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Administrative assistants' informal learning and related factors

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Abstract

Purpose – The purpose of this study is to identify the causal relationship among informal learning, leader-member exchange (LMX), empowerment, job characteristics and job self-efficacy and the impact on administrative assistants in corporations. The study aims at providing information for administrative assistants who have worked with their current supervisors for more than one year in a one-to-one administrative assistant role in corporations.

Design/methodology/approach – To ensure the reliability and validity of the questions, statistical analysis was performed using SPSS 18.0. AMOS 18.0 was also used to estimate the causal relationship of the proposed research model.

Findings – The analyses show the following results. Indirect factor loading of LMX and empowerment to informal learning and direct factor loading of job characteristics and job self-efficacy were observed. In the relationship between LMX and informal learning, empowerment had a negative mediating effect and job self-efficacy had a positive mediating effect. In the relationship between empowerment and informal learning, job self-efficacy and job characteristics both had a mediating effect. However, job self-efficacy did not have a mediating effect in the relationship between job characteristics and informal learning.

Originality/value – When considering informal learning, planners should consider both individual characteristics and organizational characteristics. However, informal learning is not directly correlated to the impact of factors related to the executives and organization itself, but rather linked to individual and job characteristics. Hence, promoting job self-efficacy not only requires the individual efforts of employees but also a systematic strategy at the corporate level.

Keywords Informal learning, Leader-member exchange, Empowerment

Paper type Research paper

Introduction

In the field of human resource development (HRD), employees are mainly educated through traditional methods such as collective training. However, these methods are not easily deliverable to employees in a timely manner. Such training is limited in that the rate at which it transfers effectively to a work environment is very low and may not appropriately reflect the differences in individual learners (Rothwell, 2002). For this reason, informal learning has received a lot of attention recently for its usefulness in the workplace. In most enterprises, learning actually takes place through informal and unstructured activities more often than through formalized and structured training (Dobbs, 2000; Marsick, 2006). In addition, 70-90 per cent of workers have received



informal training in the workplace through activities associated with their jobs (Conlon, 2004; Loewenstein and Spletzer, 1999; Marsick and Watkins, 1990; Swanson and Holton, 2001). Specifically, in a knowledge and information society, collective training or formal education alone limit creativity and professionalism, stifling the development of effective human resources. As a result, informal learning in the workplace has increased as a way to overcome the limitations of the traditional education system.

Furthermore, informal learning can more fully reflect the needs of the individual and contribute to improving business performance. As workers perceive for themselves the work required for effective job performance, they acquire the relevant knowledge and skills in a self-directed way, as opposed to formal learning achieved through a program instituted or planned in advance by a teacher (Marsick and Watkins, 1990; Merriam and Caffarella, 1999). In fact, informal learning relates more directly to the various activities of a work environment. This increases the possibility of workers acquiring the knowledge they need to do their jobs, as the content learned is directly applicable to the business. In sum, informal learning contributes to improved business performance (Enos *et al.*, 2003).

In spite of this potential, those studies that have considered informal learning have either been limited to factors at the individual or organizational levels (Dobbs, 2000). Learning can take place through the interactions between individuals and organizations and may be influenced by both individual behavior and organizational context characteristics. Park and Lee (2012) affirm the need for this type of dual analysis for both the promotion of informal learning activities and the enhancement of learning outcomes.

However, few studies have sought to investigate how administrative assistants' informal learning occurs. Informal learning is particularly important for administrative assistants, as they perform a variety of tasks depending on the level, department and work style of the executive they support. Important variables in the informal learning of administrative assistance include leader-member exchange (LMX), empowerment, job characteristics and job self-efficacy. These variables are important based on the following characteristics of administrative assistants: First, administrative assistants support the executives they work for; therefore, their focus is on the executive and this executive has the greatest impact on their work. Second, administrative assistants have greater opportunities for informal learning when their executives trust them and grant them increasing degrees of authority (Lee and Paek, 2011). Third, administrative assistants perform different tasks depending on the level, department and work style of the executive they support. Fourth, the relationship between the executive and the administrative assistant is interdependent. Because of the high frequency of interaction between the administrative assistant and the executive, their relationship is unique. Finally, when administrative assistants support their executives' work efficiently, the administrative assistant's job self-efficacy is deeply related with their duties (Lee, 2012).

Therefore, there is a need for research to show how administrative assistants' informal learning occurs in the workplace. As of yet, information about this process is lacking in the literature. If administrative assistants' informal learning is dependent on individual characteristics, the particulars of their job and the organizational characteristics of their workplace, then more needs to be understood about how these variables influence each other.

