

# THE ROLE OF SATISFACTION WITH JOB EMBEDDEDNESS IN NETWORK ABILITY

Chia-Yi Cheng and Jung-Nung Chang

---

## ABSTRACT

Based on job embeddedness and resource conservation theories, the purpose of this study is to examine how internal job satisfaction mediates the relationship between job embeddedness and sales performance among financial salespeople. We propose a hypothetical model and examine the path difference between financial salespeople with low and high network abilities. The results indicate that internal job satisfaction mediates the relationship between on- and off-the-job embeddedness and sales performance. Both on- and off-the-job embeddedness can also determine the internal job satisfaction associated with improving sales performance among personnel with high network ability. The findings also identify further potential benefits when strengthening job embeddedness.

**Keywords:** Job embeddedness, job satisfaction, sales performance, employee productivity, social network.

---

## INTRODUCTION

Instabilities in human resource acquisition and retention can impede the service consistency of firms (Trevor & Nyberg 2008). To increase the probability of success, researchers have indicated that salespeople should utilise social connections to improve their sales performance (Üstüner & Godes 2006). Previous studies have shown that salespeople can receive support from their social relationships, which not only facilitates the sharing of knowledge and information, but it also increases the probability of improving their job performance (Jarvenpaa & Majchrzak 2008). Moreover, numerous scholars have applied job embeddedness theory to explain the stability and performance of employees within in an organisation (Lee, Sablinski, Burton & Holtom 2004; Mitchell, Holtom, Lee, Sablinski & Erez 2001). In this study, we assert that the development of social relationships within an organisation or a community can discourage employees from leaving their jobs, thereby assisting managers in predicting their employees' job performance.

---

### *About the authors*

**Dr. Chia-Yi Cheng** ([cycheng@mail.mcu.edu.tw](mailto:cycheng@mail.mcu.edu.tw)) is an associate professor at the Department of Risk Management and Insurance at Ming Chuan University, Taipei (Taiwan). Her research includes employee productivity, sales management and service offerings. She has numerous articles and papers published and presented in international and national referred journals and conferences.

**Dr. Jung-Nung Chang** ([rolie@mail.mcu.edu.tw](mailto:rolie@mail.mcu.edu.tw)) is an assistant professor at the Graduate School of International Affairs, Ming Chuan University, Taipei (Taiwan). His research includes network relationships, non-profit organizations and team management. He has over 20 articles and papers published and presented in international and national referred journals and conferences. Jung-Nung is the corresponding author.

Several studies on job embeddedness have focused on social relationships, characterising them as *job-related inertia* (Holtom & Inderrieden 2006; Mitchell et al. 2001). Other studies, particularly those on employee motivation, have focused on the resources derived from interpersonal relationships or job embeddedness (Halbesleben & Wheeler 2008; Milam 2012). For example, Gorgievski and Hobfoll argued that ‘job embeddedness not only reflects an employee’s intrinsic job motivation, but it can also yield highly valuable resources’ (2008, p. 18).

Other research in this domain has examined the role of employee happiness in sales performance. For example, conservation of resources (COR) theory purports that the flexibility afforded by resource reserves can enhance a person’s happiness, thereby facilitating improvements in their performance (Cropanzano & Wright 2001). This assertion is particularly evident for salespeople because their primary goal is to build positive relationships. However, because people who engage in social relationships tend to attract help-seekers, they typically experience high work overload and negative emotions more frequently than other people do. Thus, sufficient resource reserves can offset these negative outcomes.

In this study, we adopt the perspective of happy-productive worker theory, which operationalises happiness as *job satisfaction* (Diener, Suh, Lucas & Smith 1999; Judge & Locke 1993). Accordingly, a primary objective of this study is to examine how salespeople employ relationship-building in the work environment and subsequently feels satisfied with their job embeddedness, which can facilitate improved sales performance. However, few studies have clarified the relationship between job embeddedness and job performance. For example, Lee et al. showed that on-the-job embeddedness has a significant positive influence on job performance, although there exists no analogous significant relationship for off-the-job embeddedness (2004, p. 718). Regardless, both on-the-job and off-the-job embeddedness are crucial in sales. In particular, off-the-job embeddedness is related to one of the most critical functions of a salesperson — the development of potential customer relationships outside of their organisation.

Furthermore, social relationships are dynamic processes. Consequently, variation in network ability can affect the social relationships that are intrinsic to workplaces or communities; thus, it can promote the effects of embeddedness. Network ability has been defined as the skill of building friendships and developing positive interpersonal relationships (Ferris, Treadway, Kolodinsky, Hochwarter, Kacmar, Douglas C & Frink, et al., 2005, p. 129), as well as for actively integrating and coordinating these relationships to improve job performance (Thompson 2005, p. 1015). Thompson showed that proactively developing network relationships can significantly affects job performance. Accordingly, a secondary goal of this study is to examine the path differences between low and high network ability.

Based on these research objectives, we anticipate that the findings of this study could provide a substantive contribution to the literature on job embeddedness (Crossley, Bennett, Jex & Burnfield 2007; Lee et al. 2004; Mallol, Holtom & Lee 2007; Mitchell et al. 2001) by examining the constructs’ effects on sales performance. Methodologically, we assess the job embeddedness of professional salespeople in this study to expand on previous job embeddedness research that has utilised employees from service-driven occupations (Lee et al. 2004; Mitchell et al. 2001).

## LITERATURE REVIEW AND HYPOTHESES

### Theoretical Background

Mitchell et al. (2001) provided initial empirical support for job embeddedness, which results from the relationships cultivated by employees within an organisation or community. Consequently, people can become attached to the intrinsic social networks in an organisation or community, which could make them hesitant toward leaving. Job embeddedness, which comprises two sub-dimensions (on-the-job embeddedness and off-the-job embeddedness), has been defined as the combined forces that keep an employee from leaving a job, which allows managers to predict an employee's motivation to improve their job performance (Mallol, Holtom & Lee 2007; Mitchell et al. 2001). According to Mitchell et al. (2001) and Lee et al. (2004), job embeddedness comprises the following three dimensions: (a) *links* are connections an employee has with other people or communities; (b) *fit* is an employee's perception of how well he or she fits into an organisation or environment; and (c) *sacrifice* is an employee's opportunity cost of resigning from their position (Mallol et al. 2007). Thus, based on these three organisational behaviour dimensions, Lee et al. (2004) asserted that job embeddedness can be conceptualised as an aggregated force that may restrain employees from leaving their jobs.

