Print ISSN: 2233-4165 / Online ISSN 2233-5382
JIDB website: http://www.jidb.or.kr
doi:http://dx.doi.org/10.13106/jidb.2020.vol11.no9.25

The Re-examination of the role of the Labor Relations Commission on Corporate Performance

Kwan-Su LEE[1]

Received: July 15, 2020. Revised: August 16, 2020. Accepted: September 05, 2020

Abstract

Purpose: The purpose of this study is to investigate how much continuous investment in human capital contributes to increasing labor productivity at not only individual companies but also at the national level, and causes fundamental as well as increases for labor-management conflicts. The current research aimed to empirically demonstrate the importance of human capital investment and furthermore, based on the effect of human resource investment on labor productivity, also re-examine the role of the Labor Commission as well. **Research design, data, and methodology:** This study was conducted by the Korea Information Service-Financial Accounting System (KIS-FAS) using representative panel data operated by countries to measure whether long-term investment in corporate human resources affects labor productivity. **Results:** Two distinctive summarized results of the analysis in the Korea Credit Ratings data showed that there was a high positive correlation between corporate human resource investment and economic performance for a ten-year period from 2009 to 2018. **Conclusions:** The present study concluded that the role of the labor committee should be effectively formed by the labor as a mediation agency and that the role of the mediation committee members should focus more on how to strengthen the human resources management of the union.

Keywords : Labor Relations Commission, Role of the Labor Relations Commission, Human Resource Management, Corporate Performance

JEL Classification Codes : J53, O15, G30

1. Introduction

National competitiveness depends on corporate competitiveness and corporate competitiveness depends on human, physical, and financial competitiveness (Nguyen & Khoa, 2020). The most important factor in recent years is the human factor and Korea's labor productivity was found to be in the lower rank among OECD member countries. When the labor productivity in the United States is 100%, Japan is 78% and Korea is 45%. This means that even if the same amount of labor is put in, Korea's final output is only half that of the United States. In order to solve these problems, the Korean government and corporations, which focus on strengthening their competitiveness with the goal of entering advanced countries or advanced companies, are struggling to find out the causes and establish countermeasures for labor productivity which is relatively low compared to developed countries.

In regards to why Korea's labor productivity is lower than that of developed countries, many researchers have pointed out labor quality problems, poor technological innovation and insufficient source technology, low-tech industrial competitiveness, inefficient manpower management, and employment problems. Among these, improving the quality of the workforce is a key factor in improving labor productivity. Through this, it is possible to bring about relatively low technological innovation and insufficient source technology security compared to developed countries, and furthermore, high labor productivity can be expected. This is because having a differentiated human capital that other companies do not have means a difference in job performance and is a driving

1 First Author and Corresponding Author, Ph.D student, Law school, Sungkyunkwan University, Seoul, South Korea,
Email: vtr363@hanmail.net

force to increase labor productivity in the future (Kirkpatrick, 2008).

In order to solve this fundamentally, stable, and continuous changes at the group level that form a mature labor-management relationship between management and trade unions must be preceded. However, despite the importance of labor-management relations between managers and workers, conflicts between labor and management frequently occur between managers and unions due to conflicts and conflicts. Such labor-management disputes usually appear when unions are organized within enterprises and enter into collective action without agreement between wage and collective bargaining between labor and management.

Moreover, in reality, labor-management relations are creating conflict by opposing relations through disputes rather than pursuing stabilization. It is the fundamental cause of the huge loss of labor and labor productivity caused by industrial disputes. From the standpoint of corporations and trade unions, they are engaged in mediation while taking strategic actions, such as strikes and closures in the collective bargaining process, to lead negotiations in their favor. The behavior of labor and management disputes is also a major issue in the past, with employment and management participation now. In other words, Korea's labor-management relations issues are emerging from various aspects of interests. Therefore, in order to establish a progressive labor administration in terms of corporate human resource management, it is necessary to prevent both labor and management through collective bargaining to prevent labor disputes between labor and management. However, in reality, it is impossible to fundamentally prevent the occurrence of labor disputes. Accordingly, the role of the Labor Relations Commission to mediate conflicts between labor and management is becoming increasingly important.

The purpose of the establishment of the Korean Labor Commission is to establish a labor commission for democratization of labor administration and fair coordination of labor relations. However, despite the importance of the Labor Relations Commission, studies on the specific factors that cause conflicts and increase in nature between labor and management have not been sufficiently conducted. Therefore, this study intends to reexamine the role of the Labor Relations Commission on labor productivity from a human resource management perspective.

On the basis of this problem consciousness, this study empirically reveals how much continuous investment in human resources contributes to increasing labor productivity not only at individual companies but also at the national level, and causes fundamental conflicts and increases in labor-management conflicts. We want to empirically demonstrate the importance of human capital investment. Furthermore, based on the effect of human resource investment on labor productivity, we would like to re-examine the role of the Labor Commission. Given that foreign advanced companies are investing more actively in human resource development to properly deal with the environmental changes of the times, Korea should also pay attention to these points to improve its long-term competitiveness. In order to be able to reflect on these points at the national or corporate level, the role of the labor committee should be re-established.