The specific objectives of this research were to identify the causal relationship among informal learning, LMX, empowerment, job characteristics and job self-efficacy, to

identify the effect of LMX, empowerment, job characteristics and job self-efficacy on informal learning, to identify the mediating effect of empowerment and job self-efficacy between LMX and informal learning, to identify the mediating effect of job self-efficacy and job characteristics between empowerment and informal learning and to identify the mediating effect of job self-efficacy between job characteristics and informal learning.

Review of the literature

Informal learning

Informal learning has been defined in various ways by many scholars with differing emphases. The research perspectives on informal learning can be summarized as follows: first, informal and formal learning can be categorized according to the place where learning occurs (Cofer, 2000; Kremer, 2006; Lohman, 2005; Knowles, 1950; Resnick, 1987). For instance, learning is regarded as “formal” if it takes place in the classroom with collective training. All other learning activities are considered informal (Resnick, 1987).

Second, learning can be categorized according to its purpose (Watkins and Marsick, 1992; Mocker and Spear, 1982). The objectives of a training program – focused on either the intentions of the provider or the learner – indicate whether it is formal or informal. For example, if a prepared curriculum is provided during a prescribed period, it is considered formal learning, based on its intentionality. On the other hand, informal learning is not pre-prepared or planned by an external provider (Mocker and Spear, 1982).

Here, we must distinguish between informal learning and incidental learning (Marsick and Watkins, 1992). Informal learning requires intentionality on the part of the learner; he or she must have a conscious awareness of what learning is taking place, whether it was planned in advance. This consciousness is reflected by the learner’s assimilation and action. This quality sets it apart from formal learning and is not a by-product of trial and error experience, which would be classified as incidental learning (Evans, 2003).

Third, formality and informality can be divided (Stern and Sommerlad, 1999; Colley *et al.*, 2003) according to the four aspects of learning: process, places, readiness and objectives.

Informal learning is important for administrative assistants in particular, for several reasons. First, it is difficult to design effective formal learning for administrative assistants because of the many differences between their work tasks depending on the companies they work for and the specific needs of their superiors. It would be difficult to incorporate all of the multilateral, real-life situations that occur in the workplace into a formal learning framework. Second, as administrative assistants represent a relatively small number of employees and have greater variability in their work compared to other employees, a formal training program would simply be less efficient than for other officer workers. Finally, administrative assistants need informal learning to solve the various problems caused by the lack of systematic training and the difficulty in leaving their seats during working hours (Lee and Paek, 2011; Min, 2011).

The relationship between leader-member exchange and informal learning

The LMX theory suggests that leaders have greater positive influence on their members, as the frequency of emotional support and exchange of information increases between

leaders and members (Dienesch and Liden, 1986; Graen and Uhl-Bien, 1995; Liden and Maslyn, 1998). As members who enjoy positive LMX relationships can obtain the knowledge and information necessary to perform their jobs efficiently, they are more likely to actively participate in learning activities relevant to their jobs (Driver, 2002; Graen and Scandura, 1987; Liden *et al.*, 1997; Maurer *et al.*, 2002; Paparoidamis, 2005).

Using regression analysis to identify causal relationships, a recent survey of US car sales companies demonstrated that LMX was positively related to spontaneous learning behavior among 398 employees and their 44 immediate supervisors (Walumbwa *et al.*, 2009). Spontaneous learning behavior is here defined as a series of interactions that promote work competencies through the free will of individuals, without respect to the number of hours they work (Walumbwa *et al.*, 2009). This terminology corresponds with our discussion of informal learning, with its emphasis on self-directed learning (Marsick and Watkins, 1992).

Given this discussion, we offer the following hypothesis:

H1. Leader-member exchange will be positively related to informal learning.

The relationship between empowerment and informal learning

In a study by Abbey (1999), which considered factors such as shared vision, open communication, contact with the outside environment, risk tolerance, participation and empowerment and learning support systems, the most influential factors in the workplace were participation and empowerment. Informal learning is strengthened when the managers delegate more work responsibility to their staff (Skule, 2004). Greater empowerment and communication between supervisors and employees in the workplace also increase informal learning (Clarke, 2005).

According to Park and Kim (2012), in large companies, there is a relationship between empowerment and informal learning. In this research, although empowerment has no significant direct effect on informal learning, it does have an indirect effect, mediated by job self-efficacy and motivation. Chiva-Gomez (2003) studied that the influence of empowerment on learning. Given this discussion, we offer the following hypothesis:

H2. Empowerment will be positively related to informal learning.

