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Fitting with Organizations or Jobs? A Multilevel Investigation of HR Effects on Employee Behaviors

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ABSTRACT

This study attempted to clarify the mediating role of person-environment fit and multiple work commitment in the relationship between an organization's HRM practices and its employees' behavioral outcomes. Using a sample of 876 Japanese employees working for 37 healthcare establishments, the study demonstrated that employees' evaluations of their fit and commitment to their organizations were found to be important mediators of the relationship between HRM practices and employees' behaviors, while their evaluations of their fit to and involvement in their jobs were not. The possible contributions that this study makes to the black box debate in strategic HRM are highlighted.

Keywords: Human resource practices, Person-environment fit, Multilevel analysis

INTRODUCTION

There is a general consensus among researchers that an employee's commitment to both an organization and a job is a key factor that links the human resource management (HRM) practices of an organization to the work behaviors and outcomes of its employees in areas such as enhanced job performance, reduced turnover, and absenteeism (Guest, 1997; Meyer & Allen, 1997; Meyer & Smith, 2000; Whitener, 2001; Wright, Gardner, & Moynihan, 2003). Guest (1997) lays out the clear causal path that many other researchers in this field assume. Human resource systems are established; they influence workplace practice; employee attitudes change with increased work commitment, which consequently affects work behavior; and this in turn feeds through to the performance of the work unit and eventually of the firm.

Despite the increasing attention paid to such inner mechanisms, or the so-called black box of HRM-performance relationships (Wright et al., 2003; Wright, Gardner, Moynihan, & Allen, 2005), previous studies on strategic HRM (SHRM) tended to focus on examining the effectiveness of organizational-level HRM practices and their impact on a firm's economic performance (Datta, Guthrie, & Wright, 2005; Delery & Doty, 1996; Huselid, 1995; Youndt, Snell, Dean, & Lepak, 1996). Researchers are increasingly recognizing, however, that the true effectiveness of a firm's HRM policies and practices can be evaluated from the micro or socio-cultural aspects of performance, including its employees' attitudes and behaviors (Chang, 2005; Liao & Chuang, 2004; Whitener, 2001; Wright et al., 2003). Clearly, a greater effort needs to be made to explore the mechanisms by which establishment-level HRM policies and practices influence the behaviors and outcomes of individual-level employees. Specifically, we need to further address the central part of Guest's (1997) hypothetical sequence; that is, the process by which work practices affect employee attitudes, which eventually influence employee work behavior.

The present study will therefore examine how organizational HRM practices affect employees' attitudes and behaviors, using a sample of 876 Japanese employees working for 37 healthcare establishments in Japan. We hypothesize from our literature review of this field that the person-environment (P-E) fit, along with multiple aspects of work commitment, will be the important mediators linking organizational HRM practices to the reduction in employee turnover, as well as to the enhancement of job performance quality

(Lauver & Kristof-Brown, 2001; Meyer & Allen, 1997; Meyer & Smith, 2000; Wright et al., 2003). This study is therefore expected to make a significant step forward in the areas of P-E fit and work commitment research by clarifying their roles as mediators between establishment-level HRM practices and turnover and job quality-enhancing behaviors. We also expect that the findings of this study will fuel the on-going debate over the black box issue of HRM-performance linkages by providing significant insights into the process by which HRM practices influence employees' behavioral outcomes.

LITERATURE REVIEW AND HYPOTHESES

HRM Practices That May Facilitate Work Commitment and Performance

High performance work practices in SHRM research

Studies in the SHRM field have consistently shown that certain types of HRM practices enable firms to perform better by attracting, motivating, and retaining a number of highly committed human resources (Appelbaum et al., 2000; Arthur, 1994; Wright et al., 2003). It is widely accepted that there are two models of HRM practices: the control model and the commitment model (Arthur, 1994; Wood & de Menezes, 1998). The intention of the control model is to reduce direct labor costs or improve efficiency by defining strict work roles and procedures (Arthur, 1994). Following this approach, rules, sanctions, rewards, and monitoring are considered to be the effective tools to manage the workforce. The intention of the commitment model, on the other hand, is to induce desired employee attitudes and behaviors by forging psychological links between the goals of the organization and the goals of the employee. Following the commitment approach, development, involvement, participation, and long-term orientation are considered to be the significant means of increasing human resource productivity and outcomes (Arthur, 1994; Wood & de Menezes, 1998). The commitment, rather than control, model of HRM practices is said to serve as a source of competitive advantage by eliciting greater work commitment and motivation within an organization.

Although there is agreement among SHRM researchers that the commitment model of HRM practices is the best approach, there is some discrepancy among them as to which elements of individual HRM practices should be included in the commitment model. An intensive review of relevant literature

(Delery & Doty, 1996; Huselid, 1995; MacDuffie, 1995; Way, 2002; Wright et al., 2003; Whitener, 2001; Youndt et al., 1996) led us to identify the following HRM practices as significant components in the commitment model: (1) appropriate staffing and selection, (2) a fair appraisal system, (3) comprehensive training and development, and (4) competitive compensation.

Another important argument in SHRM for enhancing work commitment and performance is the penetrating debate as to whether or not the HRM practices as a set influence employees' attitudes and behaviors. Configurational theory suggests that there should be an internally appropriate fit or consistency within the system for producing better performance and achievements (Delery & Doty, 1996; Guest, 1997). MacDuffie (1995) introduced the concept of an HR bundle, and illustrated that the effect of HRM practices as a whole (or bundle) on performance was greater than that of individual HRM practices. Chang (2005) supported this view, and explained that the bundle of HRM practices is more likely to enhance employees' desired attitudes and behaviors since it can provide the mutually reinforcing conditions that support employee motivation and skill acquisition. Relying on such a configurational view, this study examines how HRM practices as a set (i.e., an HRM bundle) will enhance the attitudes and behaviors of employees.

Literature on HRM-commitment links

A review of the literature on the effects of HRM on work commitment reveals that there are two types of studies. Earlier studies dealing with this issue focused on testing the direct impact of HRM practices on work commitment (Gaertner & Nollen, 1989; Konovsky & Cropanzano, 1991; Ogilvie, 1986). For instance, Ogilvie (1986) found that employees' perceptions of two individual HRM practices, merit-system accuracy and the fairness of promotions, had direct influences on their commitment to the organization. Similarly, Gaertner and Nollen (1989) showed a clear connection between an employee's perceptions of employment practices and his or her work commitment in a Fortune 100 manufacturing firm. They found that employee commitment had direct associations with both actual and perceived HRM practices, including internal promotion, training opportunities, and employment security. Similarly, Konovsky and Cropanzano (1991) found that types of HRM programs as perceived by employees increased affective organizational

commitment and other relevant attitudinal outcomes.

Recent studies on this issue, on the other hand, have assumed that the links between HRM practices and an employee's work commitment would be either indirect or conditional. Although limited, there is some empirical evidence that certain intervening variables mediate (or moderate, in some cases) the relations between HRM practices and employee commitment. Using a sample of 281 employees from several organizations, Meyer and Smith (2000) found that the relationship between employees' evaluations of HRM practices and their commitment to the organization was mediated by perceived organizational support and procedural justice. Moreover, Whitener (2001) revealed that the actual reward system of firms moderated the positive relationship between organizational support and organizational commitment as perceived by employees. Although the design of the research differs somewhat from researcher to researcher, a stream of recent studies suggests that the effects of HRM practices on employee commitment are neither direct nor unconditional.

Following the recent empirical findings of the aforementioned studies, it is reasonable to assume that there would be some intervening factors that mediate the relationship between HRM practices and employees' work commitment. Due to the limited number of studies that examine mediators between HRM and work commitment, there are now a variety of speculations among researchers in this field as to what would be the important factors that mediate this relationship. Nevertheless, some studies of P-E fit provide important insights into this matter (Lauver & Kristof-Brown, 2001; O'Reilly, Chatman, & Caldwell, 1991).

