경영전략이 노동투자효율성에 미치는 영향

The Impact of Business Strategy on Labor Investment Efficiency

유혜영*

Ryu, Haeyoung*

요 약 본 연구에서는 선도형 기업이 정보비대칭 및 사업 불확실성이 높아 적정인력에 대한 파악이 어렵다는 점에 착안하여, 선도형 전략과 노동투자비효율성의 관계에 대해 분석해보고자 한다.
2016년부터 2018년까지 유가증권 시장에 상장된 기업들을 대상으로 분석을 실시한 결과, 선도형 전략을 취하는 기업일수록 노동투자비효율성이 큰 것으로 나타났다. 구체적으로, 전략지수 점수가 높을수록 실제노동투자수준과 기대노동투자수준 간에 괴리가 큰 것으로 나타났으며, 관심변수를 선도형 기업여부로 설정한 추가분석에서도 동일한 결과가 확인되었다.
경영자는 인력투자 시 적정수준을 파악하고 그에 부합하게 인력을 고용할 필요가 있다. 인력에 대한 투자는 기업가치 극대화에 있어 매우 중요한 요소이다. 본 연구는 노동투자의 효율성을 좌우하는 요인을 점검했다는 측면에서 공헌도가 있다.

주요어 : 경영전략, 선도형 기업, 노동투자수준, 노동투자효율성

Abstract This study aims to analyze the relationship between prospector strategy and labor investment inefficiency, considering that leading firms face high information asymmetry and business uncertainty, making it difficult to identify the optimal level of staffing. The analysis, conducted on firms listed on the Korea Exchange from 2016 to 2018, reveals that firms adopting a prospector strategy exhibit greater labor investment inefficiency. Specifically, the higher the strategic score, the larger the gap between actual labor investment levels and expected labor investment levels. Additional analysis, with the key variable being whether the firm is a prospector, confirms the same results. Managers need to identify and hire an appropriate level of labor in line with these findings. Investment in labor is a critical factor in maximizing corporate value. This study contributes by examining the factors that influence the efficiency of labor investment.

Key words : Business Strategy, Prospector Firm, Labor Investment Level, Labor Investment Efficiency

Ⅰ. INTRODUCTION

This study aims to analyze the impact of a firm's business strategy on labor investment efficiency. Labor is a critical element directly linked to a firm's competitiveness, as it is responsible for product research and development, sales, management, and determining the scale of production. By strategically hiring labor, managers can expand sales and market share[1-2]. However, if more labor is employed than necessary, profitability may decrease due to increased training costs and wages. Therefore, managers must determine and hire an appropriate level of labor.

Recent studies suggest that a firm's strategy, which is executed over a significant period, is a determinant of its characteristics[3-4]. [5] classified corporate strategies into prospector, analyzer, and defender based on how firms respond to products and markets. Firms pursuing an innovation-centered prospector strategy swiftly alter their product mix, while defender firms focus on a narrow range of products, competing primarily on price, service, and product quality. Previous research suggests that prospector firms face higher information asymmetry due to the uncertainty of outcomes[6-7]. Prospector firms tend to adopt decentralized organizational structures to capitalize on various opportunities, which may make it challenging for managers to identify the optimal level of labor investment. Additionally, the uncertainty of projects managed by prospector firms may reduce the manager's confidence in labor investment. Overall, it is more likely that managers of prospector firms will make labor investments that deviate from the optimal level compared to other firms.

Business strategy and labor investment efficiency are essential to realize not only short-term performance but also long-term competitiveness and sustainability. When the two elements are organically combined, companies can optimize their resources to achieve high performance and gain an advantage in the market. This study examines how labor investment efficiency varies according to the business strategy pursued by executives, with a particular focus on prospector strategy.

Ⅱ. RESEARCH DESIGN

1. DATA

This study targets firms listed on the Korea Exchange from 2016 to 2018, limiting the sample to firms with a December fiscal year-end. Financial firms and firms with capital impairments were excluded from the sample. The necessary financial data were extracted from the Kis Value database. To control for the impact of outliers, the collected data were winsorized at the 1% level on both tails, resulting in a final sample of 1,327 firm-years.

2. MEASUREMENT OF BUSINESS STRATEGY

In this study, the measurement of a company's management strategy refers to the research by [3]. [3] assigned scores from 1 to 5 for six characteristics (R&D investment, efficiency, growth, marketing, organizational stability, and capital intensity) for each firm-year and summed them to calculate a total score ranging from 6 to 30. Firms with total scores between 24 and 30 are classified as prospectors, those between 6 and 12 as defenders, and those in the middle range of 13 to 23 as analyzers. The higher the total score, the more a company is pursuing a prospector strategy, and the lower the score, the more it is pursuing a defender strategy.