Accordingly, this research question is whether a long-term investment in corporate human resources contributes to improving labor productivity from a human resource management perspective. To clarify this, the first hypothesis is that whether a company invests in human resources is arbitrarily decided, which leads to improved labor productivity. This is an appropriate model when the investment in corporate human resources is arbitrarily determined and is not related to errors including variables that cannot be observed. To solve this problem consciousness, a panel data analysis model was established to analyze the estimation results. In order to achieve the purpose of this study, this study is conducted as follows. First, Chapter 2 analyzes and organizes the theoretical background and prior studies for constructing the measurement variables for this study. Chapter 3 introduces the analysis methods and models used to explain and analyze the data and variables in this study. Chapter 4 discusses the results of the analysis comprehensively as research results, and Chapter 5 discusses implications based on the research results.

2. Literature Review

2.1. Theoretical approach to human capital investment and labor productivity

This study attempts to analyze the effect of long-term corporate in-service education and training investment on labor productivity. In this regard, as the theoretical analysis framework of this study, first, the human capital theory, which reasonably explains the relationship between education and income, is introduced. On the other hand, endogenous growth theory needs to be considered as a determinant of labor productivity improvement along with human capital theory.

2.1.1. Human Capital Theory

Schultz (1960), who introduced the concept of human capital for the first time and introduced it in economic analysis in earnest, developed the theory of a logical system

with the basic structure of improving productivity and increasing income through education. In other words, using the concept of human capital, a theoretical system to reasonably explain the relationship between education and training and income can be defined as a human capital theory. This human capital theory is an approach to explaining wage income in terms of supply in the labor market. Explain that the expected return from education investment is consistent with productivity regardless of job type. In other words, the human capital theory viewed education and training as an investment that can increase the productivity of the workforce, not consumption. In other words, education and training were considered to increase productivity, personally increase income, and socially invest in human capital that contributes to economic growth. According to the human capital theory, an individual invests in himself as much as the expected financial and non-monetary returns.

In the country, in order to increase productivity through investment in human capital in terms of efficient operation of resources, furthermore, invest to contribute to economic growth (Chulanova, 2017). In addition, in the corporate position, we invest in human capital development to secure competitiveness in the midst of rapid environmental changes such as globalization, informatization, changes in consumer demand, and technological changes, as well as to secure the driving force to continuously increase corporate productivity. All these decisions are made in a reasonable judgment, not in terms of immediate consumption and investment, but in terms of long-term investment. This study is based on the human capital theory that education and training bring productivity (Zwick, 2005), which increases worker's expected income. And the first type was used to analyze the relationship between long-term in-service training investment and labor productivity and its effects. In this study, which analyzes the improvement of labor productivity compared to the education and training investment of a company, the human capital theory, which has the basic structure of increasing productivity and increasing income through education and training, is more productive depending on the extent to which companies strive to form human capital. Explain that the likelihood of having a relationship increases. In other words, a company with a lot of investment in human capital formation improves human capital than a company that does not, and thereby brings more productivity.

2.1.2. The theory of endogenous growth

This study intends to analyze the effect of in-service training on business in labor productivity. Traditional growth theory cannot explain how the accumulation of human capital, such as the skills and knowledge endogenously possessed by a company, affects labor productivity. In other words, it is impossible to explain that human capital accumulated in the human body through in-service education and training affects labor productivity in the long term. Therefore, this study applied the endogenous growth theory to examine the relationship between the investment in long-term corporate in-service training and the improvement of labor productivity and its effect. An important starting point of the endogenous growth theory is that the labor force considers not only the quantitative aspects of labor but also the quality of labor (Pack, 1994).

The qualitative aspect of labor means that it has differentiated human capital that no other company has. This is because human capital refers to the knowledge, skills, or abilities of an individual. Therefore, it means that the productivity of individuals within the company and the continuous growth of the entire company depend largely on the human capital of individuals and members. This human capital can only be secured through investment and a period of education and training. Companies can cultivate workers' knowledge and skills through investment in in-service training and education, and further cultivate the necessary human resources (Kang, Nantharath & Hwang, 2020). And by improving the skills you already have or cultivating new ones, you can increase the quality of human capital.

It can be explained that the quality level of a company's human capital is more likely to have more productivity depending on the extent to which the company strives to form human capital. In other words, companies with a lot of investment in human capital formation have improved human capital and more productivity than those that did not. However, it is necessary to take a sufficient period to examine the effects of such human capital investment. Harbison and Myers (1964) revealed the important criteria for assessing the level of economic growth and modernization of a country by evaluating the level of human capital development through education.

2.2. Labor Committee character and role analysis

2.2.1. Characteristics of the Labor Commission

The background of the introduction of the labor commission system is that Korea has three labor rights guaranteed by the Constitution and is strengthening the status of unions through laws such as the Trade Union Act. Although the issue of trade union status and employers' interference with trade union activities can be resolved through the general court, there is a limit to resolving the flexible labor-management relations through the courts, and a labor commission system is introduced to separate disputes

between labor and management. Was done. Each country has a separate organization for handling labor-management disputes separately from the general courts. The main labor-management dispute organizations in the country include the German Labor Court, the British Industrial Court, and the American Labor Relations Commission. In fact, the Korean Labor Commission system was introduced by imitating most of the Japanese Labor Commission system. The labor commission system in both countries is based on the recognition that administrative remedies are difficult to achieve effectively and that administrative remedies are necessary for prompt resolution of the hiring or disadvantage of employers related to union activities. The Korean Labor Committee is first, a consensual administrative agency composed of three workers, labor and management, and second, a quasi-judicial administrative agency with independence. It has the characteristics of an administrative agency (Cunningham, 1975).

