

Full Length Research Paper

Impacts of coworkers' relationships on organizational commitment- and intervening effects of job satisfaction

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Accepted 14 January, 2011

This research targets on employees of international hotels. The samples include hotel employees of different nationalities and a total of 1241 valid questionnaires were returned. This research conducts empirical analysis on the influences of coworkers' relationship, job satisfaction, and organizational commitment through regression analysis. Results of this research show that job satisfaction is indeed an intervening variable to the relationship between coworkers' relationship and organizational commitment, but the intervening effect is only partial. This research also found that, when influenced by the intervening effect of job satisfaction, the no significant correlation is found in between the factors of coworkers' relationship and moral-based organizational commitment.

Key words: Coworkers' relationship, job satisfaction, organizational commitment, service industry.

INTRODUCTION

In advanced nations, the service industry contributes an average of over 55% of the GDP, and the ratio is increasing over the years. Therefore, we can say that the service industry is the mainstream industry in advanced nations (Council for Economic Planning and Development, Executive Yuan, Taiwan, 2009). Among the service industries, the international hotel is a chimney-free industry that has attracted a great share of attention among the world's nations. It is seen as one of the star industries of the 21st Century and expected to bring significant employment opportunities. The world travel and tourism council (WTTC) forecasts that the demand for global travel and tourism will reach US\$10.7 trillion by 2015 and expected to create a production value of US\$2.7 trillion from relevant services, as well as an increase in the employee population from 222 to 270 million (Tan, 2005).

The attributes of the service industry is very different from the manufacturing or distribution industries; therefore, the management of the employees of the service industry would also be very different from employees of other industries. Shaffer (1953) pointed out in his research

in his research that job satisfaction reflects a sense of satisfaction in the employees, which directly affects the employee's work performance and vitality. Factors that influence job satisfaction can be grouped into two categories: 1. personal attributes: including age, education, gender, intelligence, and personality. 2. Job attributes: including organization and management, salary, job security, repetitiveness of the job, supervision, and communication (Fournet et al., 1966). From the dimensions of job attributes, we can see that there is a close relationship between the factors of job attributes and the management within an organization and an organization's internal communication and management have direct relations to the coworkers' relationship, supervisor-subordinate relationship, interaction between workers and the organization.

The communication behavior, as part of the interactive relationship between the coworkers and the superiors, have multiple effects to the operations of an organization, for example, employees' job satisfaction, work motivation, work efficiency, and innovative abilities (Adams et al., 1988; Albrecht and Hall, 1991; Stewart et al., 1986; Tjosvold, 1984). At the same time, Hsu Chao-Chin (2000) indicated that coworkers' relationship has a positive correlation to the relationship between job satisfaction and organizational commitment and "organizational

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commitment" entails how much an employee identifies to his/her organization (Mowday et al., 1982). Therefore, a manager should try to maximize the rate of employee job satisfaction in order to gain high level of identification towards coworkers' relationship (Robert and Anegelo, 1995). In summary, internal management of an organization deals with the relationships among the supervisors, the subordinates, the coworkers, and the organization, but studies relating to the correlations between the factors of coworkers' relationships, job satisfaction, and organizational commitment are rather insufficient. The sub-industry of international hotel is one of the significant components of the service industry. Therefore, this researches targets on the sub-industry of international hotels of the service industry for the studies on the correlations between the following factors: coworkers' relationships, job satisfaction, and organizational commitment, since it is an important subject in both academic research and industrial practice.

LITERATURE REVIEW AND HYPOTHESES

Coworkers' relationship and job satisfaction

Generally, coworkers' relationship contained in an organization is a type of interpersonal relationship based on two concepts: the leader-member relationship and coworkers' interactions. Some of the significant theories relating to interpersonal relationship in an organization include: the Interpersonal Relationship Three-dimensional Theory, the Social Exchange Theory, and the A-B-X Theory. Among which, the Social Exchange Theory has been amended several times, which considers leader-member relationship not just a relationship between the vertical pair but also a relationship between the horizontal pair between coworkers, other groups, or even the whole organization. Thus, in recent years, many researchers have expanded the scope of their studies (Uhl-Bien and Graen, 1992; Kao, 2008; Weng et al., 2010).

On the subject of the relations between coworkers' relationship and job satisfaction, Ducharme and Martin (2000) conducted a large-scale investigation on the problems relating to job satisfaction issues targeted on the employees of international service providers. The studies found that the factors of work group interactions and coworkers' support have significant positive correlation to job satisfaction. Therefore, this research infers that, in the service industry, coworkers' relationship can be subdivided into two dimensions- leader-member relationship and coworkers' interactions. Fiedler et al. (1977) think that coworkers' relationship is the friendship, acceptance, and loyalty built up in between the members of a group, which also refers to the level of the subordinates' confidence, trust, and respect in their leaders (Chen, 1989). Meanwhile, if the managers can win support and trust from the subordinates and the coworkers, the managers' ability to influence will be much better than the

better than the unsupported managers (Fiedler et al., 1977). Graen and Cashman (1975) proposed that, between the leaders and subordinates, the subordinates play a detrimental part in the relationship, and Tsao (1990) research indicated that the quality of the coworkers' relationship reveals the effectiveness of communication between the two parties, as well as a representation of how well the two parties coordinate with one another. Coworkers' behaviors also affect the relationship between the coworkers. The above-mentioned research also indicated that job satisfaction has a positive correlation to the leader-member relationship and how well the coworkers' coordinate with one another; that is, the better the coordinative relationship between the leaders and subordinates, the higher the job satisfaction rate would be. Since the attitude of the employees in the service industry affects customers' perceptions to the quality of the service, service-oriented businesses must seek effective management methods. Trust is a fundamental element in management. When a subordinate trusts his/her manager and interacts with his/her manager on good terms, he/she would be more willing to take the damages incurred from the behaviors of the managers or coworkers because the subordinate believes that his/her own rights would not be overlooked (Lin and Lin, 2006).