The relationship between job characteristics and informal learning

Lee and Paek's (2011) research indicated that informal learning occurs when administrative assistants receive positive feedback from their bosses, explicit advice and variety in their assigned tasks. Informal learning closely relates to daily tasks (Marsick and Volpe, 1999) in that workplace challenges encourage mutual learning and individual learning and learning from colleagues, low-skilled workers, and external parties (Doornbos *et al.*, 2008).

Skule's (2004) study of 1,300 Norwegian employees from 200 organizations reveals that job type is a very important factor for determining engagement in informal learning. In his study, the magnitude of practicing informal learning depended on the degree of learning opportunity and needs while performing jobs. Jobs that scored high on the learning opportunity and needs were labeled learning-intensive jobs, whereas jobs that scored lower on the learning opportunity and needs were labeled learning-deprived jobs. Skule also argues that the seven learning conditions that promote informal learning at the workplace, regardless of the characteristics of

organizations or industries, include the following: a high degree of exposure to change, demands, managerial responsibilities, extensive professional contacts, superior feedback, management support for learning and rewarding of proficiency.

Given this discussion, we offer our third hypothesis:

H3. Job characteristics will be positively related to informal learning.

The relationship between job self-efficacy and informal learning

Lohman's (2005) research demonstrated that initiative, job self-efficacy, enthusiasm for learning, interest in one's vocation, commitment to professionalism and an extroverted personality were the factors that enhanced informal learning.

Yannie (2002) reveals in her study that people's willingness to learn from anyone who might benefit them is essential in promoting effective and efficient informal learning. It is necessary for individuals to intentionally and actively participate in conferences, classes and individual research projects. In addition, informal learning is sometimes shaped by the emotions of workers' different responses and circumstances, at that time, emotions affect not only the attitude but also learning and behavior changes (Knowles *et al.*, 1998).

Another study addressed four factors that affect informal learning: personal, interpersonal, environmental and job situational. Among the personal factors, a learner's driven and confident attitude, including the ability to lead confidently, is related to job self-efficacy (Yi, 2009). Given this discussion, we offer the following hypothesis:

H4. Job self-efficacy will be positively related to informal learning.

Mediating effects of empowerment in the relationship between leader-member exchange and informal learning

We can infer such a relationship indirectly through the relationship between LMX and empowerment and between empowerment and informal learning. First, in studies regarding LMX and empowerment, Keller and Dansereau (1995) claimed that LMX is a strong predicting factor for empowerment and furthermore determines the amount of support provided for members. Studies by Liden and Graen (1980) and Graen and Uhl-Bien (1995) confirmed that LMX has a significant effect on psychological empowerment. Liden *et al.* (1997) verified that LMX had a significant effect on empowerment in their empirical study of members of service organizations. In Korea, Song (2005) researched how LMX affects empowerment in terms of meaningfulness, self-determination, affection and competence among hotel workers. The study found that LMX impacted meaningfulness, self-determination and affection, but not competence.

Second, as mentioned in the advanced research discussion of *H2*, empowerment is assumed to be positively related to informal learning. Given this discussion, we offer the next hypothesis:

H5. In the relationship between leader-member exchange and informal learning, empowerment will have a mediating effect.

The mediating effects of job self-efficacy in the relationship between leader-member exchange and informal learning

We can infer such a relationship indirectly through the relationship between LMX and job self-efficacy and between job self-efficacy and informal learning. First, Shamir *et al.* (1993) conducted a study to verify the psychological process that enables charismatic leaders to have an influence on members' outstanding performance. They claimed that a charismatic leader compels his or her members to overachieve by enhancing his or her self-concept. In this case, a charismatic leader, as a variable of leadership, is related to LMX and self-concept is related to self-efficacy. Additionally, Kang and Kim (2003) found that for workers in Korea's Jeju Island, LMX had the potential to increase the self-esteem and job self-efficacy of a subordinate.

Second, as mentioned in the advanced research discussion of *H4*, job self-efficacy is expected to be positively related to informal learning. Given this discussion, we offer the following hypothesis:

- H6.* In the relationship between leader-member exchange and informal learning, job self-efficacy will have a mediating effect.