The jurisdiction of the Labor Committee is as follows. Parties' application cases include requests for relief for unfair labor practices(article 40 of the union law), applications for relief of unfair dismissal (3 of Article 27 of the labor law), exceptions for the regulation of working hours(article 49 of the labor law), and requests for resolution by the administrative authority. Cases may include prior examination of a corrective order by union's resolution or disposition(article 12 of the trade union act), approval of the nomination of the right to convene a temporary general meeting(article 26 of the trade union act) of the trade union. Compared to Japan's Labor Commission, the work area of the Korean Labor Commission is too wide. In Japan, the functions of the Labor Relations Commission are limited to trade union-related disputes, such as judging unfair labor practices, mediating labor disputes, examining qualifications of trade unions, and expanding the application of conventions. This means that the professionalism of the institution may be deteriorated when the work area of the Labor Commission expands to disputes over the regulation of individual labor relations laws, such as the Labor Standards Act.

The labor union's decision and mediation functions are based on the Labor Relations Commission Act, the Trade Union Act, the Labor Dispute Adjustment Act, and the Labor Standards Act. However, since the Labor Relations Act has limitations in establishing the necessary rules for labor relations in detail, the Labor Relations Commission's interpretation or application to the Labor Relations Act actually complements the Labor Relations Act and creates important rules for labor relations. In other words, through the interpretation and application of the Labor Relations Act, the Labor Committee decides whether a specific action by the employer is a violation of the law as an unfair labor act or whether a special action by the union is in violation of the justification of the industrial action. Therefore, as the practice of law interpretation and application of the Labor Committee accumulates, it creates rules of labor relations by itself (Epstein, 1983).

The functions of the decisions, mediations and policies of the Labor Committee are quite different in nature, but the organization of the Labor Commission is not created in such a way that these three functions are dedicated. In fact, the Labor Relations Commission can be said to be an organizational form for handling judgment cases, and the mediation function is performed secondary and the policy function is rarely performed. There is no distinction between the judges and the judges, and in severe cases, the judges make the adjustments and even the secretariat's staff participate in the mediation. The judging function is intended to induce labor and management to resolve disputes autonomously, but when the autonomous resolution is difficult, the Labor Commission makes an authoritative judgment by covering the costs and expenses. On the other hand, the mediation function is to support and settle negotiations so that disputes between labor and management do not reach catastrophe after leaving conflict. At first glance, the function of the policy proposal seems to be able to be performed by the Labor Commission with judgment and coordination functions, but it is difficult to carry out without a dedicated organization because the policy proposal requires a high degree of expertise. Therefore, if the labor committee needs to effectively perform three different functions, it needs to be changed into an organizational form dedicated to each function.

As labor-management relations develop (Bushe, 1988), the cases undertaken by the Labor Relations Commission become increasingly complex in quality, requiring expertise in resolution. In the early stages of industrial relations development, the cases handled by the Labor Relations Commission are relatively simple, but as labor-management relations develop, the behavior pattern of labor-management advances and many new events have complicated the solution. There are many incidents of a simple nature that appear at the beginning of the development of industrial relations, and the solution is blessed. Although there may be many cases of simple personalities that appear at the beginning of the development of industrial relations, it can be solved by applying the existing legal system as a precedent relatively easily. However, the more complicated the case, the more difficult it is to find the existing legal system as a precedent, and accordingly the processing time will be longer. This tendency can be seen in the fact that the labor-management relations between the United States and Japan are generally stabilized, but the period of unfair labor practice cases is lengthened (Cooke & Gautschi III, 1982).

In order to respond to the qualitative changes in the work of the Labor Relations Commission due to the development

of industrial relations, it means that the Labor Relations Commission needs to collect and study domestic and foreign laws and economic theories and precedents.

2.2.2. Labor Committee Role

The Labor Commission Act was enacted and promulgated in 1953, and the Central Labor Commission and the Local Labor Commission were established. The labor committee not only acts as a mediator and mediator for labor disputes between labor and management, but also judges when it comes to remedy for unfair labor practices. The Labor Relations Commission is a quasi-judicial organization with independence, with the main task of mediating and judging disputes between interests and rights between labor and management as a consensus administrative agency composed of three workers, employers, and public interests.

The mediation of the labor dispute is the result of negotiations on the determination of working conditions, such as wages and working hours between labor and management, and the Labor Commission listens to the claims of the parties to the labor dispute and investigates the facts and prepares a mediation plan by requesting unions or employers in the labor dispute. Afterwards, it refers to recommending the parties to accept. The mediation of a labor dispute may be applied by either party concerned or by a collective agreement, and in the case of essential public works, the chairman of the Labor Committee may decide the arbitration by the recommendation of a special mediation committee. The mediation and difference is that the arbitration of the Labor Relations Commission has the same effect as the collective agreement regardless of whether the parties accept it.

