보건행정학회지 : 제 5 권 제 1 호
Korean J. of Health Policy & Administration
Vol.5, No.1, 161-191, June 1995

Estimating a Causal Model of Job Satisfaction in a Korean Hospital *

Young-Joon Seo **

Department of Preventive Medicine and Public Health

School of Medicine, Keimyung University

Taegu, South Korea

Jong-Wook Ko

James L. Price

Department of Sociology University of Iowa Iowa City, IAJ2242

〈국문요약〉

본 논문은 서구의 이론을 바탕으로 개발된 직무만족도에 관한 인과모형을 한국의 병원근무자들을 대상으로 실증적으로 검증하고 직무만족도를 결정하는 인과적 요인들을 파악하는데 목적이 있다. 본 모형의 종속변수는 직무만족도이고 독립변수로는 3개집단의 변수들로 크게 분류하여 선정되었는데 첫째, 사회적 변수들로써 직무의 자율성, 직무의 모호성, 직무 갈등, 직무의 양, 상사 및 동료와의 관계, 발전가능성, 직무의 단순성, 분배정의, 승진기회, 물리적 근무환경, 임금 등이며, 둘째, 심리적 변수들로써

* We appreciate the comments that the following people made about the paper : Charles Mueller, Morain-e Baker, Douglas Currivan, Roderick Iverson, David Watson, Jeongkoo Yoon,The University of Iowa, Iowa City, U.S.A., and the staff of the Department of Preventive Medicine, College of Medicine, Yeungnam University, Taegu, Korea.

** Contact for information about the paper.

기대 충족도, 근무의욕, 적극적 심성, 부정적 심성 등이고, 셋째, 환경적 변수들로써 외부 취업기회와 가족에 대한 책임 등이 사용되었다. 또한 독립변수들이 종속변수에 영향을 미치는데 있어 개인의 가치관이 어떻게 작용하는지도 검증하였다.

자료수집을 위해 대구에 위치한 750병상 규모의 한 대학병원에 근무하는 전직원을 대상으로 자기기입식 설문조사를 실시하였으며 879매가 회수되어 74.7%의 응답율을 기록하였다. 수집된 자료중 사용가능한 836명의 응답을 바탕으로 선형구조관계분석(LISREL)과 다중회귀분석기법을 이용하여 인과모형을 검증하였다.

분석결과 직무만족도에 유의한 영향력을 가지는 변수들은 직무의 모호성, 직무의 양, 동료관계, 직무의 단순성, 분배정의(이상 사회적 변수), 기대의 충족도, 근무의욕, 적극적 심성, 부정적 심성(이상 심리적 변수), 외부 취업기회(환경적 변수) 등인것으로 나타났으며 개인의 가치관과 인구학적인 변수들은 직무만족도에 큰 영향을 미치지 못하는 것으로 나타났다. 또한 본 연구에서 사용된 인과모형은 직무만족도의 변이를 75.4% 설명함으로서 기존의 다른 모형들 보다 높은 설명력을 나타내었다.

결론적으로 본 연구에서 사용된 직무만족도의 인과모형은 한국의 조직에서도 적용이 가능한 것으로 보이며, 또한 직무만족도의 일반적 모형은 구조적 변수, 심리적 변수, 그리고 환경적 변수들을 모두 포함하는 포괄적인 모형이 타당하다는 결론을 얻을 수 있었다.

Key Words : A Causal Model of Job Satisfaction, Hospital Employees, Generalization, LISREL

I. Background

Explaining job satisfaction has been an enduring problem in the study of organizations. Although the Western Electric researchers did not propose an explicit model of job satisfaction, they did much to make the topic a central focus in the study of organizations(Landsberger, 1958). For example, they assumed that increases in job satisfaction yielded increased productivity, and, during the 1940s and 1950s, this assumption was widely shared by organizational scholars. The recent review of the job satisfaction literature by Smith and her colleagues(Cranny et al., 1992) illustrates the continued interest in this prob-

lem.

Nearly all of the research on job satisfaction has originated in Western societies, especially the United States and Great Britain. Were American and British literature to be subtracted from the corpus of research on job satisfaction, there would be very little data left to examine. Since scholars seek to construct models they can apply across many societies, it is incumbent on these scholars to estimate their models with data collected cross-culturally. The study reported in this paper purports to estimate a causal model of job satisfaction in Korea and to find out the determinants of job satisfaction of hospital employees.

Job satisfaction is the extent to which employees like their work(Locke, 1976). It is the affective component -- the liking -- that is central to job satisfaction. There is often a cognitive component in the measurement of job satisfaction, but, as much as possible, this cognitive component is excluded in the measurement process.

One reason the explanation of job satisfaction has been such an enduring problem is its theoretical standing, as assessed by the impact it is believed to have on other concerns of organizational scholars. Job satisfaction is considered an important determinant of absenteeism(Brooke and Price, 1989), turnover(Mobley, 1982 ; Mowday, Porter and Steers, 1982), mental health(House, 1981), physical health(Sales and House, 1971), organizational citizenship behavior(Organ, 1988), and the growth of unions(Freeman and Medoff, 1984).

Although no longer viewed as a determinant of performance(Lawler, 1973), job satisfactions impact on absenteeism, turnover, mental health, organizational citizenship behavior, and the growth of unions is sufficient to guarantee its continued theoretical significance.

II. The Causal Model

1. Overview of the Model

The model to be estimated is grounded in expectation theory. Basic to this theory is the idea that employees enter work organizations with expectations and values, and if these

expectations and values are met, the employees will likely be satisfied with their jobs. Expectations are beliefs about what will characterize the work organization, whereas values are conceptions of preferred courses of action. Vroom(1964) was the first major scholar to apply expectation theory to work organizations, and Porter and his colleagues(Porter and Steers, 1973) are probably the major contemporary exponents of this theoretical perspective.

To apply expectation theory, it is critical to specify what the employees have expectations and values about. Empirical research on satisfaction indicates what work conditions and environmental features the employees have expectations and values about. The subsection which follows this overview refers to those work conditions as social variables and the environmental features as environmental variables.

Employees bring more than expectations and values into the work organization. Basic personality dispositions, for example, accompany the expectations and values. These additional characteristics are referred to as psychological variables. Traditional expectation theory, as illustrated by Vrooms research, focuses only on expectations and values and does not examine these other psychological variables.

