

# Testing Mediation Effects of Social and Economic Exchange in Linking Organizational Training Investment to Employee Outcomes

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# **Testing Mediation Effects of Social and Economic Exchange in Linking Organizational Training Investment to Employee Outcomes**

## **Abstract**

**Purpose** – Although social exchange theory has long been used to explain employees’ positive work attitudes in response to perceived investment in employee development (PIED), few studies have examined this theoretical mechanism by introducing a direct measure of social exchange between employees and their personified organization. Furthermore, most studies have focused solely on one type of exchange (i.e., social exchange) and have ignored another type of exchange characterized as economic exchange. The main purpose of this study is therefore to uncover the process by which PIED affects employees’ attitudes, including affective organizational commitment and job satisfaction, by examining the mediating roles of both social and economic exchanges.

**Design/methodology/approach** – To test the hypothesized mediating model, this study conducted a three-phase, time-lagged questionnaire survey and collected data from 545 full-time employees. The model was tested based on structural equation modeling with a bootstrap test of indirect effects.

**Findings** – In line with social exchange theory, our findings showed that social exchange perceptions positively mediated the relationships between PIED and affective commitment/ job satisfaction, whereas economic exchange perceptions negatively mediated them. Additionally, social and economic exchange perceptions were found to partially mediate the relationship between PIED and affective commitment but fully mediate the relationship between PIED and job satisfaction.

**Practical implications** – These results suggest that employers would benefit from investing in employee development, provided workers see the training investment as the employer’s side of social exchange, which in turn leads to increased affective commitment and job satisfaction. When employers do not achieve the

expected returns from the training investment, they should check not only hard data (e.g., training attendance rate, hours of training, etc.) but also soft data (e.g., employees' perceptions of training investment, social exchange, etc.) by conducting employee surveys and communicating with line managers.

**Originality/value** – The main contribution of this study is that it provides important empirical support for social exchange theory in the context of organizational training investment and employees' attitudinal outcomes, by directly testing the positive mediating role of social exchange and the negative role of economic exchange.

**Keywords** – Perceived investment in employee development, social exchange, economic exchange, HRM practices, affective commitment.

**Paper type** – Research paper.

## Introduction

In an era of fierce global competition, organizations are increasingly relying on their human resources (HR) to become competition in the global market. Adopting successful HR practices has become increasingly important in enabling firms to maintain competitive advantages, particularly through accumulating valuable, rare, inimitable, and non-substitutable employees (Barney, 2001). Currently, many organizations around the world find themselves in a turbulent environment; therefore, what firms require of each individual is constantly changing. Both researchers and practitioners are dedicating greater attention to employee training and development activities that enable firms to increase HR flexibility in terms of employees' skills and behaviors (Bhattacharya *et al.*, 2005; Beltrán-Martín and Roca-Puig, 2013). As Bowen and Ostroff (2004) emphasize, a firm's actual investment in HR can be effective only when employees understand that their company is investing in them. This paper therefore highlights the concept of perceived investment in employee development (PIED), which refers to "employees' beliefs about the organization's commitment to improving their competence and enhancing their marketability, both internally and externally" (Lee and Bruvold, 2003, p. 983).

For the last decade, researchers have attempted to analyze the inner mechanisms by which PIED influences employee attitudes and behaviors (Koster *et al.*, 2011; Kuvaas and Dysvik, 2009). Most of these studies have discussed these mechanisms from the perspective of the norm of reciprocity (Gouldner, 1960), which is the essence of social exchange theory, suggesting that PIED causes employees to feel greater sense of obligation toward their organization, which in turn elicits enhanced employee attitudes and behaviors. Indeed, prior studies have generally demonstrated positive relationships between PIED and job satisfaction (Koster *et al.*, 2011), affective commitment (Kuvaas and Dysvik, 2010), intention to stay (Koster *et al.*, 2011), and in- and extra-role behaviors (Kuvaas and Dysvik, 2009).

However, the process by which employees respond to their organization's investment in employee

development is unclear (Song *et al.*, 2009). In particular, although studies based on social exchange theory presume that organizational training investment will influence employee outcomes through employees' social exchange perceptions, they have not directly tested the mediating role of social exchange (Hom *et al.*, 2009). Furthermore, most studies have focused only on one type of exchange (i.e., social exchange) and have not considered another type of exchange characterized as economic exchange (Shore *et al.*, 2006; Shore *et al.*, 2009). Economic exchange is a state in which "transactions between parties are not long term or ongoing, but represent discrete, financially oriented interactions" (Shore *et al.*, 2006, p. 839). Unlike social exchange, which incorporates a long-term, trust-based, and reciprocal relationship between employees and organizations, economic exchange involves a relationship that is characterized by "a set of financial and material organizational obligations in exchange for employee fulfillment of job duties" (Shore *et al.*, 2009, p. 702). Prior studies have demonstrated both the conceptual and empirical distinctiveness of social and economic exchanges (e.g., Shore *et al.*, 2006) and have argued that these exchange processes in the employee-organization relationship should not be identical (e.g., Shore *et al.*, 2009; Song *et al.*, 2009; Tsui *et al.*, 1997). Thus, extending this notion explored in the exchange literature to employee development and training settings, we intend to offer insights regarding the role of both social and economic exchanges in the relationship between PIED and employees' work attitudes, by directly and simultaneously assessing the functioning of these exchanges.

The main objective of this study, therefore, is to uncover the exchange process by examining whether or not and how organizational training investment relates to employees' social and economic exchange perceptions and how these perceptions relate to employee outcomes. Specifically, we propose and test the mediating mechanisms of social and economic exchanges in the relationship between PIED and employees' work attitudes, including affective commitment and job satisfaction (Figure 1). This model was tested using three-phase time-lagged data derived from Japanese employees of privately owned firms.

A potential contribution of this study is to provide the PIED literature with empirical evidence on employee-organization exchange mechanisms, by directly and simultaneously examining the mediating roles of social and economic exchanges in the link between organizational training investment and employee outcomes. According to social exchange theory, the basis of any exchange relationship can be described in terms of either social or economic principles (Blau, 1964). Specifically, Shore *et al.* (2009) argue that individuals have both social and economic exchange perceptions of their organization's treatment of them, while the degree to which individuals perceive social and economic exchanges varies. Therefore, to fully understand the process by which organizational training investment influences employee outcomes, we need to investigate both social and economic exchange perceptions together. Nevertheless, as mentioned above, most studies have focused on social exchange in the relationship between organizations and employees, with very little theoretical and empirical research conducted on economic exchange (Shore *et al.*, 2009; Song *et al.*, 2009). Although Kuvaas and Dysvik (2009) attempted to examine the mediating roles of social and economic exchanges between PIED and exchange outcomes, they did not investigate a two-party exchange between the organization and the employee. Instead, their study focused on the perception of a third party (temporary employees) toward the organization's investment in regular employee development. Thus, evidence from our empirical study will help HRM researchers to understand the nature of organizational training investment and how it can influence employee outcomes via different forms of exchanges between an organization and an employee. In conducting this research, this paper responds to the call for an empirical investigation of an integrative model in which social exchange and economic exchange constitute distinct elements of the employee-organization relationship (Shore *et al.*, 2009).