3. MEASUREMENT OF LABOR INVESTMENT INEFFICIENCY

This study measures labor investment efficiency based on the method proposed by [8]. [8] considered that the higher the employment growth rate, the more the firm invests in labor. The actual employment growth rate is set as the dependent variable, and variables related to expected employment growth rate (sales growth rate, return on assets, increase in

return on assets, and cumulative stock return) are set as independent variables. If a firm's actual employment growth rate deviates from the expected employment growth rate, it can be interpreted that labor investment is being made inefficiently. Therefore, the level of labor investment inefficiency is measured by the absolute value of the residuals.

4. MODEL

This study aims to verify whether firms pursuing a prospector strategy make labor investments inefficiently. The regression model is constructed by setting ABSLII, which indicates the level of labor investment inefficiency, as the dependent variable, and the business strategy index (STRATEGY) and control variables as independent variables.

The key variable for hypothesis testing in this study is STRATEGY, which represents a firm's business strategy. The higher the STRATEGY value, the more the company pursues a prospector strategy. The regression coefficient β_1 of STRATEGY is the coefficient of interest for hypothesis testing. If β_1 shows a significantly positive value, it supports the hypothesis that firms pursuing a prospector strategy are more likely to make inefficient labor investments.

Control variables include firm size (SIZE), leverage (LEV), growth (MB), return on assets (ROA), tangibility (TANGIB), and loss occurrence (LOSS), as suggested by prior studies[9-10].

$$ABSLII_t = \beta_0 + \beta_1 STRATEGY(PROSPECTOR)_{t-1} \\ + \beta_2 SIZE_{t-1} + \beta_3 LEV_{t-1} + \beta_4 MB_{t-1} \\ + \beta_5 ROA_{t-1} + \beta_6 TANGIB_{t-1} + \beta_7 LOSS_{t-1} \\ + \sum IND + \sum YEAR + \epsilon$$

where:

ABSLII = Absolute value of labor investment inefficiency;

STRATEGY = Strategy index;

PROSPECTOR = 1 if the total strategy index score for the calculated firm-year is 24 to 30 points, otherwise;

SIZE = Log of total assets;

LEV = Total liabilities scaled by total assets;

MB = The market value of equity scaled by the book value of equity;

ROA = Net income scaled by total assets;

TANGIB = (Tangible assets-Land-Construction in Progress)/Total assets;

LOSS = 1 if a loss occurred, otherwise 0;

IND = Industry dummies;

YEAR = Year dummies.

III. EMPIRICAL RESULTS

Table 1 shows the descriptive statistics of the main variables used in the analysis. The mean (median) value of the firm strategy (STRATEGY), the variable of interest, is 18.145 (18), indicating that the sample firms are generally pursuing an analyzer strategy. The dependent variable, labor investment inefficiency (ABSLII), was measured as the absolute value of the residuals based on Pinnuck and Lillis (2007) [8]. The mean (median) value of ABSLII is 0.088 (0.050), confirming that there is a gap between the actual and expected labor investment levels among the firms.

Table 1. Descriptive statistics (N=1,327)

Variable	Mean	Median	Std.	Min	Max
ABSLII	0.088	0.050	0.119	0	0.752
STRATEGY	18.145	18	3.809	8	28
PROSPECTOR	0.088	0	0.284	0	1
SIZE	27.150	26.833	1.496	24.440	31.159
LEV	0.404	0.406	0.201	0.036	0.928
MB	1.452	1.029	1.329	0.217	7.472
ROA	0.028	0.029	0.065	-0.292	0.234
TANGIB	0.179	0.156	0.134	0	0.915
LOSS	0.185	0	0.388	0	1

ABSLII = Level of labor investment inefficiency, Absolute value of labor investment inefficiency;

STRATEGY = Strategy index;

PROSPECTOR = Prospector-type firms, 1 if the total strategy index score for the calculated firm-year is 24 to 30 points, otherwise;

SIZE = Firm size, Log of total assets;

LEV = Total liabilities scaled by total assets;

MB = The market value of equity scaled by the book value of equity;

ROA = Return on assets, Net income scaled by total assets;

TANGIB = Proportion of tangible assets, (Tangible assets-Land-Construction in Progress)/Total assets;

LOSS = 1 if a loss occurred, otherwise 0.

Table 2 presents the Pearson correlation coefficients among the main variables. The firm strategy (STRATEGY) shows a positive relationship with labor investment inefficiency (ABSLII), but it is not statistically significant. The PROSPECTOR variable, representing whether a firm is a prospector, also did not yield statistically significant results. On the other hand, larger firms, firms with higher growth, firms with a higher proportion of tangible assets, and loss-making firms were more likely to pursue a prospector strategy. The correlation analysis results in Table 2 examine only the bivariate relationships, so a multiple regression analysis controlling for other variables that may affect labor investment inefficiency is necessary.