Assumptions characterize all models, some pertaining to the entire model and others relating to its specific elements. Assumptions which relate to specific elements of the model are described throughout the following subsection. At a more general level, the model assumes an exchange of benefits between the organization and its employees. Organizations typically exchange rewards at their disposal -- most of the social variables in the model are rewards -- in return for the contributions their employees make. Employees are satisfied with their work and are motivated to do their jobs in exchange for the rewards dispensed by the organization.

2. Elements of the Model

This subsection discusses the models variables and the relationships among them. Table 1 defines the variables and Figure 1 diagrams the model.

Table 1. Definitions of Variables in the Causal Model

Variable	Definition
Opportunity	availability of alternative jobs in the environment
Kinship Involvement[a]	the existence of obligations to and support from relatives residing in the community
Met Expectations	degree to which preconceived ideas held by employees concerning organizational life are met
Work Motivation	belief in the centrality of the work role in one's life
Positive Affectivity	a dispositional tendency to experience pleasant emotional states
Negative Affectivity	a dispositional tendency to experience unpleasant emotional states
Autonomy	degree to which an employee exercises power in performing his /her work
Job Stress	degree to which an employee abilities fall below a job's demands
Role Ambiguity	degree to which role expectations are unclear
Role Conflict	degree to which role expectations are incompatible
Workload	degree to which work role demands are excessive
Social Support	availability of helpful others
Co-worker Support	degree to which employees have close friends in theirimmediate work unit
Supervisory Support	degree to which supervisors are helpful in job-related matters
Job Growth	the opportunity provided by the organization to increase work-related skills and knowledge
Routinization	degree to which jobs are repetitive
Distributive Justice	degree to which rewards and punishments are related to performance inputs
Promotional Chances	degree to which vertical opportunities exist for an individual within an organization
Physical Working	Conditions general physical working environment which surrounds the individual
Pay	Money and its equivalents received by employees for their services

[a]Kinship involvement is viewed as a social support variable in this study

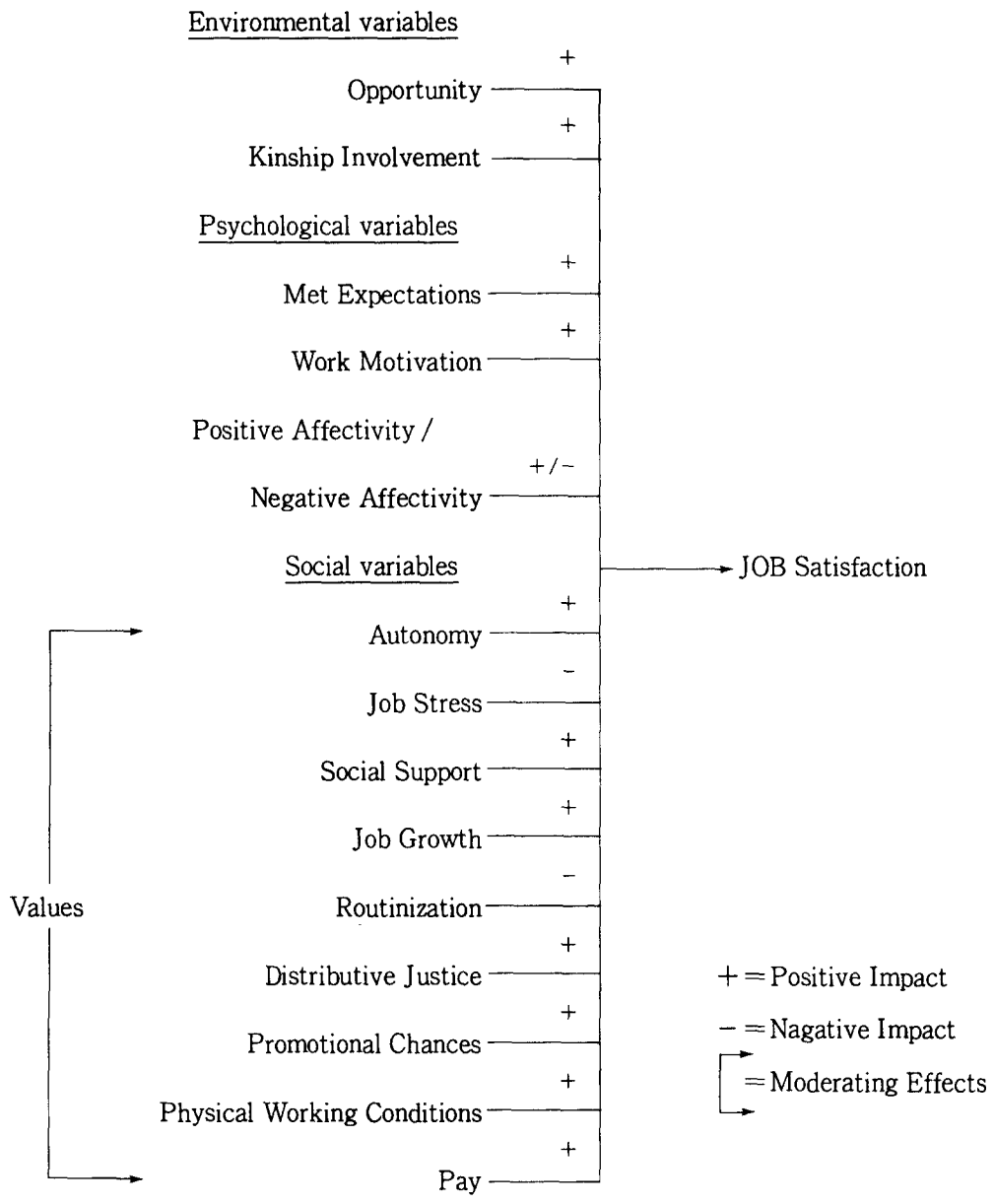

Figure 1. A Causal Model of Job Satisfaction

1) Environmental Variables

The model has two environmental variables, opportunity and kinship involvement. Opportunity is a job market variable emphasized by economists and represents an external labor market(Kalleberg and Sorensen, 1979). The emphasis on the environment is consistent with the focus on environmental determinants studied using the ecological perspective(Hannan and Freeman, 1977). Opportunitys impact on satisfaction is based on the assumption that an employee is free to move. It is also assumed that employees will become dissatisfied if they know that similar employees elsewhere are getting more rewards. A comparative component -- the similar employees -- is thus built into the model.