In the case of urgent mediation, when the act of dispute is about a public interest project, its size is large, or its nature is special, there is a risk that it will significantly harm the national economy or jeopardize the daily lives of the people. If an urgent mediation is decided, prohibition of industrial action shall be prohibited for 30 days from the date of publication of the emergency mediation decision, and during this period, the Central Labor Relations Commission shall mediate and arbitrate. If there is an employer's unfair labor practice, the local labor committee will judge the unfair labor practice according to certain procedures at the request of the worker or union. First, the act of dismissing or giving disadvantage to the worker on the grounds that the worker attempted to join or join the union, attempt to organize the union, or do other legitimate acts for the work of the union. Second, the act of making it a condition of employment that a worker should not join or withdraw from a union, or a condition of employment to be a member of a specific union, provided that two-thirds of the workers in the union are engaged in the workplace. In the case of representing the above, the exception of the conclusion of collective agreements on the condition of employment that the worker be a member of the union, in which case, the employer may act in an unfavorable position because of the worker's expulsion from the union. None.

Third, it is not possible to deny or neglect collective bargaining or other collective bargaining with a representative of a union or a person who has been delegated by the union without justifiable reasons. Fourth, workers dominate or intervene in organizing or operating trade unions, and paying wages to the union's predecessors or assisting unions with operating expenses. However, it is acceptable for employers to allow workers to negotiate or negotiate with employers during working hours. Also, donations of funds for the prevention and relief of workers' welfare funds or economic misfortunes and other disasters, and at least the trade union office The provision of is an exception. Fifth, the worker is dismissed or the employee is dismissed on the grounds that the worker has participated in a legitimate group action, or on the basis of the employer's report to the Labor Commissioner that the employer violated the provisions of this Article, testified, or submitted evidence to other administrative agencies. An act that gives disadvantage to a person is called unfair labor practice. Therefore, workers or trade unions who have been dismissed, disciplined, or have other disadvantages due to such unfair labor practices must apply to the local labor council at the place of business within three months from the date of the unfair labor practice(the end of the continued act). The contents handled by the local labor committee will make recommendations for reconciliation between the parties, determine whether or not the application case is an unfair labor practice, and give relief orders to restore the original state if it is an unfair labor practice.

3. Research Methods and Materials

3.1. Research Methods

This study empirically clarifies the extent to which the continuous investment of human resources contributes to the increase of labor productivity not only at individual companies but also at the national level, and empirically demonstrates the importance of fundamental human resource investment that causes substantial conflicts and changes between labor and management. Through this, we tried to re-examine the role of the Labor Relations Commission on labor productivity from a human resource management perspective. For this, panel data from the Korea Information Service-Financial Accounting System (KIS-FAS) was used.

When using panel data, the bias of the parameters arising

from missing or unobservable variables, such as a company's ability to be considered to have played an important role in a company's labor productivity You can solve the problem. In panel data analysis, the missing or unobservable variables are usually defined as C variables (Wooldrige, 2002). If the labor productivity variable and the C variable do not correlate, even if included in the error, the independence assumption is satisfied and an endogenous problem in which the parameter estimate is biased does not occur. However, even though the C variable is related to the labor productivity variable, if it is included in the error, a correlation between the independent variable and the error is generated, and the parameter estimation is convenient.

In this study, using the panel data, the estimation method for testing the effect of a company's human resource investment on labor productivity is examined based on the contents discussed so far. If there are no C variables such as capabilities, the POLS estimation method is used, and if the C variables exist, the fixed and random effects methods are applied. Here, if the independent variable, including the labor productivity variable, and the C variable are related, the fixed effect method is applied because the estimation is convenient when the random effect is applied. If not, both the fixed and random effects methods can be applied, but the random effect method is superior to the precision of the estimate.

The research question of this study is whether a long-term investment in corporate human resources contributes to improving labor productivity from a human resource management perspective. To reveal this, the first hypothesis is that whether a company invests in human resources is arbitrarily decided, which leads to improved labor productivity. This is an appropriate model when the company's human resource investment is determined arbitrarily and is not related to errors including unobservable variables. However, whether or not to invest in corporate human resources depends on the capabilities and corporate culture of the company (Bartel, 2000; Barrett & O'Connell, 2001). Therefore, a model that takes these into consideration is presented in the second hypothesis. In other words, a model is needed to overcome the endogeneity problem that occurs when the human resource variable(T) correlates with the error term(ε) (Horgan & Mühlau, 2006). This is because the non-measured company's characteristic variables can affect in-service training and productivity, but the model's estimate that does not take this into account can be a biased estimate.

In addition, it is necessary to consider the effect of qualitative differences in labor on labor productivity in order to examine the effect of long-term corporate in-service education and training investment on labor productivity (Kirkpatrick, 2008). To solve this, this study considered the effect of qualitative differences in labor on labor productivity by using the ratio of high-education students among the economically active population. Independent variables affecting labor productivity by corporate in-service education and training investments are in-service education and training costs per capita (Barrett &, O'Connell, 2001; Almeida & Karen, 2005), capital intensity per capita (Black & Lynch, 2001), the ratio of the economically active population above college graduates (Dearden, Reed, & Van Reenen, 2006), and the number of employees (Bartel, 2000). $C_{[i]}$ is an unobserved company-specific characteristic that affects labor productivity without changing over time and is included in the error. If $C_{[i]}$ is correlated with other independent variables affecting the current education and training investment, the fixed effects model is used. effect model.