COR theory explains why people attempt to acquire, retain, protect and develop what they perceive to be valuable resources (Hobfoll 1989). Both personal factors and the social-cultural environment may determine the perceived value of resources. Gorgievski and Hobfoll (2008) showed that job embeddedness leads to abundant resources. Accordingly, understanding the relationships that employees have with their social groups could assist in predicting their resource capacity. Moreover, this capacity might indicate a person's motivational goals (Mitchell et al. 2001) and proactive coping behaviours (Hobfoll 1989, 2001). COR theory purports that a positive correlation exists between the degree to which a person is embedded in their social circle and the resources that are available for their use. Because a greater availability of resources facilitates an employee's ability to replace and/or substitute resources in their workplace, it enhances their ability to coordinate his or her work demands. *Resource replacement* refers to the replenishment of lost resources, whereas *resource substitution* refers to the finding of other resources to replace those that are lacking (Hobfoll 2001, p. 350). These two mechanisms facilitate the efficient exploitation of resources because resource-rich people tend to be more effective at allocating resources (Baltes & Baltes 1990, p. 28).

### On-the-Job Embeddedness and Sales Performance

Higher degrees of on-the-job embeddedness indicate a person has numerous work ties and that they are more able to acquire available resources in an organisation. For example, higher on-the-job embeddedness would occur if a salesperson were to participate frequently in organisational activities (i.e., links). By developing these links, the salesperson would be able to acquire various resources that facilitate their job function, and they would perceive higher compatibility with colleagues or organisational activities (i.e., fit), thereby accruing benefits that would be forfeited should they resign from their position (i.e., sacrifice). Mitchell et al. argued that greater levels of embeddedness are associated with an employee's tendency to (a) embrace a proactive mindset toward his or her job, and (b) engage in work with greater dedication, thereby facilitating improved job performance (2001, p. 1107).

With a greater level of on-the-job embeddedness, an employee might be able to acquire a diverse range of valuable resources through their organisation, which is particularly critical for salespeople. Hobfoll argued that a diverse pool of resources can enhance a salesperson's capacity to replace or substitute resources, thereby facilitating the successful completion of their work tasks (2001, p. 350). In addition, Maslach, Schaufeli and Leiter argued that employees with richer resources tend to exhibit higher self-efficacy and positive work attitudes toward adverse work tasks (2001, p. 416).

Social relationships facilitate resource replacement and resource substitution. A positive relationship with supervisors implies that they would be more willing to assist salespeople in recovering lost resources (i.e., replacement). Moreover, salespeople who maintain friendly relationships with their colleagues would obtain various work experiences while seeking substitute resources to improve their sales performance.

This discussion shows that salespeople's resource capacity affects their motivation to excel at their jobs (Halbesleben & Wheeler 2008). Numerous studies have confirmed that sufficient resource reserves negate negative emotions and positively affect an employee's performance (Wright & Hobfoll 2004). Furthermore, Halbesleben and Wheeler (2008) showed that a positive association exists between on-the-job embeddedness and job performance. Similar conclusions were also reported by Lee et al. (2004) and Sekiguchi, Burton and Sablinski (2008). Accordingly, we propose the following hypothesis:

*H1. On-the-job embeddedness is positively associated with sales performance.*

### **Off-the-Job Embeddedness and Sales Performance**

Salespeople typically depend on social relations outside of their organisation to enhance the success of their business relationships. Abelson asserted that off-the-job embeddedness represents a salesperson's (a) links to communities outside of the organisation, (b) perceived fit, compatibility and comfort within these communities, and (c) perceived difficulty in forfeiting the advantages accrued by being in these relationships (1987, p. 384). Hence, for salespeople, social relationships outside of the organisation can be a primary source of work motivation. For example, a salesperson who is financially supporting a family might choose to continue working for an organisation and work harder to ensure they have a stable source of income (Mitchell et al., 2001).

High off-the-job embeddedness might indicate that a person has acquired abundant resources through informal relationships. Hobfoll indicated that in addition to resources such as physical assets, forming close interpersonal relationships outside of the organisation, receiving strong support from family and friends, participating in community activities and establishing trust with others can assist in acquiring valuable resources (2001, p. 354). These personal resources are derived from the social context in which a person lives and the relational attachment to social groups within that context.

The outcomes associated with off-the-job embeddedness also affect resource replacement and substitution. Salespeople frequently attend community activities and meet people from various backgrounds and socio-economic classes. By developing relationships through these activities, a salesperson is repeatedly rejected by a certain customer, he or she would be more able to identify other potential customers. Accordingly, rich and diverse customer resource

pools are integral for improving a salesperson's performance.

According to social exchange theory, a salesperson's off-the-job embeddedness is not only indicative of a richer customer resource base, but also their customers' increased embeddedness in the salesperson's organisation. Ahearne, Bhattacharya and Gruen argued that customers' embedded relationships with an organisation cause them to feel more like insiders than outsiders (2005, p. 576). Consequently, these perceptions would foster a customer's identification with an organisation and the salesperson through which the customer is connected to it. A richer resource pool that is intrinsic to customer relationships would assist salespeople in acquiring a sufficient customer base, while also improving the quality of those relationships, thereby increasing sales performance (Crosby, Evans & Cowles 1990). Thus, we propose the following hypothesis:

*H2. Off-the-job embeddedness is positively associated with sales performance.*

### **On-the-Job Embeddedness and Internal Job Satisfaction**

Following from the rationale of social embeddedness (Granovetter 1992), salespeople tend to draw on past links and experiences for repeated exchanges with others (i.e., path dependence). By doing so, they can reduce the costs and risks associated with transactions while increasing the probability of success. Accordingly, salespeople may have more confidence in handling related tasks, thereby facilitating an increase self-efficacy which reinforces their capability perceptions and contributing to *internal job satisfaction*. Internal job satisfaction refers to the sense of accomplishment and self-respect a person earns from his or her job. In comparison to external job satisfaction (e.g., salaries), previous research reported that internal job satisfaction is a primary motivator for employees pursuing personal growth (Weiss, Dawis, England & Lofquist 1967).

Furthermore, the more a person is linked to others, that person is more likely to attempt to maintain autonomy and control (i.e., centrality) in their social relationships. This can have a positive outcome because the extent to which a person exerts autonomy in his or her job is also positively associated with internal job satisfaction (Ibarra & Andrews 1993).

Regarding fit, Mitchell et al. asserted that employees' perceived compatibility in a workplace environment reflects the consistency of their job goals with their personal values (2001, p. 1017). Higher consistency between personal values and job-related characteristics tends to increase a person's internal job satisfaction. Salespeople typically enjoy the autonomy they possess on the job. The ability to organise work schedules and set performance goals for themselves indicates that they are given higher degree of job flexibility and autonomy, which also facilitates higher internal satisfaction.

