

## An Expectancy Theory Model for Hotel Employee Motivation: Examining the Moderating Role of Communication Satisfaction

Chun-Fang Chiang , SooCheong (Shawn) Jang , Deborah Canter & Bruce Prince

To cite this article: Chun-Fang Chiang , SooCheong (Shawn) Jang , Deborah Canter & Bruce Prince (2008) An Expectancy Theory Model for Hotel Employee Motivation: Examining the Moderating Role of Communication Satisfaction, International Journal of Hospitality & Tourism Administration, 9:4, 327-351, DOI: [10.1080/15256480802427263](https://doi.org/10.1080/15256480802427263)

To link to this article: <https://doi.org/10.1080/15256480802427263>



Published online: 12 Dec 2008.



Submit your article to this journal [↗](#)



Article views: 17720



View related articles [↗](#)



Citing articles: 14 View citing articles [↗](#)

# An Expectancy Theory Model for Hotel Employee Motivation: Examining the Moderating Role of Communication Satisfaction

Chun-Fang Chiang  
SooCheong (Shawn) Jang  
Deborah Canter  
Bruce Prince

**ABSTRACT.** The study investigated the role of communication satisfaction as a moderator strengthening the effect of three components of the expectancy theory (expectancy, instrumentality, valence) on work motivation in a hotel setting. High and low communication satisfaction groups respond differently to expectancy, instrumentality, valence, and work motivation. Employees who are highly satisfied with communication respond more positively toward motivation components, and they are more likely to perform well in their job when they are motivated. However, a series of confirmatory factor analyses of metric invariance indicated that there is no significant difference in the moderating effect between high and low

---

Chun-Fang Chiang, PhD, is Assistant Professor, Department of Tourism Management, Chinese Culture University, Taipei, Taiwan.

SooCheong (Shawn) Jang, PhD, is Assistant Professor, Department of Hospitality and Tourism Management, Purdue University.

Deborah Canter, PhD, is Professor, Department of Hotel, Restaurant, Institution Management, Dietetics, Kansas State University.

Bruce Prince, PhD, is Professor at the Department of Management, Kansas State University.

Address correspondence to: Chun-Fang Chiang, PhD, Department of Tourism Management, Chinese Culture University, Taipei, Taiwan (E-mail: jcf@faculty.pccu.edu.tw).

International Journal of Hospitality & Tourism Administration, Vol. 9(4) 2008

Available online at <http://www.haworthpress.com>

© 2008 by The Haworth Press. All rights reserved.

doi:10.1080/15256480802427263

communication satisfaction groups. Communication should be managed collectively to motivate employees. Implications and suggestions for future research are provided to better explain the process of decision-making when hotel employees are motivated.

**KEYWORDS.** Expectancy theory, hotel employee motivation, communication satisfaction, moderator, metric invariance

## ***INTRODUCTION***

Employee motivation has been the focus of research in academic circles as scholars seek to understand what motivates employees in a variety of work settings. Particularly in the hotel industry, where the work is labor intensive and turnover is high, understanding hotel worker attitudes and motivation has become an important issue for research. Communication should be clear, consistent, correct, and complete to be effective between employer and employee, and effective communication is vital to understanding employee needs. Employee satisfaction with the communication process could be a factor in the complex process of motivation.

The expectancy theory of motivation, originally developed by Vroom (1964), explains the process individuals use to make decisions on various behavioral alternatives. Motivation is a force directing specific behavioral alternatives, which are suggested when deciding among behavior options. Individuals select the option with the highest motivational forces. The motivational force for a behavior, action, or task is a function of three distinct perceptions: expectancy, instrumentality, and valence. Expectancy is the perceived probability that effort will lead to good performance; instrumentality is the perceived probability that good performance will lead to desired outcomes; valence refers the value the individual personally places on rewards. This study was designed to examine the motivation of hotel workers using expectancy theory while testing the influence of communication satisfaction as a moderator.

The goal of this study is to build a theoretical model to understand employee motivation in a hotel setting. Employee motivation in hospitality research has focused on simply identifying factors motivating employees. Expectancy theory can explore the process of forming employee motivation. The central premise of the expectancy theory is that people make behavioral choices that are calculated to allow them to achieve desired outcomes (Porter & Lawler, 1969; Vroom, 1964). Employees will be

more motivated to adjust their behavior and combine the functions of expectancy, instrumentality, and valence. Expectancy theory has been recognized and applied in work motivation. This study then attempts to examine the credibility of expectancy theory as applied to employee motivation in the hotel industry. It can also confirm the validity of measurement scales of constructs of the expectancy theory. Overall, the main purpose of this study is to gain a better understanding of employee motivation and of its decision-making process by applying expectancy theory.

Communication is probably the most central process in organizations (Frone & Major, 1988). Communication satisfaction is defined as the satisfaction with communication that is linked to an employee's position in the organization (Mount & Back, 1999). In this present study, communication satisfaction is proposed as a moderator in employee work motivation. Satisfaction with the extent to which communication in the organization motivates and stimulates employees to improve performance is the moderator between expectancy and work motivation. Supervisors and managers who are open to ideas, who listen and pay attention, and who offer guidance for solving job-related problems and offer feedback show the moderating effect of instrumentality on work motivation, which is reflected in employees who receive pay raises, bonuses, opportunity for advancement and have a feeling of accomplishment. Communication allows employees to clearly understand the greater rewards they receive for improving their performance. The moderating effect of valence on work motivation shows satisfaction with effective and organized communication that motivates employees to work hard to achieve their desired outcomes.

Despite the importance of employee motivation in the hotel industry, relatively little research has focused on hotel employee motivation based on theoretical concepts. Most previous studies have concentrated on identifying the factors motivating employees and suggesting implications for further improving employee motivation. Applying motivation theories and models to the process of employee decision making has not commonly been done. In this study, we apply the expectancy theory as a theoretical foundation to explain hotel employee motivation. The expectancy theory is a very commonly used theory. However, adding one or two variables should provide better understanding of the process of being motivated (Parker & Dyer, 1976). Communication has been recognized for its contribution to good relationships between management and employees. We propose that communication satisfaction moderates the model of employee motivation. Satisfaction with communication

strengthens the influences of expectancy, instrumentality, and valence on employee motivation. A major research question will be explored in this study: Does adding communication satisfaction as a moderator to the proposed expectancy theory model of hotel employee motivation truly advance the understanding of the specific determinants of hotel employee motivation?