Multiple Aspects of Work Commitment

Recently, studies on work commitment have tended to treat the concept of work commitment as having multiple dimensions, and have classified them depending on particular commitment objectives, such as organization, work group, occupation, union, and one's job (Cohen, 1999). According to Cohen (1999), such a broad concept of work commitment can be divided into five distinctive constructs based on the work of Morrow (1993). These are affective organizational commitment, continuance organizational commitment, work ethic endorsement, career commitment, and job involvement. Morrow (1993) termed these constructs

the "universal forms of work commitment," since these five foci of commitment were considered relevant to all employees.

Of these five forms of work commitment, we focused on the three forms that are considered most relevant to the present study: (1) affective organizational commitment, (2) continuance organizational commitment, and (3) job involvement. Since the aim of our study was to demonstrate how human resource management affects work behaviors, including turnover intentions and job quality improvement, within a firm, we considered employees' attitudes toward both their job and their organization to be the more relevant constructs that mediate the link between HRM and work behavior. It is logical to assume that employees' commitment to their job and organization can be conditioned by their reactions toward HRM practices, while the two other forms of commitment, work ethic endorsement and career commitment, are less likely to be changed by HRM. Morrow (1993) similarly holds the view that the protestant work ethic and career commitment are more dispositional, cultural, and cohort-based in nature, and are therefore relatively stable over time. We therefore used the above three forms of commitment as important mediators of the relationship between HRM practices and employee work behavior. Affective organizational commitment reflects an emotional attachment to, identification with, and involvement in the organization, while continuance organizational commitment is based on the perceived costs associated with discontinuing employment within the organization (Meyer & Smith, 2000: p. 320). Job involvement is defined as the psychological identification with one's work and the degree to which the job situation is central to the person and his or her identity (Lawler & Hall, 1970: pp. 310-311). It is generally accepted that the first two forms of commitment, affective and continuance commitment to the organization, are the sub-dimensions of the broader concept of organizational commitment, while the latter is treated as an independent concept of job involvement.

Person-Environment Fit as a Mediator between HRM Practices and Work Commitment

In recent years, management scholars have expressed a growing interest in the concept of person-environment (P-E) fit, since it can offer many insights into the links between an organization's policies and practices, and employees' attitudes and behaviors (Hoffman & Woehr, 2006; Lauver & Kristof-Brown,

2001; Verquer, Beehr, & Wagner, 2003). Prior research demonstrated that employees in work organizations could distinguish two specific types of fit under the umbrella concept of P-E fit: person-organization (P-O) fit and person-job (P-J) fit (Lauver & Kristof-Brown, 2001). P-O fit is defined as the compatibility between people and organizations that occurs when at least one entity provides what the other needs, they share similar fundamental characteristics, or both (Kristof, 1996: pp. 4-5). P-J fit, on the other hand, is defined as the match either between the abilities of a person and the demands of a job, or the needs and desires of a person and what a job provides (Edwards, 1991).

Traditionally, studies of P-O and P-J fit have been conducted in the context of the selection and recruitment processes of firms. A number of studies have examined the similarities and dissimilarities between the recruiters' own values, goals, and nature (i.e., personality) and those of the organization and the job (Bretz, Rynes, & Gerhart, 1993; Cable & Judge, 1996). Recent studies, on the other hand, have shifted their focus from the fit of the recruiters to that of existing employees, examining the relationship between P-O/P-J fit and work attitudes (Lauver & Kristof-Brown, 2001; Verquer, Beehr, & Wagner, 2003). For instance, P-O fit was found to have a positive relationship with organizational commitment, whereas P-J fit was found to have a positive relationship with job involvement (Kristof, 1996; Saks & Ashfoth, 1997). The relation between P-O fit and organizational commitment has been more extensively analyzed and demonstrated in many prior studies. Verquer et al. (2003), who conducted a meta-analysis of this link by examining 15 studies involving 18,776 participants altogether, reported that the mean correlation of P-O fit with organizational commitment was r=.27.

More importantly, with an increasing number of empirical studies reporting a clear connection between P-O/P-J fit and positive work attitudes and outcomes, the organizational and individual contexts that affect employees' perceptions of P-O/P-J fit are becoming an important issue (e.g., Lauver & Kristof-Brown, 2001). Although few studies have examined what contextual variables lead to employees' having greater perceptions of P-O/P-J fit, there is no doubt that an organization's HRM practices and the resulting level of its employees' evaluations of these programs can change their P-O/P-J fit perceptions.

For P-O fit, when HRM practices as a set are implemented in such a way as to facilitate the P-O fit,

employees will evaluate that they fit in well with their organizations' values, goals, and climate. In other words, rather than assuming that HRM practices directly stimulate an employee's emotional attitudes, it is more logical to consider that HRM can change an employee's assessment of his or her fit within the organization (i.e., perceived P-O fit), which eventually influences more emotional aspects of organizational attitudes (i.e., organizational commitment). For instance, Cable and Parsons (2001) demonstrated that the use of training programs as part of HRM practices directly enhanced employees' perceptions of P-O fit. Moreover, in their attempt to test the effectiveness of training programs in firms, Klein and Weaver (2000) reported that employees' participation in training programs increased their P-O fit perceptions. Although these studies have focused on training and its direct impact on P-O fit, it is more likely, following a configurational and complementary notion of SHRM, that a firm's HRM practices as a bundle can be a direct and strong predictor of employees' perceptions of P-O fit, which then affect their sense of organizational commitment (Chang, 2005; Delery & Doty, 1996; Sekiguchi, 2006; Takeuchi, Wakabayashi, & Chen, 2003; Way, 2002). Thus, we expect that the links between HRM practices and employees' psychological attachment to an organization will be conditioned by how the employees assess the degree of their congruence with their organizations. Therefore, we developed the following hypotheses:

Hypothesis 1a: *The relationship between establishment-level HRM practices and affective organizational commitment will be positively mediated by the person-organization fit as perceived by employees.*

Hypothesis 1b: *The relationship between establishment-level HRM practices and continuance organizational commitment will be positively mediated by the person-organization fit as perceived by employees.*

In a similar vein, the other aspect of commitment, namely job involvement, and its links to HRM practices is considered to be conditioned by the degree of employees' P-J fit perceptions. Kristof (1996) suggested that P-J fit should be more strongly associated with attitudes specific to the job (e.g., job involvement) and P-O fit with attitudes about the organization in general (e.g., organizational commitment).

Hence, it is reasonable to consider that HRM practices first affect employees' assessment of their actual degree of job match, which in turn leads to the increase (or decrease) of their emotional involvement with their own job. Hence, the following hypothesis regarding the links between HRM practices, job involvement, and P-J fit can be made:

Hypothesis 1c: *The relationship between establishment-level HRM practices and job involvement will be positively mediated by the person-job fit as perceived by employees.*

Consequences of Organizational Commitment and Job Involvement

As many studies have demonstrated, employees' turnover intentions are one of the most salient consequences of multiple work commitments, including affective and continuance commitment, and job involvement. The findings of past studies in regard to the three forms of commitment are largely consistent, in that employees' turnover intentions were found to be negatively related to affective organizational commitment (e.g., Chen & Francesco, 2003; Meyer, Herscovitch, & Topolnytsky, 2002; Shore, Newton, & Thorton III, 1990), continuance organizational commitment (e.g., Chen & Francesco, 2003; Meyer, Herscovitch, & Topolnytsky, 2002), and job involvement (e.g., Brown, 1996; Morrow & McElroy, 1987). Therefore, we can make the following hypotheses:

Hypothesis 2a: *An employee's turnover intention will be negatively influenced by affective organizational commitment.*

Hypothesis 2b: *An employee's turnover intention will be negatively influenced by continuance organizational commitment.*

Hypothesis 2c: An employee's turnover intention will be negatively influenced by job involvement.