3.2. Research Materials

This study uses the Korea Information Service-Financial Accounting System(KIS-FAS), a representative panel data operated by the country, to measure whether long-term investment in corporate human resources affects labor productivity improvement. Korea credit rating data can be used to examine how long-term human resource investment affects labor productivity while considering the characteristics of human resources. Through this, it is possible to examine the relationship between long-term corporate in-service training and investment and labor productivity, and its effect, at the corporate level, such as the research context of Harbison and Myers (1964). And by solving the problems raised in Harbison and Myers (1964) research, we can examine the relationship and effects of the two over a long period of time.

In this study, the relationship between corporate human resource investment and labor productivity and its effects, such as Harbison and Myers' research context, were examined macroscopically at the corporate level. In addition, by resolving the problems raised in the above study, we examined how human capital investment affects the economic performance of a company. The Korea Credit Rating Data has been completed in the 10th year panel survey as of 2007 from 2018 on financial information on companies listed on the Korea Stock Exchange. The data used in this study were targeted at companies listed on the Korea Stock Exchange from 2007 to 2018. The financial and non-financial service industries were excluded from the target companies due to different types of education and training in the financial statements and many years missing.

In addition, companies with missing training expenditures even for a period of time were excluded from this study. Therefore, the 10-year panel data was targeted at 373 companies that provided all appropriate information on the factors determining the level of investment productivity

and labor productivity improvement. The mean and standard deviation of the natural logarithm of 373 companies in 10-year units, which are dependent variables of this study, are presented. The dependent variable is a form that takes the natural logarithm of the company's sales per capita.

Table 1: Average and standard deviation of sales per capita(N=373)

Year	Mean	Standard Deviation	Minimum value
2009	5.63	0.79	3.49
2010	5.73	0.75	3.66
2011	5.83	0.74	3.89
2012	5.89	0.75	4.03
2013	5.99	0.75	4.16
2014	6.02	0.75	4.19
2015	6.15	0.78	4.40
2016	6.19	0.76	4.39
2017	6.28	0.81	4.41
2018	6.32	0.80	4.01

Table 2: Independent variable and variable input method

Division	Variable name	Variable input method
Dependent variable	Salesper Person (lnSPP)	Value of natural logarithm (total sales/employees) (million won)
Independent variable	Education and Training Cost per Person (lnEEP)	Value of natural logarithm (total education cost/number of employees) (thousand won)
	Capital Intensity per Capita (lnFCP)	{(Tangible fixed assets-construction account)/number of employees} natural logarithm (million won)
	Human Resource Quality (LnEDU)	Value of natural algebra for the number of economically active graduates above college degree (thousands)
	Number of Workers (lnNOE)	Number of workers taking natural logarithm (persons)
	Ratio of Performance Pay (INC)	Quarterly Performance Benefit Ratio (%)
	R&D Expenses (REA)	Value of natural algebra for research and development expenses (1,000 won)

Table 3: Descriptive statistics of independent variables

	Mean(standard deviation)									
	09	10	11	12	13	14	15	16	17	18
Ln EEP	3.89 (1.73)	4.09 (1.65)	4.29 (1.68)	4.38 (1.79)	4.63 (1.56)	4.66 (1.73)	4.90 (1.52)	4.97 (1.64)	5.09 (1.60)	5.14 (1.69)
Ln FCP	5.89 (0.76)	5.99 (0.75)	6.01 (0.75)	6.05 (0.74)	6.07 (0.74)	6.12 (0.76)	6.20 (0.78)	6.27 (0.74)	6.38 (0.79)	6.47 (0.82)
Ln EDU	8.763	8.80	8.85	8.91	8.96	9.09	9.14	9.19	9.24	9.29
Ln NOE	6.32 (1.14)	6.32 (1.11)	6.33 (1.12)	6.28 (1.13)	6.24 (1.12)	6.20 (1.14)	6.16 (1.19)	6.15 (1.19)	6.10 (1.22)	6.09 (1.25)
INC	12.83 (22.30)	13.37 (21.28)	13.86 (21.87)	13.99 (22.09)	14.77 (22.30)	14.10 (14.64)	15.24 (17.61)	16.14 (21.86)	16.16 (19.41)	17.80 (25.59)
REA	5.71 (2.54)	5.81 (2.50)	5.87 (2.44)	5.97 (2.43)	5.98 (2.45)	6.04 (2.45)	6.08 (2.53)	6.13 (2.60)	6.07 (2.70)	6.14 (2.69)
N	373	373	373	373	373	373	373	373	373	373

The reason for taking this form was to convert the static bias distribution, which reflects the exponential increase in exponential sales, to the natural logarithmic normal distribution by taking natural logarithms for sales per capita. As a result, the linear regression analysis using the dependent variable with normal logarithmic distribution also makes the distribution of the error terms of the regression model normal, making it easy to statistically verify the

regression coefficients. The sales per capita of the sample companies in this study ranged from 448(KRW 1 million) in 2009 to 816(KRW 1 million) in 2018 for panel data in 10-year increments.

Through prior research on human resource investment and corporate performance at the corporate level, investment in corporate human resources was selected as a representative variable with high influence on the level of labor productivity improvement. Table 2 presents variable names and variable input methods for independent variables. Table 3 shows the descriptive statistics of independent variables.