The main purpose of this study is to examine the moderating role of communication satisfaction on the relationship between employee motivation and its determinants (expectancy, instrumentality, valence). Thus, this study extends the model by adding communication satisfaction as a moderator strengthening the process of employee motivation. Advanced statistical data analysis will also help in examining the moderator effect and will be used to provide validity and reliability as well as to enhance the understanding of theoretical development in research.

### **CONCEPTUAL BACKGROUND**

Both the hotel industry and academia recognize the importance of motivating employees. Most previous studies have concentrated on identifying the factors that motivate employees and on suggesting further improvements in employee motivation (Simons & Enz, 1995; Siu, Tsang, & Wong, 1997; Wong, Siu, & Tsang, 1999). Several motivation factors have been identified in the hotel industry: pay; monetary bonuses or benefits; opportunities for advancement and promotion; opportunities for increased job responsibility; recognition from managers, colleagues, customers, and family; challenging work; feelings of accomplishment; development of self-esteem; good working conditions; good work schedules; job security; and being regarded as a good employee.

The expectancy theory of motivation, proposed by Vroom (1964), attempts to explain how individuals make decisions about various behavioral alternatives. This model deals with the direction aspect of motivation; that is, once behavior is instigated, what behavioral alternatives are individuals likely to pursue? When deciding among behavioral options, individuals select the option with the greatest motivational forces (MF).

$$\text{MF} = \text{Expectancy} \times \text{Instrumentality} \times \text{Valence}$$

The motivational force for a behavior, action, or task is a function of three distinct perceptions: expectancy, instrumentality, and valence.

Expectancy is the perceived probability that effort will lead to good performance; Instrumentality is the perceived probability that good performance will lead to desired outcomes; Valence refers to the value the individual personally places on the rewards. Expectancy theory is a theory of the process of motivation. Rather than simply explaining what will motivate an employee, process theories define how motivation comes about. Process theories are, in effect, working models of the decision processes that individuals go through in order to determine whether they will pursue a certain activity and sustain a certain level of productivity. Process theories help describe and explain how behavior is directed, energized, sustained, or stopped. Expectancy theory provides a general framework for assessing, interpreting, and evaluating employee behavior in learning, decision-making, attitude formation, and motivation (Chen & Lou, 2002). However, Mitchell (1974) pointed out that the construct validity of the components of expectancy theory remains little understood. The results of the meta-analysis by Van Erde and Thierry (1996) suggested that Vroom's model did not yield higher effect sizes than the components of the models, implying that the model lacks validity.

To better understand the components of expectancy theory, moderating variables, or moderators, have been used (Seybolt & Pavett, 1979). A moderator is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable (Baron & Kenny, 1986). Further, a basic moderator effect can be represented as an interaction between a focal independent variable and a factor that specifies the appropriate conditions for its operation (Baron & Kenny, 1986). Expectancy theory predictions of job effort and performance have received weak to moderate support in recent literature (Heneman & Schwab, 1972; House & Wahba, 1972; Mitchell & Biglan, 1971; Reinharth & Wahba, 1975). Therefore, Vroom's (1964) original model and its various extensions have been tested frequently using several moderating variables in a search to improve model predictions (Seybolt & Pavett, 1979). In this study, communication satisfaction is proposed as a moderator to improve predicting hotel employee motivation because communication is important in strengthening good relationships between managers and employees. Thus, satisfaction with communication should increase the impact of expectancy, instrumentality, and valence on employee motivation.

Communication is probably the most central process in organizations (Frone & Major, 1988). Several studies posit that the perceived

communication environment should be related to organizational outcomes such as work motivation, job satisfaction, and organization productivity or effectiveness (Downs, 1977; Greenbaum, 1974; Hall & Goodale, 1986; Likert, 1973; Pinchus, 1986a, 1986b; Orpen, 1997; Porter & Roberts, 1993; Shuler, 1995). Other empirical research supports the hypothesized communication-job satisfaction relationship (Roberts & O'Reilly, 1974; Muchinsky, 1989; Sussman, 1974), and these studies suggest that high-quality communication is associated with relatively high levels of job satisfaction, whereas low-quality communication is associated with relatively low levels of job satisfaction. Quality communication is assessed by dimensions such as timelines, accuracy, and usefulness (Frone & Major, 1988). However, some studies have failed to prove a significant relationship between these two constructs (Muchinsky, 1989). These inconsistent and often weak findings support the contention of several writers that a contingency (moderator) approach to the study of organizational communication is warranted (Goldhaber, Yates, Porter, & Lesniak, 1978; Larson, Lee, Brown, & Shorr, 1984; Porter & Roberts, 1993; Schuler, 1995). Frone and Major (1988) examined the moderating effect of job involvement on the relationship between perceived communication quality and job satisfaction in a sample of managerial issues. The quality of communication was assessed separately for immediate supervisor, subordinates, co-workers, and hospital administrators. Each source of information was rated by dimension of communication quality using timelines, accuracy, and usefulness. Results showed that perceived communication quality is positively related to the level of reported job satisfaction among nurses. The strength of communication quality-job satisfaction relationship was modified by the respondents' level of job involvement. Further, in Orpen's (1997) study, the involvement-communication interaction was significant in explaining variance in both satisfaction and motivation.

It is through communication of one kind or another that employees learn what they are expected to learn, find out how to do their jobs, and become aware of what others think of their work (Likert, 1993; Schuler, 1995). Because the transmission and reception of information pay such an important role in the organization, effective communication should be related to employee work attitude (Schuler, 1995). However, some studies do not support the prediction (Muchinsky, 1989; Pinchus, 1993). According to Porter and Roberts (1993), the reason for the inconsistent findings is that the relationship between communication and employee work attitude may be moderated by several variables, such as abilities, personality, and

attitudes. Thus, communication satisfaction is proposed in this study as a moderator in evaluating employee work motivation. Thus, satisfaction with the extent to which communication in the organization motivates and stimulates employees to improve performance is the moderator between expectancy and work motivation. Satisfaction with the extent to which supervisors and managers are open to ideas, listen and pay attention, offer guidance for solving job-related problems, and provide feedback should be reflected in pay raises, bonuses, and opportunities for advancement. Employees should clearly understand the rewards for improving performance, which should show the moderating effect of instrumentality on work motivation. In addition, the moderating effect of valence on work motivation should show in satisfaction with effective and organized communication motivating employees to work hard to achieve their desired outcomes.

