



# The Effect of the Strategic Role of HR Department in Manufacturing on the Organizational Effectiveness through Education and Training Satisfaction

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**Abstract.** The purpose of this study is to find out the impact of the strategic role of the HR department in charge of human resource-related tasks, which is the subject of innovation to overcome the immediate crisis situation in the manufacturing industry, on the effectiveness of the organization through satisfaction with education and training. The result of this study is as follows: First, we verified that a strategic role of the HR department has a positive effect on education and training satisfaction. Second, the satisfaction level of education and training and the strategic role of the personnel department have a positive effect on job satisfaction among organizational effectiveness. Third, it was confirmed that education and training satisfaction was found to have a mediating effect in the relationship between HR department's strategic role and job satisfaction. We expect that the results of this study will serve as the basis for re-establishing the role of the HR department dedicated to human resources, which is the important factor not only for innovation but also for overcoming the crisis faced by SMEs and expand their authority and responsibility. The focus of this study is on manufacturing only. This industrial sector is currently facing a serious crisis due to fierce competition and rapidly changing economic environment, but it is better to expand its research focus to more diverse industrial areas.

**Keywords:** Manufacturing, HR Department, Education and Training Satisfaction, Organizational Effectiveness, Job Satisfaction, Organizational Commitment

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## INTRODUCTION

Due to competition with emerging manufacturing powerhouses, the full-scale of the fourth industrial revolution, strengthening environmental regulations, and changing demographics, the existing quantitative pursuit strategy in Korea's manufacturing industry has reached its limit, and concerns are growing as growth is slowing. Innovation is necessary to overcome the rapidly changing global competitive environment and the crisis, and the subject of innovation will be a member of the organization. The more complex the business environment becomes and the more difficult it becomes to predict the future, the more important human resources are to be to regard physical resources, and the role of the HR department in charge of related affairs will be emphasized more. This study aims to find out the relationship between the strategic role of the HR department, which is dedicated to human resources related to the manufacturing industry, and its effect on organizational effectiveness through education and training satisfaction. It is intended to provide evidence to redefine the concept of the role of HR department.

### 1. Theory and formula

#### 2.1. A Study on Domestic Manufacturing

Korea's economy has grown and developed mainly in manufacturing, and the nation's leading conglomerates still operate manufacturing businesses. According to the government's 'Manufacturing Renaissance Vision and Strategy' released in June 2019, manufacturing accounted for 29.6 percent of GDP, 90 percent of exports, and 56 percent of facility investment as of 2017, accounting for 30 percent of the added value of all industries, and nearly 50 percent of output, driving Korea's economic growth. However, with competition from emerging manufacturing powers such as China, the full-fledged Fourth Industrial Revolution, tightened environmental regulations and changes in population structure, our manufacturing industry's quantitative pursuit strategy has reached its limits, and concerns are mounting as growth slows

down [1].

## **2.2. Role of HR Department**

The HR department's role is further emphasized at a time when the importance of human resources and investment in them are increasing amid the rapidly changing global competitive environment and slowing growth. The roles of the HR department can be divided into four categories. The first is a long-term role characteristic, and actively participates in the establishment of strategies related to the management of the organization, and in the process of implementing them, the HRM strategies and activities are matched with the organization's strategic goals. It is a role as a 'strategic partner' that plays a role of prescribing. The second is the role of 'change promoter' in which HR departments actively manage changes in members and take the initiative in developing organizations.

The third is the short-term role characteristic, which is the role of a 'member spokesman' who carries out human relations activities that enhance the morale of members and improve their work commitment by helping them meet and solve their needs by identifying the grievances and desires that arise from individual organizational lives. Lastly, it is the role of a "personnel management expert" that designs and implements a rational and efficient personnel management process consisting of management such as recruitment, education and training, evaluation, promotion, compensation, and placement as a traditional role characteristic [2]. The meaning and role of the human resources department in a company is increasing in importance, weight, and scope along with changes in the management environment and paradigm of personnel management. For this reason, if the role of the human resources department is grafted in order to efficiently implement the business strategy for creating a company's performance, it will be possible to secure a competitive advantage more effectively [3].