Most importantly, Gulati asserted that occupying an influential position in the job network indicates that such an employee can control knowledge and information, or that they can enhance their personal reputation in the social network (1995, p. 102). The power and reputation that results from this position in the job network can increase a salesperson's self-respect and trigger their self-actualisation. Subsequently, we propose the following hypothesis:

*H3. On-the-job embeddedness is positively associated with internal job satisfaction.*

### Off-the-Job Embeddedness and Internal Job Satisfaction

In sociology, the theory of fields proposed by Lewin (1951) purports that peoples' lives are symbolised and connected by a conceptual *life space*, and that people tend to analogise themselves as being entangled in a net of various forces and connections. Similarly, Maertz argued that the community dimension of that net influences a person's decisions related to his or her employment (2004, p. 115); accordingly, off-the-job connections play a crucial role in forming a positive attitudes toward a person's job. Several scholars have indicated that employees who develop high embeddedness in their respective communities exhibit positive attitudes toward their jobs (Mitchell et al. 2001; Reitz & Anderson 2010). Furthermore, Portoghese, Galletta and Battistelli reported that employees' community embeddedness improves the quality of their relationships with leaders, thereby affecting their job satisfaction (2011, p. 42).

Salespeople with comparatively higher off-the-job embeddedness receive greater referral benefits that can create new links; consequently, they might acquire additional opportunities to increase their sales, which could enhance their job performing confidence. When a salesperson's job performance is acknowledged, they experience higher internal satisfaction. Moreover, supportive community-based and familial relationships satisfy a salesperson's personal social needs, whereas social influence improves their self-evaluation of their job (Griffin, Bateman, Wayne & Head 1987). Collectively, positive social support and perceived social influences facilitate higher internal job satisfaction.

Granovetter asserted that actors who possess sufficient resources outside of the organisation can apply informal power and influence to obtain benefits that are inaccessible from within their organisation (1985, p. 487). If a salesperson were to fulfil their job function as a result of their access to external resources, they would acquire additional trust from their colleagues and supervisors. Hence, relationships in social groups can enhance a salesperson's job capability, thereby leading to higher internal satisfaction. Based on this discussion, we propose the following hypothesis:

*H4. Off-the-job embeddedness is positively associated with internal job satisfaction.*

### Happy-Productive Worker: Satisfaction with Job Embeddedness

Social-cognitive theories have postulated that attitude is invariably related to a pattern of behaviours that a person exhibits toward a particular target, which Festinger (1954) referred to as an *attitude object*. When people evaluate an attitude object favourably, they tend to exhibit fostering or supportive behaviours (Eagly & Chaiken, 1993). Hence, social-cognitive theorists have hypothesised that an employee's attitude toward their job (i.e., job satisfaction) affects their on-the-job behaviours; thus, their attitude can be considered indicative of their job performance (Ajzen 1991, p. 186). Accordingly, numerous studies have asserted that positive attitudes toward work are conducive to superior job performance (Bluen, Barling & Burns 1990; Judge, Thoresen, Bono & Patton 1998).

Historically, a common method for testing the productive worker theory was to operationalise happiness as job satisfaction (Cropanzano & Wright 2001; Judge et al. 1998). The meta-analysis on the job satisfaction-performance relationship conducted by Judge et al. (1998) was guided by a simple research question: "Is a happy worker productive?" Gorgievski and Hobfoll argued that a person's embedded relationships within social groups

may predict that person's ability to access various resources (2008, p. 17). Happy people tend to possess greater resources. At work, they are more likely to take risks that could increase their happiness, and they tend to remember events more favourably (Seidlitz & Diener 1993; Seidlitz, Wyer & Diener 1997). Consequently, happy people are more sensitive to opportunities in their work environment, are more outgoing and helpful to their co-workers and are generally optimistic and confident (Myers & Diener 1995, p. 14). Coupled with sufficient resource reserves, happier people can improve their work performance according to the resource maintenance model. Accordingly, this gives rise to the following hypothesis:

*H5. Internal job satisfaction is positively associated with sales performance.*

### **Role of Network Ability**

*Network ability* is a key dimension of social political skills. Those who possess higher network ability tend to have more opportunities to control and access key persons and critical resources within a network. People with higher network ability are likely to utilise their network dominance to gain access to available resources (Pfeffer 1992). They are also highly capable of coordinating affairs and managing conflicts (Ferris et al. 2005).

Commitment motivation theory stipulates that an employee's motivation for committed work is based on both instrumental-cognitive and social-normative beliefs (Wiener 1982). People with higher network ability tend to feel more sensitive in social relationships, and they are keenly aware of how to manage interpersonal relationships. Their behaviour motivation related to their instrumental- cognitive and social-normative beliefs is stronger than those with lower network ability. Subsequently, they tend to be more proactive in building relationships. Although those with higher network ability are typically adept at integrating and coordinating personal affairs, they are also constrained by social norms. Hence, they tend to interact with their organisational peers with a degree of harmony.

According to COR theory, differences in a salesperson's network ability could result in various types of social relationships (Hobfoll 1989, p. 517). People with higher network ability are embedded in their social context, and they have more resources at their disposal. Consequently, this increases their positive motivation toward matters related to their jobs (Baltes & Baltes 1990, p. 27).

In addition, aggressive action in developing network relationships typically has a considerable effect on job performance (Thompson 2005, p. 1014). In other words, a salesperson's network ability can influence the relationship between job embeddedness and job-related outcomes such as attitude and sales performance. Accordingly, it is reasonable to assert that a salesperson's network ability could mediate the effect of job embeddedness on internal job satisfaction and sales performance. Thus, we propose the following hypothesis:

*H6. Network ability mediates the effect of job embeddedness on internal job satisfaction and sales performance.*

## METHODS

### Measure Development

In this study, we adapted variables from prior studies to fit the research context based on the in-depth interviews (Churchill & Brown 2004) with six life insurance sales managers and three scholars in the related field. Prior to its mailing, the questionnaire was pre-tested to improve the content validity of the instrument (*see Table A in the Appendix*).

*Job embeddedness.* The two job embeddedness dimensions were measured using items adapted from a scale developed and validated by Lee et al. (2004) and Holtom and Inderrieden (2006) based on the results of Mitchell et al. (2001). The two composites comprised 12 items that asked the participants to detail the extent to which they valued their jobs and communities. The three organisation-focused sub-dimensions were aggregated to form an on-the-job embeddedness construct ( $\alpha = 0.85$ ), whereas the three community-focused sub-dimensions were aggregated to form an off-the-job embeddedness construct ( $\alpha = 0.81$ ).

*Internal job satisfaction.* Job satisfaction was measured using a scale from the Minnesota Satisfaction Questionnaire (MSQ) that examines individual affective and cognitive liking of perceived job relations and rewards (Weiss et al. 1967; Price & Mueller 1986). This scale was designed to measure intrinsic and extrinsic satisfaction in accordance with Herzberg's theory (Weiss et al. 1967). The intrinsic sub-scale was characterised by specific abilities related to on-the-job achievement opportunities. Three items in the proposed model were designed to assess employee satisfaction ( $\alpha = 0.82$ ).

*Network ability.* This construct was measured using a six-item scale adapted from Ferris et al. (2005), which was based on a facet of political skill; specifically, the extent to which people develop and use social networks to increase their influence ( $\alpha = 0.93$ ). The sample was divided into two groups based on network ability (mean = 3.96,  $p < .01$ ). We considered participants to possess high network ability if their mean network ability scores were higher than or equal to the mean of the entire sample.