Communication satisfaction refers to satisfaction with communication linked to the employee's position in the organization (Mount & Back, 1999). The Communication Satisfaction Questionnaire (CSQ) was developed by Downs and Hazen (1977) to investigate the relationship between communication and job satisfaction. Eight factors were identified to explain communication satisfaction: communication climate, supervisory communication, organizational integration, media quality, coworker communication, corporate information, personal feedback, and subordinate communication. Mount and Back (1999) further examined communication satisfaction in the lodging setting by using a Communication Satisfaction Questionnaire (CSQ).

The main objective of this study was to examine the moderating role of communication satisfaction strength on the relationship between employee motivation and its determinants (expectancy, instrumentality, valence). Based on the literature review, a hypothesis was formed (Figure 1):

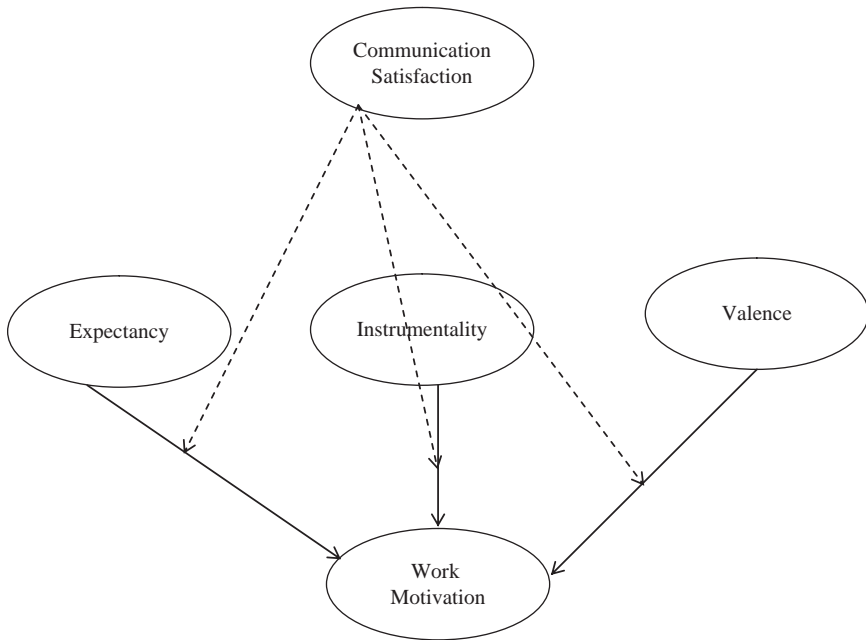
**H1:** The higher the level of communication satisfaction, the more positive are the effects of expectancy, instrumentality, and valence on hotel employee motivation.

## **METHODOLOGY**

Measurement items were developed from both a literature review (Byrne, 1986; Charles & Marshall, 1992; Downs & Hazen, 1977; Knight, 1971; Mount & Back, 1999; Simons & Enz, 1995; Siu, Tsang, & Wong,



FIGURE 1. Proposed moderating effect of communication satisfaction on expectancy theory.



1997; Wong, Siu, & Tsang, 1999) and an elicitation study. An elicitation study was used in constructing the final set of measurement items for the instrument questionnaire. In the elicitation study, respondents were asked to rank the list of measurement items to elicit the best measurement items for the five constructs. The elicitation study was administered to 33 hotel managers, supervisors, and employees from 6 hotels in a Midwestern state in the U.S. The 6 hotels included 3 mid-scale and 3 economy hotels. The results of the elicitation study were similar to results in the literature pertaining employee motivation. Pay, advancement opportunities, monetary bonus, and recognition from managers and colleagues were found as primary motivators for hotel employees.

Further, a survey instrument was conducted. Five items of expectancy were drawn from the literature (Campbell, Dunnette, Lawler, & Weick, 1970; Gavin, 1970; Porter & Lawler, 1968) to measure each respondent's expectation of work outcomes on a 7-point scale ranging from strongly disagree to strongly agree. Thirteen items of instrumentality were drawn

from the literature (Gavin, 1970; Matsui & Ohtsuka, 1978; Reinharth & Wahba, 1975), and respondents evaluated the effort of performance on work outcomes using a 7-point scale ranging from strongly disagree to strongly agree with the statement. Sixteen items of valence were borrowed from the literature (Galbraith & Cummings, 1967; Gavin, 1970; Mobley, 1971; Mitchell, 1974), and respondents rated the desirability of work outcomes using a 7-point scale ranging from very undesirable to very desirable. Eleven items of work motivation were adopted from the literature (Arvey & Mussio, 1973; Ivancevich, 1976; Kopelman, 1979; Landy & Guion, 1970). Respondents evaluated work motivation using a 7-point scale ranging from strongly disagree to strongly agree.

A pilot study was conducted before data collection. The purpose of the pilot study was to test the reliability of the study instrument and to test the survey distribution procedures. One hotel in a city of a Midwestern state and both Hotel and Restaurant Management graduate and undergraduate students in that city who had worked in hotels were asked to participate in the pilot test. Twenty-nine surveys were gathered from the pilot survey. Slight changes in wording in the questionnaire were made based on the pilot study. Most measurement items were kept for the final version of the questionnaire; however, some items were deleted to increase Cronbach's alpha and shorten the survey. "If I work very hard, the quality of my job performance will be greatly enhanced," was deleted from the construct of expectancy. "Receiving recognition/praise from others at work" and "Being regarded as a good employee" were deleted from the construct of Instrumentality. "Good working conditions", "Stable work schedules", "Job security", "Recognition/Praise from others at work" were deleted from the construct of valence. "Work harder than others" was deleted from the construct of work motivation. The final version of the questionnaire comprised 34 questions to measure five constructs and respondent demographic characteristics.

This study used convenience samples of hotel employees. Hotel employees from 56 hotels in several cities in a Midwestern state filled out the surveys. Most hotels were upper-economy and mid-scale hotels (such as Hampton Inn, Quality Inn, and Super 8), and few of them (Sheraton Hotel) were upper-scale hotels. Data was collected between February 24, 2006, and March 22, 2006. A total of 1,450 surveys were distributed to employees in these participating hotels, and 301 were returned, yielding a response rate of 20.76%. Of the 301 returned responses, 12 were not usable because of missing data. Thus, 289 (19.93%) responses were used for analysis.