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Insert Figure 1 about here

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## **Literature review and hypotheses development**

### *PIED and exchange perceptions*

For the past several decades, social exchange theory (Blau, 1964) has explained the motivation behind the attitudes and behaviors exchanged between individuals. Eisenberger and his colleagues (1986) later extended this work, explaining that social exchange theory may also operate between the employee and his or her personified organization (Whitener, 2001). Particularly, there are two types of exchange (i.e., social and economic exchanges) in the employee-organization relationship (Shore *et al.*, 2009; Song *et al.*, 2009). Social exchange is based on trust and unspecified obligations with a long-term orientation, while economic exchange is based on impersonal and economic agreements without long-term implications (Shore *et al.*, 2006; 2009). The type of exchange is dependent on the characteristics of the resources, including socio-emotional and economic resources, exchanged between an organization and an employee (Song *et al.*, 2009). Specifically, socio-emotional resources (e.g., being taken care of by the organization) generate social exchange, whereas economic resources (e.g., payment and financial benefits) create economic exchange (Marescaux *et al.*, 2013; Song *et al.*, 2009).

In this study, we expect the investment in developing HR to include features of socio-emotional resources, trust, and a long-term orientation, which will in turn lead to increased employees' social exchange perceptions. Specifically, the investment in developing HR (e.g., training for future jobs and career development) reflects an employer's overt trust because employers are not necessarily guaranteed returns from their investment in HR development (Hom *et al.*, 2009). In other words, the investment in employee development signals to employees that they are valued and that the employer has made a long-term investment in them. Thus, the investment in developing HR distributes socio-emotional resources, representing key features of social exchange in terms of trust, investment, and long-term relationships (Shore *et al.*, 2006). In addition to this, prior empirical studies have shown that developmental HR practices, such as technical and skills training, managerial training, and career development programs, are positively related to

social exchange (Hom *et al.*, 2009; Shin *et al.*, 2012). Hence, we propose that an organization's investment in employee development will be positively related to employees' social exchange perceptions.

On the other hand, we expect the investment in employee development to be negatively related to economic exchange, given the nature of economic exchange. According to the exchange literature (Blau, 1964; Shore *et al.*, 2006), economic exchange is typified by the following four features of relational patterns: impersonal (distrust), non-investment, short-term, and financial. First, economic exchange reflects an impersonal relationship based on distrust. In the impersonal relationship between an employer and an employee, legal or normative sanctions for failure to fulfill obligations prevent the development of trust (Yamagishi and Yamagishi, 1994). Contrary to such negative sanctions or treatments, organizational investment in HR development can be regarded as an employer side of a message that signals his or her trust in his or her employees (Hom *et al.*, 2009), helping to reduce employees' feeling of organizational distrust and thus avoiding the creation of an impersonal relationship between an employer and his or her employees. Second, investment is not an aspect of (or at least not a significant part of) economic exchange. In fact, investment in employee development is intertwined with trust in continuing exchange relationships between employers and employees. Under the condition of economic exchange, both parties may exchange little risk associated with inducements (in the form of payment for performance, for example) and contributions (in the form of performing duties assigned) (Shore *et al.*, 2009). However, investments accompanying the risk of non-reciprocation (training investment, for example) may not function in the employee-organization relationship, which is characterized as economic exchange. Third, economic exchange tends to be of a short and specific duration, with a focus on pecuniary benefits (Shore *et al.*, 2006). Based on expectations about the duration of the exchange as narrowly defined financial obligations, the employee and the employer exchange by granting monetary incentives intensively for employees' task outcomes, rather than by investing in employee training and development for potential future benefits from employees. Finally, economic

exchange emphasizes financial and tangible aspects of exchange. It incorporates a set of financial and material organizational obligations in exchange for the employee fulfillment of job duties (Shore *et al.*, 2006). Training and employee development, by nature, does not involve the direct exchange of monetary and financial resources between the employer and the employee, thus lowering employees' economic exchange perceptions with their organization.

Thus, given the four features of economic exchange, PIED based on trust, long-term, and socio-emotional resources will be negatively related to the economic exchange characterized by impersonal, non-investment, short-term, and financial relationships. In addition, Kuvaas and Dysvik (2009) found that a client firm's investment in its regular employees significantly decreases economic exchange perceptions of temporary employees, implying that a negative relationship exists between PIED and economic exchange perceptions. Therefore, we hypothesize:

*H1.* PIED is positively related to an employee's social exchange perceptions.

*H2.* PIED is negatively related to an employee's economic exchange perceptions.

### *Exchange perceptions and employees' work attitudes*

This paper focuses on two work-related attitudes as outcomes of social and economic exchanges: affective commitment and job satisfaction, which "have been linked to important outcomes such as productive and counterproductive performance and turnover" (Takeuchi *et al.*, 2009, p. 2). Affective commitment is defined as "an affective or emotional attachment to the organization" (Allen and Meyer, 1990, p. 2). Job satisfaction reflects "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976, p. 1304). These two work attitudes are expected to be the most proximal outcomes of social and economic exchanges because employees respond to the employer side of the exchange with work-related attitudes, which could be considered as the employees' resources for the

exchange (Song *et al.*, 2009).

Social exchange involving socio-emotional resources creates feelings of employee obligation, which in turn influence employees to benefit the organization through positive work attitudes, particularly “affective commitment representing the employee side of the exchange” (Shore *et al.*, 2006, p. 837). Specifically, employees in the social exchange relationship believe that they are being taken care of and are valued by the organization, which in turn enhances affective commitments to the organization (Hom *et al.*, 2009). Attesting to this notion, prior studies have found a positive relationship between social exchange and affective commitment (Hom *et al.*, 2009; Shin *et al.*, 2012). In addition to this, social exchange will be positively related to an employee’s job satisfaction. Employees in a social exchange relationship receive socio-emotional resources fulfilling their needs for esteem, approval, and emotional support (Hom *et al.*, 2009). These intrinsic rewards from an organization will increase individuals’ job satisfaction, the “appraisal of one’s job or job experiences” (Locke, 1976, p. 1300). Similarly, Rhoades and Eisenberger (2002) mentioned that employees’ job satisfaction should increase through the fulfillment of socio-emotional needs and performance-reward expectations. Therefore, social exchange involving socio-emotional resources will increase employees’ job satisfaction.