*Sales performance.* Sales managers periodically assess sales performance in business and profits market share (i.e., first-year commission, FYC; first-year premium, FYP). The criteria used to measure sales performance were the insurance policies sold during a 12-month period by each salesperson. Previous studies have applied these measures as indicators of insurance sales performance (Bluen et al. 1990; Barling & Beattie 1983). Furthermore, input measures have been shown to be critical for the evaluation of sales performance (Pilling, Donthu & Henson 1995; Boles, Donthu & Lohtia 1995). Therefore, we also considered the number of customer contacts to be indicative of a salesperson's input in sales work. The performance data were completed by salespeople according to their annual financial statements ( $\alpha = 0.70$ ).

Table 1: Means, Standard Deviations and Correlations

	Variable	M	SD	1	2	3	4
1	On-the-job embeddedness (ON)	3.85	0.60				
2	Off-the-job embeddedness (OFF)	3.53	0.74	0.37**			
3	Internal job satisfaction (SAT)	3.90	0.75	0.69**	0.41**		
4	Sales performance (PER)	2.58	1.00	0.26**	0.17**	0.28**	
5	Network ability (NET)	3.96	0.63	0.39**	0.44**	0.41**	0.41**

\*\* p < 0.01

### Sample and Data Collection

In this study, data were obtained using a structured questionnaire survey. In accordance with the recommendations of Richardson, Swan and McInnis-Bowers (1994), we collected data from employees at the five largest insurance firms in Taiwan, which accounted for 66% of the national market share. These firms agreed to provide a total sample of 780 life insurance salespeople. A cover letter with a request from each firm's CEO for full support and cooperation was attached to each participant's questionnaire. In addition, each questionnaire package contained a letter explaining the purpose of our research. The salespeople were requested to complete and return the questionnaire to their sales managers. Subsequently, each agency manager assisted in collecting the completed questionnaires and returned them by mail for analysis.

The firms returned 496 responses (initial response rate = 63.5%). After excluding the responses with disqualifying properties (e.g., those completed by sales administrative staff) and those with incomplete or missing data (e.g., those with more than two consecutive unanswered questions), a total of 445 responses were deemed valid (final response rate = 57.1%). Among these respondents, 45.4% were men and 54.6% were aged between 20 and 50 years. On average, the respondents had 16 years of education and 5 years of sales experience.

### Analytical Techniques

The models were tested using the two-step structural equation modelling (SEM) procedure proposed by Anderson and Gerbing (1988). First, SEM was performed to assess the fit of the data with the hypothesised model, including the adequacy of the measurement model and a test of the proposed structural model, as well as a fit comparison to nested alternative models. Subsequently, a two-group confirmatory factor analysis (two-group CFA) was applied to test whether the measurement model was equal across low and high network ability groups. If the results were invariant, structural analysis was conducted to determine whether the paths differed between the two groups (Bollen 1989; Chiou, Droge & Hanvanich 2002).

## RESULTS

### Non-Response Bias

Armstrong and Overton (1977) showed that the differences between respondents and non-respondents were similar to the differences between early and late returns. Mishra, Heide

and Cort (1998) verified the difference between early and late returns to forecast the non-response bias. Therefore, to confirm that the respondent firms were representative, we performed analysis of variance (ANOVA) to identify any differences between the early and late respondents. We categorised the responses returned within one month as early ( $n = 312$ ), and those returned after one month as late ( $n = 133$ ). Subsequently, we applied ANOVA to compare the sales and tenure between the two groups. The results show that the difference between the two groups was non-significant (sales,  $p = .73$ ; tenure,  $p = .86$ ).

### Validity of Network Ability.

To substantiate the efficacy of the measurement, we conducted confirmatory factor analysis (CFA) using LISREL 8.7 (Jöreskog & Sörbom 1996). As indicated by Hair, Anderson, Tatham and Black (1998), the CFA results were a good fit ( $\chi^2_{(9)} = 26.02$  ( $p = .00$ ),  $\chi^2/df = 2.89$ , GFI = 0.93, CFI = 0.99, RMSEA = 0.065, RMR = 0.017).

### Measurement Model

*Convergent validity.* We tested the hypothesised four-factor model to evaluate whether each measurement item would load significantly onto the corresponding scales. As indicated by Hair et al. (1998), the results were a good fit ( $\chi^2_{(129)} = 300.78$  ( $p = 0.00$ ),  $\chi^2/df = 2.33$ , GFI = 0.93, CFI = 0.98, RMSEA = 0.055, RMR = 0.045). The CFA results showed a significant relationship between each indicator variable and its respective construct ( $p < .01$ ). Consequently, the proposed relationships among the indicators and constructs were established and thus considered convergent (Hair, Anderson, Tatham & Black 1998).

*Discriminant validity.* As proposed by Bagozzi and Yi (1988), the correlation between each pair of constructs was constrained to 1.0. The chi-square for the constrained model was subsequently compared with that of the unconstrained model. A significantly lower chi-square for the unconstrained model implies that the constructs are not perfectly correlated, which supports the discriminant validity of the scales. For all six pairs of the constructs, the chi-square for the unconstrained model was significantly lower ( $p < .01$ ) than that of the constrained model (See Table B in the Appendix).

### Path Analysis and Model Comparison

*Hypothesis test.* To examine whether H1 ~ H5 would be supported in the proposed model, the hypotheses were tested (Table 2), and the following results indicated that the constructs were a good fit for the model ( $\chi^2_{(129)} = 305.43$  ( $p = .00$ ),  $\chi^2/df = 2.37$ , GFI = 0.93, CFI = 0.98, RMSEA = 0.055, RMR = 0.043, PGFI = 0.70; Hair et al. 1998). Although the p-value was zero, the ratio of chi-square to the degree of freedom was 2.37 (305.43/129). The findings indicate that the hypothesised positive relationship between on-the-job embeddedness and sales performance was non-significant (ON  $\rightarrow$  PER,  $\gamma_{21} = 0.12$ ,  $t = 0.95$ ), and the hypothesised positive relationship between off-the-job embeddedness and sales performance was also non-significant (OFF  $\rightarrow$  PER,  $\gamma_{22} = 0.03$ ,  $t = 0.50$ ). Thus, H1 and H2 were not supported. The results, however, showed a significant relationship between on-the-job embeddedness and internal job satisfaction (ON  $\rightarrow$  SAT,  $\gamma_{11} = 1.00$ ,  $t = 10.43$ ). The positive influence of off-the-job embeddedness on internal job satisfaction was also significant (OFF  $\rightarrow$  SAT,  $\gamma_{12} = 0.17$ ,  $t = 4.06$ ). Moreover, the results confirmed that the effect of internal job satisfaction on sales performance was significant (SAT  $\rightarrow$  PER,  $\beta_{21} = 0.21$ ,  $t = 2.07$ ), thereby supporting H3 ~ H5.



and low network ability groups. These analyses showed that the measurement models were invariant across the groups at the loading (Lambda), error variance (theta delta) and co-variance levels (Models 2, 3 and 4; Table C in the Appendix). Subsequently, the measurement model with invariance was applied in the two-group structural model analyses.