The emphasis on kinship involvement comes from the work of Price and Mueller(Price and Mueller, 1986b) who term this variable kinship responsibility. In the present paper, the variable is relabelled kinship involvement to indicate that it refers not just to kinship obligations but also to social support from the kinship system. In their research, Price-Mueller and colleagues found that kinship involvement decreases turnover by increasing satisfaction. Based on their research, it is assumed that high kinship involvement increases satisfaction, because it provides assistance for job-related problems. This assistance for job-related problems means that kinship involvement is also a social-support variable, albeit one that is outside the organization.

2) Psychological Variables

The model includes four psychological variables : met expectations, work motivation, positive affectivity, and negative affectivity. Met expectations comes from the work of Porter and his colleagues(Mowday et al., 1982). The study reported in this paper is concerned only with whether expectations are met or not ; it was not possible to collect data about employees expectations prior to entering the organization.

Work motivation is discussed in the work of McClelland and his colleagues(McClelland et al., 1953), and is elaborated recently, with different terminology, by Kanungo(Kanungo, 1982). Kanungo(1982) distinguishes between job and work involvement. The former

indicates involvement with a specific job, whereas the latter refers to involvement with work in general. The study reported in this paper is concerned only with the latter. Work motivation is a type of variable that employees bring into the organization. It is assumed that work motivation leads to greater satisfaction, because highly motivated employees are likely to work harder and thus receive more rewards for their efforts.

Positive affectivity and negative affectivity have been recently emphasized as important determinants of work orientations by Watson and their colleagues(Watson and Clark, 1984 ; Watson and Tellegen, 1985). These two affectivities are commonly referred to as dispositional variables. In addition to their expectations and values, employees bring their dispositions into the organization. Like the previously-mentioned environmental variables, these two dispositional variables constitute a departure from the traditional emphasis on the social determinants of satisfaction(Kalleberg, 1977).

Some literature suggests that these two dispositional variables may contaminate the measurements of job stress and social support(Brief et al., 1988). For example, employees who are predisposed to experience pleasant emotional states may falsely underestimate job stress and overestimate social support. Therefore, it is argued that without controls for these dispositional variables, biased results may be produced. Although this possibility is not emphasized in the literature, the measures of other determinants, particularly opportunity and promotional chances, may also be contaminated by the dispositional variables. Employees who are predisposed to experience pleasant emotional states may overestimate the availability of alternative jobs in the environment and the chances to advance within an organization, whereas employees who are predisposed to experience unpleasant emotional states may underestimate these alternatives and chances. Job stress, social support, opportunity, and promotional chances could all be contaminated by the optimism/pessimism aspects of positive and negative affectivity. The possible confounding influences of the dispositional variables will be examined in this study.

3) Social Variables

The model has twelve social variables : autonomy, role ambiguity, role conflict, workload, co-worker support, supervisory support, job growth, routinization, distributive justice, promotional chances, physical working conditions, and pay. Role ambiguity, role conflict, and workload are dimensions of job stress, whereas co-worker support and supervisory support are dimensions of social support.

Autonomy is the distribution of power from the perspective of an individuals job. Excluded from this definition is the power that individuals exercise in their immediate work unit. Material pertinent to autonomy is often found in discussions of centralization, control, participation, and power. Ever since the Western Electric Research, autonomy -- often referred to as participation -- has been viewed as an important determinant of satisfaction : the greater the autonomy, the greater the satisfaction.

Job stress has three dimensions : role ambiguity, role conflict, and workload. These job-stress variables stem from the researchers(House, 1980, 1981) at the Survey Research Center(SRC) of the University of Michigan. Increases in job stress are believed to reduce satisfaction.

Social support has two internal sources, coworkers and supervisors. The social support label also comes from the SRC. Concern for what this research labels as social support dates back to the Western Electric Research in the late 1920s and early 1930s(Roethlisberger and Dickson, 1938), studies on primary groups in the 1940s and 1950s(Shils and Janowitz, 1948), and research on cohesion in the 1950s(Seashore, 1954). As previously indicated, kinship involvement is also a social-support variable. The difference is that co-worker support and supervisory support indicate assistance from within the organization, whereas kinship involvement represents assistance from outside the organization.

Job growth is a variable that is not much emphasized as a determinant of satisfaction. Hackman and Oldham(1980) assert that work which allows employees to grow and develop knowledge and skills provides them with a sense of personal progress and meaningfulness. Additional empirical research(Mangelsdorff, 1989) reports that opportunities

for the acquisition of new knowledge and for continuing education are important sources of satisfaction. Job growth may also be especially important to the professional employees in the hospital studied. The model postulates that it is likely to increase satisfaction. Routinization is a technology variable, since it indicates the nature of the transformation process. The label of routinization in the study of organizations comes from the work of Perrow(1967). Material pertinent to routinization is found in the discussion of variety, as in the Job Diagnostic Survey(Hackman and Oldham, 1975). Routinized work has long been believed to produce lower satisfaction.

Distributive justice has its roots in the work of Adams(1963). Literature on distributive justice contends that when employees perceive that rewards are distributed in proportion to the contribution to the organization, they will define the situation as fair, and that fairness produces increased satisfaction. What is assumed in the literature is the importance of comparison in judging fairness. In other words, it is assumed that when an employees input-output(rewards) ratio is proportional to that of other similar employees, the rewards are judged as fair.

Promotional chances has long been a critical variable to sociologists, since it fits well with their traditional concern about vertical mobility. Labor market theorists distinguish between internal and external labor markets. Promotional chances captures the key element of an internal labor market, whereas opportunity, an environmental variable mentioned earlier, is part of an external labor market. Mobley and his colleagues(Mobley et al., 1979) emphasize the importance of future rewards as a determinant of organizational behavior, and these future rewards are captured by promotional chances. The model indicates that increases in promotional chances produce greater satisfaction.

Physical working conditions impact on work orientations has not been much studied (Mottaz, 1988). Material relevant to physical conditions is found in the discussion of job hazards by Viscusi(1979), and in a recent study by Iverson and Roy(1994) which reports that physical working conditions is an important determinant of work orientations. On the basis of these data, it is argued that good physical working conditions improves satis-

faction.

Pays role as an important incentive for employees has long been investigated in the study of organizations. Scientific management theory has insisted that pay is the most important means to get employees to work hard(Aitken, 1985), whereas the Western Electric research tradition has tended to underestimate the importance of pay(Landsberger, 1958). Although pay is not as important as scientific management theory has argued, it is still important as a determinant of work orientations and organizational behavior(Lawler, 1973). The model postulates a positive relationship between increases in pay and satisfaction.

The model does not include demographic variables because these variables lack theoretical standing(Price, 1995). However, five demographic variables -- age, tenure, gender, education, and union membership -- will be used as controls.