In contrast with social exchange, Blau (1964) argued that “only social exchange tends to engender feelings of personal obligations, gratitude, and trust; purely economic exchange as such does not” (p. 94); therefore, economic exchange will be negatively associated with affective commitment and job satisfaction. Unlike social exchange, economic exchange based on an impersonal and narrow set of obligations should serve to undermine affective commitment (Shore *et al.*, 2009). In fact, previous studies have found that economic exchange perceptions are negatively related to affective commitment (Shore *et al.*, 2006; Song *et al.*, 2009). In addition to this, economic exchange emphasizing the minimal requirements for employment do not involve a consideration of employees’ needs and preferences (Shore *et al.*, 2009), which in turn decreases

employees' job satisfaction. Therefore, we hypothesize the following:

*H3.* An employee's social exchange perceptions are positively related to employee attitudes, including affective commitment (H3a) and job satisfaction (H3b).

*H4.* An employee's economic exchange perceptions are negatively related to employee attitudes, including affective commitment (H4a) and job satisfaction (H4b).

Together, Hypotheses 1-4b specify a model in which PIED indirectly influences employee attitudes, including affective commitment and job satisfaction, through employees' exchange perceptions. Accordingly, we anticipate that social and economic exchange perceptions will mediate the relationship between PIED and employee attitudes. Therefore, we hypothesize:

*H5.* An employee's social exchange perceptions positively mediate the relationship between PIED and employee attitudes, including affective commitment (H5a) and job satisfaction (H6b).

*H6.* An employee's economic exchange perceptions negatively mediate the relationship between PIED and employee attitudes, including affective commitment (H6a) and job satisfaction (H6b).

## **Methods**

### *Sample and data collection*

To test our hypotheses, we adopted a time-lagged design to collect survey data from employees in Japan at three different time points (hereinafter referred to as Time 1, Time 2, and Time 3) over a six-month period. The application of the time-lagged survey design helps to create a temporal separation by introducing a time lag between the measurement of the predictor and criterion variables and to mitigate the salience of common method variance (Podsakoff *et al.*, 2003). Following the recommended sequence for testing a mediation model (e.g., Mathieu *et al.*, 2008), we measured the independent variable (PIED) at Time 1, the

mediator variables (social exchange and economic exchange) at Time 2, and the dependent variables (affective commitment and job satisfaction) at Time 3. We administered the surveys with a three-month time interval between each.

Initially, we targeted full-time, white-collar employees working at privately owned firms with more than 100 employees in manufacturing industries. The reason for targeting manufacturing firms was to focus on a sector in which employees receive more formal training embedded within the organizational HR systems than in other sectors (e.g., the service industry), particularly in the Japanese context (see Macduffie and Kochan, 1995). Firm size was an important factor in ensuring that our findings would be applicable to “firms that were most likely to have formally established HR systems” (Collins and Smith, 2006, p. 549).

The survey was administered in collaboration with a large-scale retail company in Japan, which sells various consumer goods online. We recruited our participants from the company’s broad customer base by conducting a short screening survey that asked the respondents for their current employment status and their willingness to participate in the subsequent surveys. Based on their responses to the screening survey, 1,200 individuals (out of the 10,000 individuals randomly selected using the company’s membership ID number) matched our criteria. The main survey was sent to these eligible individuals at Time 1 and 931 respondents returned usable answers, representing a response rate of 77.6%. Three months later, the Time 2 survey was sent to the 931 initial respondents, of whom 618 returned their responses, representing a response rate of 66.4%. However, eight responses were found to be unusable, since the individuals concerned had changed organizations since the Time 1 survey. Three months later, the Time 3 survey was sent to the 610 eligible participants; 556 returned their answers, yielding a response rate of 91.1%. Again, some respondents had left their organizations since the Time 2 survey was administered and were thus omitted from the final sample. The final sample ( $N = 545$ ) consisted of 414 men (76.0%) and 131 women (24.0%), who were, on average, 35.3 years old ( $SD = 7.7$ ). They had worked for their current organization, on average, for 11.3

years ( $SD = 7.9$ ) and a majority of the respondents (75.1%) possessed a bachelor's degree or higher.

To ensure that the analytic sample was representative of the original sample, we conducted attrition analyses. Following Goodman and Blum's (1996) procedure, we conducted a series of logistic regression analyses to check whether or not significant differences existed in key background variables (i.e., age, gender, educational background, organization tenure, and position) and the study's focal variables (i.e., *PIED*, social exchange, and economic exchange) at the three different points of survey administration: (1) participants who withdrew between Time 1 and Time 2; (2) participants who withdrew between Time 2 and Time 3; and (3) participants who withdrew between Time 1 and Time 3. All of the logistic regression coefficients were found to be statistically insignificant, except for 'gender', which was entered into the equation for the Time 1 to Time 3 difference. This statistically significant result may be partly attributable to the labor mobility trend in Japan, in which women experience a higher rate of turnover than men (Japan's Ministry of Health, Labor and Welfare, 2017).

### *Measures*

The survey instruments used in the study were initially only available in English and therefore had to be translated into Japanese. Following recommendations, such as those from Schaffer and Riordan (2003), we used a conventional translation and back-translation method to ensure equivalence. Responses were coded on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

*PIED* (Time 1) was measured with a nine-item scale from Lee and Bruvold (2003). Items such as the following were included: "My organization trains employees on skills that prepare them for future jobs and career development". The reliability of this scale is .92, which is comparable to the .92 reported by Lee and Bruvold (2003) and to the .91 reported in a recent study by Dysvik and Kuvaas (2012).

Social exchange (Time 2) was measured with an eight-item scale from Shore *et al.* (2006). An

example item is: “There is a lot of give and take in my relationship with my organization”. One item was deleted due to a low factor loading (below 0.40), resulting in a seven-item scale. The scale’s reliability of .86 is similar to the reliabilities reported by both Shore *et al.* (2006) and Shore *et al.* (2009).