### Structural Effects across the Groups

As with the path hypothesised in Model 1 (Table 2), this study applied a two-group structural analysis to test the effects of network ability (ON  $\rightarrow$  SAT  $\rightarrow$  PER, OFF  $\rightarrow$  SAT  $\rightarrow$  PER) in each group (Model 5), and compared each with a second model that included the direct effects (Model 6). Consequently, the two-group model with the indirect effects of job embeddedness on sales performance (Model 5) obtained the following results:  $\chi^2_{(262)} = 470.26$  ( $p = .00$ ), GFI = 0.90, CFI = 0.95, RMSEA = 0.057, RMR = 0.058, PNFI = 0.77. Meanwhile, the low network ability group indicated:  $\gamma_{11} = 0.18$  ( $t = 5.75$ ),  $\gamma_{12} = 0.10$  ( $t = 1.18$ ),  $\beta_{21} = 0.26$  ( $t = 2.67$ ), and the high network ability group indicated:  $\gamma_{11} = 0.87$  ( $t = 6.00$ ),  $\gamma_{12} = 0.15$  ( $t = 3.45$ ),  $\beta_{21} = 0.34$  ( $t = 3.42$ ). Furthermore, the direct effect paths added in Model 6 were non-significant, and there was no significant improvement in fit ( $\Delta\chi^2_{(4)} = 4.47$ ) over Model 5 ( $\chi^2_{(258)} = 465.79$  ( $p = .00$ ), GFI = 0.90, CFI = 0.95, RMSEA = 0.057, RMR = 0.053, and PNFI = 0.76). Different effects were observed in the structural paths from job embeddedness to internal job satisfaction in the two groups (Figures 2 and 3), thereby supporting H6.

Figure 2: Low Network Ability

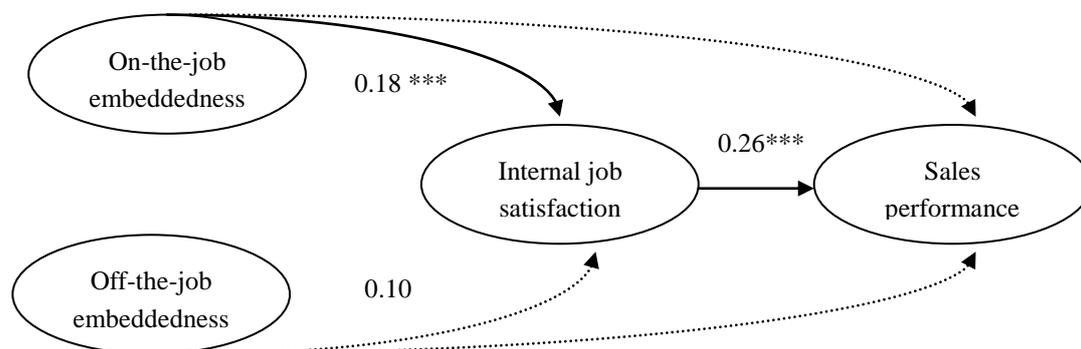
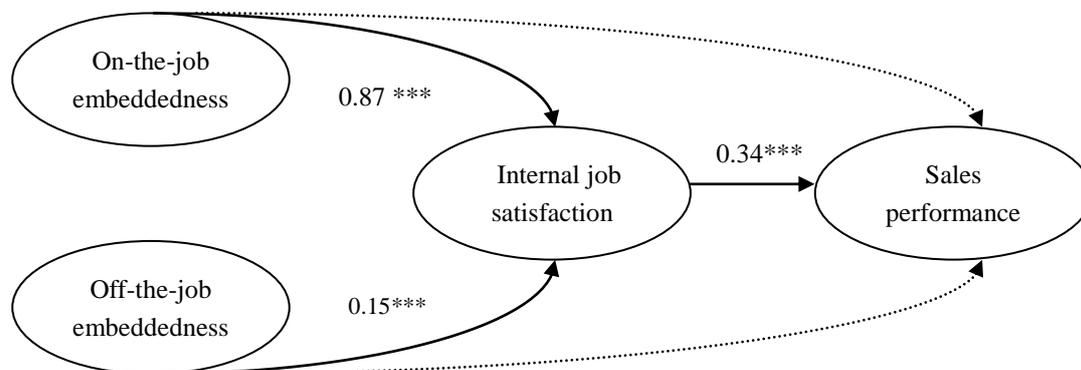


Figure 3: High Network Ability



## CONCLUSION

### Discussion

In this study, we examined how to enhance a financial salesperson's performance based on theories of job embeddedness. The findings indicate that on- and off-the-job embeddedness neither directly nor significantly affected sales performance. The effect, however, becomes significant after internal job satisfaction was introduced as mediating variable. These findings are consistent with the assertion that embedded resources are indicative of personal motivation to work (Mitchell et al. 2001; Lee et al. 2004; Gorgievski & Hobfoll 2008). Furthermore, the findings of this study show that network ability can cause a significant structural difference in the model path across the groups. On-the-job embeddedness rather than off-the-job embeddedness can effectively assist a salesperson with lower network ability to achieve internal job satisfaction. Moreover, a salesperson with higher network ability can draw on both on- and off-the-job embeddedness to significantly increase their internal satisfaction to improve their sales performance.

The results of this study differ from those reported in previous studies that have applied job embeddedness to explain approaches to enhancing the job performance of employees. This research shows that both on- and off-the-job embeddedness could have a significant effect on the sales performance of field service employees through internal job satisfaction. The concept of off-the-job embeddedness reflects how the strong force resulting from social relationships outside of an organisation can constrain an employee from leaving their job (Lee et al. 2004). Such embeddedness is also a primary source of informal power or social influence for field service employees. A salesperson who knows how to manage social relationships outside of their organisation (i.e., off-the-job embeddedness) would be able to achieve higher internal job satisfaction, thereby improving their sales performance.

This research also confirms the mediating effect of internal job satisfaction between job embeddedness and sales performance. A crucial finding of this research indicates that both on- and off-the-job embeddedness indirectly affects sales performance via internal job satisfaction. Accordingly, if a salesperson wanted to enhance their performance, it would be insufficient to simply enhance their job embeddedness. The salesperson should first attempt to apply job embeddedness to obtain a certain level of internal satisfaction. Without this precondition, they would experience difficulty achieving their sales goals.

Furthermore, the concept of network ability extends theories of job embeddedness. In early years, job embeddedness was considered a solid relational state that an employee created through social relationships. Higher organisational embeddedness leads to improved results in an employee's behaviour. In the context of socialisation, increased political power has been considered a crucial factor for developing an employee's organisational socialisation, and network ability has been considered a key competency that is indispensable to this cause (Ferris et al. 2005).