Driscoll (1978) and Liou (1995) pointed out that trust of the subordinates and coworkers affects the rate of job satisfaction, Kistin (2005), Liao et al. (2008), and Weng et al. (2010) also indicated that trust in the leaders and coworkers affect the rate of job satisfaction, while the relationship between the leaders and the subordinates reveals the level of confidence, trust, and respect from the subordinates to the leaders. Hackett and Guion (1985), Bass (1990), and Robbins (2003) have also mentioned that coworkers' relationship affects job satisfaction. From the above discussion, this research infers that coworkers' relationship affects job satisfaction and proposes Hypothesis 1.

H₁: Coworkers' relationship has positive effect on job satisfaction.

Job satisfaction and organizational commitment

Job satisfaction is a result of a person's interpretation of the feeling, perception, or emotion towards his/her job (Smith et al., 1969); at the same time, job satisfaction is also an attitude of a person's subjective judgment and feeling towards the level of satisfaction on factors, including benefits and training, communication and care, network resources, and the atmosphere in the organization (Pan, 2005), as well as a person's feeling or emotional reaction toward the role he/she plays in the organization (Vroom, 1964). Job satisfaction is the employees' overall assessment on their jobs. In the service industry, job satisfaction ensures that the employees receive customers with dignity (Arnett et al., 2002).

Many researches pointed out that job satisfaction has positive influence to organizational commitment (Price and Mueller, 1986; Mathieu, 1988; Matheieu and Hamel, 1989; Bartle et al., 2002; Liao et al., 2008). Empirical studies pointed out that job satisfaction is a prerequisite to organizational commitment (Brown and Peterson, 1994; Mathieu and Hamel, 1989; Reichers, 1985) and, in the service industry, job satisfaction affects organizational commitment and further influence service behaviors (Testa, 2001). Fletcher and Williams (1996) and Yavas and Bodur (1999) pointed out that job satisfaction has positive correlation to organizational commitment. Furthermore, compared to employees with lower level of job satisfaction, employees with higher job satisfaction also have higher level of organizational commitment (Woo et al., 2005).

Based on the above discussion, this research proposes Hypothesis 2.

H₂: Job satisfaction has positive effect on organizational commitment.

The relationships between coworkers' relationship, job satisfaction, and organizational commitment in the service industry and the relevant variables

At present, studies on the coworkers' relationship in the service industry are relatively scarce. In the Contingency Theory of Leadership proposed by Fieldler et al. (1977), the relationship between coworkers is the most important factor in the leadership situation control variable. Although good coworkers' relationship does not necessarily mean high leadership effectiveness, among all situational control variables, coworkers' relationship has the most significant power to influence (Fiedler and Chemers, 1984). When a leader thinks that the subordinates are supportive, he/she has a high degree of trust in that the decisions made by the subordinates during work are accurate (Beach and Beach, 1978).

A manager's leadership, employees' work attitude, and coworkers' interactions have the power of influence to work performance which cannot be overlooked. In another word, if a company wishes to have high work performance and high job satisfaction, good coordination between employees would be a prerequisite (Tsao, 1990). Both Hackett and Guion (1985) and Bass (1990) mentioned in their researches that coworkers' relationship affects job satisfaction. Job satisfaction is the employees' overall assessment on their jobs. In the service industry, job satisfaction ensures that employees receive customers with dignity (Arnett et al., 2002). Since customer reception is significant in terms of establishing customer relations, employees' job satisfaction would be very important to the service industry since businesses in this industry rely heavily on customer loyalty (Arnet et al., 2002). Many researches also pointed out that job satisfaction has a positive influence to organizational

commitment (Price and Mueller, 1986; Mathieu, 1988; Matheieu and Hamel, 1989; Bartle et al., 2002; Liao et al., 2008). The rate of job satisfaction and organizational commitment has positive correlation with work performance (Fletcher and Williams, 1996; Yavas and Bodur, 1999; Sy et al., 2006; Othman et al., 2008; Singh, 2008). Empirical studies pointed out that job satisfaction is a prerequisite of organizational commitment (Brown and Peterson, 1994; Mathieu and Hamel, 1989; Reichers, 1985). Discoll (1978) and Liou (1985) indicated in their researches that the trust of subordinates and coworkers affect job satisfaction. Kristin (2005), Liao et al. (2008), and Weng et al. (2010) also pointed out that trust of the leader and coworkers affect job satisfaction, and the relationship between a leader and their subordinates also means the level of confidence, trust, and respect from the subordinates to the leader. In the aspect of leader-member relationship and coworkers' interactions, Hackett and Guion (1985), Bass (1990), and Robbins (2003) proposed that leader-member relationship and coworkers' interactions affect job satisfaction. Fletcher and Williams (1996) and Yavas and Bodur (1999) pointed out that job satisfaction has positive correlation with organizational commitment. Furthermore, compared to employees with lower level of job satisfaction, employees with higher job satisfaction also have higher level of organizational commitment (Woo et al., 2005).