Economic exchange (Time 2) was measured with an eight-item scale from Shore *et al.* (2006). An example item is: “All I really expect from my organization is that I be paid for my work effort”. The scale’s reliability of .82 is higher than the reliabilities of .78 and .79 reported by Shore *et al.* (2006) and Shore *et al.* (2009), respectively.

Affective commitment (Time 3) was measured with a six-item measure from Meyer *et al.* (1993). An example item is: “I would be very happy to spend the rest of my career with this organization”. The scale’s reliability of .92 is higher than the .87 reported by Meyer *et al.* (1993) and the .82 reported in a recent study by Restubog *et al.* (2006).

Job satisfaction (Time 3) was assessed using Cammann and colleagues’ (1983) three-item scale. An example item is: “In general, I like working here”. The scale’s reliability of .77 is comparable with that of .80 reported by Harris *et al.* (2011) and .78 reported by Jokisaari and Nurmi (2009).

We controlled for gender (1 = male, 0 = female); age (self-reported in years); organizational tenure (self-reported in years); education level (1 = high school, 2 = junior college, 3 = undergraduate, 4 = master’s/doctoral degree); type of job (1 = engineering, 0 = clerk); position (1 = managerial employee, 0 = non-managerial employee); and firm size (1 = 100-299 employees, 2 = 300-999 employees, 3 = 1,000-2999 employees, 4 = 3,000-9,999 employees, 5 = 10,000 or more employees).

### *Analytical procedure*

The data were analyzed via structural equation modeling (SEM) using *Mplus* (version 8; Muthén and Muthén, 2017). To determine whether or not the hypothesized model accurately represented the data, we

used the following indices: comparative fit index (CFI), Tucker-Lewis coefficient (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Although values indicative of acceptable model fit remain controversial, satisfactory model fit is indicated by CFI and TLI values greater than .90, RMSEA values no higher than .06, and SRMR values no higher than .08 (Hu and Bentler, 1999; Kline, 2005).

Following the frequently advocated two-step approach to SEM (Anderson and Gerbing, 1988), the fit of the measurement model was examined first, then the hypothesized structural model was tested. Specifically, in performing structural model analyses (i.e., mediation analyses), following the recommendation of “using the complete mediation model as the baseline” (James *et al.*, 2006, p. 240), we initially fitted a fully mediated baseline model and compared the baseline model with three alternative models to identify the best-fitting model by examining the change in chi-square value. Specifically, three alternative models had either one or two direct paths added from the independent variable (PIED) to the dependent variables (affective commitment and job satisfaction) to the baseline model.

Finally, to ascertain the significance and magnitude of the multiple mediation effects simultaneously, we utilized a bootstrapping approach recommended by Hayes (2009). The significance of the indirect effects of PIED on each outcome through each mediator was judged based on a 95% bias-corrected bootstrap confidence interval that did not include zero (number of bootstrap samples = 1,000).

## **Results**

Table I reports the means, standard deviations, and inter-correlations among the variables. In general, the correlations reflect expected relationships. PIED was positively related to social exchange and negatively related to economic exchange, as predicted in Hypotheses 1 and 2. Moreover, social exchange was positively related to both work attitudes, including affective commitment and job satisfaction, whereas

economic exchange was negatively related to both work attitudes. These significant correlations were in the expected directions, as predicted in Hypotheses 3a-6b. While the correlations suggest initial support for the hypotheses, the hypotheses were formally tested using SEM analyses.

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Insert Tables I and II here

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*Measurement model analyses (confirmatory factor analysis)*

Prior to testing our structural model, we conducted a confirmatory factor analysis (CFA) to examine the distinctiveness of each construct used in this study, since the constructs might be conceptually similar to some degree. First, a CFA test was performed to assess the fit of our theorized five-factor model with the independent variable (PIED), two mediators (social exchange and economic exchange), and two dependent variables (affective commitment and job satisfaction). As seen in Table II, the model provided a good fit to the data ( $\chi^2_{(485, N=545)} = 1223.24$ ; CFI = 0.93; TLI = 0.92; RMSEA = 0.06; SRMR = 0.07).

Next, we compared these results with those of four alternative models: (1) Alternative Model 1, which combined the two dependent variables (affective commitment and job satisfaction) into one factor; (2) Alternative Model 2, which combined the two mediators (social exchange and economic exchange) into one factor; (3) Alternative Model 3, which combined the two mediators into one factor and combined the two employee attitudes into one factor; and (4) Alternative Model 4, which combined all five variables into one overall factor. As shown in Table II, the baseline (five-factor) model showed a significantly better fit than the alternatives: (1) Alternative Model 1 ( $\Delta\chi^2_{(4, N=545)} = 240.62$ ;  $p < 0.001$ ); (2) Alternative Model 2 ( $\Delta\chi^2_{(4, N=545)} = 1096.07$ ;  $p < 0.001$ ); (3) Alternative Model 3 ( $\Delta\chi^2_{(7, N=545)} = 1316.76$ ;  $p < 0.001$ ); and (4) Alternative Model 4 ( $\Delta\chi^2_{(10, N=545)} = 4190.22$ ;  $p < 0.001$ ). Thus, the results justified keeping the five variables as distinct constructs. Given the acceptable fit of our measurement model, we then assessed the hypothesized structural model.

### *Structural model analyses*

In keeping with the theory outlined earlier, we specified the baseline model in which social exchange and economic exchange fully mediated the influence of PIED on affective commitment and job satisfaction. In order to examine two mediation effects simultaneously, we utilized Lau and Cheung's (2012) procedure to assess and compare specific indirect effects in complex latent variable models. As shown in Table III, the fully mediated baseline model had a good fit to the data ( $\chi^2 = 1652.25$ ;  $df = 691$ ;  $p < 0.001$ ; CFI = 0.91; TLI = 0.90; RMSEA = 0.06; SRMR = 0.07).

Next, following the procedure described by James *et al.* (2006), we compared the fully mediated baseline model with three alternative partial mediation models in order to search for the best-fitting model. Based on earlier findings (Lee and Bruvold, 2003), we set three alternative partial mediation models by adding direct path(s) from PIED to affective commitment (Alternative Model 1), job satisfaction (Alternative Model 2), and both affective commitment and job satisfaction (Alternative Model 3) into the baseline model.

As shown in Table III, comparing the baseline model to alternatives 1 to 3, the change in chi-square values showed that Alternative Model 1 ( $\Delta\chi^2 = 10.55$ ;  $\Delta df = 1$ ;  $p < 0.001$ ) and Alternative Model 3 ( $\Delta\chi^2 = 12.97$ ;  $\Delta df = 2$ ;  $p < 0.01$ ) were significantly better than the baseline model, but Alternative Model 2 ( $\Delta\chi^2 = 0.01$ ;  $\Delta df = 1$ ; n.s.) was not. Thus, the best-fitting model was to be selected between Alternative Models 1 and 3 over the baseline model.