### Implications

The findings of this study offer the following practical and managerial implications. For salespeople, the practical implications include the improvement of sales performance, which can be achieved through sustained satisfaction derived from embedded social relationships.

Therefore, salespeople who build relationships inside or outside of their organisation should consider whether the social network on which they rely can assist in the procurement of critical resources.

Network ability also plays a key role for sales managers to create productive jobs. Firms can divide sales roles into subtypes that are designed specifically to meet customer needs. For salespeople with greater network ability, relationship-building skills should be applied to develop customer relationships in diverse markets. Therefore, salespeople primary tasks should be centred establishing customer relationships. Conversely, salespeople with lower network ability can achieve internal job satisfaction through on-the-job embeddedness. Accordingly, those with lower network ability should focus on maintaining customer relationships. For example, insurance salespeople with lower network ability could be assigned to manage orphan policies, provide customer services or collect insurance premiums.

Moreover, salespeople with lower network ability should focus on interpersonal relationships within their organisation. Managers can create mechanisms or environments that assist this type of employees in improving their network ability to increase their job embeddedness by encouraging them to participate in interpersonal activities that are relevant to their jobs. This endeavour can contribute to higher internal job satisfaction, thereby becoming a primary source of motivation to improve their sales performance. In addition to the selection of eligible salespeople, firms can provide sales employees with appropriate education and training to advance their social skills.

### **Limitations and Future Research Suggestions**

First, the sample used in this study was limited to salespeople. Future research should continue to examine the effects of job embeddedness on employees' job attitude and performance in other industries. For example, a similar investigation could be conducted to examine employees in non-profit or other public-interest institutions. Although it is difficult to comprehensively evaluate their job performance, those engaged in public-interest jobs tend to pursue vocations that provide intrinsic psychological rewards. Moreover, achieving their job objectives depends considerably on their interpersonal relationships outside of their organisation. Hence, off-the-job embeddedness for employees in other sectors might also play a critical role in improving their job performance. Further research in this domain would elucidate the validity of this assertion.

Second, we did not consider the role of attitudes apart from job satisfaction. Although job satisfaction reflects an employee's perceptions toward people and things related to their job, this concept is inadequate for explaining the motivation behind an employee's job engagement, which has been considered a key concern for managers (Klein 1989; Landy & Becker 1987). Thus, future research should consider other variables related to motivation. For example, vigour could be examined as a potential outcome of job embeddedness. Carmeli, Ben-Hador, Waldman and Rupp (2009) reported that managers' relational behaviours intended to induce the development of employees' social capital can boost vigour and further improve their job performance. Given that job embeddedness can yield considerable social capital, employees with higher job embeddedness might also exhibit higher levels of job vigour. Empirical work related to these relationships would likewise be illuminating.

Finally, this study examined the individual differences among salespeople only. We have not observed the effect of managers' leadership styles on the job embeddedness of salespeople. Recently, there has been an increasing trend among organisational studies on the effects of a manager's relational network on employees' job performance (Carmeli et al. 2009; Venkataramani, Green & Schleicher 2010). For example, Carmeli et al. (2009) reported that a manager's relational behaviours can have a direct effect on employees' bonding social capital, thereby affecting the job performance of employees. Similarly, Venkataramani et al. (2010) indicated that a manager's network structure can have a considerable effect on the relational interactions between managers and employees. These studies show the effect of a manager's network structure on employees' job satisfaction. Further investigation in this area could benefit from observing the effect of a manager's relational leadership on his or her employees' job embeddedness.

## REFERENCES

- Abelson, MA 1987, 'Examination of avoidable and unavoidable turnover', *Journal of Applied Psychology*, vol. 72, no. 3, pp. 382-386.
- Ahearne, M, Bhattacharya, CB & Gruen, T 2005, 'Antecedents and consequences of customer-company identification: Expanding the role of relationship making', *Journal of Applied Psychology*, vol. 90, no. 3, pp. 574-585.
- Ajzen, I 1991, 'The theory of planned behavior', *Organizational Behavior and Human Decision Processes*, vol. 50, no. 2, pp. 179-211.
- Anderson, JC & Gerbing, DW 1988, 'Structural equation modeling in practice: A review and recommended two-step approach', *Psychological Bulletin*, vol. 10, no. 3, pp. 411-423.
- Armstrong, JS & Overton, TS 1977, 'Estimating non-response bias in mail surveys', *Journal of Market Research*, vol. 14, no. 3, pp. 396-402.
- Bagozzi, RP & Yi, Y 1988, 'On the evaluation of structural equation models', *Journal of the Academy of Marketing Science*, vol. 16, no. 1, pp. 74-94.
- Baltes, MM & Baltes, MM 1990, 'Psychology perspectives on successful aging: The model of selective optimization with compensation', in PB Baltes & MM Baltes (eds.), *Successful aging: Perspectives from behavioral sciences* (pp. 1-34), Cambridge University Press, New York.
- Barling, J & Beattie, R 1983, 'Self-efficacy beliefs and sales performance', *Journal of Organizational Behavior Management*, vol. 5, no. 1, pp. 41-51.
- Bentler, PM & Bonnett, DG 1980, 'Significance tests and goodness of fit in the analysis of covariance structures', *Psychological Bulletin*, vol. 88, no. 3, pp. 588-606.
- Bluen, SD, Barling, J & Burns, W 1990, 'Predicting sales performance, job satisfaction, and depression by using the achievement strivings and impatience-irritability dimensions of Type A behavior', *Journal of Applied Psychology*, vol. 75, no. 2, pp. 212-216.