3. Moderating Effects

Four moderators will be examined in this research. First, the model hypothesizes that the impacts of the social variables on satisfaction will be moderated by values, that is, the relationship between the social variables and satisfaction will differ depending on the valuation of the social variables.

Second and third, job stress is hypothesized to impact only directly on satisfaction in this study. However, a considerable amount of literature(Cohen and Wills, 1985) suggests that the negative impact of job stress on satisfaction is moderated by social support and/or autonomy. Job stress is said to have little or no impact on satisfaction when high levels of social support and/or autonomy exist.

The fourth moderator to be estimated is being a primary income-earner. Pay is anticipated to impact directly on satisfaction. In contrast, Muchinsky and Tuttle(1979) suggest that the impact of pay on satisfaction will vary, depending on whether or not an employee is a primary income-earner. They suggest that as a households dependence on one earners

pay increases, pay will be more important to the household and to the employee, and so pays impact on satisfaction will also increase.

III. Methodology

1. Site, Sample, and Data Collection

The site for this research is a university hospital in Taegu, South Korea. Taegu is a large city with a population of 2.5 million. This university hospital is a tertiary-care facility that provides a full range of specialized diagnostic and treatment programs. It has 750 beds and employs 1,202 people.

The sample is composed of 836 hospital employees and represents all occupational categories in the hospital(physicians, 16.7 percent ; nurses, 53. 8 percent ; technologists, 12.5 percent ; administrative/clerical workers, 7.1 percent ; and manual workers, 9.9 percent). There are 577 females(69.0 percent) and 509 union members(60.9 percent). Mean levels of employee age, education, and tenure are thirty, fifteen(14.7), and five(5.2) years, respectively.

Data were collected by questionnaire. The questionnaire was carefully translated into Korean by the first author of this paper and by a Korean doctoral student of the University of Iowa. Since it is critical to assure equivalent versions between the two different languages, careful attention was paid to minimizing the problems of simple translation (Hulin and Mayer, 1986). The translation was then reviewed and modified by five scholars in South Korea. A pretest was conducted in another university hospital, and based on the pretest results, final revisions were made on the Korean version of the questionnaire.

The distribution and collection of the questionnaires was done during May 1992. Questionnaires were distributed to 1,150 of the 1,202 employees. A total of fifty-two employees(1,202 minus 1,150) were not available during the survey period. A total of 879 ques-

naires were collected for a response rate of about seventy-five (74.7) percent. After forty-three questionnaires are excluded because of missing data, the final sample consists of 836 respondents. A comparison, by gender and occupation, of the sample and hospital population shows few differences between the two, which indicates that the sample is representative.

2. Measurement

All of the theoretical variables are assessed with measures that have been widely used in the study of organizations (Price and Mueller, 1986a). Most of the measures used in this study are perceptual measures, as is common in the study of organizations (Price and Mueller, 1986b). Examples of the measures are listed in the Appendix. Table 2 presents a descriptive summary and the sources of the measures. As this table shows, the Cronbachs alphas for the measures range from .54 to .84, with an average of .72.

The measurement of satisfaction may be approached globally or dimensionally. Brayfield-Rothes (1951) index illustrates a global approach, whereas Smith and her colleagues (1969) exemplify a dimensional, or facet, approach. Both approaches are legitimate ways to measure satisfaction. As with the studies by Kalleberg (1977) and Lincoln-Kalleberg (1990), this research takes a global approach.

Two measures which will be used in the tests for the moderating effects, values and primary income-earners, require some elaboration. The values regarding the social variables were measured with questions that asked respondents how much importance they attach to each social variable. Each question had five response categories, ranging from very important to not important at all. This procedure is common in measuring values in organizational research (Lincoln and Kalleberg, 1990). The values for eleven out of the twelve social variables were assessed ; only the value of physical working conditions was not assessed. Since all eleven value measures exhibited little variation, each item was converted into a dummy variable after the five response categories of the item were grouped

Table 2. Descriptive Statistics and Reliability of Indices

Variable	No. of Items	Mean	S.D.	Range	Alpha	Sources
Job Satisfaction	6	18.94	3.95	6-30	.77	Brayfield-Rothe, 1951[b]
Opportunity	2	5.58	1.40	2-10	.58	Price-Mueller, 1986[b]
Kinship Involvement	1	2.13	1.87	0-7	N.A.[a]	Price-Mueller, 1986[b]
Met Expectations	4	10.23	2.97	4-20	.82	New Measure
Work Motivation	4	16.58	2.67	4-20	.82	Kanungo, 1982[b]
Positive Affectivity	3	9.45	2.21	3-15	.67	Correspondence, Watson[b]
Negative Affectivity	4	12.71	2.70	4-20	.66	Correspondence, Watson[b]
Autonomy	2	5.48	2.00	2-10	.67	Tetrick-LaRocco, 1987[b]
Role Ambiguity	3	5.64	1.71	3-15	.65	Rizzo et al., 1970[b]
Role Conflict	3	10.00	2.32	3-15	.76	Rizzo et al., 1970[b]
Workload	3	10.97	2.45	3-15	.66	Rizzo et al., 1970[b]
Co-worker Support	4	13.51	2.77	4-20	.75	Price-Mueller, 1986[b]
Supervisory Support	3	8.45	2.43	3-15	.77	New Measure
Job Growth	3	8.21	2.40	3-15	.71	New Measure
Routinization	2	6.55	1.94	2-10	.54	Price-Mueller, 1986[b]
Distributive Justice	5	12.93	3.77	5-25	.84	Price-Mueller, 1986[b]
Promotional Chances	3	7.04	2.95	3-15	.83	Price-Mueller, 1986[b]
Phy. Working Cond.	3	6.95	2.76	3-15	.75	New Measure
Pay	1	1135.64	559.00		N.A.[a]	Price-Mueller, 1986[b]
					(mean=.72)	

[a] Alpha cannot be assessed for a single item.

[b] The items used in the measure are adapted from the source indicated.

into two approximately equal categories. These dummy variables were used to check the moderating effects of values.

Primary income-earners were identified using the income statistics collected on the questionnaire. If the employees pay constituted over seventy-five percent of their total household income, they were considered primary income-earners.(When primary income-earners were defined with different percentages, such as sixty, seventy, eighty, and ninety, the test results for the moderating effect did not change. Seventy-five percent was chosen because it is the midpoint between fifty and one hundred.) A single person who works is, of course, a primary income-earner. This was a dummy variable which had the value of one if an employee was a primary income-earner ; otherwise it had the value of zero.(Primary income-earners were evenly divided between males and females, with 53. 1 percent of the former and 46. 9 percent of the latter being primary income-earners. The reference to primary income-earner is thus not another way to refer to gender differences.)

