

A Study of Job Satisfaction, Organizational Commitment and Turnover Intention Influenced for Nano-Convergence Employees

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Abstract

This study was to induce employees to make more organizational commitment through their job satisfaction. For this, the survey was conducted among the employees who work for Nano convergence industry. In addition, literature was summarized for the better understanding of the issue being researched. On the basis of these factors, questions were set up in order to create measures to overcome economic crisis worldwide. Depending on our analysis, it was found that wage level had no impact on employees' job satisfaction. However, if employees are satisfied with the general level of compensation in compared to their duties, they seem to feel more satisfaction in their jobs. In connection with working conditions, another finding was that the equal treatment of employees at work, the same working environment, and the observance of service guidance at work have some impact on employees' work satisfaction. In addition, if any firms seek a better way to manage workers with a focus on the settlement and application plan of sound working culture, they are able to expect increases in workers' organizational commitment through their job satisfaction, with the result being an organizational performance increase.

Keywords: Perceived organizational support, Job commitment, Organization commitment, Research engineer, Organizational citizenship

INTRODUCTION

As of 2014, it is allegedly stated that the Nano Convergence Industry (NCI) covers 9% of sector share of the whole manufacturing industry in Korea. The investment rate for the research and development of Nano convergence industry is

indicated as 16.5% among the whole investment on the manufacturing industry as represented in Table 1. The investment in Nano convergence industry has especially shown 18% of average annual growth rate for the past five years, which is a higher growth rate than the 9.8% of average annual growth rate in the wholly domestic research and development cost.

In regards to sales account, small and middle-sized companies have accomplished 38.9% of sales growth, while major companies have shown the minus 5.7% of reduction in the sales account, as stated in Table 2.

The Korean government had regarded Nano convergence industry as the leading new convergent industry because it has shown consistent growth - enough to grasp a 9% share of sales account in the whole manufacturing industry, which is up 2.4% from 6.8% for the past five years. Therefore, the government stated that it would continue supporting Nano convergence industry as one of the main industries in the era of the fourth industrial revolution. Job securities, working conditions, and employment welfare are important for employees' stable work environment, which can induce them to be engaged with more organizational commitment.[1-3] Therefore, in order to draw up plans to build up the development and competition of Nano convergence industry, this paper will analyze the relationship among several concepts.

Table 1: Present Condition of Investment on Research & Development in Parts (for five years) (Unit: hundred million, %)

Division	2010	2011	2012	2013	2014	Annual Growth Rate
Nano-materials	993	1,409	1,791	2,694	2,124	20.9
Nano-electronics	51,605	56,329	62,958	79,976	99,693	17.9
Nano-bio medical	152	190	278	273	461	32.0
Nano-devices equipment	773	1,080	1,101	1,348	1,411	16.2
Total Nano-convergence industry	53,525	59,008	66,128	84,292	103,689	18.0
total domestic cost of research & development*	438,548	498,904	554,501	593,009	637,341	9.8

*total domestic cost of research & development: 2015 Science and Technology Indicators, (KISTEP)

Table 2: Research Model: Number of companies and sales by company size (unit: ea, billion won, %)

Size	2013			2014			Sales growth rate
	Number of companies	Nano-fusion products sales		Number of companies	Nano-fusion products sales		
			Ratio			Ratio	
Small Business	472	32,477	2.34	529	45,102	3.4	38.9
Major Company	69	1,354,461	97,6	61	1,277,828	96,6	-5.7
Total	541	1,386,939	100.0	590	1,322,930	100.0	-4.6

RESEARCH MODEL

The purpose of this study is to investigate whether several leading variables, such as job securities, wage level, benefit plan, and working conditions, have an impact on employees' job satisfaction; and, to analyze the effects of job satisfaction on organizational commitment. Accordingly, in order to achieve research for analysis, we draw the following research model.

RESULTS OF EMPIRICAL ANALYSIS

1. Characteristics of Sample

For data collection, the survey questionnaire was given to 200 employees who have worked for production and research & development departments of Nano-related manufacturing firms in the Seoul metropolitan area. The survey followed the explanation of the research purpose to the companies' managers and the distribution of the questionnaires to the workers in order. 153 questionnaires were ultimately used for the final analysis, with the exception some incomplete surveys.

2. Reliability and validity

The scaling is the progress to quantify observations made by some past experiences through the development of systematic principles and meaningful units of measure. The purpose of this scaling is to distribute a number in order to have most of people with the same attribute or attitude to receive the same score, and the Likert type scale has been used more widely than others such as Thurstone, Likert, and Guttman type scales.[4-6]

Reliability is to represent accuracy related to the consistent measure of objects with stability. For the reliability analysis, Cronbach's Alpha is widely used to estimate the maintainability of internal consistency, therefore, Cronbach's Alpha was used to estimate reliability in this study.[7, 8] Cronbach's Alpha represents the correlation between the measured objects and between the observed scores and true ones through the value of from 0 to 1.[9-11] The standard of reliability is generally over 0.5 of Cronbach's Alpha, however, we estimated the reliability with over 0.6 of Cronbach's Alpha for this study. Table 3 is the result of reliability on the side variables and units.