## **2.3. Education and Training Satisfaction**

Education and training conducted in the enterprise includes training and tasks directly related to the members' jobs, as well as education for more comprehensive growth of each member. Education and training satisfaction is a result of evaluating the education experience of each individual who participated in education and training, and can be said to be a functional relationship of the degree of satisfaction with the expectations before and after education participation [4]. It can also be defined as subjective responses such as attitudes, perceptions, emotions, behavior, and motivation to education or programs based on an assessment of an individual's experience in education or a program [5].

## **1.4. Organizational Effectiveness**

Organizational effectiveness can be called the degree to which the organization achieves its goals by sublimating the needs of its members to the organizational goal achievement process while adapting to the environment by acquiring the necessary resources from outside the organization [6]. In this study, we will examine the strategic role of the HR department in terms of job satisfaction and organizational commitment, which are qualitative indicators among the indicators for evaluating organizational effectiveness. Job satisfaction is the psychological or emotional state experienced or gained through the duties of each member of the organization, and is the degree of satisfaction of the desires obtained in accordance with one's aptitude, ability, evaluation, and reward [7]. Organizational commitment refers to the identity of an organization, the relative degree of commitment, and how much the individual has a sense of unity. Organizational commitment represents the tendency to remain in an organization and can be expressed as a loyalty or loyalty to the organization [8].

## **2.5. Relationship between HR Department and Education Satisfaction, Organizational Effectiveness, and relationship between Education Satisfaction and Organizational Effectiveness**

In a study of participants in the work-learning parallel workplace, education and training satisfaction was found to have a significant effect on organizational job satisfaction and job commitment [9]. In addition, in a study based on data from all sectors of a survey for workers in a panel survey of human capital companies in 2011, it was found that the strategic role of the HR department had a significant positive (+) effect on education satisfaction. In addition, it was found that it had a significant positive (+) effect on job satisfaction and organizational commitment, which are the indicators of organizational effectiveness. And education satisfaction was also found to have a significant positive (+) effect on job satisfaction and organizational commitment [10].

## **2. Experimental setup**

### **3.1. Research Models**

Looking at the previous studies, it was found that the strategic role of the HR department has a significant effect on organizational effectiveness. In this study, the research model was designed as shown in Figure 1 to examine the effect of the strategic role of the HR department in the manufacturing industry, which has driven economic growth in Korea, on the effectiveness of organization through education satisfaction.



**Figure 1. Research model**

**3.2. Hypotheses**

Hypothesis 1: The strategic role of the manufacturing HR department will have a positive effect on education and training satisfaction.

Hypothesis 2: Education and training satisfaction will have a positive effect on organizational effectiveness.

Hypothesis 3: The strategic role of the manufacturing HR department will have a positive effect on organizational effectiveness.

Hypothesis 4: Education and training satisfaction will be mediated in the relationship between the strategic role of HR department and organizational effectiveness.

**3.3. Operational Definitions and Measurement Tools of Variables**

The operational definitions and measurement tools for each variable are as shown in Table 1.

**Table 1: Operational Definition and Measurement**

Variable	Operational definition	Measurement	A leading researcher
HR Department Strategic role	(1) The role of a “strategic partner” that actively participates in establishing strategies related to the organization's management and matches HRM strategies and activities with the organization's strategic goals in the implementation process (2) The role of 'change facilitator', which performs functions and activities to develop an organization through activities such as actively managing changes of members and proactively promoting organizational changes. (3) The role of a “member advocate” performing human relations activities that raise the morale of members and improve work commitment by helping to meet individual needs and solve problems by identifying the grievances and desires of each member of the organization. (4) The role of a “personnel management expert” that designs and executes a rational and efficient personnel management process consisting of management of recruitment, education and training, evaluation, promotion, compensation, and placement.	(1) Make an important contribution in the process of establishing a management strategy plan. (2) It has a significant influence on the decisions of top management. (3) To play a leading role in the continuous improvement and implementation of the personnel system. (4) Lead the company's change and innovation.	[2]