Job performance is another important aspect of the consequences of work commitment according to many of the prior studies. In such studies, a wide variety of job performance indexes or measures have been

used: some used an objective index of job performance; others relied on subjective measures. Moreover, the aspects of an employee's performance that were measured also differed depending on the researchers' views and/or intentions: some measured job performance in terms of its quality; others in terms of its quantity.

Our study focuses on the extent to which employees behave in such a way as to improve the overall quality of their jobs. Since the sample of this study consists of healthcare workers whose ultimate objective in their jobs is to offer an excellent quality of service to their clients, the use of job quality improvement as a measure of the job performance of healthcare workers seemed appropriate.

A review of the literature on the relations between multiple work commitment and job performance revealed that affective organizational commitment tended to affect job performance significantly and positively, while continuance organizational commitment tended to affect it either not significantly or negatively (e.g., Chen & Francesco, 2003; Diefendorff et al., 2002; Meyer et al., 2002; Somers & Birnbaum, 1998). Meyer et al. (2002), who conducted a meta-analysis of the relations between the multi-dimensional scales of organizational commitment and their outcomes, revealed that affective organizational commitment had significant and positive correlations with overall job performance and organizational citizenship behavior. In a similar vein, Diefendorff et al. (2002) found that job involvement had significant and positive effects on both in-role and extra-role performance. As such, both affective commitment to the organization and job involvement tended to positively correlate with job performance.

On the other hand, Chen and Francesco (2003) reported that subordinates' continuance commitment to the organization had no statistically significant effect on in-role performance as rated by their supervisors, but had a significant and negative effect on extra-role performance. Meyer et al. (2002) found from their meta-analysis that overall job performance is negatively related to continuance organizational commitment. These findings provide evidence that continuance organizational commitment does not necessarily promote either in-role or extra-role performance, while affective organizational commitment and job involvement function, more or less, to enhance job performance. Thus, based on the general trend of empirical findings and the notions shared by scholars in this field concerning the relations between types of work commitment and job performance, we can make the following hypotheses:

Hypothesis 3a: *Employees' behavior that improves their job quality will be positively influenced by affective organizational commitment.*

Hypothesis 3b: *Employees' behavior that improves their job quality will be either negatively or not significantly influenced by continuance organizational commitment.*

Hypothesis 3c: *Employees' behavior that improves their job quality will be positively influenced by job involvement.*

METHOD

Sampling and Data Collection Procedures

In order to test the sets of hypotheses stated above, we attempted to collect individual employee data by using a questionnaire survey method. Given that we aimed to test a cross-level interplay between organizational-level HRM practices and individual-level attitudes and behaviors, we carefully designed and collected the data that allowed us to estimate both the between-group and within-group variances of the variables. Our target sample was Japanese employees who all belonged to Japanese private corporations within a single industry category in Japan, the healthcare industry sector. This is because we wanted to control for any possible bias that might stem from involving a variety of industry sectors. Within this industry sector, we selected 80 service establishments as a source of information. These establishments were the member organizations of one of the biggest cooperative unions located in the Northern part of Japan, where the healthcare service businesses are very active due to the growing number of elderly people in this region. We only targeted the relatively large service establishments within this industry (those with more than 40 employees) that were specialized in running businesses related to home care and short or long stay services. Our criteria for the size of establishment (i.e., those with more than 40 employees) may not be as large as that used in some other studies (e.g., Huselid, 1995), but in this service sector, establishments with more than 40 regular employees are considered quite large. In addition, we checked, at the time of data collection, whether each establishment sampled had formal HRM functions and procedures. They all had written documents and

guidelines for staff recruitment, appraisal, compensation, and training. For data collection, we visited all the participating establishments and asked the section heads of the human resource functions at each establishment to distribute questionnaires to each of the full-time healthcare service employees with a stamped envelope. Those employees who did not engage in a healthcare service job (e.g., clerical and/or other managerial jobs) or were part-time assistants were excluded from the sample. We left a total of 1,371 questionnaires at all the establishments sampled; 1,052 sets of completed questionnaires were then sent back directly to the senior author's institution.

However, since our study involves testing the relations between variables at two hierarchical levels, there needed to be an ample size of individual data for each establishment. For this reason, we omitted employee data with less than five samples from one establishment. As a consequence, our final sample was reduced to 876 full-time healthcare employees nested in 37 service establishments. The average number of employees per establishment was 23.7, with the minimum and maximum numbers of employees at an establishment being 5 and 151, respectively. The average establishment size of the respondents as measured by the number of employees was 85.9, ranging from 40 to 225 employees. The average age of our respondents was 34.1 and their average length of service was 3.9 years. Six hundred and fifty-nine of the respondents (75.2%), or approximately three-quarters, were female while 217 (24.8%) were male. The predominance of women in the sample reflects the overall population of this industry in Japan. The Japanese Ministry of Health, Labor, and Welfare reported in 2004 that 79.1% (787,190 out of 995,374 employees) of healthcare industry jobs in Japan were occupied by women.

Measurement Instruments

Since our target sample was made up entirely of Japanese people who speak Japanese as a native and primary language, all of the survey instruments in the questionnaire needed to be prepared in Japanese. In preparing the questionnaire, we first made it in English since most of the survey instruments we used in the study had originally been developed by other researchers in English. The conventional method of translation and back-translation (Brislin, Lonner, & Thorndike, 1973) was applied in developing the Japanese version of

the questionnaire. The details of the survey instruments are explained below.

HRM practices

There are two different approaches used to measure organization-wide HRM practices (Gerhart et al., 2000). The first is to rely on the use of single-respondent designs, which have been frequently applied in prior SHRM research (e.g., Delery & Doty, 1996; Huselid, 1995; Huselid & Becker, 2000). Some recent SHRM studies, on the other hand, have recommended taking an alternative approach that uses multiple respondent designs, given the fact that single rater reliabilities of HRM measures have in the past been frighteningly low (Gerhart et al., 2000; Wall & Wood, 2005). Consistent with this notion, some recent studies have used employees as the source of HRM practice data (Mayer & Smith, 2000; Cable & Parsons, 2001; Wright et al., 2003, 2005). Hence, we attempted to measure establishment-level HRM practices by aggregating the survey responses from all of the employees nested in each of the 37 healthcare establishments.

Since there had been a lack of well-established HRM practice items to be surveyed for employees, the HRM practice items used in this study were mostly developed by the authors, based on our extensive review of the relevant SHRM literature. To capture the commitment model of HRM practices, we listed the HRM practices from past literature so that we could find some common denominators in a number of commitment-enhancing HRM practices (Delery & Doty, 1996; Huselid, 1995; MacDuffie, 1995; Way, 2002; Wright et al., 2003; Whitener, 2000; Youndt et al., 1996). As a consequence, we developed an 11-item HRM practice measure which covers the four sub-dimensions of the major HRM functions; namely, appropriate staffing and recruitment (two items), a fair performance appraisal system (four items), comprehensive training and development (three items), and competitive compensation (two items). For each item, we used a five-point Likert-type response format, ranging from 5 (=agree) to 1 (=disagree).

To check the construct validity of our 11-item HRM practice measure, we performed a confirmatory factor analysis on all the employee respondents. The results showed that the a priori four-factor model fitted the data very well. Specifically, the various fit indices, including CFI, IFI, and TLI, had achieved

a value well above the conventional criteria of .90 (CFI=.97, IFI=.97, and TLI=.96). In addition, following the convention for testing the convergent and discriminant validity of items (e.g., Podsakoff & Organ, 1986), we tested the hypothesized four-factor model against an alternative one-factor model, as well as a null model. This additional analysis strongly supported the convergent and discriminant validity of the HRM measures. Specifically, the four-factor model fitted significantly better than both the null model where all HRM items are assumed to be totally unrelated ($\Delta\chi^2$=3610.96, Δdf=17, $p<.001$) and the one-factor model where all HRM items are converged into a single factor ($\Delta\chi^2$=286.80, Δdf=6, $p<.001$).