3. Data Analysis

Two statistical techniques were used to analyze the data, LISREL and multiple regression analysis. LISREL corrects for measurement error(Bollen, 1989 ; Joreskog and Sorbom, 1988), produces coefficients similar to standardized regression coefficients, and provides a measure of explained variance, an unadjusted R2. The sample covariance matrix for the observed indicators was inputted to LISREL. Single-item measures for kinship involvement, pay, and the five demographic variables were treated as perfectly reliable. Maximum likelihood estimation was used to obtain parameter estimates.

Although LISREL is a sophisticated statistical procedure, multiple regression techniques are more flexible for checking linearity and moderating effects. The SPSS MEANS procedure was used to check the linear relationship between each independent variable and the dependent variable. Most relationships were found to be linear. For the rela-

Table 3. Zero-order Correlations among the Exogenous Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Environmental Variables																		
Opportunity(1)	1.00																	
Kinship Involvement(2)	-.06	1.00																
Psychological variables																		
Met Expectations(3)	-.37**	.03	1.00															
Work Motivation(4)	-.09*	.01	-.01	1.00														
Positive Affectivity(5)	-.03	.00	.43**	.21**	1.00													
Negative Affectivity(6)	-.09*	-.16**	-.19**	.07	-.35**	1.00												
Social Variables																		
Autonomy(7)	-.04	.05	.43**	.07*	.29**	-.16**	1.00											
Role Ambiguity(8)	.04	-.11**	-.04	-.49**	-.21**	.17**	-.24**	1.00										
Role Conflict(9)	.07	-.04	-.23**	.12**	-.02	.32**	-.13**	-.09*	1.00									
Workload(10)	.10*	-.10**	-.39**	.09*	-.19**	.39**	-.30**	-.17**	.36**	1.00								
Co-worker Support(11)	-.12**	-.11**	.37**	.11**	.28**	-.09*	.33**	-.16**	-.19**	-.10**	1.00							
Supervisory Support(12)	-.22**	-.04	.60**	.04	.31**	-.13**	.51**	-.10*	-.30**	-.25**	.61**	1.00						
Job Growth(13)	-.24**	-.03	.69**	.05	.47**	-.14**	.51**	-.09*	-.11**	-.23**	.44**	.64**	1.00					
Routinization(14)	.15**	-.03	-.43**	-.08	-.39**	.21**	-.60**	.28**	.08	.27**	-.27**	-.48**	-.63**	1.00				
Distributive Justice(15)	-.36**	-.01	.64**	-.04	.25**	-.10**	.38**	.02	-.22**	-.43**	.31**	-.50**	.46**	-.38**	1.00			
Promotional Chances(16)	-.09*	.12**	.56**	-.03	.32**	-.30**	.48**	-.04	-.12**	-.32**	.28**	-.49**	.54**	-.44**	.51**	1.00		
Physical Working Conditions(17)	-.19**	.10**	.49**	-.02	.24**	-.26**	.22**	.07	-.14**	-.49**	.18**	-.38**	.46**	-.36**	.38**	.44**	1.00	
Pay(18)	-.04	.30**	.24**	.05	.20**	-.22**	.40**	-.19**	-.11**	-.22**	.11**	.20**	.33**	-.38**	.25**	.54**	.30**	1.00

tionships which showed significant deviations from linearity, a comparison of the R2s with Eta2s, along with a graphical examination of the relationships, reveals no extreme or meaningful nonlinearity.

Multicollinearity was checked using the eigenvalue decomposition method(Gunst, 1983) with the GAUSS statistical package. If an eigenvalue associated with an exogenous variable is less than 0.05, then that variable has a multicollinearity problem. None of the eigenvalues was found to be less than 0.05 ; therefore, there is no problem of multicollinearity among the variables. Additional information pertinent to multicollinearity is provided in the correlation matrix in Table 3.

IV. Results

1. Moderating Effects

To assess the moderating effects discussed earlier, four sets of interaction effects were examined. First were the interactions between values and the eleven social variables. Eleven interactions were studied for this analysis. Second were the interactions between social support and job stress. Nine interactions between the three social-support variables (kinship involvement, co-worker support, and supervisory support) and the three job-stress variables(role ambiguity, role conflict, and workload) were studied. Third were the interactions between autonomy and job stress. Three interactions between autonomy and the three job-stress variables were analyzed. Finally, one interaction effect between being a primary income-earner and pay was studied. Overall, twenty-four interaction terms were examined. Satisfaction is the dependent variable used in tests of the moderating effects. (To conserve space, the results for these tests are not presented in the paper.)

When the eleven interaction terms are entered as a block, after regressing satisfaction on the eighteen exogenous variables, the increment in explained variance is statistically

significant. Individual t-tests for the interaction terms show that two of the eleven interaction terms are significant : one between supervisory support and the value of the supervisory support, and the other between routinization and the value of variety(the opposite of routinization). When the relationship between supervisory support and satisfaction is examined for high and low levels of the value of supervisory support, the moderating effect is as predicted by the literature : the employees who highly value supervisory support exhibit higher levels of satisfaction than those who lowly value supervisory support. The moderating effect of the value of variety is also as predicted by the literature : the employees who evaluate variety highly are more satisfied with their job than those who do not. However, except for the above two interaction terms, the other nine interaction terms are not significant, that is, most of the results are not consistent with the argument for the moderating effects of values.

When the other three sets of interaction effects -- the moderating effects of autonomy, social support, and being a primary income-earner -- are checked, none of them is significant. The addition of each set of interaction effects does not increase the R^2 significantly. In sum, no substantial evidence is found for the moderating effects of values, autonomy, social support, or being a primary income-earner.

2. Zero-order Correlations

The first column in Table 4 contains zero-order correlations between the exogenous and demographic variables, on the one hand, and satisfaction. The results indicate that the eighteen exogenous variables are all significantly correlated with satisfaction in the direction predicted by the model. The results also show that employees who are older, longer-tenured, male, more educated, and are not union members are more satisfied with their job than are their counterparts.