In the service industry, job satisfaction affects organizational commitment and further affects service behaviors (Testa, 2001). Osman et al. (2006) found in their research that a sense of self-competence and individual competitiveness affect how much an employee becomes involved in their job, and job involvement affects job satisfaction and performance. Job satisfaction, on the other hand, affects organizational citizenship behaviors, and the sense of self-competence affects job satisfaction, while job satisfaction affects performance, as well as how likely an employee will leave his/her job. From the above discussion, we found that job satisfaction affects a wide-scope of variables and is connected to organizational commitment. Furthermore, Brown et al. (2004) conducted a study on 12 chain restaurants in the USA and found that job satisfaction affects organizational commitment. By consolidating the above discussion, we can infer that coworkers' relationship affects job satisfaction and job satisfaction affects organizational commitment.

Based on the above discussion, this research proposes Hypothesis 3.

H₃: Through the intervening effect of "job satisfaction", "coworkers' relationship" has positive effect on "organizational commitment".

RESEARCH METHODOLOGY

Objective and questionnaire

This research aims to explore the correlations between coworkers'

relationship and job satisfaction/organizational commitment in the service industry and facilitate study on the effect of job satisfaction as an intervening variable, with a goal to understand the correlations between coworkers' relationship, job satisfaction, and organizational commitment. This research uses questionnaire survey to explore the correlation between coworkers' relationship, job satisfaction, and organizational commitment. The scales used include four parts: the coworkers' relationship scale, job satisfaction scale, organizational commitment scale, and personal variables scale. The dimensions of each variable is measured by the Likert 5 point scale and the surveyees select a level of agreement from "strongly disagree", "disagree", "neutral", "agree", and "strongly agree" for each question which best represents their personal opinions, and each of the levels is assigned with a numerical score: 1, 2, 3, 4, and 5 respectively.

The scores from all questions are then totaled and a high score in a particular dimension means the dimension has stronger power to influence.

Measuring coworkers' relationship

The scale of coworkers' relationship is modified from the scale of the relationship between the leaders and the subordinates based on the viewpoints proposed by Fiedler et al. (1977), which is then split into two scales: the leader-member relationship scale and coworkers' interactions scale. The relationship between the leaders and the subordinates must also be taken into consideration when determining whether management is effective. Therefore, the operational definition of "leader-member relationship" is: "The friendship, acceptance, and loyalty of the members of a group towards the leader", which contains a total of six questions. As for the part of coworkers' interactions, this research attempts to measure the interactions between coworkers in the service industry; therefore, it is defined as: "The relationship and interactions between coworkers in the service industry".

In the questionnaire, the questions, "I do not get along with my coworkers" and "I work together with my coworkers to complete the mission", aim to explore the interactions between coworkers. Therefore, eight questions were designed for the section of coworkers' relationship in this research.

Measuring job satisfaction

This research adopts the job description index (JDI) used by Gregson (1990) and the JDI scale is modified from the JDI scale proposed by Smith et al. (1969). This research derived three dimensions, work, salary, and promotion, from the two major factors, coworkers and leader, in the scale of Smith et al (1969). The dimension of "work" measures the surveyees' feelings towards their current job; the "salary" dimension measures the surveyees' satisfaction on their salaries and the gap between their expectations and the true salary income; and the dimension of "promotion" measures employees' feelings towards the administrative procedures relating to promotion. To avoid occurrence of common method variance, questions with high similarity are deleted.

The final questionnaire contains five questions in the "work" dimension, four questions in the "salary" dimension, and three questions in the "promotion" dimension.

Measuring organizational commitment

This study uses the scale of Allen and Meyer (1990) and the scale is sub-divided into three major dimensions: the first dimension is "affective commitment", which refers to employees' psychological and emotional identification towards the organization and how they

treasure their relationships with the organization. The second dimension is "continuance commitment", which refers to employees' basic interests and their willingness to stay in the organization. The third dimension is "normative commitment", which refers to employees' firm belief that organizational loyalty is a necessary value that needs to be strictly observed.

To avoid the occurrence of common method variance, questions with high similarity are deleted. The final questionnaire contains seven questions in the "affective commitment" dimension, five questions in the "continuance commitment" dimension, and three questions in the "normative commitment" dimension.

Personal variables

This section aims to collect the surveyees' personal data for analysis purpose and as a reference for establishment of conclusions. The survey of personal data is designed with reference to the study of personal data for the service industry by Osman et al. (2006) and the variables include, gender, age, education, and job title. For the special needs of this research, four items are used, including gender, education, nationality, and the work department.

Data collection

This research targets on 60 international hotels published by the Tourism Bureau (Ministry of Transportation and Communications) and the subject sample is composed of the frontline employees who come into direct contact with the customers, including workers at food and beverage, housekeeping, and concierge (front desk) and the direct supervisors of frontline employees. The questionnaires were dispatched by post to a contact person in each of the hotels, who takes charge to hand out and collect the questionnaires. The survey period started from the end of December 2009 to January 2010.

A total of 2150 questionnaires were handed out and 1294 questionnaires were returned, registering a return rate of 60.18%. After deducting 53 incomplete questionnaires and questionnaires filled out by non-target group surveyees, a total of 1,241 valid questionnaires were received.