Table 3: The Result of Reliability Analysis

Variables	Items for Measurement	Alpha	Cronbach's Alpha
Job Security	My current job is pretty stable.	0.8311	0.8516
	I'm wondering that I have to look for another workplace.	0.7635	
	We are forced to be dismissed.	0.7622	
	I'm always worried about dismissal.	0.8810	
Wage Level	The current wage level	0.7886	0.8277
	The comparison of current wage level with current duty	0.7801	
	The comparison of current wage level and social position	0.7967	
Benefit Plan	The current benefit plan	0.8043	0.8778
	The current convenient facilities	0.7804	
	Conditions of stabilization of livelihood	0.8346	
Working Conditions	It's fair to all of the workers.	0.5955	0.6801
	I'm equally treated with others	0.5711	
	Job performance under the same working conditions	0.6721	
	Observance of regulations related to work	0.6086	

Job Satisfaction	I'm satisfied with the current duty.	0.7015	0.7491
	I feel good to work at the current workplace	0.6933	
	I try to do my best to show my capabilities	0.5892	
Organizational Commitment	I'm conforming to all duties to keep working	0.7678	0.7884
	I inspire myself into doing my best at the current workplace	0.7478	
	I'm very worried about the situation of the current organization	0.6812	
	I think that the company is the best workplace.	0.7492	

Table 4: Results of Correlation among Variables

	employment stability	wage level	benefit plan	working conditions	job satisfaction	organizational commitment
employment stability	1.0000					
wage level	-0.1337	1.0000				
benefit plan	0.1152	0.2207	1.0000			
working conditions	-0.0134	0.1854	0.2681*	1.0000		
job satisfaction	-0.1797	-0.0317	0.4014**	0.5451**	1.0000	
organizational commitment	-0.1986	-0.0298	0.0715	0.1430	0.3387**	1.0000

* p<0.05, ** p<0.01

3. Correlation Analysis

Table 4 indicates the result of relational significance analysis among the variables such as employment stability, wage level, benefit plan, and working conditions.

As summarized in Table 4, both benefit plan and working conditions showed high correlation, however, the other variables did show a little lower significance correlatively.

In addition, looking into the result of Table 4, the variables which show the highest correlation are benefit plan and working conditions, and organizational commitment and job satisfaction also shows high correlation mutually.

4. Hypothesis Verification and Discussion

(1) Verification for Suitability of Research Model

In order to analyze the effects of the other variables on job satisfaction, Regression Analysis was utilized, which resulted in a statistical significance with $R^2=0.4280$ and $F=14.6534$, refer Table 5. This means Regression Analysis was statistically appropriate in this study.

(2) Hypothesis Verification

In order to verify the effects of the other variables on job satisfaction, we did use multiple regression analysis, putting employment stability, wage level, benefit plan, and working conditions as independent variables and job satisfaction as a dependent variable. The results are as following in Table 6.

Table 5: The Result of Model's Goodness-of-fit Analysis

	B	β	t		Significance(p)
(Constant)	1.7888		4.1183	***	0.0001
Job Security	-0.1665	-0.2444	-2.7046	***	0.0086
Wage Level	-0.2116	-0.2326	-2.5065	**	0.0146
Benefit Plan	0.2882	0.3492	3.6950	***	0.0004
Working Conditions	0.5791	0.4913	5.2972	***	0.0000
$R^2=0.4280, F=14.6534, p=0.0000$					

Dependent Variable : Job Satisfaction

* P<0.1, ** p<0.05, *** p<0.001

Table 6: An Analysis on the Effects of each variable on Job Satisfaction

	B	β	t		Significance
(Constant)	1.7888		4.1183	***	0.0001
Employment instability	-0.1665	-0.2444	-2.7046	***	0.0086
Wage level	-0.2116	-0.2326	-2.5065	**	0.0146
Benefit plan	0.2882	0.3492	3.6950	***	0.0004
Working conditions	0.5791	0.4913	5.2972	***	0.0000
$R^2=0.4280, F=14.6534, p=0.0000$					

Dependent Variable: Job Satisfaction

* $P < 0.1$, ** $p < 0.05$, *** $p < 0.001$

As stated in Table 6, the result shows that multiple regression analysis was statistically appropriate, with $R^2=0.4280$ and $F=14.6534$.