To select the best-fitting model, we compared Alternative Models 1 and 3. These two models were not significantly different from each other ( $\Delta\chi^2 = 2.42$ ;  $\Delta df = 1$ ; n.s.). However, in Alternative Model 1, the added direct path from PIED to affective commitment was significant ( $\beta = 0.12$ ;  $p < 0.01$ ), whereas, in Alternative Model 3, the paths from PIED to affective commitment ( $\beta = 0.15$ ;  $p < 0.01$ ) and job satisfaction ( $\beta = 0.07$ ; n.s.) were partially significant. Therefore, we accepted Alternative Model 1, the partially mediated

and more parsimonious version, as the final model, as shown in Figure 2, with path coefficients indicating that the effect of PIED on affective commitment was partially mediated by social and economic exchanges, whereas the effect on job satisfaction was fully mediated by the two mediators.

Table IV presents the path coefficients and indirect path estimates of the final best fitting model in this study. In line with our hypotheses, PIED was positively related to social exchange (H1:  $\beta = 0.28$ ;  $p < 0.001$ ) and negatively related to economic exchange (H2:  $\beta = -0.19$ ;  $p < 0.01$ ). Consistent with Hypotheses 3a-4b, social exchange was found to be positively related to affective commitment (H3a:  $\beta = 0.78$ ;  $p < 0.001$ ) and job satisfaction (H3b:  $\beta = 0.73$ ;  $p < 0.001$ ), whereas economic exchange was negatively related to affective commitment (H4a:  $\beta = -0.29$ ;  $p < 0.001$ ) and job satisfaction (H4b:  $\beta = -0.25$ ;  $p < 0.001$ ).

Finally, we estimated specific indirect effects. Significance tests of each indirect effect were accomplished via bootstrapping procedures that created a 95% confidence interval around the indirect effect estimates. Confidence intervals that did not include zero reflected significant indirect effects for that mediator. Providing support for Hypotheses 5a and 5b, the indirect effects of PIED on affective commitment (H5a:  $\beta = 0.22$ ;  $p < 0.001$ ; 95% CI [0.16, 0.28]) and job satisfaction (H5b:  $\beta = 0.20$ ;  $p < 0.001$ , 95% CI [0.15, 0.27]) through social exchange were all significant, with corrected 95% CIs, excluding zero (Table IV). In line with Hypotheses 6a and 6b, the indirect effects of PIED on affective commitment (H6a:  $\beta = 0.06$ ;  $p < 0.01$ ; 95% CI [0.03, 0.10]) and job satisfaction (H6b:  $\beta = 0.05$ ;  $p < 0.05$ , 95% CI [0.02, 0.09]) through economic exchange were all significant (Table IV). These analyses provide support for the indirect effects of PIED on employee attitudes via both social and economic exchanges.

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Insert Tables III and IV and Figure 2 about here

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## Discussion

Previous studies have implied that an organization's investment in developing HR influences

employee outcomes through social exchange. However, there is a lack of empirical examination of the intervention of social exchange in the link between investment in developing HR and employee outcomes. Furthermore, economic exchange, which is identified as another type of exchange, has received limited theoretical and empirical attention. Our primary goal in this research was to extend the body of literature on developmental HR practices by directly measuring and testing the mediation effects of social and economic exchange perceptions in the relationship between PIED and employee attitudes. By drawing on social exchange theory and the PIED literature, the results support the links between PIED and social and economic exchange perceptions to employee attitudes. Below, we discuss the implications of these findings and avenues for future research.

### *Theoretical implications*

First, this study provides insights into the ways in which a firm's investment in developing HR is interpreted by employees. Unlike early social exchange research, which assumed that the norm of reciprocity is universal (Gouldner, 1960), recent research argues that employees may perceive and respond to an organization's investments differently according to individual differences (Shore *et al.*, 2009). Based on this notion, the possibility that firms' investment in developing HR may be perceived as economic exchange has been discussed (Kuvaas and Dysvik, 2009). However, most studies have focused on social exchange in regard to the effectiveness of developmental HR practices, with very little empirical research on economic exchange. Our empirical tests revealed that PIED is positively related to social exchange perceptions but negatively associated with economic exchange perceptions. These results provide support for Shore *et al.*'s (2006) distinction between social and economic exchanges based on the type of resources exchanged between parties. Specifically, social exchange literature views investment in developing HR as a socio-emotional resource involving trust and a long-term orientation, which in turn leads to employees' increased

perceptions of social exchange (Marescaux *et al.*, 2013).

Second, our research highlights the way in which a firm's investment in developing HR may benefit from employees with social exchange perceptions, which could lead to greater affective commitment and job satisfaction. Specifically, the results of this study are generally consistent with social exchange theory arguments (Blau, 1964) and prior empirical research (Shore *et al.*, 2006, 2009) that argues that social exchange is positively related to affective commitment and job satisfaction. On the other hand, economic exchange has negative effects on affective commitment and job satisfaction, as expected prior to conducting this research. These findings suggest that employees' exchange perceptions are the major determinants of work attitudes. However, the causal relationship between social exchange and affective commitment is mixed. For example, Shore *et al.* (2006) demonstrated that employees' affective commitment is a predictor of social exchange; whereas Hom *et al.* (2009) and Shin *et al.* (2012) found the opposite. Although our findings based on time-lagged data showed that employees' affective commitment is an outcome of their social exchange perceptions, future research needs to longitudinally examine the causal relationship between social exchange and affective commitment.

Third, this study provides important empirical support for social exchange theory in the context of organizational training investment and employees' attitudinal outcomes, by identifying the positive mediating role of social exchange, as well as the negative mediating role of economic exchange. Specifically, our findings confirm the discoveries made by previous studies of social exchange mediation in regard to firms' investment in HR development and work attitudes (Hom *et al.*, 2009; Shin *et al.*, 2009). We also extend this extant research by simultaneously assessing a mediating effect of economic exchange. Our findings suggest that a firm's training investment influences affective commitment and job satisfaction through improving social exchange perceptions and reducing economic exchange perceptions.