DATA ANALYSES AND RESULTS

Analysis of descriptive statistics

Sample distribution of this research is shown in Table 1. In the dimension of "gender", female workers take up 2.4 times more than male workers in international hotels and, in the dimension of "education", the majority have university degrees, followed by college degrees. In the dimension of "nationality", the majority is Taiwanese, followed by workers from Southeast Asia. In the dimension of work department, the department of food and beverage has the largest group of employees and the "concierge" has the smallest group of employees.

Factor and reliability analyses

This research first uses Kaiser's (1974) Kaiser-Meyer-Olkin measurement of sampling adequacy (KMO) to determine whether the scales' variables are suitable for factor analysis. In this research, the KMO value of job

Table 1. Sample distribution.

Sample		No. of person	%
Gender	Male	365	29
	Female	876	71
	High school (or lower)	278	22.4
Education	College	316	25.5
	University (or higher)	647	52.1
	Europe and US	125	10.1
	Japan and Korea	143	11.5
Nationality	Southeast Asia	199	16.0
	Taiwan	676	54.5
	Others	98	7.9
	Food and beverage	644	51.9
Work Department	Concierge (front desk)	401	32.3
	Housekeeping	196	15.8

Table 2. Regression analysis for the effect of coworkers' relationship to job satisfaction.

Independent variable - Coworkers' relationship	Dependent variable-job satisfaction		
	Work	Promotion	Salary
Leader-member relationship	0.350***	0.373***	0.418***
Co-workers' interactions	0.301***	0.473***	0.228***
F-value	39.928***	20.887***	24.047***
R ²	0.506	0.349	0.381
Adj. R ²	0.493	0.332	0.366

The regression coefficient presented in the table is a standardized coefficient. * $p < .05$, ** $p < .01$, *** $p < .001$.

satisfaction is .883, the KMO value of coworkers' relationship is .871, and the KMO value of organizational commitment is .885. All KMO values reach above .80; therefore, all are suitable for factor analysis. Following which, factor analysis is conducted to derive the construct validity. By using principal component analysis, an orthogonal rotation is conducted through the varimax method to derive the main factors of job satisfaction, coworkers' relationship, and organizational commitment. In the dimension of job satisfaction, a factor analysis derived three factors (work, promotion, and salary) and its cumulative variance is 55.93%. Among which, the eigenvalue of "work" is 5.26 and total variance is 25.03%.

The eigenvalue of "promotion" is 3.60 and its total variance is 17.14%. The eigenvalue of "salary" is 2.89 and the total variance is 13.76%. In the dimension of coworkers' relationship, a factor analysis derives a total variance of 59.92%. In the dimension of organizational commitment, a factor analysis derives three factors (affective commitment, continuance commitment, and

normative commitment) and the cumulative variance is 71.62%. Among which, the eigenvalue of affective commitment is 4.39 and the total variance is 27.43%. The eigenvalue of "continuance commitment" is 4.23 and the total variance is 26.45%. The eigenvalue of "normative commitment" is 2.84 and the total variance is 17.74%. For reliability, the scales of job satisfaction, coworkers' relationship, and organizational commitment reach the level of Cronbach's α value above .80 and the Cronbach's α values of all factors reach the level of .70. This shows that all scales used in this research have good internal consistency.

Regression analysis

Effect of coworkers' relationship on job satisfaction

As shown in Table 2, the dimension of "work" in "job satisfaction" is set as a dependent variable. Results of

Table 3. Regression analysis of the effect of job satisfaction on organizational commitment.

Independent variable - Job satisfaction	Dependent variable-organizational commitment		
	Affective commitment	Continuance commitment	Normative commitment
Work	0.420**	0.503***	0.134
Promotion	0.168*	0.145	0.125
Salary	0.144	0.177*	0.131
F value	10.586***	22.283***	10.016*
R ²	0.213	0.364	0.206
Adjust R ²	0.193	0.347	0.161

The regression coefficient presented in the table is a standardized coefficient. * $p < .05$, ** $p < .01$, *** $p < .001$.

this research show that coworkers' relationship (in the two dimensions of "leader-member relationship" and "coworkers' mutual help") has significant effect on "work". The interpretative validity of the effect of "coworkers' relationship" to "work" is 50.6% and coworkers' relationship is found to have significant positive effect on "work". When the dimension of "promotion" in "job satisfaction" is set as a dependent variable, results of this research show that coworkers' relationship has significant effect on "promotion". The interpretative validity is 34.9% and coworkers' relationship is found to have a significant positive effect on "promotion".

When the dimension of "salary" in "job satisfaction" is set as a dependent variable, results of this research show that coworkers' relationship has significant effect on "salary". The interpretative validity is 38.1% and coworkers' relationship is found to have significant positive effect on "salary". Based on the above analysis, H₁ of this research sustains.

Effect of job satisfaction on organizational commitment

As shown in Table 3 below, affective commitment is set as a dependent variable. Results of this research show that job satisfaction (work, promotion, and salary) has significant positive effect on affective commitment and the interpretative validity of the effect of job satisfaction to affective commitment is 21.3%. In which, "work" and "promotion" has significant positive effect on affective commitment. When continuance commitment is set as a dependent variable, results of this research show that job satisfaction has significant positive effect on continuance commitment and the interpretative validity of the effect of job satisfaction to continuance commitment is 36.4%. In which, "work" and "salary" has significant positive effect on continuance commitment.

When normative commitment is set as a dependent variable, results of this research shows that job satisfaction has significant positive effect on normative commitment and the interpretative validity of the effect of job satisfaction to normative commitment is 20.6%. Based

on the above analysis, H₂ of this research sustains.