The procedures of data analysis used in this study included descriptive analysis, principle component factor analysis, confirmatory factor analysis

(CFA), and moderating effect check by structural equation modeling (SEM). Descriptive analysis included mean and standard deviation of sample characteristics. Principle components analysis was performed to see if every proposed construct extracted one factor. Confirmatory factor analysis was used to test the reliability and validity of measurements for latent constructs in the model. Composite reliability assessed the reliability of indicators representing each construct in the measurement model. Composite reliability of .70 for all constructs was used as a criterion, as suggested by Anderson and Gerbing (1988). A validity check was conducted to check convergent validity and discriminant validity. Factor loading of .5 was the criterion for convergent validity. Average variance extracted (AVE) presents the overall amount of variance in the indicators accounting for the latent construct (Hair, Anderson, Tatham, & Black, 1998), and an AVE of .50 was the criterion for convergent validity. Discriminant validity was assessed by comparing AVE with the squared correlation between two constructs (Anderson & Gerbing, 1988). Lastly, the hypothesized moderator of communication satisfaction was assessed by a series of modeling tests for metric invariance (Hypothesis 1). The sample was divided into high and low communication satisfaction groups. Grouping was split based on summed scores for communication satisfaction. To analyze the measurement model with two different groups, a confirmatory factor analysis was performed on the non-restricted model first. The equality of factor loading between two groups (full metric invariance) was used to test if these two groups were comparable. The non-significance of the chi-square difference between the non-restricted model and the full metric invariance model was assessed. The equity of path coefficients was then checked. The significance of the chi-square difference between the full metric invariance and the coefficients invariance model was tested. A significant chi-square difference test indicated a moderating effect of communication satisfaction between high and low communication satisfaction groups. Statistical packages were performed using SPSS for Windows 13.0 and LISREL 8.54.

## ***ANALYSIS AND RESULTS***

### ***Sample Characteristics***

A total of 289 employees, consisting of 84 (29.1%) males and 203 (70.2%) females, participated in the study (Table 1). The age range was

TABLE 1. Descriptive characteristics of respondents

	Frequency (N = 289)	
	N	%
<b>Gender</b>		
Males	84	29.1
Females	203	70.2
No response	2	.7
<b>Age (years old)</b>		
20 and below	30	10.38
21–30	109	37.72
31–40	49	16.95
41–50	41	14.19
51 and above	33	11.42
No response	27	9.34
<b>Education Level</b>		
Secondary but no degree	14	4.84
High school degree	97	33.56
Completed some college	98	33.91
College or university	54	18.69
Graduate degree	16	5.54
No response	10	3.46
<b>Department</b>		
Administration	36	12.46
Front Office	128	44.29
Housekeeping	67	23.18
Food & Beverage	15	5.19
Others	37	12.80
No response	6	2.08
	Mean	S.D.
Time working in the current hotel	2.88 years	4.16 years
Time working in the hotel industry	5.19 years	6.04 years

17 to 70. More than one-third of the respondents (37.72%) were 21 to 30 years old. The largest groups comprised respondents (16.95%) between 31 and 40 years old and respondents (14.19%) between 41 and 50 years old. One-third of the respondents (33.91%) had completed some college, and another one-third of the respondents (33.56%) had high school degrees. One hundred and twenty-eight respondents (44.29%) were employees in the Front Office department, 23.18% worked in housekeeping, and 12.46% were employed in the Administration department. In terms of their jobs, most respondents were front office receptionists, housekeepers,

and office assistants. Average lengths of employment at the current hotel and in the hotel industry were 2.88 and 5.19 years, respectively.

### ***Measurement Items***

The mean scores and standard deviation of each measurement item are presented in Table 2. The mean scores for four measure items of expectancy ranged from 5.56 to 5.75, based on the seven-point Likert scale. The mean scores for eight measures of instrumentality ranged from 4.29 to 6.01. The mean scores for ten measures of valence ranged from 5.67 to 6.20. The mean scores for the four measures of attitude toward work motivation ranged from 6.14 to 6.21. The mean scores for the eight measures of attitudes toward communication satisfaction ranged from 4.88 to 5.33. When respondents evaluated the three components of the expectancy theory, valence had higher scores than expectancy and instrumentality. Respondents responded that they would improve their performance when they were highly motivated. Respondents said they were somewhat satisfied with the quality of communication.

Because measurement items of the survey instrument had been adopted and modified from previous studies, principle component analysis using a varimax rotation procedure was performed to examine if each proposed construct extracted one component to present each construct. One component was extracted for the construct of expectancy, work motivation, and communication quality. However, the construct of instrumentality extracted 2 factors (extrinsic instrumentality and intrinsic instrumentality), and valence extracted 2 factors (extrinsic valence and intrinsic valence). Four items (INSRESPO, INSCHALL, VALINTER, VALPROMO) were excluded because of the cross two factor loadings; to achieve a high reliability alpha, these items were deleted. As a result, intrinsic instrumentality included two items: feeling of accomplishment and feeling good about myself; intrinsic valence included five items: responsibility and control over the job, challenging work, full use of skills and abilities, feeling of accomplishment, and personal growth and development.

Table 3 presents results of principle component analysis with each set separately analyzed, including factor loadings of measurement items and eigenvalue and percent of variance explained by each construct.

### ***Confirmatory Factor Analysis***

Confirmatory factor analysis was used to test the measurement model and evaluate the validity of the constructs. Reliability alphas (see Table 3)

TABLE 2. Descriptive statistics of measurement items

Measurement Items		Mean	S. D.
Expectancy		5.67	1.30
EXPPERFO	If I work very hard, my job performance will significantly improve.	5.56	1.50
EXPACCOM	If I work very hard, I will get a lot more accomplished.	5.70	1.49
EXPPRODU	If I put more effort into my job, my productivity will improve significantly.	5.75	1.45
EXPEFFEC	If I put more effort into my job, I will definitely be regarded as an effective employee.	5.66	1.52
Instrumentality Performing well in my job will definitely result in my . . . .		5.08	1.41
INSPAY	getting good pay.	4.58	1.87
INSBONUS	getting monetary bonuses.	4.29	1.97
INSINCRE	getting pay increases.	4.56	1.92
INSPROMO	having more opportunities for promotion.	4.85	1.95
INSRESPO	having more responsibility and control over my job.	5.28	1.71
INSCHALL	taking on more challenging work tasks.	5.24	1.62
INSACCOM	having feelings of accomplishment.	5.82	1.52
INSGOODE	feeling very good about myself.	6.01	1.44
Valence		5.95	1.08
VALPAY	Good salary/wage.	5.84	1.59
VALBONUS	More monetary bonuses.	5.75	1.49
VALINCRE	More pay increases.	6.00	1.39
VALINTER	Interesting work.	5.98	1.37
VALPROMMO	Opportunities for advancement/promotion.	5.88	1.48
VALRESPOV	More responsibility/control over my job.	5.98	1.25
VALCHALL	More challenging work tasks.	5.67	1.38
VALABILI	Full use my skills and abilities.	5.97	1.33
VALACCOM	Feelings of accomplishment.	6.20	1.23
VALGROWI	Personal growth and development.	6.18	1.31
Work Motivation When I am highly motivated, I will definitely . . . .		6.16	.99
WORKEFFO	expend more effort on the job.	6.16	1.01
WORKQUAL	enhance quality of my job performance.	6.14	1.05
WORKPROD	increase productivity on the job.	6.14	1.07
WORKINVO	be willing to get involved in my job.	6.21	1.08
Communication Satisfaction		5.11	1.55
COMMKNOW	Managers know and understand the problems faced by employees.	4.88	1.70
COMMLIST	Managers listen and pay attention to me.	5.22	1.78