Table 4. Zero-Order Correlations and Model Estimation Results(N=836)

Variables	Zero-order Correlations	Model 1	Model 2
Environmental Variables			
Opportunity	-.258***	-.108**	-.057
Kinship Involvement	.152***	.048	.069*
Psychological Variables			
Met Expectations	.624***	.335***	.408***
Work Motivation	.265***	.071*	.089*
Positive Affectivity	.606***	.238***	---
Negative Affectivity	-.411***	-.112*	---
Social Variables			
Autonomy	.483***	.013	-.025
Role Ambiguity	-.454***	-.259***	-.319***
Role Conflict	-.190***	-.040	-.050
Workload	-.321***	-.100*	-.175**
Co-worker Support	.384***	.095*	.130**
Supervisory Support	.489***	-.001	-.039
Job Growth	.561***	-.011	.045
Routinization	-.578***	-.187*	-.238**
Distributive Justice	.383***	-.098*	-.121*
Promotional Chances	.475***	.056	.095*
Physical Working Conditions	.334***	-.067	-.077
Pay	.378***	-.028	-.062
Demographic Variables			
Age	.339***	.017	-.008
Tenure	.228***	.070	.101*
Gendera	.225***	.020	.032
Education	.270***	.054	.099*
Union Membershipb	-.181***	-.009	-.001
R-square		.754	.689

*P<.05, **P<.01, ***P<.001(1-tailed).
[a]1=male, 0=female.
[b]1=union member, 0=non-union member.

3. Estimates of the Causal Model

The results for Model 1(Table 4) show that ten of the eighteen variables have statistically significant net effects on satisfaction. Met expectations, work motivation, positive affectivity, and co-worker support have positive effects on satisfaction, whereas opportunity, negative affectivity, role ambiguity, workload, routinization, and distributive justice have negative effects. Except for distributive justice, these effects are all in the direction predicted by the model posited in Figure 1. Model 1 explains about seventy-five (75.4) percent of the variance in satisfaction. None of the five demographic variables -- age, tenure, gender, education or union membership -- is significant.

4. Dispositional Variables

The discussion of the model indicated that when examining the effects of the exogenous variables on satisfaction, it is necessary to control for positive and negative affectivity. There is the possibility that these dispositional variables might contaminate not only the job-stress and social-support variables, but also opportunity and promotional chances. To investigate the possible confounding influences of the dispositional variables for these variables, the model was reestimated with the two dispositional variables excluded. The results are shown in the third column of Table 4(Model 2). The focus of the analysis will be on the eight variables -- the three job-stress variables, the three social-support variables, opportunity, and promotional chances -- which are anticipated to be contaminated by the dispositional variables.

When the dispositional variables are not controlled(see Model 2), opportunity is no longer significant, but kinship involvement and promotional chances become significant. Seven variables -- met expectations, work motivation, role ambiguity, workload, co-worker support, routinization, and distributive justice -- are significant in both situations, but without controls, the size of these effects increases for each of the seven variables. The percentage increases are as follows : met expectations, twenty-two(21.8) ; work motivation,

twenty-five(25.4) ; role ambiguity, twenty-three(23.2) ; workload, seventy-five(75.0) ; co-worker support, thirty-seven(36. 8) ; routinzation, twenty-seven(27.3) ; and distributive justice, twenty-three(23.5). Two demographic variables, tenure and education, become significant, both resulting in increased satisfaction. Excluding the dispositional variables also affects the explained variance, which decreases by six percent as a result of this exclusion.

V. Discussion

1. Major Findings

First, the range of the findings is impressive. Met expectations, work motivation, positive affectivity, and negative affectivity are psychological variables ; opportunity is an environmental variable ; and role ambiguity, workload, co-worker support, and routinization are social variables. Traditional investigations of satisfaction have focused on its social determinants(Kalleberg, 1977). This study indicates that an exclusive focus on social determinants is no longer justified : psychological, environmental, and social determinants must be examined. This range of findings is a major result and suggests that an expanded focus is needed for the study of satisfaction.

Second, the explained variance of this study(75.4 percent) is impressive. While not as large as the seventy-nine percent obtained by Iverson and Roy(1994), it is higher than the explained variance for the following five studies : Price and Mueller(1986b), thirty-nine percent ; Mueller and Price(1990), forty-six percent ; Lincoln and Kalleberg(1990), thirty-nine percent for the U.S.A. and forty percent for Japan ; Seo(1992), sixty-nine percent ; Mueller and his colleagues(1994), sixty-two percent. It should be noted that all of these results are not perfectly comparable, because some of the studies use LISREL(Seo, 1992 ; Iverson and Roy, 1994 ; Mueller et al., 1994), whereas the remainder use OLS. Ther-

efore, it appears as if the model can be generalized to South Korea, or at least to a university hospital in that country. Lincoln and Kalleberg(1990), in their study of satisfaction and commitment in the United States and Japan, found substantially the same results for the two countries, thus anticipating the results of the research reported in this paper. These results are the most important ones obtained in this investigation, since one of its major purposes was to see if the estimated model could be generalized.

2. Expectation Theory

Met expectations must be considered more intensively. Met expectations was substituted for expectations, since it was not possible to measure expectations before the employees started to work in the hospital. Values, however, were assessed in the customary manner, as was described when the measures were presented.

The results for met expectations are impressive, since its beta coefficient(.335) is the largest of all the determinants. Role ambiguity(-.259) and routinization(-.187) have the next two largest coefficients. The link with expectation theory provided by this variable is, therefore, justified and confirms a main thrust of the work of Porter and his colleagues. Further research should clearly include met expectations in the models estimated.

The results for values, however, are not significant : the employees evaluation of the social conditions of work does not moderate the impact of these conditions on satisfaction. These results for values are consistent with the previous work of Price-Mueller(1986b) and Lincoln-Kalleberg(1990), but do not support an important thrust of Porter and his colleagues work.

3. Positive Affectivity and Negative Affectivity

Consider in more detail the findings regarding positive and negative affectivity. This study examined the affectivity variables by running the model with them(Model 1) and without them(Model 2). Examination of these results indicates that seven variables were

signnificant with and without the affectivity variables (met expectations, work motivation, role ambiguity, workload, co-worker support, routinization, and distributive justice). Only one variable (promotional chances) becomes significant when the affectivity variables are removed, thus suggesting that they are contaminating it. These results, therefore, suggest that the contaminating potential of the affectivity variables is somewhat exaggerated.

4. Moderators

The discussion of values as a moderator raises the issue of the other possible moderators : autonomy, social support, and being a primary income-earner. This study finds that autonomy and social support do not moderate, or buffer, the impact of job stress on satisfaction. This study also finds that being a primary income-earner does not serve as a moderator either. The literature contains considerable discussion as to whether autonomy and social support moderate the impact of job stress on satisfaction and/or whether these variables have only direct effects. This study indicates only direct effects for role ambiguity and workload. Whether being a primary income-earner serves as a moderator is not as important a topic in the literature as autonomy and social support. However, the lack of results for being a primary income-earner is consistent with the results for autonomy and social support : moderating effects are found for none of the variables examined. An additive model thus works quite well in explaining satisfaction.