4. Study Results

The results of the Korea Credit Rating(KIS) analysis are based on 10 years from 2009 to 2018. In microeconomics, the distinction between long-term and short-term does not mean a specific period, but in general, long-term is considered to be a period in which even the input capital can be changed. However, in dealing with the problem of growth in macroeconomics, the long term means quite a long time, more than 10 years. This study analyzed whether it affects the improvement of labor productivity for corporate human resource investment through the construction of panel data in 10-year units, which is a sufficient period for the accumulation of human capital and its performance. Was constructed as panel data and analyzed whether investment in long-term corporate in-service training in 10-year increments affects labor productivity improvement. First of all, the results of analysis are based on the relationship between human capital investment and labor productivity by using the Korea Credit Rating (KIS) data, such as Harbison and Myers (1964), which explored the relationship between human resource investment and economic growth. We looked at it from the corporate level. However, due to the limitations of cross-data by year, the results of this study still remain controversial about the causal relationship between in-service training and labor productivity.

In order to solve this, the Korea Credit Rating(KIS) panel data was established to estimate the contribution of human resource investment to the labor productivity of a company, and the effect of human resource investment on the labor productivity of a company was examined empirically. The panel analysis method does not consider the capabilities of individual companies included in the error term, but results from the unique characteristics of companies that are not observed, such as the POLS(Pooled Ordinary Least Square) method, and the company's capabilities. Results are presented through the fixed-effect and random-effect methods in consideration of generation.

4.1. Correlation analysis result

Harbison and Myers (1964) analyzed the ranking of educational development and economic growth at the national level through analysis of the ranking correlation between the composite index representing educational development and GNP per capita representing economic growth for 75 countries with data from 1958 to 1960. Said the relationship with. In this context, the relationship between corporate human resource investment and corporate economic performance and its effects were examined at the corporate level. To this end, 10-year data from 2009 to 2018 are constructed in 10-year panels where human resources can accumulate and their effects can be fully demonstrated, so long-term investments in corporate human resources can improve labor productivity. The impact was analyzed.

Table 4 shows the results of correlation analysis by year between human resource investment cost per person and sales per person. From 2009 to 2018, the results of the Spearman correlation analysis of corporate human resource investment and economic performance by 10 years each year proved that a rather high static correlation exists. However, the correlation coefficient obtained from the cross-sectional data for each year cannot determine the exact causal relationship between the current education and training investment and the economic performance of the company.

Table 4: Results of annual correlation analysis between human resource investment and sales

Constructs	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Spearman correlation coefficient	0.26**	0.33**	0.29**	0.29**	0.29**	0.30**	0.30**	0.30**	0.26**	0.22**
N	373	373	373	373	373	373	373	373	373	373

4.2. Panel data analysis result

The previous analysis of cross-data by year indicates that the effect of education and training costs occurs in the year in analyzing whether corporate human resource investment affects labor productivity. In addition, the results of a study conducted with cross-sectional data show that the controversy over causality still remains as to whether corporate human resource investment affects the

labor productivity of individual enterprises or individual firms with high labor productivity. have. However, the panel data analysis shows that the effect of human capital investment on labor productivity is relatively small in that it analyzes the effect over the period in which human capital is embodied rather than assuming that the effect of human resource investment costs occurs in the year. It can be understood as a comprehensive evaluation.

Table 5 and Table 6 present the results of analyzing whether corporate human resource investment affects labor productivity (sales per capita) using panel data. First, the results of LM test ((1)=8074.59**) by Breusch and Pagan (1980) rejected the null hypothesis ($H_0 : \sigma_c^2 = 0$), indicating that there is a variance of (C_i), that is, an interpersonal effect. As a result of the Hausman(1978) test, (χ^2 (6)=122.24**) also rejected the null hypothesis ($Cov(X, C_i) = 0$), indicating that the inter-individual effect was correlated with the independent variable. Based on these two test results, it is reasonable to look at the analysis results centering on the fixed effect.

Table 5: Panel data analysis result

Constructs	Fixed Effect	Pooled OLS	Radom Effect
LnEEP	0.040 (8.49)**	0.049 (10.17)**	0.040 (8.78)**
LnFCP	0.507 (32.66)**	0.782 (76.67)**	0.581 (43.82)**
LnEDU	0.614 (23.11)**	0.389 (8.95)**	0.569 (8.66)**
LnNOE	-0.012 (-0.78)	0.052 (6.95)**	0.026 (2.16)*
INC	0.001 (0.77)	0.001 (0.08)*	0.001 (0.28)**
LnREA	0.010 (2.75)**	0.013 (4.24)**	0.007 (2.06)*
Adj-R^2	0.650	0.676	0.447
N	3730(373c ompanies)	3730	3730(373 companies)

Re. 1. * : p < 0.05, ** : p< 0.01
2. The values in parentheses are t values.
3. Variable description: LnEEP = natural logarithm of training costs per capita, LnFCP = natural logarithm of capital intensity per capita, LnEDU = natural logarithm of the number of economically active graduates or higher, LnNOE = number of workers Natural logarithm, INC = performance-based index, LnREA = natural logarithm to R&D cost

Table 5 and Table 6 present the results of analyzing whether corporate human resource investment affects labor productivity (sales per capita) using panel data. First, the results of LM test ((1)=8074.59**) by Breusch and Pagan (1980) rejected the null hypothesis ($H_0 : \sigma_c^2 = 0$), indicating that there is a variance of (C_i), that is, an interpersonal effect. As a result of the Hausman (1978) test, (χ^2 (6)=122.24**) also rejected the null hypothesis ($Cov(X, C_i) = 0$), indicating that the inter-individual effect was correlated with the independent variable. Based on these two test results, it is reasonable to look at the analysis results centering on the fixed effect.