Satisfaction with education training	The functional relationship of satisfaction with the results of the evaluation of the individual's educational experience before the participation in education and the results of the training.	<p>(1) Education and training are sufficiently conducted in our company.</p> <p>(2) In our company, opportunities for education and training are evenly distributed to our employees.</p> <p>(3) Employees of our company want to receive training from each other.</p> <p>(4) The contents of our company's education and training are highly related to jobs.</p> <p>(5) Our company's education and training are contents that can be applied directly to the field.</p>	[3], [4]	
Organizational effectiveness	Job Satisfaction	Psychological or emotional state experienced or obtained through the duties of each member of the organization, and the degree of satisfaction of the desires obtained in accordance with their aptitudes, abilities, evaluations, and rewards	<p>(1) I am satisfied with what I am currently doing.</p> <p>(2) I am satisfied with the wages I am currently receiving.</p> <p>(3) I am satisfied with my current workplace relationship.</p>	[5], [6]
	Organizational Commitment	It is the same as loyalty to the organization, and the members of the organization have a mind to identify with the organization and me, and the attitude to actively comply with the goals and values of the organization and to remain in the organization.	<p>(1) I feel the problem of this company like my problem.</p> <p>(2) If I decide to leave this company, I will lose too much of my life.</p> <p>(3) This company is worth my loyalty.</p>	[6], [7]

### 3. Result discussions

#### 4.1. Empirical analysis result

##### 4.1.1. Demographic characteristics analysis

The distribution by position of 8,072 respondents showed a distribution of 8.7 percent with 2,667 staffs, 10 percent with 810 assistant section managers, 14.7 percent with 1,186 administrative managers, 13.1 percent with 1,058 section managers, 10.6 percent with 856 chiefs, 9.2 percent with 739 managers, 0.7 percent with 55 directors, 8.7 percent with 701 production class managers. The gender was 81.1 percent for men with 6,547 and 18.9 percent for women with 1,525. By job category, there were 4,307 management positions, 53.4 percent, 246 production management positions, 3 percent, and 3,519 production workers, showing a 43.6 percent distribution. The final distribution of academic records was 1.7 percent with 141 middle school graduates or less, 10.3 percent with 835 humanities high school graduates, 1,140 14.1 percent with technical high school graduates, 9.3 percent with 752 other vocational high school graduates, 16.9 percent with 1,362 junior college graduates, 43.4 percent with 3,500 university graduates, 4 percent with 326 master's degree graduates, 0.2 percent with 16 doctorate graduates.

#### 4.1.2. Measurement model analysis

Prior to analyzing the hypothetical relationship between constructing concepts, confirmatory factor analysis was performed to test the single dimensionality of each measurement variable. CMIN/DF(<3.0), GFI·CFI·NFI·IFI(>0.9), AGFI(>0.8), RMR(<0.05), RMSEA(<1.0) values were used to test the suitability of the data. In order to create a high fit, the process of removing one by one based on the SMC(Squared Multiple Correlation) value, which is an index used to determine how much a measurement variable describes a potential variable, was repeatedly performed. Finally, the HR department's strategic roles 1, 2, education satisfaction 3, 4, 5, and job satisfaction 2 were removed, and all organizational commitment was removed before analysis. As a result, it was found that all the fitness indices satisfied the standard value. In addition, the standardized regression coefficients were all above 0.7, CR above 0.7, and AVE above 0.5, confirming that there is no problem in centralized validity. Detailed results are shown in Table 2.