The positive variables that had effect on job satisfaction are benefit plan and working conditions with a significance level of $p < 0.01$, which means that the better a benefit plan and working conditions are, the higher the level of job satisfaction is. Also, the result demonstrate that employment instability and wage level statistically have negative effects on job satisfaction with a significance level of $p < 0.01$. This means that the higher employment instability, the lower job satisfaction. In addition, it says that wage level has a negative effect on job performance

Therefore, among four hypothesis made in this study, hypothesis 1, hypothesis 2, and hypothesis 3 are accepted except hypothesis 2.

Another regression analysis was made for checking the effect of job satisfaction on organizational commitment, with job satisfaction as an independent variable and organizational commitment as a dependent variable. The analysis resulted in the statistical significance with a significance level of $p < 0.001$, showing $R^2=0.1024$ and $F=9.3306$, Table 7.

Accordingly, the hypothesis 5 that the higher job satisfaction is, the higher the organizational commitment is, could be accepted.

Table 7: Analysis of Relationship between Job Satisfaction and Organizational Commitment

	B	β	t		Significance
(constant)	1.9521		4.5356	***	0.0000
Job satisfaction	0.3568	0.3387	3.0546	***	0.0032
$R^2=0.1024, F=9.3306, p=0.0032$					

dependent variable: organizational commitment

* $P < 0.1$, ** $p < 0.05$, *** $p < 0.001$

RESULTS

1. The Research Result

This study was to induce employees to make more organizational commitment through their job satisfaction. For this, the survey was conducted among the employees who work for Nano convergence industry. In addition, literature was summarized for the better understanding of the issue being researched. On the basis of these factors, questions were set up in order to create measures to overcome economic crisis worldwide.

First of all, it was found that wage level had no impact on employees' job satisfaction. However, if employees are satisfied with the general level of compensation in compared to their duties, they seem to feel more satisfaction in their jobs. Therefore, it is suggested that assessment of wage be made through job evaluation, breaking with the current wage structure.

Secondly, in connection with working conditions, another finding was that the equal treatment of employees at work, the same working environment, and the observance of service guidance at work have some impact on employees' work satisfaction. For this reason, we maintain that administrators try to make employees recognize that they are treated equally, under the directive of managing well a responsible department.

In addition, if any firms seek a better way to manage workers with a focus on the settlement and application plan of sound working culture, they are able to expect increases in workers' organizational commitment through their job satisfaction, with the result being an organizational performance increase.

2. The Practical Research Implication

We maintain that these research findings imply the need for more effective and practical management ability, compared with the previous literature. Above all, it is also stated that job security, wage level against office level, benefit plan, and equal working conditions have some impact on worker's job satisfaction. In conclusion, considering the findings in this

study, we suggest that firms be consider applying the results to the management of each department.

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REFERENCES

- [1] J. P. Meyer and N. J. Allen, "A three-component conceptualization of organizational commitment," *Human Resource Management Review*, vol. 1, pp. 61-89, 1991.
- [2] J. P. Meyer, D. J. Stanley, T. A. Jackson, K. J. McInnis, E. R. Maltin, and L. Sheppard, "Affective, normative, and continuance commitment levels across cultures: A meta-analysis," *Journal of Vocational Behavior*, vol. 80, pp. 225-245, 2012.
- [3] J. P. Meyer, L. J. Stanley, and N. M. Parfyonova, "Employee commitment in context: The nature and implication of commitment profiles," *Journal of Vocational Behavior*, vol. 80, pp. 1-16, 2012.
- [4] K. S. Larsen, M. Reed, and S. Hoffman, "Attitudes of heterosexuals toward homosexuality: A Likert-type scale and construct validity," *The Journal of Sex Research*, vol. 16, pp. 245-257, 1980.
- [5] R. L. Armstrong, "The Midpoint on a Five-Point Likert-Type Scale," *Perceptual and Motor Skills*, vol. 64, pp. 359-362, 1987.
- [6] L. Guttman, "The Cornell Technique for Scale and Intensity Analysis," *Educational and Psychological Measurement*, vol. 7, pp. 247-279, 1947.
- [7] J. M. Bland and D. G. Altman, "Statistics notes: Cronbach's alpha," *BMJ*, vol. 314, p. 572, 1997.
- [8] J. M. Bland and D. G. Altman, "Cronbach's alpha," *BMJ : British Medical Journal*, vol. 314, pp. 572-572, 1997.
- [9] G. Bravo and L. Potvin, "Estimating the reliability of continuous measures with cronbach's alpha or the intraclass correlation coefficient: Toward the integration of two traditions," *Journal of Clinical Epidemiology*, vol. 44, pp. 381-390, 1991.
- [10] L. S. Feldt, "A test of the hypothesis that cronbach's alpha or kuder-richardson coefficient twenty is the same for two tests," *Psychometrika*, vol. 34, pp. 363-373, 1969.
- [11] L. S. Feldt, "A test of the hypothesis that Cronbach's alpha reliability coefficient is the same for two tests administered to the same sample," *Psychometrika*, vol. 45, pp. 99-105, 1980.