(Continued)

TABLE 2. (Continued)

Measurement Items		Mean	S. D.
COMMGUID	My manager offers guidance for solving job-related problems.	5.19	1.84
COMMPART	My manager's communications with me make me feel an important part of this hotel.	5.22	1.87
COMMINFO	I receive on-time information needed to do my job.	5.06	1.79
COMMCONF	Conflicts are handled appropriately through proper communication channels.	5.04	1.84
COMMOPEN	Managers are open to new ideas.	5.33	1.72
COMMORGA	Management's communications with employees are accurate and organized.	4.92	1.84

Note: A 7-point scale from 1 (strongly disagree) to 7 (strongly agree).

were checked for internal consistency first. The results indicate these multiple measurement items are highly reliable for measuring each construct. To validate the developed constructs, a measurement model was estimated with a confirmatory factor analysis (CFA) in which each measurement item was loaded on its proposed constructs, and the constructs were allowed to correlate in the analysis (Anderson & Gerbing, 1988). All measurement items were loaded on their expected constructs. The model indices were as follows:  $\chi^2 = 1045.48$ ;  $df = 284$ ;  $\chi^2/df = 3.68$ ; RMSEA = .096; CFI = .95; NNFI = .94. The model did not fit the goodness of fit indices. After deleting two measurement items (VALCHALL and VALGROWN1) because of high measurement errors, the revised confirmatory factor analysis was found to be a good-fit model. The model indices showed good improvement and an acceptable level:  $\chi^2 = 181.35$ ;  $df = 97$ ;  $\chi^2/df = 1.87$ ; RMSEA = .055; CFI = .98; NNFI = .98.

Composite reliabilities and construct validity were then assessed. Composite reliability of indicators should exceed the cut off value of .70 (Hair, Anderson, Tatham, & Black, 1995). Table 4 presents the factor loadings of the observed variables on the latent constructs and the composite reliability and construct validity.

Construct validity was evaluated by examining convergent and discriminant validity of constructs. Average variance extracted (AVE) was calculated to check the convergent of constructs; and the AVE should be higher than .5 (Hair et al., 1995). Discriminant validity of constructs was assessed by comparing the AVE with the squared correlation between

TABLE 3. Principle component analysis of expectancy theory of hotel employee motivation

Factors	Factor Loadings	Eigenvalue	Percent of Variance Explained %	Cronbach's Alpha (C.A.)
1. Expectancy		3.060	76.50	.89
EXPPERFO	.93			
EXPACCOM	.92			
EXPPRODU	.89			
EXPEFFEC	.76			
2. Extrinsic Instrumentality		3.357	83.92	.94
INSPAY	.92			
INSBONUS	.92			
INSINCRE	.94			
INSPROMO	.89			
3. Intrinsic Instrumentality		1.779	88.93	.87
INSACCOM	.94			
INSGOOD	.94			
4. Extrinsic Valence		2.365	78.82	.86
VALPAY	.83			
VALBONUS	.92			
VALINCRE	.92			
5. Intrinsic Valence		3.716	74.32	.91
VALRESPO	.85			
VALCHALL	.83			
VALABILI	.89			
VALACCOM	.89			
VALGROWN	.85			
6. Work Motivation		3.493	87.33	.95
WORKEFFO	.91			
WORKQUAL	.95			
WORKPROD	.95			
WORKINVO	.93			
7. Communication Satisfaction		5.942	74.27	.95
COMMKNOW	.78			
COMMLIST	.86			
COMMGUID	.89			
COMMPART	.90			
COMMINFO	.85			
COMMCONF	.84			
COMMOPEN	.86			
COMMORGA	.91			

Note: Four items (INSRESPO, INSCHALL, VALINTER, VALPROMO) were excluded due to high across- loadings preliminary and each set separately analysis. In order to achieve a high reliability alpha, these items were deleted from further analysis.



TABLE 4. Results of confirmatory factor analysis, correlation of constructs

Construct	Standardized Factor Loadings	Composite Reliabilities*	Average Variance Extracted (AVE)**	1	2	3	4	5	6	Mean	S.D.
1. Expectancy		.95	.82	1						5.67	1.30
EXPERFO	.83										
EXPACCOM	.91										
EXPPRODU	.94										
EXPEFFEC	.64										
2. Extrinsic Instrumentality		.94	.79	.253**	1					4.57	1.76
INSPAY	.89										
INSBONUS	.88										
INSINCRE	.93										
INSPROMO	.84										
3. Intrinsic Instrumentality		.88	.79	.447**	.461**	1				5.92	1.40
INSACCOM	.95										
INSGOODE	.82										
4. Extrinsic Valence		.94	.85	.151**	.263**	.014	1			5.87	1.32
VALPAY	.69										
VALBONUS	.89										
VALINCRE	.90										
5. Intrinsic Valence		.79	.55	.270**	.348**	.317**	.536**	1		6.05	1.13
VALRESPO	.77										
VALABILI	.85										
VALACCOM	.88										
6. Work Motivation		.95	.83	.367**	.193**	.422**	.258**	.408**	1	6.16	.99
WORKEFFO	.86										
WORKQUAL	.94										
WORKPROD	.94										
WORKINVO	.91										

Note. \*p < .05, \*\*p < .01, \*\*\*p < .001.

latent constructs (Fornell & Larcker, 1981). The squares correlations between constructs were less than the AVE, suggesting discriminant validity (Fornell & Larcker, 1981). As shown in Table 4, the AVE of each construct was more than .5, and the AVE of each construct was higher than the squared correlations between pairs of constructs, which indicated construct validity (Table 4).