The results for possible moderators do not reject the contingency approach that is so important in the study of organizations(Lawrence and Lorsch, 1967). These moderating effects may exist in other settings, but they are not found in the site and sample investigated in this study. The findings of this and other research, however, suggest that the importance of the contingency approach is somewhat exaggerated.

5. Adequacy of the Model

It was previously noted that ten of the beta coefficients were significant. Since the model has eighteen variables, this means that slightly over half(fifty-five percent) of them are significant. Ignoring the explained variance for a moment, the question of the models adequacy arises when only half of its variables are significant. Those which are not significant may be genuine determinants of satisfaction, but may not be significant in the site investigated. This is because of the large number of variables controlled and the lack of variance among the variables investigated. Multivariate analysis is common in the study of satisfaction, but few studies use the extensive range of controls used in this investigation. The single hospital studied here may also lack variations among the variables which were not significant. An investigator is likely to obtain greater variance when different organizations are studied, especially if the organizations are quite different. All of the non-significant variables have empirical support in the literature and may turn out to be significant in other settings. The investigators, therefore, argue that the model estimated is a good one, even if some of its determinants are not significant in this study. Of most importance in evaluating the models adequacy are the consistency of the significant findings with predictions based on the model and the high explained variance.

Only one significant finding, that for distributive justice, was not in accord with the model ; it was negative, though it was hypothesized to be positive. In this study, the results for distributive justice seem to be a statistical artifact from the introduction of extensive controls, since the zero-order correlation indicates that, as anticipated, distributive justice is positively and significantly correlated with satisfaction.

6. Demographic Variables

The results for the zero-order correlations show that satisfaction varies with age, tenure, gender, education, and union membership. This study suggests that the South Korean employees who are older and have longer tenure are more satisfied with their jobs.

These results are consistent with the literature(Hall, 1994). This study also shows that the South Korean employees who are male, more educated, and are not union members are more satisfied with their jobs. However, a caution should be taken against generalizing the results for gender, education, and union membership, because the literature has yielded mixed evidence about the relationships between these three demographic variables and satisfaction(Pfeffer and Davis-Blake, 1990 ; Hall, 1994).

When the results for the multivariate analysis were examined, none of the demographic variables was significant(Model 1, Table 4). However, when the two affectivity variables were excluded from the analysis to assess their importance, two demographic variables (tenure and education) were significant. Since it is the first analysis which is most important, it is clear that the demographic variables add nothing to the explanation of satisfaction ; their content is caught up by the eighteen theoretical variables.

VI. Suggestions

Four suggestions are advanced for future research on satisfaction.(1) The causal model has been found to work in South Korea. However, since this finding is based on the investigation of only one organization, it may have some limitations in generalizing to other organizations in South Korea. Additional research on different organizations in South Korea is required to get a more solid assessment on the models generalizability. Along with this, the model needs to be estimated in other Asian societies, such as China and Indonesia.

(2) Nearly all studies of satisfaction are subject to the criticism of common-method variance. Various solutions to the problem of common-method variance have been suggested, but because of the practical difficulties in implementing them, the problem has not been seriously faced in the study of satisfaction. Common-method variance is very difficult to avoid, but to estimate the model more rigorously, future research should address this pro-

blem.

(3) A longitudinal design is required to establish the causal ordering among variables. For example, this study hypothesized that work motivation leads to satisfaction, but it is possible that satisfaction may promote work motivation. However, this study could not check this possibility, because it employed a cross-sectional design. A true longitudinal study, with three points in time, would make it possible to establish firmly the causal ordering.

(4) There is substantial evidence supporting the existence of different values among the different members of society -- yet this study found little variation. Before this aspect of expectation theory is rejected, values should be measured in a different way. Rather than simply asking respondents to evaluate the importance of different structural features of the organization -- the customary procedure used in this research -- a different type of question might be designed. Vignettes, for example, might be used to assess the major structural features of the organization. It is not generally prudent to reject an approach without trying different measures of variables critical to that approach.

This study has clearly demonstrated that the model estimated in this study is valuable in explaining satisfaction. Implementation of these suggestions should further improve the model.

Appendix

Selected Measures of the Research

Variable	Measure
Job Satisfaction	I feel fairly satisfied with my job.
Opportunity	It would be easy for me to find a job with another employer that is much better than the one I now have
Kinship Involvement[a]	-------
Met Expectations	Generally, this hospital has been what I thought it would be.
Work Motivation	In my view, a person's life goals should be work-oriented.
Positive Affectivity	I usually find ways to liven up my day.
Negative Affectivity	Often I get irritated at little annoyances.
Autonomy	I have control over the scheduling of my job
Role Ambiguity	I know exactly what is expected fo me in my job.
Role Conflict	I get conflicting job requests from two or more people.
Workload	I do not have enough time to get everything done in my job.
Co-worker Support	My peers are helpful to me in getting my job done.
Supervisory Support	My supervisor can be relied upon when things get tough on my job.
Job Growth	This hospital provides good opportunity for employees to learn new knowledge and skills related to their job.
Routinization	I have the opportunity to do a number of different things in my job.
Distributive	Justice Compared to other employees, my work reward is proper for my education and training.
Promotional Chances	I have a good chance to get ahead in this hospital.
Physical Working Conditions	Working conditions in this hospital are comfortable.
Pay[b]	-------

[a] Measured by the number of dependents

[b] Measured by asking the respondents to indicate their total monthly income before taxation.

References

Adams, J. S.(1963). Toward an understanding of inequality. Journal of Abnormal and Social Psychology, 67, 422-436.

Aitken, H. G. J.(1985). Scientific management in action. Princeton, New Jersey : Princeton University Press.

Bollen, K. A.(1989). Structural equations with latent variables. New York : John Wiley and Sons.

Brayfield, A. H. and Rothe, H. F.(1951). An index of job satisfaction. Journal of Applied Psychology, 35, 307-311.

Brief, A. P., Burke, M. J., Atieh, J. M., Robinson, B. S. and Webster, J.(1988). Should negative affectivity remain an unmeasured variable in the study of job stress. Journal of Applied Psychology, 73(2), 193-198.