The mediating effects of job self-efficacy in the relationship between empowerment and informal learning

We can infer this relationship indirectly through the relationship between empowerment and job self-efficacy and between job self-efficacy and informal learning. First, in a study by Kanter (1983), when it comes to working, an empowered individual has a higher sense self-efficacy, which leads to a higher level of organization commitment. By recognizing self-efficacy, an empowered member enters a state of psychological empowerment, and this, in turn, has a positive impact on the organization as a whole (Cogner and Knungo, 1988; Spreizer, 1995; Thomas and Velthouse, 1990; Kirkman and Rosen, 1997).

Second, as mentioned in the advanced research discussion of *H4*, job self-efficacy is assumed to be positively related to informal learning. Given this discussion, we offer our next hypothesis:

- H7.* In the relationship between empowerment and informal learning, job self-efficacy will have a mediating effect.

The mediating effects of job characteristics in the relationship between empowerment and informal learning

We can infer this relationship indirectly through the relationship between empowerment and job characteristics and between job characteristics and informal learning. First, Sun (2012) studied the relationship between empowerment and job characteristics at the Counselor in Youth Counseling and Support Center in Korea. In this study, the empowerment impact on job characteristics (β) was 0.72 and statistically significant ($t = 1.45, p < 0.01$). Empowerment and job characteristics were interrelated and inter-influential. The study of the relationship between empowerment and job has been conducted by a wide range of researchers. For example, Spreizer (1995) suggested that sub-factors of psychological empowerment such as self-efficacy, meaning, competence and self-determination affect job performance and job satisfaction. Sigler's (1997) study to determine the effect of employees' perception of empowerment on job

outcome validated that perception that empowerment has a positive effect on job performance. Lawrence (1997) also suggested that empowerment plays significant role in increasing job satisfaction.

Second, as mentioned in the advanced research discussion of *H3*, job characteristics are anticipated to be positively related to informal learning. Given this discussion, we offer the following hypothesis:

H8. In the relationship between empowerment and informal learning, job characteristic will have a mediating effect.

The mediating effect of job self-efficacy in the relationship between job characteristics and informal learning

We can infer this relationship indirectly through the relationship between job characteristics and job self-efficacy and between job self-efficacy and informal learning. First, the fundamentals of Hackman and Oldham's (1975) job characteristic theory are that increasing job characteristics such as skill variety, task identity, task significance, autonomy and feedback will encourage employees to improve job-related efforts by increasing their internal motivation or self-efficacy. Conger and Kanungo (1988) defined empowerment as ability or self-efficacy, because the practice of empowerment can be understood as one's belief that a task can be done successfully. In addition, Conger and Kanungo (1988) stated that autonomy, diversity and task significance of job are all factors increasing self-efficacy at work. Redesigning jobs to strengthen skill variety, task identity and job feedback will enhance self-efficacy by influencing employees to believe they have power and resources to make a significant contribution to the organization (Chen and Chen, 2008). On the other hand, jobs that are less challenging and meaningful may undermine self-efficacy (Amabile, 1983).

Second, as mentioned in the advanced research in the discussion of *H4*, job self-efficacy is expected to be positively related to informal learning. Given this discussion, we offer our next hypothesis:

H9. In the relationship between job characteristics and informal learning, job self-efficacy will have a mediating effect.

Design of the study research model

Structural equation modeling (SEM) is a general statistical modeling technique and can be regarded as a combination of factor analysis and regression or path analysis. In brief, SEM provides a structure for covariance between the observed variables, so its alternative name is "covariance structure modeling". SEM enables specific confirmatory factor analysis models, regression models and complex path models (Hox and Bechger, 1998). In this research, SEM was used to examine the causal relationships among informal learning, LMX, empowerment, job characteristics and job self-efficacy of administrative assistants in Korean companies.

We investigated the causal relationship among informal learning, LMX, empowerment, job characteristics and job self-efficacy. Based on the literature review, the specific objectives were:

- to identify the causal relationship among informal learning, LMX, empowerment, job characteristics and job self-efficacy;

- to identify the effect of LMX, empowerment, job characteristics and job self-efficacy on informal learning;
- to identify the mediating effect of empowerment and job self-efficacy between LMX and informal learning;
- to identify the mediating effect of job self-efficacy and job characteristics between empowerment and informal learning; and
- to identify the mediating effect of job self-efficacy between job characteristics and informal learning.

Sample and data collection

According to the [Ministry of Employment and Labor \(2014\)](#), in 2007, the total number of assistants in office for businesses with at least five employees was 94,949. Among this, 11,660 were administrative assistants. In 2008, the total number of assistants for businesses with at least five employees was 118,508, and among this, 11,367 were administrative assistants. Starting 2009 and onwards, the Ministry of Employment and Labor only disclosed the total number of assistants in office and no specific number of administrative assistants. Considering that the total number of assistants in office in 2012 was 125,624 and in 2013 was 128,548, it is estimated that the number of administrative assistants is approximately 12,000.