### *Moderating Effect Check by Structural Equation Modeling*

The respondents were divided into a high communication satisfaction group and a low communication satisfaction group, based on their communication satisfaction scores. The high communication satisfaction group consisted of 146 respondents, and 143 respondents were categorized into the low communication satisfaction group. Further, mean scores between high and low communication satisfaction groups were calculated (see Table 5).

For validation of grouping, group means were compared by variables of expectancy, extrinsic instrumentality, intrinsic instrumentality, extrinsic valence, intrinsic valence, and work motivation. The mean difference of expectancy was checked to see if the high communication satisfaction group believed their effort would lead to better performance than the low communication satisfaction group. If the high communication satisfaction group has relatively higher expectancy than the low communication group, we can infer that the high communication satisfaction group is willing to work harder to perform better than the low communication

TABLE 5. Comparison of group means

Variables	High Communication Satisfaction Group (N = 146) Mean	Low Communication Satisfaction Group (N = 143) Mean	t value
Expectancy	5.96	5.36	3.97***
Extrinsic Instrumentality	5.26	3.88	7.11***
Intrinsic Instrumentality	6.40	5.44	5.66***
Extrinsic Valence	5.97	5.76	1.41
Intrinsic Valence	6.23	5.86	2.89***
Work Motivation	6.41	5.91	4.34***

Note. \*\*\*p < .01.

satisfaction group. The purpose of comparing extrinsic instrumentality and intrinsic instrumentality was to see if the high communication satisfaction group thought that meeting performance expectation would garner a greater reward than the low communication satisfaction group. Comparing extrinsic valence and intrinsic valence tested whether the high communication satisfaction group reached the desired job-outcome while the low communication satisfaction group did not. Lastly, comparing work motivation showed whether the high communication satisfaction group thought that high motivation would enhance the productivity and the quality of their work while the low communication satisfaction group did not think so.

Table 5 shows that there were significant differences in mean scores among variables (except extrinsic valence) between high and low communication satisfaction groups, suggesting face validity. The differences also showed that the high communication satisfaction group believed that their effort would lead to good performance; if they met expectations, they reached desired outcomes; job outcomes were more desirable to them; and their motivation improved their performance. The low communication group showed the opposite. However, extrinsic valence did not show significant differences between high and low communication satisfaction group in their attitude toward extrinsic valence.

Cronbach's alpha was performed to check reliability. Cronbach's alpha for the high communication satisfaction group was as follows: expectancy (.90), extrinsic instrumentality (.91), intrinsic instrumentality (.91), extrinsic valence (.82), intrinsic valence (.82), and work motivation (.93). Cronbach's alpha for the low communication satisfaction group was as follows: expectancy (.88), extrinsic instrumentality (.93), intrinsic instrumentality (.83), extrinsic valence (.88), intrinsic valence (.89), and work motivation (.95). All the measures showed a satisfactory reliability.

To further analyze the measurement model by confirming the underlying structure of constructs and by testing the validity of these two groups, a confirmatory factor analysis was performed to assess the equity of factor loading (Table 6). A two-group model was estimated in which all parameters in each group were allowed to be freely estimated, then a model in which the path coefficients were constrained to be invariant across the groups was estimated. If there was a significant difference in the chi-square in this constrained versus the base model, this would suggest a moderating effect existing between the two groups. A non-restricted model showed a marginal fit for the model ( $\chi^2 = 471.63$ ;  $df = 310$ ;  $\chi^2/df = 1.52$ ;  $RMSEA = .060$ ;  $CFI = .97$ ;  $CAIC = 1204.94$ ).

TABLE 6. Tests for metric invariance

Model	$\chi^2$	df	RMSEA	CFI	CAIC
Nonrestricted Model	471.31	310	.060	.97	1204.94
Full metric invariance	493.77	324	.060	.97	1133.75
Factorial invariance	477.57	315	.060	.97	1177.55

Note. Full metric invariance is supported ( $\Delta\chi^2(14) = 22.46, p > .05$ ).

The  $\chi^2$  difference of Full metric invariance and Factorial invariance is not significant ( $\Delta\chi^2(5) = 6.26, p > .05$ ).

Based on these series of modeling tests, the two groups have similar path coefficients among the variables, resulting in a non-significant moderating effect.

The full metric invariance model was as follows:  $\chi^2 = 493.77$ ;  $df = 324$ ;  $\chi^2/df = 1.52$ ;  $RMSEA = .060$ ;  $CFI = .97$ ;  $CAIC = 1133.75$ . The chi-squared difference in the non-restricted model was not significant ( $\Delta\chi^2(14) = 22.46$ ;  $p > .05$ ): the full metric invariance was supported. Next, equality in the path coefficients between the two groups (Factorial invariance was assessed:  $\chi^2 = 477.57$ ;  $df = 315$ ;  $\chi^2/df = 1.52$ ;  $RMSEA = .060$ ;  $CFI = .97$ ;  $CAIC = 1177.55$ ); the chi-squared difference was not significant ( $\Delta\chi^2(5) = 6.26$ ;  $p > .05$ ). Based on this series of modeling tests, the two groups showed similar path coefficients among the variables; there was a non-significant moderating effect of communication satisfaction between these two groups. Thus, the proposed hypothesis was not supported: The higher the level of communication satisfaction does not have a positive effect on expectancy, instrumentality, or valence in hotel employee motivation.

## DISCUSSION

The major purpose of this present study was to apply the expectancy theory to hotel employee motivation; an attempt was made to capture the effect of communication satisfaction between high and low communication satisfaction groups. Statistically, communication satisfaction did not play a moderating role in the model of expectancy theory of hotel employee motivation.

Specifically testing the difference of mean scores of each variable, the results indicated that the effect of communication satisfaction is different in the two groups. For expectancy, the high communication satisfaction

group is willing to work harder to perform better than low communication satisfaction groups. For both extrinsic and intrinsic instrumentality, the high communication group believed that if they met performance expectations, they would receive a greater reward than the low communication satisfaction group did. For both extrinsic valence and intrinsic valence, the high communication satisfaction group wanted job-outcomes more than the low communication satisfaction group. Lastly, for work motivation, the high communication satisfaction group thought that being highly motivated would enhance their productivity and the quality of their work, unlike the low communication satisfaction group. These distinct differences between the high communication satisfaction group and the low communication group may account for the impact of communication satisfaction.