Intervening effect of job satisfaction on the relationship between coworkers' relationship and organizational commitment

This research makes an attempt to empirically explore the intervening effect of job satisfaction (work, promotion, and salary) in between coworkers' relationship (leader-member relationship and coworkers' interactions) and organizational commitment (affective commitment, continuance commitment, and normative commitment). This research adopted the recommendation of Baron and Kenny (1986), which proposes that the regression model must comply with three major components during verification of the intervening variable: 1. Independent variable and intervening variable both have significant relationships with the dependent variable; 2. A significant relationship exists in between the independent variable and intervening variable; and 3. After placing in the intervening variable, the relationship between the independent variable and the dependent variable is weakened. Furthermore, full intervening effect refers to the phenomenon that adding of the intervening variable weakens the relationship between the original independent variable and dependent variable to the level of insignificance. Partial intervening effect refers to the phenomenon that adding of the intervening variable weakens the relationship between the independent variable and dependent variable to a weaker or less significant level. First of all, this research verifies whether the regression model complies with the variables 1 and 2; results of the analysis confirm their compliance. Following the verification, a two-stage linear regression model is constructed to verify the compliance with the 3rd variable.

With the dimension of "work" in the category of "job satisfaction" as the intervening variable

In the model used to verify the relationship between the dimensions of "leader-member relationship" (coworkers'

Table 4. The intervening effect of "work" (job satisfaction) on the relationship between leader-member relationship and organizational commitment.

Independent variable	Dependent variable - Organizational commitment					
	Affective commitment		Continuance commitment		Normative commitment	
	Model 1	Mode 2	Model 1	Model 2	Model 1	Model 2
Coworkers' relationship- leader-member relationship	0.377***	0.217*	0.386***	0.318**	0.409***	0.334**
Job satisfaction-work		0.352**		0.561***		0.130
F value	19.744**	16.780***	20.871***	31.782***	23.890***	12.817***
R ²	0.142	0.221	0.149	0.350	0.167	0.178
Adjust R ²	0.135	0.208	0.142	0.339	0.160	0.165
ΔR ²		0.079		0.201		0.011

The regression coefficient presented is a standardized coefficient. * $p < .05$, ** $p < .01$, *** $p < .001$.

relationship) and "work" (job satisfaction), as shown in Table 4, when affective commitment is set as the dependent variable, a significant relationship exists between the original independent variable (leader-member relationship) and dependant variable (affective commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.377 to 0.217 but still maintains at $p < .05$). The intervening variable reaches the level of significance ($p < .01$); therefore, "work" (job satisfaction) has a partial intervening effect on the relationship between leader-member relationship and affective commitment in the service industry.

When the continuance commitment is set as the dependent variable, a significant relationship exists between the original independent variable (leader-member relationship) and dependant variable (continuance commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.386 to 0.318 but still maintains at $p < .01$). The intervening variable reaches the level of significance ($p < .001$); therefore, "work" (job satisfaction) has a

partial intervening effect on the relationship between leader-member relationship and continuance commitment in the service industry. When the normative commitment is set as the dependent variable, a significant relationship exists between the original independent variable (leader-member relationship) and dependant variable (normative commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.409 to 0.334 but still maintains at $p < .01$). The intervening variable did not reach the level of significance ($p < .05$); therefore, "work" (job satisfaction) has no intervening effect on the relationship between leader-member relationship and normative commitment in the service industry.

In the model used to verify the relationship between the dimensions of "coworkers' interactions" (coworkers' relationship) and "work" (job satisfaction), as shown in Table 5, when the affective commitment is set as the dependent variable, a significant relationship exists between the original independent variable (coworkers' interactions) and dependant variable (affective commitment), but when an intervening variable is

placed in, the relationsdent variable and dependent variable is weakened (β value drops from 0.470 to 0.318 but still maintains at $p < .01$). The intervening variable reaches the level of significance ($p < .01$); therefore, "work" (job satisfaction) has a partial intervening effect on the relationship between coworkers' interactions and affective commitment in the service industry.

When the continuance commitment is set as the dependent variable, a significant relationship exists between the original independent variable (coworkers' interactions) and dependant variable (continuance commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.708 to 0.550 but still maintains at $p < .001$). The intervening variable reaches the level of significance ($p < .001$); therefore, "work" (job satisfaction) has a partial intervening effect on the relationship between coworkers' interactions and continuance commitment in the service industry. When the normative commitment is set as the dependent variable, a significant relationship exists between the original independent variable (coworkers' interactions) and dependant variable (normative

Table 5. The intervening effect of "work" (job satisfaction) on the relationship between leader-member relationship and organizational commitment.

Independent variable	Dependent variable- Organizational commitment					
	Financial performance		Product innovation		Management innovation	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Coworkers' relationship- coworkers' interactions	0.470***	0.318**	0.708***	0.550***	0.492***	0.339**
Job satisfaction-work		0.279**		0.293***		0.146
F value	33.673**	22.438***	119.657***	75.643***	38.079***	22.548***
R ²	0.221	0.276	0.501	0.562	0.242	0.530
Adj. R ²	0.214	0.263	0.497	0.554	0.236	0.522
ΔR ²		0.055		0.061		0.288

The regression coefficient presented in the table is a standardized coefficient. **p*<.05, ***p*<.01, ****p*<.001.