This study's aim was to provide information for all administrative assistants in Korean corporations. However, the study was restricted to a target population of administrative assistants who had been working with their current executive for more than one year, as a one-to-one administrative assistant, at 1,000 companies chosen according to gross profits in 2013. Joint assistants (one administrative assistant serving several superiors) and team assistants (subordinates having their own work and also handling assistant tasks) were excluded from the study, because it proved too complex to determine which superior(s) should be focused on in their responses. Moreover, the question of empowerment or LMX was addressed only to those who had been working for more than one year, as any amount of time less than one year may result in insufficient or incomplete observation of the subjects' superiors.

The data for this study were collected via online surveys and e-mail by snowball sampling, a process which gets its name from the proverbial snowball rolling down a hill and increasing in mass as it goes. In research, this means selecting the best small sample, and continually expanding the sample until we have the desired number of samples. Of the 280 questionnaires distributed, a total of 245 (87.5 per cent) were returned. After deleting 50 incomplete responses, 195 (79.5 per cent) responses were used for statistical analysis. The general characteristics of the survey respondents were as follows: male, 1.03 per cent and female, 98.97 per cent; the mean age was 27.2 years; 48.21 per cent had a professional graduate education and 45.13 per cent had a four-year college education; and 77.95 per cent were designated as employees and 14.36 per cent were designated as assistant managers. Industries represented were as follows: manufacturing, 32.82 per cent; construction, 15.38 per cent; publishing, video, broadcast communications and information services, 12.31 per cent; and public institutions, 9.23 per cent. The average length of experience was 4.2 years, and the average company tenure was 3.3 years.

Measures

The survey questionnaire was conducted to measure variables, which included scales of informal learning, LMX, empowerment, job characteristics, job self-efficacy and demographic items. In this study, existing five-point Likert scales were used for informal learning (IL), LMX, empowerment (EM), job characteristics (JC) and job self-efficacy (JS). The informal learning scale was adopted from Choi's (2009) study. The LMX scale was based on Liden and Maslyn's (1998) study. Empowerment was measured according to the scale developed by Park and Choi (2009), which was developed specifically for administrative assistants. Job characteristics were measured by the scale proposed by Hackman and Oldham (1975). Job self-efficacy was defined according to the scale devised by Han and Choi (2011) for administrative assistants.

Data analysis

To ensure the reliability and validity of the questions, statistical analysis was performed using SPSS 18.0. AMOS 18.0 was also used to estimate the causal relationships of the proposed research model. The statistics were calculated based on a significance level of 0.05.

Testing for mediating effects

To verify the statistical significance of mediating effects, the Sobel test and bootstrapping are generally used. This study utilized bootstrapping (Cheung and Lau, 2008; MacKinnon *et al.*, 2002, 2004; Preacher and Hayes, 2004).

Results

Both measurement and structural fit were verified using various fit indices. The need for various indices was as follows: in determining the structural model fit, because of the sensitivity of the sample size and severity of the null hypothesis, the research could not depend on the χ^2 test results but needed to be determined by other fit indices (Kim, 2007, 2008). In addition, χ^2 is influenced by the sample and creates a problem that can be calculated in any situation (Kim, 2013) and was, therefore, not applicable in this study. Specifically, goodness of fit (GFI), incremental fit index (IFI), Tucker–Lewis index (TLI) and comparative fit index (CFI) were above 0.8; parsimony ratio (PRATIO), parsimonious NFI (PNFI) and parsimonious CFI (PCFI) were above 0.5; root mean square residual (RMR) was less than 0.08; and a root mean square error of approximation (RMSEA) of less than 0.08 is required (Anderson and Gerbing, 1988; Arbuckle, 2006; Bagozzi and Yi, 1988; Browne and Cudeck, 1993; Kim, 2013; Hox and Bechger, 1998).

Confirmatory factor analysis

To validate the proposed factor structures for each latent variable, such as informal learning, LMX, empowerment, job characteristics and job self-efficacy, confirmatory factor analysis was conducted and proved an acceptable fit for the data. Results were as follows: absolute fit index (RMSEA 0.07, RMR 0.03, GFI 0.87), incremental fit index (IFI 0.89, TLI 0.86, CFI 0.89) and parsimony fit index (PRATIO 0.80, PNFI 0.65, PCFI 0.71).