Finally, unlike former studies' findings that a firm's investment in HR development influences

affective commitment only through social exchange (Hom *et al.*, 2009; Shin *et al.*, 2012), our study found both direct and indirect effects of PIED on affective commitment. A possible explanation for this finding is that other social mechanisms may exist that could help to explain how PIED relates to affective commitment. For example, according to the organizational climate literature, the organizational climate perceived by employees may provide a stronger link between PIED and affective commitment than social exchange (Takeuchi *et al.*, 2009). On the basis of social information processing theory (Salancik and Pfeffer, 1978), Bowen and Ostroff (2004) suggest that a firm's HRM system sends signals to employees that allow them to form a collective sense of their organization (i.e., perceived and shared organizational climate). In particular, Takeuchi *et al.* (2009) found that the perception of a supportive organizational climate by employees fully mediates the relationship between high-performance work system and employee attitudes, including affective commitment and job satisfaction. Furthermore, based on the assumption of Sun *et al.* (2007) that "extensive skills training foster[s] the perception of the work environment as being supportive" (p. 561), PIED involving extensive skills training is likely to influence a supportive organizational climate. In other words, a supportive organizational climate may serve as an important linking mechanism between PIED and employee attitudes, particularly affective commitment. Therefore, future research should use organizational climate as an additional mediator in the current model and simultaneously examine possible mediators of the link between PIED and employee attitudes.

### *Practical implications*

The results of this study may be helpful for managers seeking ways to increase the benefits of their investment in employee development. If managers feel that they are not reaping enough benefits from their firm's investment in developing HR, the source of the problem might be diagnosed by examining the types of exchange that employees perceive. If a paucity of social exchange perceptions is identified as the source of

the problem, some components of the firm's HR development practices (such as job skills, training/retraining, advanced professional education, and management development courses) may be modified to improve the shared perceptions of social exchange. For example, organizations might benefit from expanding the way in which they view employee attitude surveys. Rather than focusing solely on employees' attitudes (e.g., their attitudes regarding job satisfaction or work engagement), expanding employee surveys to also focus on employees' perceptions of developmental HR practices would provide more actionable items on which to leverage organizational change efforts.

The findings also suggest that managers should pay attention to employees with economic exchange perceptions, which lead to decreased affective commitment and job satisfaction. Organizations should communicate the availability of training and development resources to employees both through formal organizational communications and through line managers. In particular, managers should make sure that employees properly understand the intentions of developmental HR practices in which they are taken care of and shown that they are valued by the organization. Nishii *et al.* (2008) argued that open communication between managers and employees helps to align managers' and employees' perceptions, thereby reducing the negative outcomes associated with economic exchange perceptions (i.e., reduced affective commitment and satisfaction).

In general, our findings demonstrate that employees show more social exchange and less economic exchange when they perceive that their organization invests in HR. Such organizations appear to be taking the risk that developmental opportunities will make their employees more attractive to other organizations. Moreover, in an era of global competition, some researchers claim that having flexible employment practices, with short-term contracts, low levels of employer commitment to job security, and low levels of training, should yield financial benefits for firms. Nevertheless, empirical studies have found negative correlations between flexible employment practices and a firm's performance (Michie and Sheehan-Quinn,

2005). Rather, an organization's high level of commitment to employee development has been reported to have positive outcomes for employees' affective commitment, intrinsic motivation, and organizational citizenship behaviors (e.g., Jiang *et al.*, 2012). Similarly, our findings imply that a firm's investment in employee development is expected to play a pivotal role in improving employees' work attitudes through the fostering of social exchange, which will result in increased employee and organizational performance.

### *Limitations and future research*

This study has several limitations that can shape directions for future research. First, although we collected data at three separate time points, we were unable to make inferences about the dynamic relationships involved in PIED, social and economic exchanges, and employee attitudes as they unfolded over time. For example, the scores for employees' social and economic exchange perceptions might have changed if we had repeated this question in a third wave of data collection. To examine the trajectories of change, Ployhart and Vandenberg (2010) recommend repeated measures on at least three occasions. Therefore, future research should continue to explore temporal sequences using longitudinal designs that cover longer periods of time and experimental designs.

Second, this study focused exclusively on the effects of PIED on employee attitudes. It would be useful to examine the process by which PIED influences actual individual and organizational performance. It is possible that PIED is positively related to individuals' actual performance, but not to the firm's actual performance. In addition to this, to be competitive in the global market, organizations must continuously cultivate individuals' innovative and creative behaviors. Thus, it is important to consider whether or not PIED increases employees' innovative or creative behaviors and performance through social exchange perceptions.

Finally, although we have provided compelling theoretical arguments and empirical evidence

supporting the mediating effects of social and economic exchanges, we recognize that there are other potential mediators involved in these processes. PIED, which is related to skill- and motivation-enhancing HR practices (Lepak *et al.*, 2006), may influence employee outcomes by enhancing abilities (Liao *et al.*, 2009) and intrinsic motivation (Kuvaas and Dysvik, 2009), and by providing psychological empowerment (Boxall *et al.*, 2011). Future research exploring other mediating mechanisms to replicate and extend our findings, or research examining mediators that reflect an ability-motivation-opportunity model of HRM (Lepak *et al.*, 2006) could provide more comprehensive insights into this issue.

Despite these limitations, the findings of this study offer new insights into the concept of PIED and how its mechanisms lead to enhanced employee commitment and satisfaction. This study shows that employees' perceptions of their organization's commitment to employee development can create an effective workplace in which employees work harder because they have a greater sense of social exchange with their organization. Thus, organizations should focus more on investing in development activities through which their employees can build an ongoing social exchange relationship that will drive them to contribute to their organizations with greater commitment and satisfaction.

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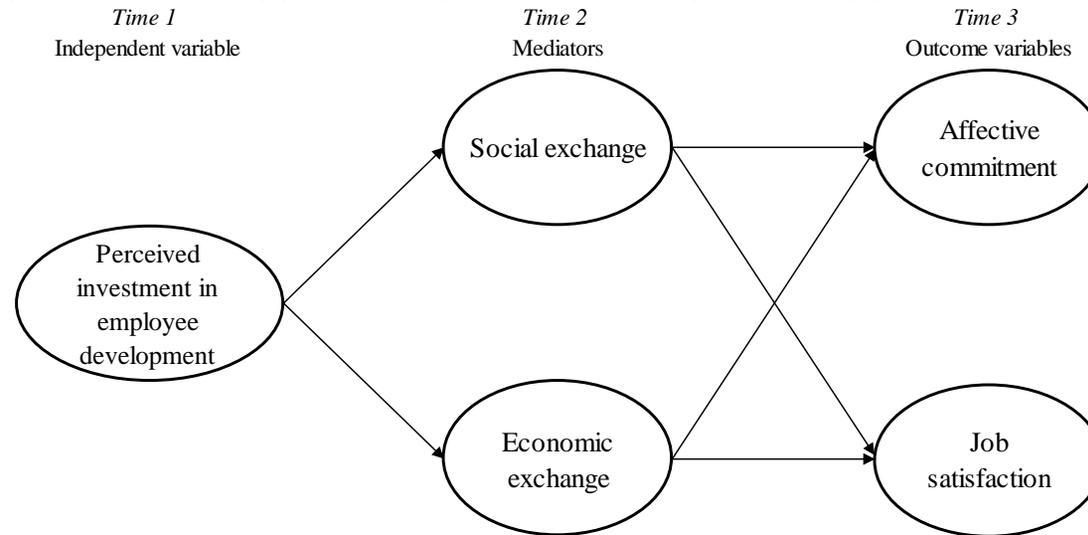