Brooke, P. P. JR. and Price, J. L.(1989). The determinants of employee absenteeism : an empirical test of a causal model. Journal of Occupational Psychology, 62, 1-19.

Cohen, S., and Wills, T. A.(1985). Stress, social support, and the buffering hypothesis. Psychological Bulletin, 98, 310-357.

Cranny, C. J., Smith, P. C. and Stone, E. F.(1992). Job satisfaction. New York : Lexington Books.

Freeman, R. B. and Medoff, J. L.(1984). What do unions do. New York : Basic Books.

Gunst, R. F.(1983). Regression analysis with multicollinear predictor variables : definition, detection, and effects. Communications in Statistics-Theory and Methods, 12, 2217-2260.

Hackman, J. R. and Oldham, G. R.(1975). Development of the Job Diagnostic Survey. Journal of the Applied Psychology, 60, 151-170.

Hackman, J. R. and Oldham, G. R.(1980). Work redesign. Reading, MA : Addison-Wesley.

Hall, R. H.(1994). Sociology of work. Thousand Oaks, CA : Pine Forge Press.

Hannan, M. and Freeman, J.(1977). The population ecology of organizations. American Journal of Sociology, 82(5), 929-966.

House, J. S.(1980). Occupational stress and the mental and physical health of factory workers. Ann Arbor, MI : Survey Research Center, University of Michigan.

House, J. S.(1981). Work stress and social support. Reading, MA : Addison-Wesley, 1981.

Hulin, C. L. and Mayer, L. J.(1986). Psychometric equivalence of a translation of the Job Descriptive Index into Hebrew. Journal of Applied Psychology, 71, 83-94.

Iverson, R. D. and Roy, P.(1994). A causal model of behavioral commitment : evidence from a study of Australian blue-collar employees. Journal of Management, 20, 15-41.

Joreskog, K. G. and Sorbom, D.(1988). LISREL VII : analysis of linear structural relationships by the maximum likelihood method. Chicago : International Educational Services.

Kalleberg, A. L.(1977). Work values and job rewards : a theory of job satisfaction. American Sociological Review, 42, 124-143.

Kalleberg, A. L. and Sorensen, A. B.(1979). The sociology of labor markets, Annual Review of Sociology, 5, 351-379.

Kanungo, R. N.(1982). Work alienation. New York : Praeger.

Landsberger, H. A.(1958). Hawthorne revisited. Geneva, New York : W. F. Humphrey Press Inc.

Lawler, E. E.(1973). Motivation in work organizations. Monterey, CA : Brooks/Cole.

Lawrence, P. R. and Lorsch, J. W.(1967). Organization and environment. Boston : Division of Research, Harvard Business School.

Lincoln, J. R. and Kalleberg, A. L.(1990). Culture, control, and commitment : a study of work organization and work attitudes in the United States and Japan. New York : Cambridge University Press.

Locke, E. A.(1976). The nature and causes of job satisfaction. Pp. 1293-1349 in Handbook of industrial and organizational psychology, edited by M. D. Dunnette. Chicago : Rand McNally.

Mangelsdorff, A. D.(1989). A cross-validation study of factors affecting military psychologists decision to remain in the service : the 1984 active duty psychologists survey. Military Psychologist, 4, 241-251.

McClelland, D. C., Atkinson, J. W., Clark, R. A. and Lowell, E. L.(1953). The achievement motives. New York : Appleton-Century-Crofts.

Mobley, W. H.(1982). Employee turnover. Reading : Addison-Wesley.

Mobley, W. H., Griffith, R. W., Hand, H. H. and Meglino, B. M.(1979). Review and conceptual analysis of the employee turnover process. Psychological Bulletin, 86, 493-522.

Mottaz, C. J.(1988). Determinants of organizational commitment. Human Relations, 41, 467-482.

Mowday, R. T., Porter, S. W. and Steers, R. M.(1982). Employee-organization linkages : the psychology of commitment, absenteeism, and turnover. New York : Academic Press.

Muchinsky, P. M. and Tuttle, M. L.(1979). Employee turnover : an empirical and methodological assessment. Journal of Vocational Behavior, 14, 43-77.

Mueller, C. W. and Price, J. L.(1990). Economic, psychological, and sociological determinants of voluntary turnover. The Journal of Behavioral Economics, 3, 321-335.

Organ, D. W.(1988). Organizational citizenship behavior. Lexington, MA : Lexington Books.

Perrow, C.(1967). A framework for the comparative study of organizations. American Sociological Review, 32, 194-208.

Pfeffer, J. and Davis-Blake, A.(1990). Unions and job satisfaction : an alternative view. Work and Occupations, 17, 259-283.

Porter, L. W. and Steers, R. M.(1973). Organizational work and personal factors in employee turnover and absenteeism. Psychological Bulletin, 80, 151-176.

Price, J. L.(1995). A role for demographic variables in the study of absenteeism and turnover. Recruitment, Selection and Retention : An International Journal(forthcoming).

Price, J. L. and Mueller, C. W.(1986a). Handbook of organizational measurement. Scranton : Harper Collins.

Price, J. L. and Mueller, C. W.(1986b). Absenteeism and turnover among hospital employees. Greenwich, CT : JAI Press.

Roethlisberger, F. J. and Dickson, W. J.(1938). Management and the worker. Cambridge, MA : Harvard University Press.

Sales, S. M. and House, J.(1971). Job dissatisfaction as a possible risk factor in coronary heart disease.

Journal of Chronic Disease, 861-873.

Seashore, S. E.(1954). Group cohesiveness in the industrial work group. Ann Arbor, MI : Survey Research Center, University of Michigan.

Seo, Y. J.(1992). Job satisfaction of hospital employees : an empirical test of a causal model in South Korea. Unpublished doctoral dissertation. University of Iowa.

Shils, E. A. and Janowitz, M.(1948). Cohesion and disintegration in the Wehrmact in World War II. Public Opinion Quarterly, 12, 280-315.

Smith, P. C., Kendall, L. M. and Hulin, C. L.(1969). The measurement of satisfaction in work and retirement. Chicago : Rand McNally.

Viscusi, W. K.(1979). Employment hazards. Cambridge, MA : Harvard University Press.

Vroom, V. H.(1964). Work and motivation. New York : John Wiley and Sons, Inc.

Watson, D. and Clark, L. A.(1984). Negative affectivity : the disposition to experience aversive emotional states. Psychological Bulletin, 96, 465-490.

Watson, D. and Tellegen, A.(1985). Toward a consensual structure of mood. Psychological Bulletin, 98, 219-235.