Table 6. The intervening effect of "promotion" (job satisfaction) on the relationship between leader-member relationship and organizational commitment.

Independent variable	Dependent variable - Organizational commitment					
	Affective commitment		Continuance commitment		Normative commitment	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Coworkers' relationship- leader-member relationship	0.377***	0.299**	0.386***	0.266**	0.409***	0.356**
Job satisfaction-promotion		0.212*		0.324***		0.110
F value	19.744***	13.034***	20.871***	18.631***	23.890***	12.650***
R ²	0.142	0.181	0.149	0.240	0.167	0.177
Adj. R ²	0.135	0.167	0.142	0.227	0.160	0.163
ΔR ²		0.039		0.091		0.010

The regression coefficient presented in the table is a standardized coefficient. **p*<.05, ***p*<.01, ****p*<.001.

commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.492 to 0.339 but still maintains at *p* <.01).

The intervening variable did not reach the level of significance (*p*>05); therefore, "work" (job satisfaction) has no intervening effect on the relationship between coworkers' interactions and normative commitment in the service industry.

With the dimension of "promotion" in the category of "job satisfaction" as the intervening variable

In the model used to verify the relationship between the dimensions of "leader-member relationship" (coworkers' relationship) and "promotion" (job satisfaction), as shown in Table 6, when the affective commitment is set as the dependent variable, a significant relationship exists between

the original independent variable (leader-member relationship) and dependant variable (affective commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.377 to 0.299 but still maintains at *p* <.01). The intervening variable reaches the level of significance (*p* <.05); therefore, "promotion" (job satisfaction) has a partial intervening effect on the relationship between

Table 7. The intervening effect of "promotion" (job satisfaction) to the relationship between coworkers' interactions and organizational commitment.

Independent variable	Dependent variable - Organizational commitment					
	Financial performance		Product innovation		Management innovation	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Coworkers' relationship - Coworkers' interactions	0.470***	0.406***	0.708***	0.643***	0.492***	0.375***
Job satisfaction-promotion		0.256**		0.259**		0.125
F-value	33.673***	18.705***	119.657***	64.538***	38.079***	33.077***
R ²	0.221	0.241	0.501	0.522	0.242	0.359
Adj. R ²	0.214	0.228	0.497	0.514	0.236	0.348
ΔR^2		0.020		0.021		0.117

The regression coefficient presented in the table is a standardized coefficient. * $p < .05$, ** $p < .01$, *** $p < .001$.

leader-member relationship and affective commitment in the service industry.

When the continuance commitment is set as the dependent variable, a significant relationship exists between the original independent variable (leader-member relationship) and dependant variable (continuance commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.386 to 0.266 but still maintains at $p < .01$). The intervening variable reaches the level of significance ($p < .001$); therefore, "promotion" (job satisfaction) has a partial intervening effect on the relationship between leader-member relationship and continuance commitment in the service industry. When the normative commitment is set as the dependent variable, a significant relationship exists between the original independent variable (leader-member relationship) and dependant variable (normative commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.409 to 0.356 but still maintains at $p < .01$).

The intervening variable did not reach the level of significance ($p > .05$); therefore, "promotion" (job satisfaction) has no intervening effect on the relationship between leader-member relationship and normative commitment in the service industry.

In the model used to verify the relationship between the dimensions of "coworkers' interactions" (coworkers' relationship) and "promotion" (job satisfaction), as shown in Table 7, when the affective commitment is set as the dependent variable, a significant relationship exists between the original independent variable (coworkers' interactions) and dependant variable (affective commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.470 to 0.406 but still maintains at $p < .001$). The intervening variable reaches the level of significance ($p < .01$); therefore, "promotion" (job satisfaction) has a partial intervening effect on the relationship between coworkers' interactions and affective commitment in the service industry.

When the continuance commitment is set as the dependent variable, a significant relationship

exists between the original independent variable (coworkers' interactions) and dependant variable (continuance commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.708 to 0.643 but still maintains at $p < .001$). The intervening variable reaches the level of significance ($p < .01$); therefore, "promotion" (job satisfaction) has a partial intervening effect on the relationship between coworkers' interactions and continuance commitment in the service industry. When normative commitment is set as the dependent variable, a significant relationship exists between the original independent variable (coworkers' interactions) and dependant variable (normative commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.492 to 0.375 but still maintains at $p < .001$).

The intervening variable did not reach the level of significance ($p > .05$); therefore, "promotion" (job satisfaction) has no intervening effect on the relationship between coworkers' interactions and

Table 8. The intervening effect of "salary" (job satisfaction) on the relationship between coworkers' relationship and organizational commitment.

Independent variable	Dependent variable - Organizational commitment					
	Affective commitment		Continuance commitment		Normative commitment	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Coworkers' relationship- leader-member relationship	0.377***	0.305**	0.386***	0.227*	0.409***	0.321**
Job satisfaction-salary		0.310**		0.279**		0.099
F value	19.744**	36.833***	20.871***	14.913***	23.890***	10.325***
R ²	0.142	0.443	0.149	0.202	0.167	0.149
Adj. R ²	0.135	0.433	0.142	0.188	0.160	0.135
ΔR ²		0.065		0.053		0.007

The regression coefficient presented is a standardized coefficient. * $p < .05$, ** $p < .01$, *** $p < .001$.

normative commitment in the service industry.