Structural equation model assessment

The purpose of the SEM is to determine whether the theoretical relationships specified at the conceptualization stage are supported by the collected data. Model fit was

evaluated using the maximum likelihood. The SEM was assessed, and the hypothesized model yielded an absolute fit index (RMSEA 0.07, RMR 0.03, GFI 0.88), an incremental fit index (IFI 0.89, TLI 0.86, CFI 0.89) and a parsimony fit index (PRATIO 0.80, PNFI 0.65, PCFI 0.71). Therefore, the hypothesized SEM provides an acceptable fit for the data (Table I).

Although the hypothesized SEM was considered acceptable for describing the data, a modification was conducted to simplify the model and improve its fitness. To modify the model, the path which did not appear as a significant path coefficient was removed. First, the path “job characteristics -> job self-efficacy” was removed. As a result, the Alternative Model 1 yielded an absolute fit index (RMSEA 0.07, RMR 0.03, GFI 0.88), an incremental fit index (IFI 0.89, TLI 0.86, CFI 0.89) and a parsimony fit index (PRATIO 0.81, PNFI 0.65, PCFI 0.72). However, this did not significantly improve the initial fit of the model. Second, the path “empowerment -> informal learning” was removed, and the Alternative Model 2 yielded an absolute fit index (RMSEA 0.07, RMR 0.03, GFI 0.87), an incremental fit index (IFI 0.89, TLI 0.86, CFI 0.88) and a parsimony fit index (PRATIO 0.82, PNFI 0.66, PCFI 0.72). Finally, the path “LMX -> informal learning” was removed. The Alternative Model 3 yielded an absolute fit index (RMSEA 0.07, RMR 0.03, GFI 0.87), an incremental fit index (IFI 0.89, TLI 0.86, CFI 0.88) and a parsimony fit index (PRATIO 0.82, PNFI 0.66, PCFI 0.73). However, the fit of the model was not improved. Therefore, removing the path was not necessary, and the hypothesized SEM was adopted as the final model (Figure 1).

Hypothesis testing

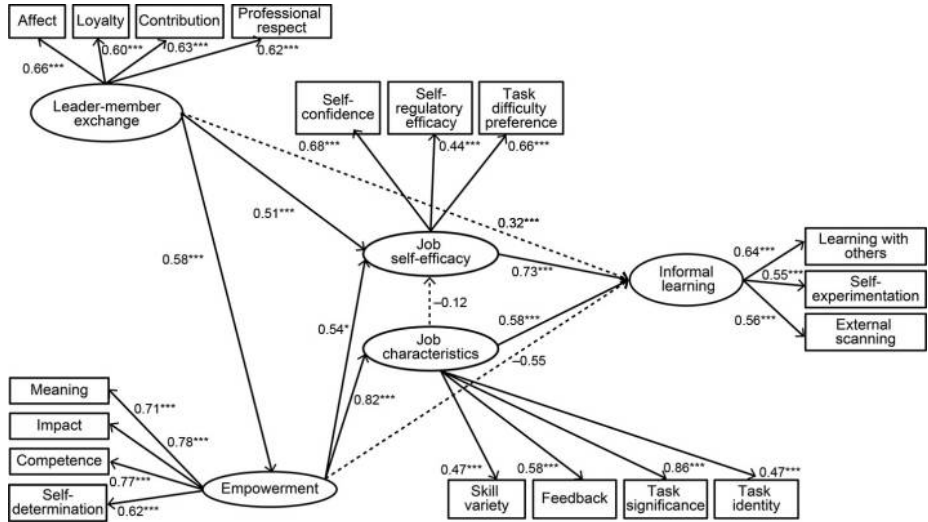
LMX did not have a positive or significant effect on informal learning; therefore, *H1* was not supported. Empowerment did not have a positive or significant effect on informal learning; therefore, *H2* was not supported. Job characteristics did have a positive and significant effect on informal learning; therefore, *H3* was supported. Job self-efficacy had a positive and significant effect on informal learning; therefore, *H4* was supported (Table II).