Before creating establishment-level measures of HRM practices by aggregating individual responses for each measure, we calculated the intraclass correlations, ICC(1) and ICC(2), that are commonly used to justify the aggregation of the data to higher levels (e.g., Shrout & Fleiss, 1979). The value of ICC(1) is known as an index to assess the reliability of a single-respondent measure, while that of ICC(2) is typified as estimating the reliability of aggregated multiple respondents. We found that the ICC(1) values for both the four underlying dimensions of HRM practices and the HRM practices as a whole (i.e., the HRM practices bundle) were extremely low (ranging from .01 to .09), indicating that using a single respondent for measuring HRM practices would result in extremely low reliability. ICC(2) values for these items, on the other hand, were all found to be well above the recommended value of .60 (Glick, 1985), ranging from .83 to .96. These findings served as strong evidence to support the use of aggregated data for the four sub-divided measures of HRM practices, as well as for the overall HRM bundle measure. Cronbach's coefficient alphas for the four HRM practices and the overall HRM practices bundle at the establishment-level were all found to achieve the conventional criteria of measurement reliability with alphas greater than .73.

Person-environment fit

Perceived P-O fit was measured using three items taken from Lauver and Kristof-Brown (2001) (sample item: "My values match or fit the values of this organization."). The coefficient alpha of this scale was .75. We measured perceived P-J fit using four items adopted from Lauver and Kristof-Brown (2001) (sample item: "My ability fits the demands of this job."). Cronbach's coefficient alpha for this scale was .82.

For these P-E fit measures, a five-point Likert-type response format, ranging from 5 (=agree) to 1 (=disagree), was used.

Then, we conducted a confirmatory factor analysis to check the convergent and discriminant validity of the two underlying structures of perceived P-E fit measures. The results strongly supported a statistical validity of the P-E fit constructs. The expected two-factor model of P-O and P-J fit fitted better to the present sample covariant matrix, with CFI, IFI, and TLI being .92, .92, and .90, respectively. In addition, this a priori model fitted significantly better than both the null model ($\Delta\chi^2$=2443.02, Δdf=7, p<.001) and the alternative one-factor model ($\Delta\chi^2$=352.91, Δdf=1, p<.001). Thus, we may conclude from the above results that the two underlying constructs of P-E fit are a valid operationalization in the present study.

Multiple work commitment

As explained earlier, two constructs of organizational commitment, namely affective and continuance commitment to the organization, were used in this study. To measure affective and continuance organizational commitment, we relied on the use of existing psychometric properties developed by Meyer, Allen, and Smith (1993). We measured affective organizational commitment using four representative items out of the six global items of Meyer et al. (sample item: "I really feel as if this organization's problems are my own."). The coefficient alpha of this scale was .80, indicating a sufficiently high reliability of the construct. Continuance commitment was measured using three items from Meyer et al.'s original six items (sample item: "Too much of my life would be disrupted if I decided I wanted to leave my organization right now."). The reliability coefficient of the three items was found to be .73. Job involvement was measured with three items adopted from Lodahl and Kejner's (1965) and Kanungo's (1982) job involvement scales (sample item: "My present job is religion for me."). The Cronbach's coefficient alpha for this measure was .76. A five-point Likert-type response format, ranging from 5 (=agree) to 1 (=disagree), was used for the above work commitment scale.

The results of the confirmatory factor analyses for multiple work commitment indicated that the a priori three-actor model fitted better than both the null model ($\Delta\chi^2$=2781.66, Δdf=13, p<.001) and the

one-factor model ($\Delta\chi^2$=479.57, Δdf=3, p<.001). The fit indices of CFI, IFI, and TLI that the a priori three-factor model had achieved all exceeded the recommended level of .90.

Behavioral outcomes

Two outcome measures of the employees' behavior were included in this study: turnover intention and job quality improvement. The employees' turnover intentions were tapped by using two items ("I want to leave the present organization." and "I want to move to other organizations which are different from the present workplace."). The coefficient alpha for this two-item measure was .77. Job quality improvement was measured using four items taken from Randall, Fedor, and Longenecker (1990) with a slight modification of their "behaviors indicating a concern for quality" items (sample item: "I always try to increase the quality of my job."). The reliability coefficient of this measure was found to be .74. We adopted a five-point Likert-type response format, ranging from 5 (=agree) to 1 (=disagree), for this behavioral outcomes scale.

It was observed from the confirmatory factor analysis results that the behavioral outcome measures used in the study subsumed the expected two factors, yielding sufficiently high values of various model fit indices (CFI=.99, IFI=.99, and TLI=.97). Moreover, the a priori two-factor model fitted better than both the null model ($\Delta\chi^2$=1251.11, Δdf=7, p<.001) and the one-factor model ($\Delta\chi^2$=344.50, Δdf=1, p<.001). These findings give support to the validity of both the convergent and discriminant behavioral outcome scales used in the study.

Control variables

We controlled for the following six background variables in the study: (1) gender (coded 1 for male and 0 for female), marital status (coded 1 for married and 0 for not married), years of service (the actual number of years of each respondent), job change experiences (1 was assigned when a respondent had ever experienced job hopping, while 0 was assigned when he or she had not), and company size (measured in terms of the number of employees in each establishment).

Model Estimation Strategies

We developed three types of analytical model involving either the whole or part of the hypothesized paths from HRM practices to P-O fit and P-J fit, commitment and involvement, and employee turnover and job quality behavior. The three analytic models, tested using a structural equation modeling (SEM) method, are depicted in Figure 1. The first model, Model A, only involves organization-related attitudes (e.g., P-O fit and organizational commitment) as mediators of the relationship between HRM practices and an employee's turnover intention and job quality improvement. Specifically, we examined in this model the sequences of paths initiating from HRM practices to P-O fit, organizational commitment, and the two outcome variables of turnover intention and job quality behavior. Using this model, we tested the six individual hypotheses, Hypotheses 1a, 1b, 2a, 2b, 3a, and 3b. The aim of testing this model using SEM was to evaluate to what extent an employee's attitude toward the organization will help strengthen or weaken the effects of HRM practices on the resulting level of employee turnover and quality improvement behavior.

The second model (i.e., Model B) focuses on the variables relating to P-J fit and job involvement in examining the relationship between HRM practices and employee behavior to test Hypotheses 1c, 2c, and 3c. Here, we examined the sequences of paths leading from HRM practices to P-J fit, job involvement, and outcome variables. An examination of Model B using SEM helped us assess the role of job-related attitudes (e.g., P-J fit and job involvement) as a means of mediating the relationship between establishment-level HRM practices and behavioral outcomes.

The third model (i.e., Model C) involves all the hypothesized paths regarding the effects of HRM practices on an employee's attitudes toward both his or her organization and job. This is considered a full model since it aims to test all the hypothesized relationships at once in the same model. If this model were found to be a valid operationalization, we would be able to consider that types of commitment HRM practices facilitate an employee's psychological attachment to both the job and the organization, which in turn promotes job quality improvement behavior and employee retention in an organization. In our SEM analyses, we attempted to compare all three models in terms of model fit and to test all the individual hypotheses stated above.

Our data, as well as our hypotheses, involve cross-level interplay between organizational HRM practices and individual (i.e., employee) perceptions of fit in an organization and a job. We decided that further statistical investigations should be carried out to ascertain whether (and if so, to what extent) individual-level differences in P-O/P-J fit can be explained by the establishment-level differences in HRM practices, after eliminating the possible individual-level effects that may influence P-O/P-J fit perceptions. To rigorously capture such multi-level effects, we performed a hierarchical linear modeling (HLM) analysis. The use of HLM allows for the iterative investigation of multiple levels of relationships with individual-level (employee) dependent variables (Hofmann, Griffin, & Gavin, 2000).