With the dimension of "salary" in the category of "job satisfaction" as the intervening variable

In the model used to verify the relationship between the dimensions of "leader-member relationship" (coworkers' relationship) and "salary" (job satisfaction), as shown in Table 8, when the affective commitment is set as the dependent variable, a significant relationship exists between the original independent variable (leader-member relationship) and dependant variable (affective commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.377 to 0.305 but still maintains at $p < .01$). The intervening variable reaches the level of significance ($p < .01$); therefore, "salary" (job satisfaction) has a partial intervening effect on the relationship between leader-member relationship and affective commitment in the service industry.

When the continuance commitment is set as the dependent variable, a significant relationship

exists between the original independent variable (leader-member relationship) and dependant variable (continuance commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.386 to 0.227 but still maintains at $p < .05$). The intervening variable reaches the level of significance ($p < .01$); therefore, "salary" (job satisfaction) has a partial intervening effect on the relationship between leader-member relationship and continuance commitment in the service industry. When the normative commitment is set as the dependent variable, a significant relationship exists between the original independent variable (leader-member relationship) and dependant variable (normative commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.409 to 0.321 but still maintains at $p < .01$). The intervening variable did not reach the level of significance ($p > .05$); therefore, "salary" (job satisfaction) has no intervening effect on the relationship between leader-member relationship and normative commitment in the service industry. In the model used to verify the relationship

between the dimensions of "coworkers' interactions" (coworkers' relationship) and "salary" (job satisfaction), as shown in Table 9, when the affective commitment is set as the dependent variable, a significant relationship exists between the original independent variable (coworkers' interactions) and dependant variable (affective commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.470 to 0.425 but still maintains at $p < .001$). The intervening variable reaches the level of significance ($p < .01$); therefore, "salary" (job satisfaction) has a partial intervening effect on the relationship between coworkers' interactions and affective commitment in the service industry.

When the continuance commitment is set as the dependent variable, a significant relationship exists between the original independent variable (coworkers' interactions) and dependant variable (continuance commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.708 to 0.648 but still maintains at $p < .001$). The intervening variable reaches the level of significance

Table 9. The intervening effect of "salary" (job satisfaction) on the relationship between coworkers' interactions and organizational commitment.

Independent variable	Dependent variable - Organizational commitment					
	Financial performance		Product innovation		Management innovation	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Coworkers' relationship- coworkers' interactions	0.470***	0.425***	0.708***	0.648**	0.492***	0.320***
Job satisfaction-salary		0.288**		0.149*		0.116
F value	33.673***	17.740***	119.657***	63.956***	38.079***	39.191***
R ²	0.221	0.231	0.501	0.520	0.242	0.399
Adj. R ²	0.214	0.218	0.497	0.512	0.236	0.389
ΔR^2		0.010		0.019		0.157

The regression coefficient presented in the table is a standardized coefficient. * $p < .05$, ** $p < .01$, *** $p < .001$.

significance ($p < .05$); therefore, "salary" (job satisfaction) has a partial intervening effect on the relationship between coworkers' interactions and continuance commitment in the service industry.

When the normative commitment is set as the dependent variable, a significant relationship exists between the original independent variable (coworkers' interactions) and dependant variable (normative commitment), but when an intervening variable is placed in, the relationship between the independent variable and dependent variable is weakened (β value drops from 0.492 to 0.320 but still maintains at $p < .001$). The intervening variable did not reach the level of significance ($p > .05$); therefore, "salary" (job satisfaction) has no intervening effect on the relationship between coworkers' interactions and normative commitment in the service industry.

Summarizing the analysis in Tables 4 to 9, H3 of this research sustains partially. That is, job satisfaction as an intervening variable has intervening effects to the relationship between coworkers' relationship and organizational commitment in the service industry, but the intervening effect is only partial. In which, the effect on "normative commitment" (organizational commitment) is not

significant.

Estimating the common method variance

To ensure the quality of the data, this research has also adopted some methods to avoid common method variance (CMV), which is a type of systematic errors occurring because of the measuring methods used in this research. For example, if we assume that both the scales of independent variable and dependent variable are answered by the same person, the scores of these two scales may have homology bias due to certain factors of the answerer. Other factors, such as the attributes of the questions, the sequence of the questions, and the scenario sequence of the measurements, may also cause common method variance). For preventive measures, this research adopted the recommendations of Podsakoff and Organ (1986) and Williams et al. (1989), and arranged the dependent variables and independent variables in random orders, so that the cause-effect relationships between the variables would not be detected by the surveyees. After the questionnaires are

collected, statistic methods were implemented to rectify the problem.

First of all, the ratio of the first factor of each variable to the common method variance of each variable is calculated through the exploratory factor analysis. After which, the recommendation of McEvily and Marcus (2005) and Podsakoff and Organ (1986) was utilized to verify factor analysis and estimate the common method variance. Results of the analysis show that X^2 value of the measurement model is far lower than the value ($\Delta X^2 = 1259.963$, $\Delta d.f. = 36$, $p < .05$) of the single factor model. This shows that the model has high level of goodness-of-fit; therefore, this model should not have a problem of common method variance.

CONCLUSIONS AND CONNOTATION FOR MANAGEMENT PRACTICE

This research investigates the coworkers' relationship (antecedents) from the angles of the leader and the members and explores its relationship to organizational commitment (outcome variable) through the factor of job satisfaction (intervening variable). In the development of this research and

Table 10. Verifications of hypotheses.