The mediating effect of empowerment and job self-efficacy on the relationship between LMX and informal learning

In the relationship between LMX and informal learning, empowerment had a mediating effect ($-0.322, p < 0.05$); therefore, *H5* was supported. In the relationship between LMX

| Classification | Fit index | Good fit guidelines | Measurement model's output | Interpretation |
|-----------------------|-----------|---|----------------------------|----------------|
| Absolute fit index | RMSEA | ≤ 0.05 (excellent), ≤ 0.08 (suitable) | 0.07 | Suitable |
| | RMR | ≤ 0.05 (excellent), ≤ 0.08 (suitable) | 0.03 | Excellent |
| | GFI | ≥ 0.90 (excellent), ≥ 0.80 (suitable) | 0.88 | Suitable |
| Incremental fit index | IFI | ≥ 0.90 (excellent), ≥ 0.80 (suitable) | 0.89 | Suitable |
| | TLI | ≥ 0.90 (excellent), ≥ 0.80 (suitable) | 0.86 | Suitable |
| | CFI | ≥ 0.90 (excellent), ≥ 0.80 (suitable) | 0.89 | Suitable |
| Parsimony fit index | PRATIO | ≥ 0.60 (excellent), ≥ 0.50 (suitable) | 0.80 | Excellent |
| | PNFI | ≥ 0.60 (excellent), ≥ 0.50 (suitable) | 0.65 | Excellent |
| | PCFI | ≥ 0.60 (excellent), ≥ 0.50 (suitable) | 0.71 | Excellent |

Table I. Model fit indices for the hypothesized model



Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; presented path coefficients is standardized path coefficients; ○ = latent variables; □ = observed variables; → = significant effects; ---→ = no significant effects

Figure 1.
SEM result

| Parameter | Unstandardized factor loading (B) | Standardized factor loading (β) | Standard error | t |
|-----------|---------------------------------------|---|----------------|----------|
| LMX → IL | 0.275 | 0.322 | 0.195 | 1.41 |
| LMX → EM | 0.496 | 0.583 | 0.102 | 4.866*** |
| LMX → JS | 0.349 | 0.506 | 0.099 | 3.526*** |
| EM → IL | -0.555 | -0.553 | 0.357 | -1.555 |
| EM → JS | 0.434 | 0.537 | 0.207 | 2.097* |
| EM → JC | 0.698 | 0.822 | 0.132 | 5.302*** |
| JC → IL | 0.69 | 0.584 | 0.326 | 2.119* |
| JC → JS | -0.112 | -0.118 | 0.207 | -0.544 |
| JS → IL | 0.91 | 0.733 | 0.457 | 1.989* |

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table II.
Result of path coefficients

and informal learning, job self-efficacy had a mediating effect (0.371, $p < 0.05$); therefore, $H6$ was supported.

The mediating effect of job self-efficacy and job characteristics on the relationship between leader-member exchange and informal learning

In the relationship between empowerment and informal learning, job self-efficacy had a mediating effect (0.394, $p < 0.01$); therefore, $H7$ was supported. In the relationship between empowerment and informal learning, job characteristics had a mediating effect (0.480, $p < 0.01$); therefore, $H8$ was supported.

The mediating effect of job self-efficacy and job characteristics on the relationship between job characteristics and informal learning

In the relationship between job characteristics and informal learning, job self-efficacy did not have a mediating effect (-0.086); therefore, *H9* was not supported (Table III).

Discussion and conclusion

Based on the findings, the main conclusions of the study were as follows. First, administrative assistants' informal learning and a hypothetical causality model on LMX, empowerment, job characteristics and job self-efficacy validly predicted the causal relationship among variables and was suitable for an empirical data analysis on administrative assistants.

Second, LMX and empowerment did not have a direct effect on the administrative assistants' informal learning. However, job characteristics was found to have a direct effect on informal learning, and this is consistent with previous research (Skule, 2004; Doornbos *et al.*, 2008; Lee and Paek, 2011; Marsick and Volpe, 1999). Also, job self-efficacy was found to have a direct positive effect on informal learning, and this is consistent with previous research (Knowles *et al.*, 1998; Lohman, 2005; Yannie, 2002; Yi, 2009).

Because administrative assistants work closely with their bosses, previous studies have shown that either the LMX with the boss or empowerment is expected to have a direct effect on informal learning. In reality, they indirectly influenced informal learning mediated by job self-efficacy or job characteristics. Moreover, job self-efficacy had the greatest direct effect. However, regarding administrative assistants' informal learning, previous studies have mainly focused on the employees' workplace conditions, relationships with their bosses and organizational characteristics and less on job self-efficacy. Hence, promoting job self-efficacy not only requires the individual efforts of administrative assistants but also a systematic strategy at the corporate level.