- Boles, JS, Donthu, N & Lohtia, R 1995, 'Salesperson evaluation using relative performance efficiency: The application of data envelopment analysis', *Journal of Personal Selling and Sales Management*, vol. 15, no. 3, pp. 31-49.
- Bollen, KA 1989, *Structural equations with latent variables*, John Wiley, New York.
- Carmeli, A, Ben-Hador, B, Waldman, D.A & Rupp, DE 2009, 'How leaders cultivate social capital and nurture employee vigor: Implications for job performance', *Journal of Applied Psychology*, vol. 94, no. 6, pp. 1553-1561.
- Chiou, JS, Droge, C & Hanvanich, S 2002, 'Does customer knowledge affect how loyalty is formed?' *Journal of Service Research*, vol. 5, no. 2, pp. 113-124.
- Churchill, Jr GA & Brown, TJ 2004, *Basic marketing research*, 5<sup>th</sup> ed., South-Western, Mason, Ohio.
- Cropanzano, R & Wright, TA 2001, 'When a 'happy' worker is really a 'productive' worker: A review and further refinement of the happy-productive worker thesis', *Psychology Journal: Practice & Research*, vol. 53, no. 3, pp. 182-199.
- Crosby, LA, Evans, KR & Cowles, D 1990, 'Relationship quality in services selling: An interpersonal influence perspective', *Journal of Marketing*, vol. 54, no. 3, pp. 68-81.
- Crossley, CD, Bennett, RJ, Jex, SM & Burnfield, JL 2007, 'Development of a global measure of job embeddedness and integration into a traditional model of voluntary turnover', *Journal of Applied Psychology*, vol. 92, no. 4, pp. 1031-1042.
- Diener, E, Suh, EM, Lucas, RE & Smith, HL 1999, 'Subjective well-being: Three decades of progress', *Psychological Bulletin*, vol. 125, no. 2, pp. 276-302.
- Eagly, AH & Chaiken, S 1993, *The psychology of attitudes*, Harcourt Brace Jovanovich, Fort Worth, TX.
- Ferris, GR, Treadway, DC, Kolodinsky, RW, Hochwarter, WA, Kacmar, CJ, Douglas, C & Frink, DD 2005, 'Development and validation of the political skill inventory', *Journal of Management*, vol. 31, no. 1, pp. 126-152.
- Festinger, L 1954, 'A theory of social comparison processes', *Human Relations*, vol. 7, no. 2, pp. 117-140.
- Gorgievski, MJ & Hobfoll, SE 2008, 'Work can burn us out or fire us up: Conservation of resources in burnout and engagement', in JRB Halbesleben (ed.), *Handbook of stress and burnout in health care* (pp. 2-22), Nova Science Publishers, Hauppauge, NY.
- Granovetter, M 1985, 'Economic action and social structure: A theory of embeddedness', *American Journal of Sociology*, vol. 91, no. 3, pp. 481-510.
- Granovetter, M 1992, 'Problems of explanation in economic sociology', in N. Nohria & R. G. Eccles (eds.), *Networks and organization: Structure, form and action*, Harvard Business School Press, Boston, MA.

- Griffin, RW, Bateman, TS, Wayne, SJ & Head, TC 1987, 'Objective and social factors as determinants of task perceptions and responses: An integrated perspective and empirical investigation', *Academy of Management Journal*, vol. 30, no. 3, pp. 501-523.
- Gulati, R 1995, 'Does familiarity breed trust? The implications of repeated ties for contractual choice in alliance', *Academy of Management Journal*, vol. 38, no. 1, pp. 85-112.
- Hair, JF, Anderson, RE, Tatham, RL & Black, WC 1998, *Multivariate data analysis*, Prentice Hall, Upper Saddle River, NJ.
- Halbesleben, JRB & Wheeler, AR 2008, 'The relative roles of engagement and embeddedness in predicting job performance and intention to leave', *Work & Stress*, vol. 22, no. 3, pp. 242-256.
- Hobfoll, SE 1989, 'Conservation of resources: A new attempt at conceptualizing stress', *American Psychology*, vol. 44, no. 3, pp. 513-524.
- Hobfoll, SE 2001, 'The influence of culture, community, and the nested-self in the stress process: advancing conservation of resources theory', *Applied Psychology: An International Review*, vol. 50, no. 3, pp. 337-421.
- Holtom, BC & Inderrieden, EJ 2006, 'Integrating the unfolding model and job embeddedness model to better understand voluntary turnover', *Journal of Managerial Issues*, vol. 18, no. 4, pp. 435-453.
- Ibarra, H & Andrews, SB 1993, 'Power, social influence, and sense making: Effects of network centrality and proximity on employee perceptions', *Administrative Science Quarterly*, vol. 38, no. 2, pp. 277-303.
- Jarvenpaa, SL & Majchrzak, A 2008, 'Knowledge collaboration among professionals protecting national security: Role of transactive memories in ego-centered knowledge networks', *Organization Science*, vol. 19, no. 2, pp. 260-276.
- Judge, TA, Thoresen, CJ, Bono, JE & Patton, GK 1998, 'The Job Satisfaction-Job Performance Relationship: 1939-1998', paper presented at the Annual Meeting of the Academy of Management, San Diego, CA.
- Judge, TA & Locke, EA 1993, 'Effects of dysfunctional thought processes on subjective well-being and job satisfaction', *Journal of Applied Psychology*, vol. 78, no. 3, pp. 475-490.
- Jöreskog, KG & Sörbom, D 1996, *LISREL 8: User's reference guide*, Scientific Software International, Chicago, IL.
- Klein, HJ 1989, 'An integrated control theory model of work motivation', *Academy of Management Review*, vol. 14, no. 2, pp. 150-172.
- Landy, FJ & Becker, LJ 1987, 'Motivation theory reconsidered', in LL Cummings & BM Staw (eds.), *Research in organizational behavior* (pp. 1-38), JAI Press, Greenwich, CT.

- Lee, TW, Sablinski, CJ, Burton, JP & Holtom, BC 2004, 'The effects of job embeddedness on organizational citizenship, job performance, volitional absences and voluntary', *Academy of Management Journal*, vol. 47, no. 5, pp. 711-722.
- Lewin, K 1951, *Field theory in social science*, Harper, New York.
- Mallol, CM, Holtom, BC & Lee, TW 2007, 'Job embeddedness in a culturally diverse environment', *Journal of Business and Psychology*, vol. 22, no. 1, pp. 35-44.
- Maslach, C, Schaufeli, WB & Leiter, MP 2001, 'Job burnout', *Annual Review of Psychology*, vol. 52, no. 1, pp. 397-422.
- Maertz, CP 2004, 'Five factors neglected in employee turnover models', in RW Griffith & PW Hom (eds.), *Innovative theory and empirical research in employee turnover* (pp. 105-152), Information Age Publishing, Greenwich, CT.
- Milam, JG 2012, 'Why Workplace Friendships Matter: An Assessment of Workplace Friendships, Employee Engagement, Job Embeddedness and Job Burnout', Doctoral Dissertation, Alliant International University, Alhambra, CA.
- Mishra, DP, Heide, JB & Cort, SG 1998, 'Information asymmetry and levels of agency relationships', *Journal of Market Research*, vol. 35, no. 3, pp. 277-295.
- Mitchell, TR, Holtom, BC, Lee, TW, Sablinski, CJ & Erez, M 2001, 'Why people stay: Using job embeddedness to predict voluntary turnover', *Academy of Management Journal*, vol. 44, no. 6, pp. 1102-1121.
- Myers, DG & Diener, E 1995, 'Who is happy?', *Psychological Science*, vol. 6, no. 1, pp. 10-19.
- Pfeffer, J 1992, *Managing with power: Politics and influence in organizations*, Harvard Business School Press, Boston, MA.
- Pilling, BK, Donthu, N & Henson, S 1995, 'Accounting for the impact of territory characteristics on sales performance: Relative efficiency as a measure of salesperson performance', *The Journal of Personal Selling and Sales Management*, vol. 19, no. 2, pp. 35-45.
- Portoghese, I, Galletta, M & Battistelli, A 2011, 'The effects of work-family conflict and community embeddedness on employee satisfaction: The role of leader-member exchange', *International Journal of Business and Management*, vol. 6, no. 4, pp. 39-48.
- Price, JL & Mueller, CW 1986, 'Absenteeism and turnover of hospital employees', in SB Bacharach (ed.), *Monographs in organizational behavior and industrial relations*, vol. 5. JAI Press, Greenwich, CT.
- Reitz, OE & Anderson, MA 2010, 'Job embeddedness and nurse retention', *Nursing Administration Quarterly*, vol. 34, pp. 190-200.