Several studies posit that the perceived communication environment should be related to organizational outcomes such as work motivation, job satisfaction, and organization productivity or effectiveness. (Downs, 1977; Greenbaum, 1974; Hall & Goodale, 1986; Likert, 1973; Pinchus, 1986a, 1986b; Orpen, 1997; Porter & Roberts, 1993; Schuler, 1995). Other empirical research supports the hypothesized communication-job satisfaction relationship (Roberts & O'Reilly, 1974; Muchinsky, 1989; Sussman, 1974), and these studies suggest that high-quality communication is associated with relatively high levels of job satisfaction, whereas low-quality communication is associated with relatively low levels of job satisfaction. Frone and Major (1988) examined the moderating effect of job involvement on the relationship between perceived communication quality and job satisfaction in a sample of managerial issues. All these studies have indicated that communication is a direct predictor of job satisfaction or job outcomes. No study tested communication as a moderator. This present study verifies that communication satisfaction is not a moderator in the expectancy theory of employee motivation. However, communication might be a predictor for the expectancy theory, an idea that can be examined in future research.

### ***IMPLICATIONS***

Given that communication satisfaction plays an influential role in motivating employees, it would be important for hotel managers to pay attention to communicating with employees. In this regard, it would be beneficial for hotel managers to understand how well satisfied employees

are with communication. In this study, the mean of measurement items of communication satisfaction ranked from high to low as follows: managers are open to new ideas; managers listen and pay attention to me; my manager's communications with me makes me feel an important part of this hotel; my manager offers guidance for solving job-related problems; I receive on-time information needed to do my job; conflicts are handled appropriately through proper communication channels; management's communications with employees are accurate and organized; managers know and understand the problems faced by employees. Overall, managers are willing to listen to employees and accept ideas from employees, so employees feel they are part of the organization. However, some items for communication quality may not be quite satisfactory: information is not prompt enough, or not organized, and managers do not exactly know what problems employees are facing. Therefore, managers should pay more attention to these deficiencies to improve communication skills with employees.

Another issue is that more and more people whose first language is not English work in the hotel industry. Here, communication might play a more important role in motivating employees. Managers should respect employees and understand cultural differences. In particular, managers should give clear and precise instructions to let employees know their job description, performance evaluation, service quality, and hotel values. Always providing prompt feedback, encouraging job involvement, and truly caring for employees make communication successful.

### ***LIMITATIONS AND FUTURE RESEARCH***

There are some limitations to the current study and suggestions for future research. First, data were collected from hotels in several cities in the Midwest, and most hotels were upper-economy and mid-scale hotels. Very few of them were upper-scale hotels. The findings of this study might only be valid for upper-economy to mid-scale hotels and cannot be generalized to all hotels in the entire industry. It would be interesting to duplicate the study in other segments of the industry or other areas to see if results differed. This approach would help reconfirm the validity of expectancy theory with hotel employee motivation model.

More and more Hispanics work in the hotel industry, and they may be representative of some hotel employees. A Spanish version of the survey was not provided in this study. Communication satisfaction, particularly

language barriers, should be assessed in future research. Hotel managers should be aware of cultural differences. A Spanish version of the survey should be used to increase the response rate as well as assess communication satisfaction among other groups.

Mitchell (1974) commented that measures of instrumentality and valence should include both positive and negative values. Parker and Dyer (1976) stated that excluding negative valent outcomes from the expectancy theory model actually increased its validity. Previous research has mostly identified positive values of motivation factors, and the researchers also attempted to shorten the measurement items in the surveys, so negative variables were not included in this study. However, including negative values in instrumentality and valence would provide more understanding of employee motivation even though doing so would decrease the model's validity. Future research could include positive values of instrumentality and valence for further analysis.

Other studies have founded that communication leads to job satisfaction and other desirable job outcomes (Roberts & O'Reilly, 1974; Muchinsky, 1989; Sussman, 1974), so we should also see if adding communication satisfaction as a component of expectancy and doing the model comparison better explains hotel employee motivation. The samples in this study have identical characteristics and backgrounds and should have internal validity, but it would be challenging to identify which source is more responsible for the failure of factorial invariance. Lastly, Yoo (2002) commented that establishing metric invariance is not a sufficient condition to compare composite means across groups and suggested establishing partial or scalar invariance to conduct comparative studies.

## ***CONCLUSIONS***

The objective of this study was to investigate the moderator effect of communication satisfaction on high and low communication satisfaction groups. The findings indicated that there is no significant moderator effect of communication satisfaction on the expectancy theory model of hotel employee motivation. The higher levels of communication satisfaction do not have a positive effect on expectancy, instrumentality, or valence in hotel employee motivation.

However, from a practitioner's perspective, communication satisfaction does have an effect in motivating employees. The high communication

satisfaction group was willing to work harder to get better performance; they strongly believed that if they met performance expectations, they would receive a greater reward; they wanted better job-outcomes than the low communication satisfaction group; thus, the high communication satisfaction group is more likely to enhance the productivity and the quality of their work if they are highly motivated. This indicates that communication is still an important tool in motivating employees.

Employees noted that they are only somewhat satisfied with the communication, which suggests that hotel managers still need to improve their communication with employees. Communication should be accurate, prompt, and well organized, and managers should listen to employees carefully, help employees with the problems, and care for employees.

## REFERENCES

- Anderson, J. C., & Gerbing, D. W. (1988). Structural modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411–423.
- Arvey, R. D., & Mussio, S. J. (1973). A test of expectancy theory in a field setting using female clerical employees. *Journal of Vocational Behavior*, *3*, 421–432.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.
- Byrne, D. (1986). Waiting for change: working in hotel and catering. Low pay unit, Pamphlet No. 42, LPU, GMBATU p.v.
- Campbell, J. P., Dunnette, M. D., Lawler, E. E., & Weick, K. E. (1970). *Managerial Behavior, Performance, and Effectiveness*. New York: McGraw-Hill.
- Charles, K. R., & Marshall, L. H. (2002). Motivational preference of Caribbean hotel workers: an exploratory study. *International Journal of Contemporary Hospitality Management*, *4*(3), 25–29.
- Chen, Y., & Lou, H. (2002). Toward an understanding of the behavioral intention to use a groupware application. *Journal of End User Computing*, *14*(4), 1–16.
- Downs, C. W. (1977). The relationship between communication and job satisfaction. In R. C. Huseman, C. M. Logue, & D. L. Freshly (Eds.) *Readings in interpersonal and organizational communication* (3rd ed.) (pp. 363–376). Boston: Holbrook.
- Downs, C. W., & Hazen, M. D. (1977). A factor-analytic study of communication satisfaction. *The Journal of Business Communication*, *14*(3), 63–73.
- Fornell, C., & Lacker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement errors. *Journal of Marketing Research*, *18*, 39–50.
- Frone, M. R., & Major, B. (1988). Communication quality and job satisfaction among managerial nurses. The moderating influence of job involvement. *Group & Organization Studies*, *13*(3), 332–347.