Table 2: Confirmatory Factor Analysis and Goodness of Fit of Measurement Model

Latent variable	Measurement variable	RW	SRW	SE	t(C.R)	P(SMC)	CR	AVE
HR Department Strategic role	HRDS 3	1.091	0.889	0.020	54.802	.790	.878	.782
	HRDS 4	1.000	0.859			.737		
Satisfaction with Education Training	SET 1	1.000	0.882			.777	.888	.799
	SET 2	1.037	0.898	0.016	63.774	.807		
Job Satisfaction	JS 1	1.000	0.779			.606	.835	.718
	JS 3	0.902	0.732	0.025	36.734	.536		
Measurement model Fitness	(initial model) $\chi^2=4218.473$ , $df=84$ , $p=.000$ , $CMIN/DF=50.220$ , $RMR=.027$ , $GFI=.929$ , $AGFI=.898$ , $RMSEA=.078$ , $NFI=.935$ , $CFI=.937$ , $TLI=.921$ (final model) $\chi^2=17.551$ , $df=6$ , $p=.007$ , $CMIN/DF=2.925$ , $RMR=.003$ , $GFI=.999$ , $AGFI=.997$ , $RMSEA=.015$ , $NFI=.999$ , $CFI=.999$ , $TLI=.999$							

Annotation 1) RW : Regression Weights

Annotation 2) SRW : Standardized Regression Weights

Annotation 3) SE : Standard Error

Annotation 4) t : Critical Ratio

Annotation 5) SMC : Squared Multiple Correlation

Annotation 6) CR : Construct Reliability

Annotation 7) AVE : Average variance Extracted

#### 4.1.3. Discriminant validity analysis

After analyzing the measurement model, the discriminant validity of the model was evaluated. As a result of analysis, it was found that the square value of the correlation coefficient between all the variables did not exceed the AVE value, thus ensuring discriminant validity, and the results are shown in Table 3.

Table 3: Validity assessment results of the measurement model

Measurement variables	HR Department Strategic role	Satisfaction with Education Training	Job Satisfaction
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HR Department Strategic role	<b>.782</b>		
Satisfaction with Education Training	.463	<b>.799</b>	
Job Satisfaction	.418	.478	<b>.718</b>

Annotation) Diagonal dark part is AVE value

#### 4.2. Hypothesis test

The suitability of the structural model was found to be satisfactory as  $\chi^2=17.551$  ( $p<.01$ ), TLI=.999, CFI=.999, RMSEA=.015. As a result of the structural model analysis, it was found that the strategic role of the HR department has a positive (+) significant effect on education and training satisfaction ( $\beta=.463$ ,  $p<.001$ ), education and training satisfaction was found to have a significant positive (+) effect on job satisfaction ( $\beta=.363$ ,  $p<.001$ ). In addition, the strategic role of HR department was found to have a positive effect on job satisfaction ( $\beta=.250$ ,  $p<.001$ ). The analysis results are as shown in Table 4, and the figure is shown in Figure 2.

Table 4. Hypothesis test results

Hypothesis	Path	Non-standardization coefficient	Standardized coefficients	SE	t	P-value	Results
Hypothesis 1	HR Department Strategic role → Satisfaction with Education Training	.498	.463	.014	35.662	.000	<b>Adopted</b>
Hypothesis 2	Satisfaction with Education Training → Job Satisfaction	.245	.363	.010	23.428	.000	<b>Adopted</b>
Hypothesis 3	HR Department Strategic role → Job Satisfaction	.182	.250	.011	16.459	.000	<b>Adopted</b>
Structure model fit		CMIN=17.551, df=6, p=.007, CMIN/DF=2.925, TLI=.999, CFI=.999, RMR=.003, GFI=.999, AGFI=.997, RMSEA=.015					