- Richardson, LD, Swan, JE & McInnis-Bowers, C 1994, 'Sampling and data collection methods in sales force research: Issues and recommendations for improvement', *The Journal of Personal Selling & Sales Management*, vol. 14, no. 4, pp. 31-39.
- Sekiguchi, T, Burton, JP & Sablinski, CJ 2008, 'The role of job embeddedness on employee performance: The interactive effects with leader-member exchange and organization-based self-esteem', *Personnel Psychology*, vol. 61, no.4, pp. 761-792.
- Seidlitz, L & Diener, E 1993, 'Memory for positive versus negative events: Theories for the differences between happy and unhappy persons', *Journal of Personality and Social Psychology*, vol. 64, no.4, pp. 654-664.
- Seidlitz, L, Wyer, RS & Diener, E 1997, 'Cognitive correlates of subjective well-being: The processing of valenced life events by happy and unhappy persons', *Journal of Research in Personality*, vol. 31, no.2, pp. 240-256.
- Thompson, JA 2005, 'Proactive personality and job performance: A social capital perspective', *Journal of Applied Psychology*, vol. 90, no. 5, pp. 1011-1017.
- Trevor, CO & Nyberg, AJ 2008, 'Keeping your headcount when all about you are losing theirs: Downsizing turnover rates and the moderating role of HR practices', *Academy of Management Journal*, vol. 51, no. 2, pp. 259-276.
- Üstüner, T & Godes, D 2006, 'Better sales networks', *Harvard Business Review*, vol. 84, pp. 102-112.
- Venkataramani, V, Green, SG, Schleicher, DJ 2010, 'Well-connected leaders: The impact of leaders' social network ties on LMX and member's work attitudes', *Journal of Applied Psychology*, vol. 95, no. 6, pp. 1071-1084.
- Weiss, DJ, Dawis, RV, England, GW & Lofquist, LH 1967, *Manual for the Minnesota Satisfaction Questionnaire*, University of Minnesota Industrial Relations Center, Minneapolis, MN.
- Wiener, Y 1982, 'Commitment in organizations: A normative view', *Academy of Management Review*, vol. 7, no. 3, pp. 418-428.
- Wright, TA & Hobfoll, SE 2004, 'Commitment, psychology well-being and job performance: An examination of conservation of resources (COR)', *Journal of Business and Management*, vol. 9, no. 4, pp. 389-406.

## Appendix

**Table A: Measures of studied constructs**

Constructs	Measures
On-the-job embeddedness ( $\alpha = 0.85$ )	1. I must interact with coworkers on my daily work. (link) 2. I like my work schedule (e.g. flextime, shift). (fit) 3. I like the authority and responsibility I have at this company. (fit) 4. I would sacrifice a lot of friends if I left this job. (sacrifice) 5. I would incur very few costs if I left this organization. (sacrifice) 6. The benefits are good on the job. (sacrifice)
Off-the-job embeddedness ( $\alpha = 0.81$ )	1. My family roots are in the community where I live. (link) 2. I regularly visit persons in the community. (link) 3. I enjoy leisure time in the community near my house. (link) 4. I have good relationships with neighbors in the community. (fit) 5. Leaving this community would be very hard. (sacrifice) 6. I would give up a lot of things I like if I left this community. (sacrifice)
Internal job satisfaction ( $\alpha = 0.82$ )	1. The feeling of accomplishment I get from the job. 2. The feeling of recognition I get on this job from my relatives and friends. 3. The praise I get for doing my job.
Sales performance ( $\alpha = 0.70$ )	1. Average monthly first-year premium (FYP) in the past year. (NT.) <input type="checkbox"/> under 3 <input type="checkbox"/> 3-7 <input type="checkbox"/> 8-12 <input type="checkbox"/> 13-17 <input type="checkbox"/> above 17 (ten thousand) 2. Total first-year commission (FYC) in the past year. (NT.) <input type="checkbox"/> under 21 <input type="checkbox"/> 21-50 <input type="checkbox"/> 51-80 <input type="checkbox"/> 81-110 <input type="checkbox"/> above 110 (ten thousand) 3. The number of customers visited a week. <input type="checkbox"/> 1-4 <input type="checkbox"/> 5-7 <input type="checkbox"/> 8-10 <input type="checkbox"/> 11-13 <input type="checkbox"/> above 15 (person)
Network ability ( $\alpha = 0.93$ )	1. I spend a lot of time and effort at working with others. 2. I am good at building relationships with influential people at work. 3. I have developed a large network of colleagues and associates at work whom I can call on for support when I really need to get things done. 4. At work, I know a lot of important people and am well connected. 5. I spend a lot of time at work developing connections with others. 6. I am good at using my connections and networks to make things happen at work.

The items use a 5-point Likert scale format rating from 1 (strongly disagree) to 5 (strongly agree).

**Table B: Chi-square comparison**

Unconstrained model $\chi^2_{(129)} = 300.78$ ( $p=0.00$ ) Equal between constructs	Constrained model	Comparison**
	$\chi^2$ (df=130)	$\Delta\chi^2$ (df=1)
$\psi(\text{ON}, \text{OFF})=1$	886.85	586.07
$\psi(\text{ON}, \text{SAT})=1$	481.01	180.29
$\psi(\text{ON}, \text{PER})=1$	572.02	271.24
$\psi(\text{OFF}, \text{SAT})=1$	776.62	475.84
$\psi(\text{OFF}, \text{PER})=1$	589.47	288.69
$\psi(\text{SAT}, \text{PER})=1$	564.98	264.20

\*\* Model comparison is significant at 0.01 level.

**Table C: Two-group confirmatory factor analysis**

Model	Baseline model	Model comparison		
		Model 2 Equality of factor loading	Model 3 Equality of error variance	Model 4 Equality of covariance
$\chi^2$	465.79	483.22	504.13	513.38
Df	258	276	294	300
$\Delta\chi^2_{(df)}$		17.43 (n.s.)	20.91 (n.s.)	9.25 (n.s.)
RMSEA	0.057	0.055	0.054	0.054
RMR	0.066	0.069	0.068	0.070
CFI	0.95	0.95	0.95	0.95
GFI	0.90	0.89	0.89	0.89

n.s. at  $\alpha = 0.05$  significant level