	Hypotheses	Results	Remark
H ₁	Coworkers' relationship has positive effect on job satisfaction.	Sustain	When leader-member relationship and coworkers' interactions (coworkers' relationship) are better, the level of job satisfaction is higher.
H ₂	Job satisfaction has positive effect on organizational commitment.	Sustain	The higher the level of job satisfaction, the higher the level of organizational commitment would be.
H ₃	Through the intervening effect of "job satisfaction", coworkers' relationship has positive effect on organizational commitment.	Partially sustain	When leader-member relationship and coworkers' interactions (coworkers' relationship) are better, the level of job satisfaction would be higher, as well as affective organizational commitment and continuance organizational commitment (partially intervening effect). However, the effect of normative organizational commitment is not significant, that is, not subjected to the intervening effect of job satisfaction.

analysis, three hypotheses were developed based on the research subjects, the employees of international hotels (service industry), and a questionnaire was designed based on the relevant empirical studies. Scales used in this research are verified by a validity and regression analysis to ensure the reasonableness and adequacy.

A total of 1241 valid questionnaires were returned and the data was analyzed by a regression analysis to verify the hypotheses and derive the conclusions and connotations for management practice.

Conclusions

This research has been developed based on literature analysis and the hypotheses. Through statistical analysis, the results are verified and organized into Table 10.

CONNOTATIONS OF MANAGEMENT PRACTICE AND FOLLOW-UP STUDIES

The products of service industry are produced

through the delivery process carried out by the employees. Therefore, employees' service attitude has certain effect on the products. The actions of the management can effectively influence employees' behaviors and respond in time to maximize the quality of services. Therefore, "people" play a key role in the service industry. This research starts from the factors of "humanity" to explore the effect of coworkers' relationship to job satisfaction and organizational commitment.

1. From the research, we found that, in the service industry, coworkers' relationship has positive effect on job satisfaction, job satisfaction also has positive effect on organizational commitment, and job satisfaction plays an intervening role in between coworkers' relationship and organizational commitment. Therefore, if a business in the service industry wishes to build up higher employee organizational commitment, the business must tackle the problem from leader-member relationship and coworkers' interactions. A manager should make attempts to build closer relationships with his subordinates at work or privately through the official or non-official

channels and establish employees' trust in the leader through the closer relationship. Therefore, trust is a fundamental element in management. When a subordinate trusts his/her manager, he/she would be more willing to take the damages incurred from the behaviors of the managers or coworkers because the subordinate believes that his/her own rights would not be overlooked (Lin and Lin, 2006).

Fiedler et al. (1977) mentioned that if a manager can win the support and trust from the subordinates and the coworkers, the managers' ability to influence will be much better than the unsupported managers and, in between the leaders and subordinates, the subordinates play a detrimental part in the relationship (Graen and Cashman, 1975; Liao et al., 2008). Therefore, in both private life and workplace, a manager in the service industry should try to close up the distance to the subordinates and coworkers since gaining trust from the subordinates and coworkers can achieve effective management. An employee, on the other hand, should be aware that behaviors of the leader and coworkers are interactive in an organization. Therefore, employees should no

charge forward without supervision and should constantly make adjusts to coordinate with the leaders and coworkers because a coordinated team will create core competitiveness and bring maximum benefit to the organization.

2. Based on the scale proposed by Smith et al. (1969), this research derived three dimensions for the intervening variable of job satisfaction. Based on the scale of organizational commitment proposed by Allen (1990), this research adopted the three major dimensions of organizational commitment. First of all, "affective commitment" refers to employees' psychological and emotional identification towards the organization. The second dimension is "continuance commitment", which refers to employees' basic interests and their willingness to stay in the organization. The third dimension is "normative commitment", which refers to employees' firm belief that organizational loyalty is a necessary value that needs to be strictly observed.

Results of this research show that, in the service industry, when leader-member relationship (coworkers' relationship) and coworkers' interactions are better, the level of job satisfaction would be higher, as well as affective organizational commitment and continuance organizational commitment. However, the effect of normative organizational commitment is not significant, that is, it not subjected to the intervening effect of job satisfaction. In another word, employees see "loyalty" as a necessary value that should be strictly observed and cannot be affected by the intervening factors of job satisfaction, including "work", "promotion", and "salary". That is, the effect of the intervening variable of job satisfaction does have significant effect on normative organizational commitment. In the service industry, the leader-member relationship and coworkers' interactions (coworkers' relationship) should be reinforced and if you wish to increase normative organizational commitment (loyalty and values) through job satisfaction, the effect is not significant. To induce higher and more significant level of organizational commitment, the key is to reinforce leader-member relationship and coworkers' interactions.

Results of this research show that, in the service industry, leader-member relationship and coworkers' interactions are the factors that truly affect job satisfaction and organizational commitment. Job satisfaction only has a partial intervening effect on affective and continuance organizational commitment but no effect on normative organizational commitment. This result has not yet been mentioned in the research literature available today.

3. Follow-up researches can explore deeper into the effect of organizational culture to coworkers' relationship, job satisfaction, and organizational commitment. The atmosphere at a workplace in a company is deeply affected by an organization's culture. Therefore, studies on different organizations (manufacture, banking and insurance, high-tech industries, and public offices) can be further explored for the possible effect between coworkers' relationship, job satisfaction and organizational

commitment. Furthermore, as discussed in the literature review section, further studies can be done to explore coworkers' relationship the variances relating between leader-member relationship and coworkers' interactions, such as organizational support, inter-role conflict, turnover, and organizational citizenship behavior.

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