Third, within administrative assistants' LMX and informal learning, empowerment was found to have a mediated effect with an indirectly negative effect on informal learning. Furthermore, within the administrative assistants' LMX and informal learning

| Path coefficient | Direct effect | Indirect effect | Total effect |
|---|---------------|-----------------|--------------|
| LMX → informal learning | 0.322 | 0.516* | 0.838** |
| LMX → empowerment → Informal learning | – | –0.322* | – |
| LMX → job self-efficacy → Informal learning | – | 0.371* | – |
| Empowerment → informal leaning activities | –0.553 | 0.803*** | 0.25 |
| Empowerment → job characteristics → informal leaning activities | | 0.480** | – |
| Empowerment → job self-efficacy → informal leaning activities | | 0.394** | – |
| Job characteristics → informal learning | 0.584* | –0.087 | 0.497* |
| Job characteristics → job self-efficacy → informal learning | – | –0.086 | – |

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table III.
Result of research
question with
standardized path
coefficients

activity, the mediating effect of job self-efficacy had an indirect positive influence on informal learning. To promote administrative assistants' informal learning, enhancing relationships with their bosses will help increase individual job self-efficacy. However, increasing the level of empowerment by improving boss–employee relationships did not promote informal learning. Even though the LMX helped enhance empowerment, boss-related factors did not have a positive influence on administrative assistants' empowerment. Therefore, in promoting administrative assistants' informal learning, variables or situations related to their bosses should not be considered the only important factors. The administrative assistants' job and individual characteristics also need to be taken into account.

Fourth, within the relationship between administrative assistants' empowerment and informal learning, empowerment had an indirectly positive effect on informal learning via job self-efficacy. Empowerment had an indirect positive effect on informal learning mediated by job characteristics. Increasing the level of variables such as empowerment did not directly influence administrative assistants' informal learning, but did increase job self-efficacy and positive feedback, diversify duties and effectively convey the importance and meaning of the job.

Fifth, job characteristics of the administrative assistants had an indirect positive effect on informal learning mediated by job self-efficacy. Based on this research, job characteristics' indirect influence does not have a significant effect on job self-efficacy but was found to directly influence the administrative assistants' informal learning. Therefore, although job characteristics do not influence job self-efficacy, positive feedback, and job diversity, they remind the administrative assistants of the meaning and importance of their tasks. Such strategies are believed to facilitate informal learning.

Implications for practice

There are three two implications for HRD practices. First, when considering informal learning, planners should consider both individual characteristics and organizational characteristics. From the research, LMX, empowerment, job characteristics and job self-efficacy could be important predictor variables for the informal learning of administrative assistants. However, informal learning is not directly correlated to the impact of factors related to the executives and organization itself, but rather linked to individual and job characteristics. As research about informal learning has shown more interest in the status or context of the work, HRD planners should consider the individual and job characteristics of learners.

Another implication is that job self-efficacy plays an important role in the informal learning of administrative assistants. The factor loading of job self-efficacy to informal learning was significant, and this is consistent with previous research (Knowles *et al.*, 1998; Lohman, 2005; Yannie, 2002; Yi, 2009). Also, job self-efficacy was the primary variable that mediated the relationship between executive related variables such as LMX or empowerment and informal learning. Therefore, HRD policies and practices ought to focus more on workers' job self-efficacy.

Implications for further research

Further research needs to be conducted to overcome some of this study's limitations. First, the target of this study has been one-to-one administrative assistants, which

avoids the difficulties confronted when measuring LMX among team assistants and joint assistants reporting to multiple superiors. However, the trend for administrative assistants is such that team and joint assistants are increasing, thus, a study that accounts for informal learning within such relationships will be required.

Second, an empirical study is required to incorporate another significant variable relating to administrative assistants apart from the LMX, empowerment, job specifications and job self-efficacy. In this study, the most important factors were thought to be those relating to the superior, job specifications or individuals, and, therefore, the LMX, empowerment, job specifications and job efficacy were selected as related variables. However, if studies relating to informal learning for administrative assistants were carried out by adding variables such as organizational culture or the communication style of superiors, this could expand the study on informal learning of administrative assistants in a meaningful way.

Third, the approach to informal learning can be divided into process, context and results; this study regards the informal learning of administrative assistants as the process and context and has utilized a tool that measures participation in informal learning. However, the study results will differ depending on how informal learning is regarded – whether as process and context or as results. Moreover, when informal learning is seen as process and context, the study's results will differ depending on whether the focus of the study is frequency of learning, participation, a stimulating environment or other factors. Therefore, it would be useful to measure informal learning according to aspects other than participation, regardless of whether informal learning of administrative assistants is regarded as results or process and context.

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