A possible response bias for this study might exist regarding the common source variance problem (Podsakoff & Organ, 1986), since our study involved collecting all variable information from the same source. Although the HRM practices data were nested in each establishment, it is likely that other individual data might be subject to this problem. Following the recommended method of checking this (e.g., Podsakoff & Organ, 1986), we performed a Harman's one-factor test on all of the 23 individual-level items, including the items on P-O/P-J fit, affective and continuance commitment, job involvement, turnover intention, and job quality-enhancing behavior. Using an eigenvalue with a criterion of greater than one, the expected seven factors were justified, and no general factor was present. In addition, the results of a confirmatory factor analysis for the a priori seven-factor model of all items showed a reasonably good fit to the present sample covariance matrix structure ($\chi^2 = 940.81$, df = 209; GFI = .91; CFI = .91; IFI = .91; RMSEA = .06). It is worth noting that there was a significant increase in chi-square statistics from the seven-factor model to the single-factor model ($\Delta\chi^2 = 2003.40$, df = 21, $p < .001$) and to the null model ($\Delta\chi^2 = 7618.88$, df = 44, $p < .001$), indicating that the a priori seven-factor model was a better-fitting model for the observed data. These results suggest that method variance may not be a suitable explanation for this study. A correlation matrix and descriptive statistics of all the variables used in the study are presented in Table 1.

Insert Figure 1 about here

RESULTS

Hypothesis Testing based on SEM

Model comparisons

In order to identify which of the three models proposed in this study fits best with the present sample covariance structure, we performed a series of SEM analyses for each model. The summary statistics are displayed in Table 1. This table shows that Model A fitted the data better than the two other models did. Various fit indices for Model A, including a comparative fit index (CFI), an incremental fit index (IFI), the Tucker-Lewis index (TLI), and a root mean square error of approximation (RMSEA), showed 0.91, 0.92, 0.90, and 0.07, respectively, indicating that they all achieved the general acceptance limit of a model fit. Nevertheless, these fit indices failed to reach the conventional criteria of a model fit for Models B and C—the values were all between 0.82 and 0.89 for CFI, IFI, and TLI, and 0.08 or more for RMSEA. This indicates that Models B and C, which involve job-related attitudes, including P-J fit and job involvement, as mediators of HRM-behavior relationships do not fit our sample well. In addition, it can be seen from Table 1 that the ratio of the model chi-square to the degree of freedom of all three models was smallest in Model A. All these findings indicated that the model that best fit our data was Model A, which predicted that only one aspect of P-E fit, namely P-O fit, would mediate the relationship between establishment-level HRM practices and organizational commitment. Thus, we may conclude that the findings negate Hypotheses 1c, 2c, and 3c, which concern the relationships between HRM practices and job attitudes.

Insert Table 1 about here

Path analytical results

Since Models B and C, which include variables concerning job-related attitudes, failed to reach the level of acceptance in various fit indexes, we only depicted the results of a path model in Model A, as shown in Figure 2. The tests of the hypotheses regarding the individual paths are summarized below.

First, we hypothesized that a P-O fit would positively mediate the relationships between establishment-level HRM practices and affective organizational commitment (Hypothesis 1a) and between the practices and continuance organizational commitment (Hypothesis 1b). Figure 2 shows that organizational

HRM practices significantly and positively affected P-O fit as perceived by employees (β=.25, p<.001), which in turn contributed significantly and positively to the two forms of organizational commitment, affective and continuance (β=.85, p<.001 and β=.65, p<.001, respectively). This indicates that the positive relationship between perceived HRM practices and the two forms of organizational commitment is mediated by the extent to which an employee perceives himself or herself to fit in with the organization. More specifically, an establishment-level HRM practices bundle helps to promote both affective and continuance organizational commitment when employees feel that they fit well with the organization. These findings are consistent with Hypotheses 1a and 1b of the present study.

Second, Hypothesis 2 stated that an employee's turnover intention would be negatively influenced by affective organizational commitment (Hypothesis 2a) and by continuance organizational commitment (Hypothesis 2b). As shown in Figure 2, both coefficients of the paths linking affective and continuance commitment to turnover intention were found to be statistically significant and showed the predicted negative effects (β=-.54, p<.001 and β=-.34, p<.001, respectively). These negative paths mean that the higher the level of affective and continuance commitment to an organization an employee shows, the lower the intention to quit. These findings give consistent support to Hypotheses 2a and 2b that predicted the negative effects of an employee's organizational commitment and the resulting level of his or her turnover intention.

Third, Hypothesis 3 stated that an employee's behavior that leads to an improvement in his or her job quality would be positively influenced by affective organizational commitment (Hypothesis 3a) and negatively influenced by continuance organizational commitment (Hypothesis 3b). Our structural equation results provided strong support for these predictions. Specifically, we found that job quality improvement was significantly and positively affected by affective commitment (β=.68, p<.001), but negatively affected by continuance commitment (β=-.14, p<.05). These findings suggest that affective commitment will help motivate an employee to improve his or her job quality, while an employee's motivation to improve job quality will decrease once he or she holds a high level of continuance commitment. These findings give support to Hypotheses 3a and 3b of the present study.

In order to further analyze the mediating role that P-O fit plays between HRM practices and the two

forms of organizational commitment, we examined an additional structural model that subsumes two extra paths in Model A initiating from (1) HRM practices to affective commitment and (2) HRM practices to continuance commitment. This additional estimated structural model has led us to further identify that P-O fit mediates the relations between HRM practices and the two forms of commitment. First, the positive effect of HRM practices on P-O fit was still very strong and statistically significant, even when we simultaneously estimated the direct paths between HRM practices to two latent variables of organizational commitment. The magnitude of HRM effects on P-O fit was almost equivalent when estimated in this additional model (β=.24, $p<.001$) and Model A (β=.25, $p<.001$). This indicates that adding the direct paths from HRM to the two forms of commitment to Model A has almost nothing to do with the HRM and P-O fit relationship. Moreover, the direct paths from HRM to continuance and affective commitment were found to be either insignificant or very low (β=-.05, n.s. for the HRM-continuance path, and β=.07, $p<.05$ for the HRM-affective path). Finally, the effects of P-O fit on affective and continuance commitment were found to remain statistically significant with ample sizes of beta coefficients being presented, even in this additional model (β=.83, $p<.001$ and β=.66, $p<.001$, respectively) Again, the magnitudes of these effects in this model remained almost unchanged from those of the respective effects in Model A (β=.85, $p<.001$ and β=.65, $p<.001$, respectively). The above extra evidence gives further support to the mediation hypothesis depicted in Hypotheses 1a and 1b of the study.

To summarize, all the coefficients of the predictive paths included in Model A were found to be statistically significant, and thus Hypotheses 1a, 1b, 2a, 2b, 3a, and 3b were supported. Nevertheless, three individual hypotheses that assumed the presence of significant paths initiating from HRM practices to P-J fit and job involvement (H-1c), from job involvement to turnover intention (H-2c), and from job involvement to job quality improvement (H-3c) were unsupported due to the poor fit of the hypothesized models B and C.

Insert Figure 2 about here

Hypothesis Testing based on HLM

To further test the cross-level effects involved in Hypotheses 1a to 1c, namely the effect of establishment-level HRM practices on employees' P-O fit and P-J fit perceptions, we administered the HLM

for the 37 establishment-level and 876 individual-level data simultaneously. First, in order for the above cross-level hypotheses to be supported, there should be significant between-establishment variances in P-O fit and P-J fit perceptions. Non-statistically significant variances in the individual-level dependent variables (i.e., P-O and P-J fit) indicate that a large proportion of P-O or P-J fit variances can be explained by other within-establishment (i.e., individual-level) variances, and hence the effect of organizational HRM practices on an employee's P-O and P-J fit can not be warranted. To check this basic condition, we first estimated a null model in which no predictors were specified either in the level 1 (individual-level) or the level 2 (establishment-level) function.