Table 6: Panel data analysis result by company size

Constructs	Fixed Effect	Pooled OLS	Radom Effect
LnEEP	0.043(9.49)**	0.043(9.03)**	0.042(9.58)**
LnFCP	0.514(37.28)**	0.779(75.44)**	0.570(45.58)**
LnEDU	0.613(23.26)**	0.389(8.94)**	0.570(21.84)**
INC	0.001(1.60)*	0.001(0.04)	0.001(0.45)
LnREA	0.010(5.53)**	0.011(3.49)**	0.008(2.50)**
SSIZE	0.024(0.63)	-0.118(-4.61)**	-0.035(-1.07)
MSIZE	0.068(1.99)*	-0.056(-2.17)*	0.016(0.55)
MLSIZE	0.092(3.06)**	-0.085(-0.56)**	0.047(1.70)*
Adj-R2	0.650	0.674	0.661
N	3730(373 companies)	3730	3730(373 companies)

Re. 1. * : p < 0.05, ** : p< 0.01
2. The values in parentheses are t values.
3. Variable description: LnEEP = natural logarithm of training costs per capita, LnFCP = natural logarithm of capital intensity per capita, LnEDU = natural logarithm of the number of economically active graduates or higher, LnNOE = number of workers Natural logarithm, INC = performance-based index, LnREA = natural logarithm to R&D cost
4. SSIZE= Number of workers<350, MSIZE= 350<Number of workers<690, MLSIZE= 690<Number of workers<1320. LSIZE = number of workers> 1320, divided by the quartile of the number of workers.

Looking at the results of the analysis of the fixed effect, it was found that as long-term corporate human resource investment increases, it has a positive effect on labor productivity (sales per capita). This result is more meaningful because it comes from considering the characteristics of the same company that cannot be measured, such as the capabilities of the company. In

addition, it was found that as capital intensity per capita increased, it had a positive effect on labor productivity (sales per capita). Also, as the economically active population above college graduates increased, it had a positive effect on labor productivity (sales per capita).

However, the result of the fixed effect loses the degree of freedom as much as the set temporary variable, so as long as there is no endogenous problem, the precision of the estimate is relatively higher than the result of the random effect(Greene, 2003). And since the result of the fixed effect includes the explanatory power of the time invariant variables, the result can be biased (Cameron & Trivedi, 2005). Therefore, the results of POLS and random effects (RE) are presented together. A brief look at the results of POLS and random effects (RE) showed that the increase in education and training costs per person, capital intensity per person, performance pay, and R&D costs had a positive effect on labor productivity (revenue per person).

As a result of analyzing the panel data, it was found that the long-term investment in corporate human resources has a positive effect on labor productivity(revenue per person). In other words, by analyzing the panel data, it was possible to solve the bias problem caused by the unique effects of individual companies, and at the same time, the pure influence on the labor productivity of the company when human resource development was conducted in the long term at the company level. It is meaningful in that it was confirmed.

5. Conclusion

Despite the importance of the role of the Labor Relations Commission as a starting point for the problem-consciousness of this study, studies on the specific factors that cause conflicts and intrinsic changes between labor and management have not been sufficiently conducted. Therefore, this study attempted to reexamine the role of the Labor Relations Commission on labor productivity from a human resource management perspective. Based on the results of this study, the conclusions are as follows.

First, from a long-term human resource management perspective, human resource development investment seems to contribute to improving labor productivity. Using the credit rating data from Korea, we reviewed the changes in labor productivity of companies that invested in human resource management for a long time through corporate-level data on large-scale company samples. Through the results of this study, it was found that companies improve labor productivity when they achieve human resource development in the long term. In summary, the results of the analysis of the Korea Credit Ratings data showed that, first, there was a rather high positive correlation between corporate human resource investment and economic performance by year from 2009 to 2018. As a result of examining whether corporate human resource management by year affects labor productivity, it was found that at a 1% significance level, per capita human resource management cost has a positive effect on sales per capita reflecting labor productivity.

Second, when looking at the analysis results considering the capabilities of companies suspected of having a relationship between the labor productivity variable and the included independent variable, as human resource management investment increases, it has a positive effect on labor productivity(sales per capita). This result was able to solve the problem of convenience of parameters caused by the unique effect of individual companies, and at the same time, it confirmed the influence on corporate labor productivity when human resource development through human resource management investment was made in the long term at the corporate level. It is meaningful in that respect. In other words, this result does not assume that the effects of human resource management investment occur in all of the year, but rather that the effects of human capital management investment on labor productivity are analyzed in terms of analyzing the effects of human capital over a period of time. It can be understood as a comprehensive assessment of effectiveness. In addition, as a result of analyzing whether corporate in-service education and training investment affects labor productivity (sales per capita) by applying as a dummy variable for each company size, as the training cost per capita, capital intensity per capita increases, and the ratio of performance pay The higher it was, the more positive it was to have a positive impact on labor productivity(per capita sales).