Table 2. Correlation matrix (p-values in brackets)

Variable	S	P	SIZE	LEV
ABSLII	0.043 (0.1151)	0.067 (0.0154)	−0.045 (0.1026)	0.018 (0.5156)
STRATEGY		0.555 (<.0001)	0.266 (<.0001)	−0.054 (0.0475)
PROSPECTOR			0.123 (<.0001)	−0.022 (0.4169)
SIZE				0.138 (<.0001)

Tables 3 shows the regression analysis results on whether firms pursuing a prospector strategy make labor investments inefficiently. If firms with higher strategic index scores (prospector firms) exhibit a greater gap between actual labor investment levels and expected labor investment levels, then the STRATEGY variable, the variable of interest in this study, should show a significantly positive coefficient

Variable	MB	ROA	TANGIB	LOSS
ABSLII	0.027 (0.3260)	−0.018 (0.5063)	−0.015 (0.5857)	0.031 (0.2546)
STRATEGY	0.236 (<.0001)	0.058 (0.0333)	−0.189 (<.0001)	−0.112 (<.0001)
PROSPECTOR	0.171 (<.0001)	0.006 (0.8234)	−0.128 (<.0001)	−0.045 (0.0997)
SIZE	−0.017 (0.5326)	0.043 (0.1185)	0.083 (0.0026)	−0.068 (0.0137)
LEV	0.020 (0.4690)	−0.199 (<.0001)	0.246 (<.0001)	0.311 (<.0001)
MB		0.041 (0.1364)	−0.017 (0.5435)	−0.037 (0.1750)
ROA			−0.062 (0.0250)	−0.278 (<.0001)
TANGIB				−0.015 (0.5936)

1) See Table 1 for variable definitions.

with the dependent variable, labor investment inefficiency (ABS_LII).

The analysis results show that the regression coefficient of STRATEGY is 0.003 (t-value: 1.77), which is significant at the 10% level, indicating that firms pursuing an innovation-centered prospector strategy exhibit a wider gap between actual labor investment levels and expected labor investment levels. These results suggest that firms pursuing a prospector strategy face higher information asymmetry and project uncertainty, leading to inefficient labor investment decisions. Table 4 presents the regression analysis results using the PROSPECTOR variable as the independent variable. Specifically, the PROSPECTOR variable is set to 1 if the firm-year strategic index score is 24 or higher, and 0 otherwise. The regression coefficient of the PROSPECTOR variable is 0.060 (t-value: 2.55), which is significant at the 5% level, supporting the hypothesis.

Table 3. Firm strategy and labor investment inefficiency

Variable	Coefficient	t-value
Intercept	0.230	1.87*
STRATEGY	0.003	1.77*
SIZE	−0.008	−1.87*
LEV	0.029	0.82
MB	0.003	0.83
ROA	−0.007	−0.19
TANGIB	−0.021	−0.39
LOSS	0.017	0.93
Adj. R^2	0.1218	

N	1,327

1) See Table 1 for variable definitions.
2) ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table 4. Prospector-type firms and labor investment inefficiency

Variable	Coefficient	t-value
Intercept	0.257	2.08**
STRATEGY	0.060	2.55**
SIZE	-0.007	-1.75*
LEV	0.028	0.78
MB	0.003	0.84
ROA	-0.004	-0.12
TANGIB	-0.021	-0.4
LOSS	0.015	0.87
Adj. R^2	0.1241	
N	1,327	

1) See Table 1 for variable definitions.
2) ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

IV. CONCLUSION

This study analyzed the impact of a firm's business strategy on labor investment efficiency. The analysis results reveal that firms pursuing a prospector strategy exhibit greater labor investment inefficiency.

This study is significant as it verifies the relationship between a firm's business strategy and labor investment efficiency for firms listed on the Korea Exchange. Previous studies have focused on capital investment efficiency when researching investment efficiency[11-15]. Labor investment, alongside capital investment, is a key decision that significantly influences corporate performance and value. Labor investment is characterized by continuous cash outflows and difficulties in restructuring, such as layoffs, even after the investment is made. This study aims to expand on previous research regarding investment efficiency by focusing on factors that determine labor investment efficiency.

This study was conducted based on the period before the outbreak of COVID-19. Since the outbreak of the pandemic, there has been a shift in companies' labor investment strategies due to the activation of remote work. Future research will reflect these changes and focus on the impact of post-COVID business strategies on workforce investment.

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