- Galbraith, J., & Cummings, L. (1967). An empiric investigation of the motivational determinants of past performance: Interactive effects between instrumentality-valance, motivation, and ability. *Organizational Behavior and Human Performance*, 2, 237–257.
- Gavin, J. F. (1970). Ability, effort, and role perception as antecedents of job performance. *Experimental publication system, manuscript number 190A*. Washington, DC: APA, 1970.
- Greenbaum, H. H. (1974). The audit of employee communication. *Academy of Management Journal*, 17, 739–785.
- Goldhaber, G. M., Yates, M. P., Porter, D. T., & Lesniak, R. (1978). Organizational Communication: 1978. *Human Communication Research*, 5, 76–96.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.
- Hall, D. T., Goodale, J. G. (1986). *Human resource management: Strategy, design, and implementation*. Glenview, IL: Scott, Foresman.
- Heneman, H. G., & Schwab, E. P. (1972). Evaluation of research on expectancy predictions of employee performance. *Psychological Bulletin*, 78, 1–9.
- House, R. J., & Wahba, M. A. (1972). Expectancy theory as a prediction of job satisfaction, performance and motivation: A model and review of literature. Tosi, Dunnette, and House (Eds.), *Managerial Motivation and Compensation*. East Lansing, Michigan: Michigan State University, 1972.
- Ivancevich, J. M. (1976). Expectancy theory predictions and behaviorally anchored scales of motivation: An empirical test of engineers. *Journal of Vocational Behavior*, 8, 59–75.
- Knight, L. B. (1971). Patterns of Labor Market Mobility in the Hotel and Catering Industry. HCITB: London.
- Kopelman, R. E. (1979). Directionally different expectancy theory predictions of work motivation and job satisfaction. *Motivational and Emotion*, 3(3), 299–317.
- Landy, F. J., & Guion, R. M. (1970). Development of scales for the measurement of work motivation. *Organizational Behavior and Human Performance*, 5, 93–103.
- Larson, E., Lee, P. C., Brown, M. A., & Shorr, J. (1984). Job satisfaction: Assumptions and complexities. *Journal of Nursing Administration*, 14, 31–38.
- Likert, R. (1973). Human resources accounting: Building and assessing productive organizations. *Personnel*, 50, 8–24.
- Matsui, T., & Ohtsuka, Y. (1978). Within-person expectancy theory predictions of supervisory consideration and structure behavior. *Journal of Applied Psychology*, 63(1), 128–131.
- Mitchell, T. R., & Biglan, A. (1971). Instrumentality theories: Current uses in psychology. *Psychological Bulletin*, 76(6), 432–454.
- Mitchell, T. R. (1974). Expectancy models of job satisfaction, occupational preference and effort: A theoretical, methodological and empirical appraisal. *Psychological Bulletin*, 81, 1053–1077.
- Mobley, W. H. (1971). *An inter-organizational test of a task-goal expectancy model of work motivation and performance*. Doctoral dissertation, University of Maryland, Baltimore, Maryland.
- Mount, D. J., & Back, K. J. (1999). A factor-analytic study of communication satisfaction in the lodging industry. *Journal of Hospitality & Tourism Research*, 23(4), 401–418.
- Muchinsky, P. M. (1989). Organizational communication: Relationships to organizational climate and job satisfaction. *Academy of Management Journal*, 20, 592–607.

- Orpen, C. (1997). The interactive effects of communication quality and job involvement on managerial job satisfaction and work motivation. *Journal of Psychology, 131*(5), 519–522.
- Parker, D. F., & Dyer, L. (1976). Expectancy theory as a within-person behavioral choice model: An empirical test of some conceptual and methodological refinements. *Organizational Behavior and Human Performance, 17*, 97–117.
- Pinchus, J. D. (1986a). Communication satisfaction, job satisfaction, and job performance. *Human Communication Research, 12*, 395–419.
- Pinchus, J. D. (1986b). Communication: Key contributor to effectiveness - The research. *Journal of Nursing Administration, 16*, 19–25.
- Pinchus, J. D. (1993). Communication satisfaction, job satisfaction and job performance. *Human Communication Research, 12*, 395–419.
- Porter, L. W., & Lawler, E. E. (1968). *Managerial Attitudes and Performance*. Homewood, IL: Irwin Dorsey.
- Porter, L. W., & Robers, K. H. (1993). Communication in organizations. In M. D. Dunnette (Ed.) *Handbook of Industrial and Organizational Psychology* (pp. 1553–1589). Chicago, IL: Rand McNally.
- Reinharth, L., & Wahba, M. A. (1975). Expectancy theory as a predictor of work motivation, effort, expenditure, and job performance. *Academy of Management Journal, 18*(3), 520–537.
- Roberts, K. H., & O'Reilly, C. A. (1974). Measuring organizational communication. *Journal of Applied Psychology, 59*, 321–326.
- Schuler, R. S. (1995). A role perception transactional process model for organizational communication-outcome relationships. *Occupational Behavior and Human Performance, 23*, 268–291.
- Seybolt, J. W., & Pavett, C. M. (1979). The prediction of effort and performance among hospital professionals: Moderating effects of feedback on expectancy theory formulations. *Journal of Occupational Psychology, 52*, 91–105.
- Simons, T. & Enz, C. A. (1995). Motivating hotel employees. *The Cornell Hotel and Restaurant Administration Quarterly, 36*(1), 20–7.
- Siu, V., Tsang, N. & Wong, S. (1997). What motivates Hong Kong's Hotel employees? *The Cornell Hotel and Restaurant Administration Quarterly, 38*(5), 44–49.
- Sussman, L. (1974). The relationship between message distortion and job satisfaction - A field study. *Journal of Business Communication, 11*, 25–29.
- Van Eerde, W., & Thierry, H. (1996). Vroom's expectancy models and work-related criteria: A meta-analysis. *Journal of Applied Psychology, 81*(5), 575–586.
- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Wong, S., Siu, V., & Tsang, N. (1999). The impact of demographic factors on Hong Kong hotel employees' choice of job-related motivators. *International Journal of Contemporary Hospitality Management, 11*(5), 230–241.
- Yoo, B. (2002). Gross-Group Compare: A Cautionary note. *Psychology & Marketing, 19*(4): 357–368.

RECEIVED: December 22, 2006

REVISIONS RECEIVED: June 15, 2007

ACCEPTED: September 17, 2007