Third, in terms of the role of the Labor Relations Commission on labor productivity from a human resource management perspective, factors such as whether or not to delegate negotiations, whether to participate in high-level organizations, or whether to participate in union representatives in the mediation process of the Labor Relations Commission, are different from the mediation performance. It will not affect. This indicates that formal participation or negotiation can no longer be effective according to the corporate values and behaviors. The central core should be the role of the labor committee in the direction that the effectiveness of human resource development by the union can be exerted.

Fourth, it can be expected that factors such as the participation of the employer's representative of the Labor Relations Commission and the participation of labor unions will have little impact on the performance of coordination. It can be understood that formal participation or negotiations can no longer be effective due to recent changes in workers' maturity values and behavior patterns. The main role of the

Labor Commission is to enable human resource development to take place in the long-term at the corporate level, and it will be a key role to promote the improvement of labor productivity of the company.

Fifth, in the role of the Labor Relations Commission, factors that control the mediation process, such as the existence of prior mediation, the existence of mediation delay, the subject of mediation application, the details of the mediation application, and the mediation period, will be important. In order to improve the coordination performance of the labor council, the coordination agency, the labor council, should be effectively formed, and the role of the coordination members should be focused on how to strengthen the human resource management of the union.

This study empirically reveals how much continuous investment in human resources contributes to increasing labor productivity not only at individual companies but also at the national level. I want to be empirical. Furthermore, based on the effect of human resource investment on labor productivity, the role of the labor committee was reexamined. The Labor Commission will change the rate of establishment of coordination depending on the characteristics of the company. In other words, factors such as industry type, number of workers, and number of union members will not significantly affect the performance of coordination. This means that the recent mature labor-management relations no longer influence external factors, such as the characteristics of the company, in establishing a dispute settlement. Therefore, in future studies, it is expected that more practical and detailed research results will be presented by establishing a variety of variable selection such as worker situation, employer situation, coordination management situation, and corporate characteristics.

References

Almeida, S. & Karen, M. (2005). Employee training and wage compression in Britain. *The Manchester School, 73*(3), 1463-6786.

Barrett, A. & O'Connell, P. J. (2001). Does training generally work? The returns to in-company training. *Industrial and Labor Relations Review, 54*(1), 647−662.

Bartel, A. P. (2000), Measuring the Employer's Return on Investment in Training: Evidence from the Literature. *Industrial Relations 39*(3), 502-524.

Black, S. E., & Lynch, L. M. (2001). How to compete: the impact of workplace practices and information technology on productivity. *Review of Economics and statistics*, *83*(3), 434-445.

Bushe, G. R. (1988). Developing cooperative labor-management relations in unionized factories: A multiple case study of quality circles and parallel organizations within joint quality of work life projects. *The Journal of applied behavioral science*, *24*(2), 129-150.

Cooke, W. N., & Gautschi III, F. H. (1982). Political bias in NLRB unfair labor practice decisions. *ILR Review*, *35*(4), 539-549.

Chulanova, Z. K. (2017). The human capital as a factor of competitiveness and economic development. *The Journal of Business, Economics, and Environmental Studies*, *7*(3), 23-31.

Cunningham, R. A. (1975). Rezoning by Amendment as an Administrative or Quasi-Judicial Act: The" New Look" in Michigan Zoning. *Michigan Law Review*, *73*(8), 1341-1360.

Dearden, L., Reed, H., & Van Reenen, J. (2006). The impact of training on productivity and wages: Evidence from British panel data. *Oxford bulletin of economics and statistics*, *68*(4), 397-421.

Epstein, R. A. (1983). A common law for labor relations: a critique of the New Deal labor legislation. *The Yale Law Journal*, *92*(8), 1357-1408.

Greene, W. H. (2003). *Econometrics analysis*. (5th ed.). New York: Prentice-Hall.

Harbison, F., & Myers, C. A. (1964). Education and employment in the newly developing economies. *Comparative Education Review*, *8*(1), 5-10.

Horgan, J. & Mühlau, P. (2006). Human resource systems and employee performance in Ireland and the Netherlands. *International Journal of Human Resource Management, 17*(3), 414−439.

Kang, E., Nantharath, P., & Hwang, H. J. (2020). The Strategic Process of Merger and Acquisition (M&A) Market Using Integrating Change Management. *The Journal of Distribution Science*, *18*(6), 57-62.

Kirkpatrick, D. L. (2008). *Evaluating training programs: The four levels*. TU102, ASTD 2008 International Conference and Exposition. San Diego, CA: ASTD.

Nguyen, M. T., & Khoa, B. T. (2020). Improving the Competitiveness of Exporting Enterprises: A Case of Kien Giang Province in Vietnam. *The Journal of Asian Finance, Economics, and Business*, *7*(6), 495-508.

Pack, H. (1994). Endogenous growth theory: intellectual appeal and empirical shortcomings. *Journal of Economic Perspectives*, *8*(1), 55-72.

Schultz, T. W. (1960). Capital formation by education. *Journal of political economy, 68(6), 571-583*.

Zwick, T. (2005). Continuing Vocational Training forms and establishment productivity in Germany. *German Economic Review, 6*(2), 155-184.