The findings of two null model estimations for both P-O fit and P-J fit indicated that a significant level of the level 2 residual variance was found only in P-O fit (τ_{oo}=.04, p<.001), not in P-J fit (τ_{oo}=.01, p>.10). This suggests that establishment-level predictors including HRM practices cannot explain employees' perceptions of P-J fit, which is consistent with the findings obtained from the above SEM analysis. As such, Hypothesis 1c was rejected again. There is a possibility, however, that employees' P-O fit perceptions can be directly influenced by establishment-level HRM practices, given the significant level 2 residual variance in P-O fit. The ICC(1) value that was calculated for P-O fit was found to be .12, indicating that 12 percent of the variance in employees' perceptions of P-O fit lay between establishments, and 88 percent of it lay within establishments.

In the next step, we estimated the model that incorporated both level 1 and level 2 predictors to test the cross-level effects of organizational HRM practices on employees' perceptions of fit in their organization. Adding to the five individual-level control variables, as well as one establishment-level one, the establishment-level HRM practices bundle measure was put into the level 2 equation. Table 2 displays the results of the HLM for predicting P-O fit perceptions.

As can be seen in Model 1 of Table 2, establishment-level HRM practices were found to have a significant and positive effect on the employees' perceptions of P-O fit (γ=.50, p<.001), indicating that establishment-level HRM practices, when implemented as an overall bundle, directly enhanced members' perceptions of P-O fit. This finding provides additional support for Hypotheses 1a and 1b of the present study,

which assumed a direct and positive association between organizational HRM practices and the resulting level of members' P-O fit.

An additional HLM model was built and tested for the purpose of contributing to both the configurational theory and the HRM bundle arguments. As seen in Model 2 of Table 2, an appropriate staffing policy had a significant and positive impact on employees' perceptions of P-O fit (γ=.39, $p<.05$), while none of the other three HRM practices had any meaningful effects on the employees' attitudinal variable. Moreover, magnitude of the effect of the individual HRM practice (i.e., staffing practice) seems to be rather weak, with staffing practice generating a statistical significance level of $p<.05$. These findings may be consistent with the penetrating debate on configurational theory, which asserted the importance of the synergistic impacts of internally aligned HRM policies and practices in eliciting positive and desirable behavioral and organizational outcomes.

Insert Table 2 about here

DISCUSSION

A possible contribution that our study makes is that it provides partial but significant evidence to fuel the on-going debate on the black box issue of the SHRM field. Although empirical studies of SHRM consistently reported a positive relationship between HRM practices and performance at the organizational level, the mechanisms by which organizational HRM practices stimulate its members' attitudes and behaviors have yet to be explored. Our findings may partly answer the fundamental question as to what is inside the black box. Our tentative answer would be that the use of a high performance HRM practices bundle seems to increase employees' sense of P-O fit, which then elicits their affective commitment to an organization and its resulting level of their retention and job quality-enhancing behaviors. Future studies should further test, adjust, and modify our mediating model of HRM effectiveness, accumulating solid evidence to penetrate deep inside the black box of an HRM-performance relationship.

Another important contribution is that our study of HRM effectiveness has shed light on the person-environment fit studies and connected them to the extant work of the strategic HRM field. Issues of

P-E fit have often been treated with respect to the selection and training activities of firms. With such a background, the sample target and/or the scope of general P-E fit studies have mostly been applicants (potential employees) or new hires. Very few studies have involved organizational employees as a whole in the sample or scope of studies. Our study is one of the few that has demonstrated that P-O fit can be a strategically important concept for both human resource researchers and practitioners in order to help translate a firm's HRM activities into the retention and quality-enhancing behaviors of its employees.

Despite these possible contributions, this study has several limitations that necessitate caution when interpreting the results. First, our study relied on the use of self-reported measures in P-O fit and job quality improvement behaviors. In particular, it is well known that P-O fit can be measured from two different means yielding virtually entirely different concepts: subjective fit and objective fit (Hoffman & Woehr, 2006; Kristof, 1996). Hoffman and Woehr (2006) illustrated from their meta-analysis of past P-O fit studies that the correlational levels of subjective fit and objective fit with behavioral outcome variables were slightly different. Correlations of subjective fit with turnover behavior and job performance were found to be slightly lower than those of objective fit. Although there did not seem to be a large difference between subjective fit and objective fit measures in terms of their correlates with outcome variables, the findings might have been somewhat different if we had used the objective fit index in the study. However, the subjective fit measurement method is also a well-accepted method and is widely used in contemporary P-O fit studies for its conciseness and simplicity (Cable & Parsons, 2001).

Second, we adopted a cross-sectional survey method by which various HRM activities and the employees' attitudinal and behavioral data were collected at the same time. While we presented and tested the model in which causal directions are assumed to initiate from HRM practices, followed by P-E fit, work commitment, and employees' behaviors, there is the possibility that the causal flow may occur in the reverse order. In other words, more committed and loyal employees may actively adjust themselves to organizations that implement high performance HRM practices in firms. Adequate time between the assessments of these different groups of variables would strengthen the causal inferences that can be derived from data similar to ours. A longitudinal study needs to be carefully conducted with ample time intervals between the

measurements of the different variables, as well as their sequencing.

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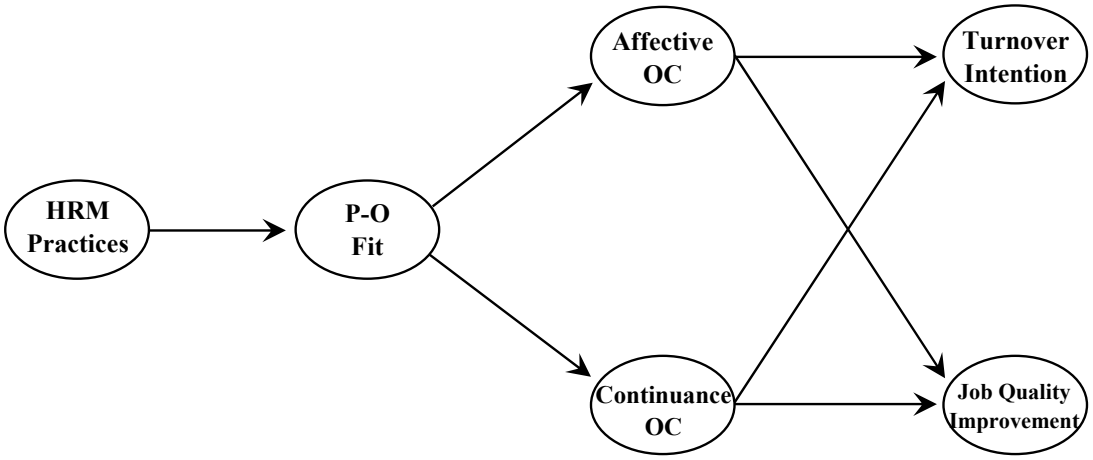
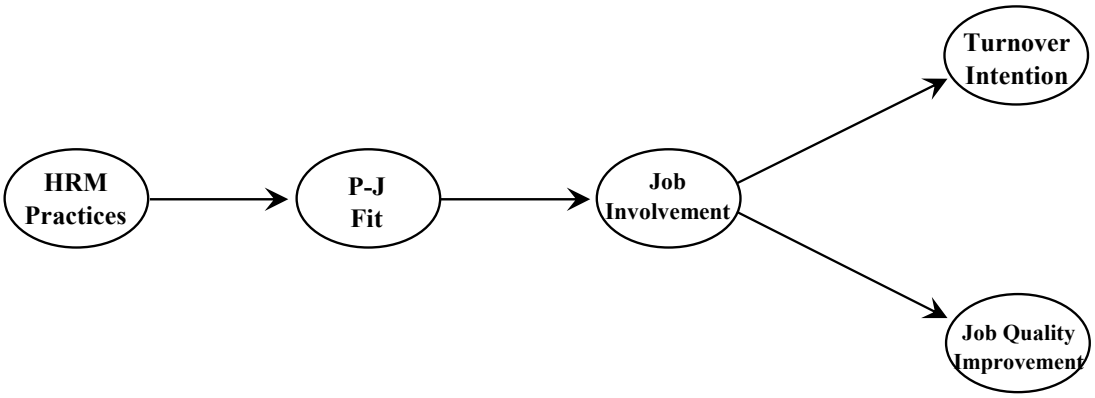
FIGURE 1
Three SEM Analytical Models Tested in the Study

Model A: Organizational Commitment Model



Model B: Job Involvement Model



Model C: Combined Model

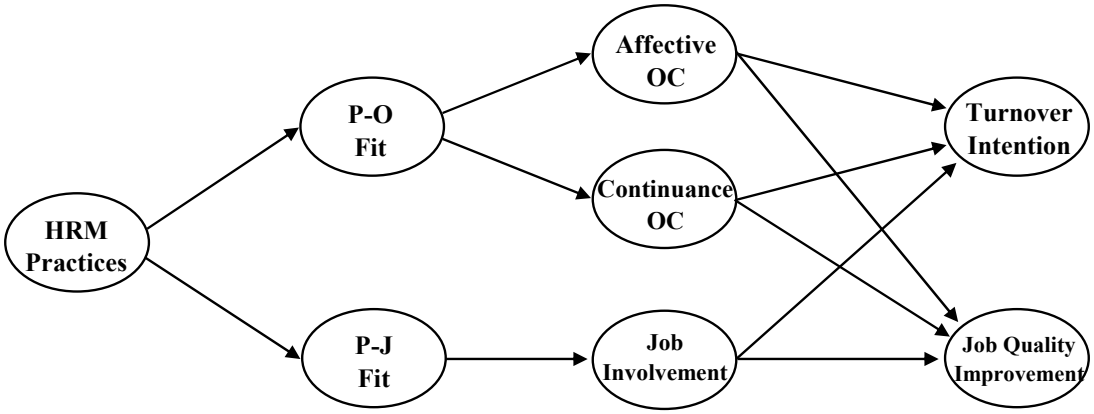


TABLE 1

Results of Model Fit in the Three Different Models

Model	χ^2	*df*	χ^2/df	IFI	TLI	CFI	RMSEA
Model A: Organizational commitment model	770.02	163	4.72	.92	.90	.91	.07
Model B: Job Involvement model	849.55	115	7.39	.89	.87	.89	.09
Model C: Combined model	1988.96	313	6.36	.84	.82	.84	.08

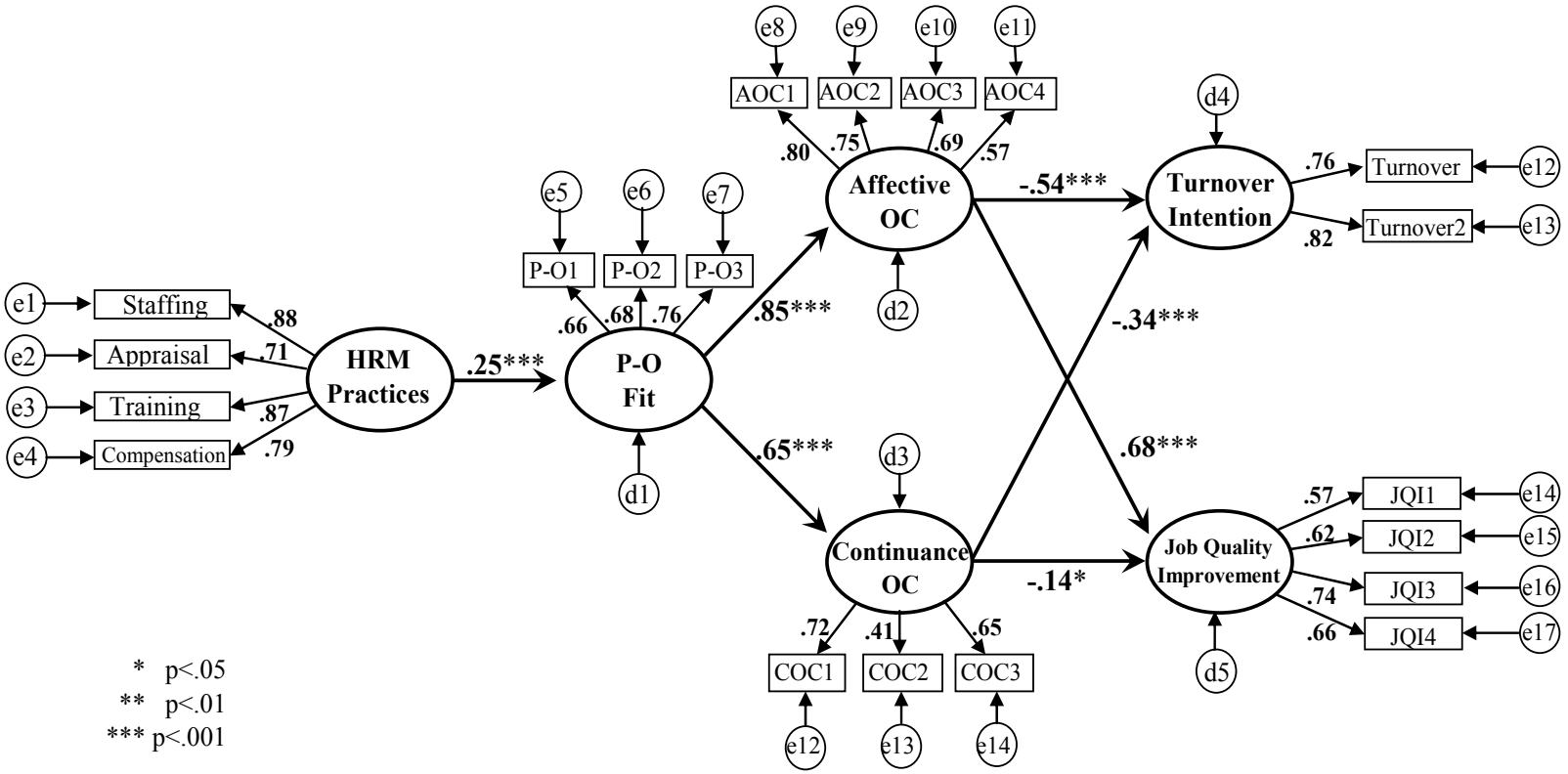
TABLE 2

Hierarchical Linear Modeling Results on HRM Practice Effects on Employees' P-O Fit Perceptions

Variables	MODEL 1			MODEL 2		
	γ	(SE)	p	γ	(SE)	p
Level 1						
(Intercept)	3.35	(.04)	***	3.34	(.04)	***
Gender	-.11	(.06)	†	-.11	(.06)	†
Marital status	-.28	(.05)	***	-.28	(.05)	***
Years of service	.02	(.01)		.02	(.01)	
Job change experience	.02	(.04)		.02	(.04)	
Educational background	-.02	(.02)		-.02	(.02)	
Level 2						
Company size	-.01	(.01)	*	.00	(.00)	*
HRM practices bundle	.50	(.09)	***			
Appropriate staffing and selection				.39	(.18)	*
Fair performance appraisal				-.01	(.12)	
Comprehensive training and development				.18	(.19)	
Competitive compensation				-.12	(.19)	
Level 1 residual variance (σ^2)	.49			.49		
Level 2 residual variance (τ_{00})	.01			.01		
Model deviance	1652.00			1650.23		

† p<.10
* p<.05
** p<.01
*** p<.001

FIGURE 2
Results of a Path Analysis for Model A



APPENDIX A

Mean, standard deviation, and correlation coefficient among variables used in the present study [a]

	Variables	Mean	(SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Gender	.75	(.43)	1.00																
2	Marital status	.50	(.50)	-.02	1.00															
3	Years of service	3.85	(3.36)	.13	-.17	1.00														
4	Job change experience	.64	(.48)	-.02	-.24	-.04	1.00													
5	Educational background	2.90	(1.07)	-.16	.14	-.06	-.14	1.00												
6	Company size	86.92	(44.93)	-.16	.20	.04	-.28	.19	1.00											
7	HRM practices bundle	2.90	(.32)	-.36	-.38	-.39	.12	.05	-.09	1.00										
8	Appropriate staffing and selection	3.08	(.40)	-.24	-.33	-.37	.16	.06	.01	.88	1.00									
9	Fair performance appraisal	2.72	(.43)	-.32	-.32	-.24	-.05	.04	-.12	.83	.54	1.00								
10	Comprehensive training and development	3.18	(.34)	-.27	-.32	-.50	.24	.05	-.12	.89	.79	.63	1.00							
11	Competitive compensation	2.61	(.33)	-.41	-.34	-.27	.10	.01	-.10	.86	.69	.69	.64	1.00						
12	P-O fit 1	3.24	(.93)	-.08	-.21	.08	.08	-.06	-.04	.58	.58	.47	.56	.37	1.00					
13	P-O fit 2	3.58	(.95)	-.09	-.13	-.03	.06	.00	-.02	.43	.49	.23	.55	.25	.47	1.00				
14	P-O fit 3	3.02	(.81)	-.02	-.16	.07	.06	-.02	-.17	.68	.75	.44	.69	.47	.53	.52	1.00			
15	P-J fit 1	3.08	(.95)	.00	-.14	.16	.04	-.05	-.17	.02	.08	-.02	.02	.00	.23	.14	.26	1.00		
16	P-J fit 2	3.49	(.97)	-.02	-.15	.04	.09	-.17	-.01	.24	.33	.07	.38	.04	.50	.32	.38	.40	1.00	
17	P-J fit 3	3.24	(.98)	-.02	-.14	.14	.02	-.07	-.19	.07	.14	-.05	.12	.07	.28	.20	.30	.66	.48	1.00
18	P-J fit 4	3.27	(.91)	-.08	-.15	.10	.03	-.09	.05	.30	.48	.01	.41	.17	.38	.27	.35	.49	.54	.62
19	Affective organizational commitment 1	3.53	(1.05)	-.08	-.20	.08	.13	.01	-.21	.52	.49	.34	.53	.46	.39	.44	.50	.19	.30	.20
20	Affective organizational commitment 2	3.01	(1.10)	-.11	-.17	.06	.08	-.03	-.31	.52	.55	.27	.59	.40	.36	.37	.48	.23	.31	.22
21	Affective organizational commitment 3	3.46	(1.07)	-.17	-.10	.04	.06	.04	-.15	.48	.50	.31	.44	.43	.37	.38	.42	.20	.31	.17
22	Affective organizational commitment 4	3.15	(1.05)	-.15	-.07	.04	.07	.07	-.05	.54	.47	.46	.42	.49	.26	.23	.33	.20	.23	.20
23	Continuance organizational commitment 1	2.50	(1.22)	-.07	-.13	.07	.07	-.07	-.01	.04	.12	.10	.02	-.15	.32	.30	.36	.08	.25	.11
24	Continuance organizational commitment 2	3.81	(1.11)	-.08	.06	.01	-.08	.05	.15	.33	.37	.25	.18	.33	.14	.17	.10	.05	.08	.08
25	Continuance organizational commitment 3	3.21	(1.34)	-.06	-.05	.08	.02	-.06	-.01	.04	.12	.10	.02	-.15	.22	.27	.21	-.05	.12	-.02
26	Job involvement 1	3.08	(1.09)	.00	-.18	.10	.09	-.15	-.09	.43	.42	.45	.37	.23	.46	.35	.42	.25	.47	.34
27	Job involvement 2	3.72	(.94)	-.07	-.08	-.03	.08	.03	-.07	.54	.64	.30	.40	.54	.31	.29	.30	.27	.35	.29
28	Job involvement 3	3.20	(1.12)	-.03	-.19	.07	.09	-.15	-.24	.30	.20	.39	.31	.13	.40	.29	.37	.23	.40	.33
29	Turnover 1	2.54	(1.12)	.07	.22	-.03	-.09	.05	.11	-.41	-.45	-.27	-.43	-.29	-.39	-.52	-.42	-.10	-.25	-.11
30	Turnover 2	2.34	(1.14)	.06	.19	.00	-.08	.05	.26	-.53	-.47	-.46	-.52	-.37	-.43	-.55	-.47	-.21	-.34	-.23
31	Job quality improvement 1	4.04	(.80)	.01	-.13	.08	.02	-.01	-.06	.32	.38	.25	.21	.24	.17	.16	.23	.38	.33	.37
32	Job quality improvement 2	3.38	(.86)	-.03	-.10	.02	-.02	.02	.08	.43	.62	.07	.56	.27	.23	.18	.29	.39	.32	.37
33	Job quality improvement 3	3.68	(.80)	-.11	-.14	.02	.05	-.07	-.25	.38	.34	.24	.42	.33	.33	.27	.34	.41	.47	.42
34	Job quality improvement 4	3.81	(.83)	-.13	-.14	.08	.07	-.04	-.02	.24	.13	.26	.20	.25	.26	.22	.27	.29	.31	.27

a. n=37 for inter-correlations among company size and HRM practices, and cross-level correlations between company size, HRM practices and aggregated employee attitudes and behaviors; n=876 for inter-correlations among individual-level employee attitudes and behaviors.

APPENDIX A (continued)

Variables	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1 Gender															
2 Marital status															
3 Years of service															
4 Job change experience															
5 Educational background															
6 Company size															
7 HRM practices bundle															
8 Appropriate staffing and selection															
9 Fair performance appraisal															
10 Comprehensive training and development															
11 Competitive compensation															
12 P-O fit 1															
13 P-O fit 2															
14 P-O fit 3															
15 P-J fit 1															
16 P-J fit 2															
17 P-J fit 3															
18 P-J fit 4	1.00														
19 Affective organizational commitment 1	.29	1.00													
20 Affective organizational commitment 2	.31	.66	1.00												
21 Affective organizational commitment 3	.29	.52	.52	1.00											
22 Affective organizational commitment 4	.25	.45	.41	.46	1.00										
23 Continuance organizational commitment 1	.23	.40	.41	.38	.35	1.00									
24 Continuance organizational commitment 2	.11	.16	.14	.23	.16	.27	1.00								
25 Continuance organizational commitment 3	.08	.25	.23	.26	.22	.47	.36	1.00							
26 Job involvement 1	.48	.40	.36	.39	.32	.43	.12	.21	1.00						
27 Job involvement 2	.36	.41	.37	.40	.38	.24	.14	.13	.43	1.00					
28 Job involvement 3	.38	.39	.32	.35	.36	.36	.07	.19	.71	.39	1.00				
29 Turnover 1	-.21	-.44	-.38	-.34	-.28	-.36	-.15	-.33	-.36	-.28	-.32	1.00			
30 Turnover 2	-.32	-.50	-.39	-.39	-.31	-.36	-.19	-.33	-.42	-.29	-.38	.63	1.00		
31 Job quality improvement 1	.34	.19	.16	.24	.23	.03	.08	-.02	.25	.32	.21	-.12	-.13	1.00	
32 Job quality improvement 2	.37	.30	.29	.32	.33	.16	.10	.03	.32	.36	.31	-.20	-.22	.39	1.00
33 Job quality improvement 3	.42	.30	.29	.34	.28	.21	.07	.09	.37	.39	.35	-.27	-.29	.39	.49
34 Job quality improvement 4	.28	.25	.26	.28	.29	.14	.14	.07	.23	.32	.24	-.20	-.21	.40	.35