Figure 1. Hypothesized model

Table I. Means, standard deviations, and correlations among variables used in this study

|                                   | M     | SD   | 1         | 2         | 3         | 4         | 5        | 6       | 7        | 8        | 9        | 10        | 11       |
|-----------------------------------|-------|------|-----------|-----------|-----------|-----------|----------|---------|----------|----------|----------|-----------|----------|
| 1. Gender                         | 0.76  | 0.43 |           |           |           |           |          |         |          |          |          |           |          |
| 2. Age                            | 35.26 | 7.66 | 0.01      |           |           |           |          |         |          |          |          |           |          |
| 3. Organizational tenure          | 11.28 | 7.90 | 0.03      | 0.79 ***  |           |           |          |         |          |          |          |           |          |
| 4. Education level                | 2.83  | 0.99 | 0.27 ***  | -0.16 *** | -0.28 *** |           |          |         |          |          |          |           |          |
| 5. Type of jobs                   | 0.34  | 0.48 | -0.42 *** | 0.08      | 0.07      | -0.31 *** |          |         |          |          |          |           |          |
| 6. Position                       | 0.42  | 0.49 | 0.19 ***  | 0.58 ***  | 0.49 ***  | 0.01      | -0.03    |         |          |          |          |           |          |
| 7. Firm size                      | 3.22  | 1.43 | 0.12 **   | 0.07      | 0.12 **   | 0.16 ***  | -0.09 *  | 0.06    |          |          |          |           |          |
| 8. PIED <sup>a</sup> (Time 1)     | 3.81  | 1.08 | 0.10 *    | 0.05      | 0.08      | 0.17 ***  | -0.12 ** | 0.13 ** | 0.38 *** |          |          |           |          |
| 9. Social exchange (Time 2)       | 3.83  | 0.86 | 0.13 **   | 0.01      | 0.04      | 0.09 *    | -0.15 ** | 0.09 *  | 0.09 *   | 0.38 *** |          |           |          |
| 10. Economic exchange (Time 2)    | 3.95  | 0.79 | -0.08     | -0.02     | -0.02     | -0.06     | 0.00     | -0.07   | 0.01     | -0.13 ** | -0.11 ** |           |          |
| 11. Affective commitment (Time 3) | 3.70  | 1.06 | 0.07      | 0.07      | 0.11 *    | 0.02      | -0.04    | 0.08    | 0.07     | 0.36 *** | 0.55 *** | -0.31 *** |          |
| 12. Job satisfaction (Time 3)     | 4.01  | 1.05 | -0.02     | 0.11 *    | 0.09 *    | -0.03     | 0.01     | 0.08    | 0.00     | 0.23 *** | 0.44 *** | -0.28 *** | 0.57 *** |

Note. N = 545.

<sup>a</sup> PIED = perceived investment in employee development

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

Table II. Confirmatory factor analysis of measurement models: Fit indices

| Model                            | $\chi^2$ | df  | CFI  | TLI<br>(NNFI) | RMSEA | SRMR | $\Delta\chi^2$ <sup>f</sup> | $\Delta$ df <sup>g</sup> |     |
|----------------------------------|----------|-----|------|---------------|-------|------|-----------------------------|--------------------------|-----|
| Baseline Model                   |          |     |      |               |       |      |                             |                          |     |
| Five-factor model <sup>a</sup>   | 1223.24  | 485 | 0.93 | 0.92          | 0.06  | 0.07 |                             |                          |     |
| Alternative Models               |          |     |      |               |       |      |                             |                          |     |
| Alternative model 1 <sup>b</sup> | 1463.86  | 489 | 0.90 | 0.89          | 0.06  | 0.07 | 240.62                      | 4                        | *** |
| Alternative model 2 <sup>c</sup> | 2299.47  | 489 | 0.82 | 0.80          | 0.09  | 0.09 | 1096.07                     | 4                        | *** |
| Alternative model 3 <sup>d</sup> | 2540.00  | 492 | 0.79 | 0.78          | 0.09  | 0.10 | 1316.76                     | 7                        | *** |
| Alternative model 4 <sup>e</sup> | 5413.46  | 495 | 0.49 | 0.46          | 0.14  | 0.14 | 4190.22                     | 10                       | *** |

Note.  $N = 545$ .

<sup>a</sup> The baseline model assumes that all the 33 items should be loaded onto the following hypothesized five factors: (1) PIED, (2) social exchange, (3) economic exchange, (4) affective commitment, and (5) job satisfaction.

<sup>b</sup> Alternative model 1 assumes that 33 items should be loaded onto the following alternative four factors: (1) PIED, (2) social exchange, (3) economic exchange, and (4) work attitudes (i.e, items on affective commitment and job satisfaction are grouped into a single latent factor).

<sup>c</sup> Alternative model 2 assumes that 33 items should be loaded onto the following alternative four factors: (1) PIED, (2) two mediators (i.e, items on social exchange and economic exchange are grouped into a single latent factor), (3) affective commitment, and (4) job satisfaction.

<sup>d</sup> Alternative model 3 assumes that 33 items should be loaded onto the following alternative three factors: (1) PIED, (2) two mediators (i.e, items on social exchange and economic exchange are grouped into a single latent factor) and (3) work attitudes (i.e, items on affective commitment, and job satisfaction are grouped into a single latent factor).

<sup>e</sup> Alternative model 4 assumes that all the 33 items should be loaded onto a single factor and used as an alternative model.

<sup>f</sup>  $\Delta\chi^2$  denotes an increment in chi-square values from the full measurement model to each of the four alternative factorial models shown above.