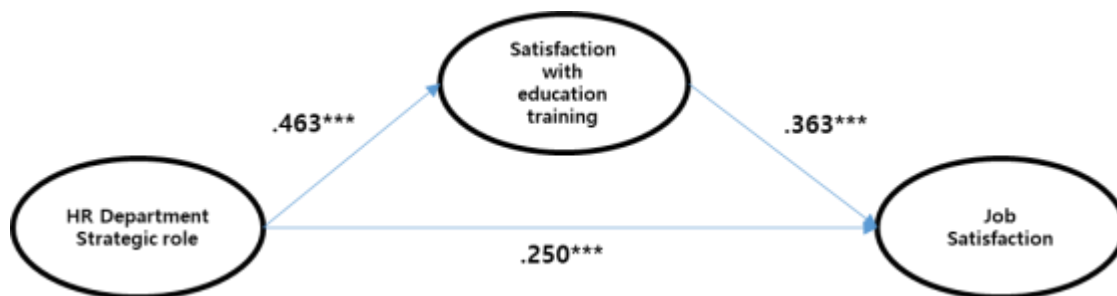


Figure 2. Structural Path

#### 4.3. Mediated effect analysis

With the Bootstrapping method, we analyzed whether education and training satisfaction has a mediating effect on the relationship between the strategic role of HR department and organizational efficiency. As a result of the analysis, it was confirmed that the mediating effect of satisfaction with education and training was significant, and the analysis results are shown in <Table 5>.

Table 5. Mediated effect analysis results

Hypothesis	Path	Indirect effect	P-value	Results
Hypothesis 4	HR Department Strategic role → Satisfaction with Education Training → Job Satisfaction	.168	.004	<b>Adopted</b>

#### 4. Conclusions

Through this study, we analyzed the effect of the strategic role of the HR department in the manufacturing industry on the organizational effectiveness through education and training satisfaction. This study has been driving the economic growth of Korea, but it was intended to reveal the relationship between HR department's role and organizational effectiveness in the manufacturing industry, where concerns have been rising due to the recent slowdown in growth, and the results of the study are as follows. First, as a result of analyzing the effect of the HR department's strategic role on education and training satisfaction, it was found to have a positive effect. This can be attributed to the HR department driving change and innovation and developing and actively implementing education and training programs that meet the latest trends. Second, education and training satisfaction was found to have a positive effect on job satisfaction among organizational effectiveness. Participation in education and training programs that are directly related to job performance improves job performance and provides an opportunity to expand the human network, thus improving job satisfaction. Third, the strategic role of HR department was found to have a significant positive (+) effect on job satisfaction among organizational effectiveness. Lastly, it was confirmed that education and training satisfaction played a mediating role in the relationship between HR department's strategic role and job satisfaction. Based on the results of this study, it can be used as a basis for strengthening and re-establishing the strategic role of the HR department responsible for HR in the manufacturing industry. The implications of this study on manufacturing HR are as follows. First, HR departments should be active in bringing new wind to the organization by leading the change and innovation of enterprises and play a leading role in improving and implementing the personnel system. Small and medium-sized manufacturing companies with limited corporate resources tend to focus resources on the manufacturing sector, but under current uncertain conditions, attention and investment in HR are essential. In the HR sector, a strategic, future-oriented organizational atmosphere should be created with a view to the future rather than the present. Second, in order to promote morale and improve job skills of employees, it is necessary to provide sufficient opportunities for education and training and concentrate on the transfer of education and training so that it can be applied to practice after completion. Third, managers need to approach HR from a longer-term perspective, and should empower and responsibilities for HR to actively participate in establishing and implementing management strategies. Rather than focus on the traditional role of HR, you should focus on strategic, innovative activities. Since this study is limited to the manufacturing industry, it is limited to apply to the entire industry, and only the strategic role among the four roles of HR is needed, so an empirical study including the remaining roles is needed. However, it is meaningful in that it provided supporting data for the re-establishment of the role of the HR sector and the expansion of authority and responsibility for the manufacturing sector, which has a high proportion of small and medium-sized enterprises.

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