<sup>g</sup>  $\Delta$ df denotes an increment in the degree of freedom (df) from the full measurement model to each of the four alternative factorial models shown above.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

Table III. Comparison of the baseline structural model to alternative models

| Model   | $\chi^2$ | df  | CFI  | TLI<br>(NNFI) | RMSEA | SRMR | $\Delta\chi^2$ <sup>e</sup> | $\Delta$ df <sup>f</sup> | Conclusion   |
|---|----------|-----|------|---------------|-------|------|-----------------------------|--------------------------|--|
| Baseline Model <sup>a</sup>   |          |     |      |               |       |      |                             |                          |  |
| Fully mediated model  | 1652.25  | 691 | 0.91 | 0.90          | 0.06  | 0.07 |                             |                          |  |
| Alternative Models  |          |     |      |               |       |      |                             |                          |  |
| <i>Alternative model 1</i> <sup>b</sup><br>PIED → Affective commitment                            | 1641.70  | 690 | 0.91 | 0.90          | 0.05  | 0.07 | 10.55                       | 1                        | *** The best-fitting model. The added path was significant.  |
| <i>Alternative model 2</i> <sup>c</sup><br>PIED → Job satisfaction                                | 1652.24  | 690 | 0.91 | 0.90          | 0.06  | 0.07 | 0.01                        | 1                        | Significantly poorer fit than alternative model 3. The added path was not significant.   |
| <i>Alternative model 3</i> <sup>d</sup><br>PIED → Affective commitment<br>PIED → Job satisfaction | 1639.28  | 689 | 0.91 | 0.90          | 0.05  | 0.07 | 12.97                       | 2                        | ** Significantly better fit than baseline model but not better than alternative model 1. The added paths were partially significant. |

Note: N = 545.

<sup>a</sup> The baseline model assumes that social and economic exchanges fully mediated the influence of PIED on affective commitment and job satisfaction.

<sup>b</sup> Alternative model 1 assumes that the effect of PIED on affective commitment was partially mediated by social and economic exchanges.

<sup>c</sup> Alternative model 2 assumes that the effect of PIED on job satisfaction was partially mediated by social and economic exchanges.

<sup>d</sup> Alternative model 3 assumes that the effects of PIED on affective commitment and job satisfaction were partially mediated by social and economic exchanges.

<sup>e</sup>  $\Delta\chi^2$  denotes an increment in chi-square values from the baseline model to each of the three alternative models shown above.

<sup>f</sup>  $\Delta$ df denotes an increment in the degree of freedom (df) from the baseline model to each of the three alternative models shown above.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

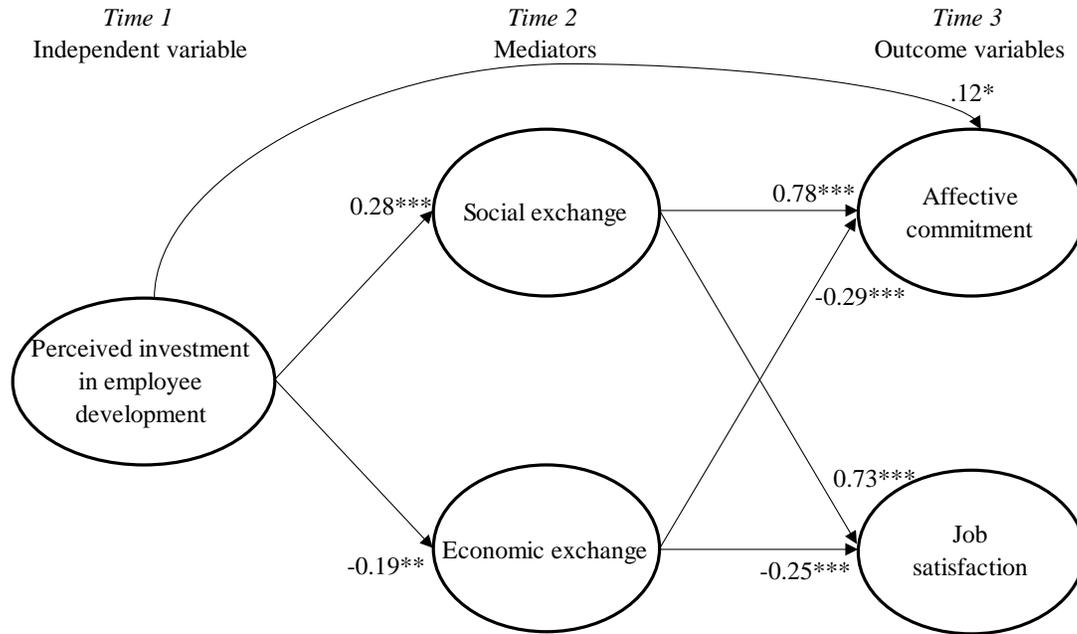


Figure 2. Estimated structural model (final model)

Notes: N = 545. All numbers represent standardized path coefficients for latent constructs after controlling for the effects of age, gender, education, organizational tenure, position, and firm size.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Table IV. Path coefficients and indirect effects for the final model

|   | Path coefficients |                   |                      |                  |
|---|-------------------|-------------------|----------------------|------------------|
|   | Social exchange   | Economic exchange | Affective commitment | Job satisfaction |
| PIED  | 0.28 ***          | -0.19 **          | 0.12 *               |                  |
| Social exchange                                   |                   |                   | 0.78 ***             | 0.73 ***         |
| Economic exchange                                 |                   |                   | -0.29 ***            | -0.25 ***        |
| Indirect effects <sup>a, b</sup>                  |                   |                   |                      |                  |
| Bias-corrected bootstrap 95% confidence intervals |                   |                   |                      |                  |
|   | Estimate          | Lower bounds      | Upper bounds         |                  |
| PIED→SE→AC  | 0.22 ***          | 0.16              | 0.28                 |                  |
| PIED→EE→AC  | 0.06 **           | 0.03              | 0.10                 |                  |
| PIED→SE/EE→AC                                     | 0.28 ***          | 0.20              | 0.34                 |                  |
| PIED→SE→JS  | 0.20 ***          | 0.15              | 0.27                 |                  |
| PIED→EE→JS  | 0.05 *            | 0.02              | 0.09                 |                  |
| PIED→SE/EE→JS                                     | 0.25 ***          | 0.18              | 0.32                 |                  |

Note. N = 545.

<sup>a</sup> Bootstrap confidence intervals were constructed using 1,000 resamples.

<sup>b</sup> PIED = perceived investment in employee development; SE = social exchange; EE = economic exchange; AC = affective commitment; JS = job satisfaction.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .