

Pham, Duc Hieu; Chu, Thi Huyen; Hoang, Thi Bich Ngoc; Lai, Thi Thu Thuy

## Article

# Human resource accounting disclosure among listed companies in Vietnam: An empirical study

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\*Corresponding author: Duc Hieu Pham, Dean of Accounting and Auditing Faculty, Thuongmai University, 79 Ho Tung Mau Street, Cau Giay District, Hanoi 122868, Vietnam  
E-mail: [hieu.pd@tmu.edu.vn](mailto:hieu.pd@tmu.edu.vn)

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Human resource accounting disclosure among listed companies in Vietnam: An empirical study

Duc Hieu Pham<sup>1\*</sup>, Thi Huyen Chu<sup>2</sup>, Thi Bich Ngoc Hoang<sup>3</sup> and Thi Thu Thuy Lai<sup>4</sup>

**Abstract:** This study examines the association between corporate attributes and human resource accounting disclosures of non-financial companies listed on the Vietnam Stock Exchange. Data were obtained from the annual reports of 80 selected companies for the period 2016–2018. Content analysis was also applied to analyze the extent of human resource disclosures. To determine the level of voluntary disclosures of Vietnamese listed companies, the human resource disclosure index consisting of 32 items was developed. For hypothesis testing, we used panel regression, employing techniques like the pooled-ordinary least squares, fixed effects model, and random effects model to analyze the data. The findings reveal a significant positive relationship among firm size, foreign ownership, and human resource accounting disclosures. However, other variables, including listing age, leverage, and profitability, exhibit no relationship with human resource accounting disclosures. In addition, based on the content analysis results, it can be concluded that human resource accounting disclosures by Vietnamese listed companies are quite low, and there is room for improvement. The study contributes to the limited research on this field in Vietnam. Moreover, the disclosure index constructed in this

### ABOUT THE AUTHORS

Duc Hieu Pham is an associate professor, Dean of Accounting and Auditing Faculty, Thuongmai University (TMU), Hanoi, Vietnam. His major research focuses on corporate social responsibility, corporate governance, earnings management, human resource accounting, firm performance, and internal control.

Thi Huyen Chu is a lecturer of Accounting and Auditing Faculty, Thuongmai University (TMU), Hanoi, Vietnam. Her major research focuses on responsibility accounting, human resource accounting, and firm performance.

Thi Bich Ngoc Hoang is a senior lecturer of Accounting and Auditing Faculty, Thuongmai University (TMU), Hanoi, Vietnam. Her major research focuses on environmental accounting, corporate social responsibility, and accounting for non-profit organizations.

Thi Thu Thuy Lai is a senior lecturer of Accounting and Auditing Faculty, Thuongmai University (TMU), Hanoi, Vietnam. Her major research focuses on financial reporting, internal control, and audit quality.

### PUBLIC INTEREST STATEMENT

Human resource accounting (HRA) is still a new concept in both theoretical and practical aspects and not widely adopted by local companies in Vietnam. The reasons for this late adoption of HRA depends on many factors both internal and external in enterprises. In addition, there still exists a wide variety in the disclosure level between companies. The paper has contributed to the empirical foundations on HRA by supplementing and clarifying the issues related to factors affecting the level of voluntary human resource disclosures by companies listed on the Vietnam Stock Exchange such as firm size, foreign ownership, listing age, leverage, and profitability. The findings from this study not only may fill the gap in research but also will be foundations for recommendations to improve the voluntary human resource disclosures in Vietnamese enterprises in the future.

study may be utilized by local companies as a benchmark to enhance their human resource disclosures in the future.

**Subjects: Business, Management and Accounting; Accounting;; Financial Accounting; Corporate Social Responsibility & Business Ethics; Corporate Social Responsibility; Human Resource Management**

**Keywords: Human resource accounting; human resource accounting disclosures; Corporate disclosures; Vietnam; Vietnam Stock Exchange**

**JEL Classifications: M40; M41**

## 1. Introduction

In a knowledge-based economy, the success of a business depends largely on the quality and efficiency of its human resources, apart from other critical tangible and intangible assets. Without human resources, other resources cannot operate effectively and efficiently. Therefore, human resources have become a vital source of value creation and a determinant in ensuring the sustainable growth and development of an organization (Sürdü et al., 2020). There is no difference in opinion regarding the fact that people are one of the most important components of an entity (Adejuwon et al., 2020). An organization with vast physical resources and the latest technology may experience a financial crisis if it lacks the right people to manage and conduct its affairs (Bukh, 2003). Thus, despite technological developments, the importance of human resources has not diminished (Akintoye et al., 2016; Oladele et al., 2018). As defined by Schultz (1961), human resources are the abilities and skills of an individual or group of people, including behavior, experience, knowledge, morale, and attitude, that are expected to generate future economic value for an entity. Sarkar et al. (2016) observed that every aspect of a firm's activities is determined by the competence, motivation, and general effectiveness of human resources. Due to rising concerns regarding the association between the performance of organizations and their employees, the concept of human resource accounting disclosures has gained prominence (Khadijeh, 2015).

Human resource accounting establishes and estimates data about human resources and communicates this information to interested users. It can provide internal users (management) with relevant information for recruiting, training, and other human-related decisions and supply external users (investors, lenders, and other stakeholders) with information on human resource investment and utilization within the organization (American Accounting Association, 1974; Sarkar et al., 2016; Ullah & Karim, 2015). Human resource accounting disclosure is an important process by which companies communicate information about employee knowledge and skills that provide future economic benefits to organizations (Ullah & Karim, 2015).

The fact that firms engage in voluntary disclosures of human resource information is a clear indication they now recognize and acknowledge that such an important asset has been omitted from financial statements since the launch of the corporate disclosures system (Oladele et al., 2018). Human resource accounting accepts that the success of an organization depends to a great extent on the quality, caliber, and character of its employees. Human resource accounting also recognizes that inclusion of this disclosure in financial reporting will make published financial statements more meaningful and useful to users (Oladele et al., 2018; Petty & Guthrie, 2000; Schneider & Samkin, 2008; Vergauwen et al., 2007). Consequently, many companies voluntarily disclose information about human resources to reduce information asymmetry and improve transparency between the organization and stakeholders, as well as to show social responsibility compliance (Dominguez, 2011; Petty & Guthrie, 2000). There is a need, therefore, to evaluate the human resource disclosure practices of companies because it will add a further dimension to the assessment of reporting by disclosing certain types of information that are more useful to readers than others (Hooks & van Staden, 2011; Sarkar et al., 2016). Unlike in developed countries, where many studies on human resource accounting and its disclosures have been conducted (Sarkar

et al., 2016), limited attention has been paid to this area of research in developing countries (Adejuwon et al., 2020; Enofe et al., 2013; Okpala & Chidi, 2010). To the best of our knowledge, there is a dearth of studies investigating human resource accounting disclosure practices and their determinants in Vietnam. Hence, this study examines the extent and determinants of human resource disclosure practices followed by Vietnamese listed companies to improve accountability, particularly for comprehensive disclosures by individual corporations. This study sheds light on the current practices of human resource accounting in the annual reports of Vietnamese listed firms. It also provides a direction for further development of this important branch of accounting.

This study examines the relationship between corporate attributes and human resource accounting disclosures of listed companies in Vietnam by focusing on the following two issues: (i) the disclosure level of human resource accounting by Vietnamese listed companies and (ii) the impact of firm attributes on the human resource accounting disclosure practices of Vietnamese listed companies.

Most previous studies consider human resources to be a source of intellectual capital; however, only a few studies focus on human resource-related disclosures in organizations' financial statements (Aggarwal & Verma, 2020). This study provides valuable information and contributes to the existing literature because it analyzes the effects of certain company characteristics on human resources reporting in Vietnam using content analysis techniques, and it considers different types of human resource disclosures. The findings from this study allow us to verify the level and determinants of voluntary disclosure practices that have emerged in the recent literature in the new context of Vietnam's securities market. In addition, the human resource disclosure index (HRDI) developed in this study may be utilized by local companies as a benchmark to enhance their human resource disclosures in the future. Since no rigorous studies have been conducted in Vietnam to examine human resource accounting disclosures and their determinants, this study attempts to fill the gap in research.

The remainder of this paper is organized as follows. Section 2 reviews the literature and develops the research hypotheses. Section 3 presents the study methodology. The results and discussion are presented in Section 4. Finally, the conclusions are presented in Section 5.

## 2. Literature review and hypotheses development

### 2.1. Theoretical review

From the shareholder perspective, voluntary human resource disclosures are based on the agency and signaling theories. As per these theories, information asymmetry exists in financial markets, which can reduce a firm's value and create market inefficiency (Botosan, 1997), thus resulting in adverse consequences for an economy. In this regard, agency theory suggests voluntary disclosures as a way to reduce agency costs due to, among other things, information asymmetry. Voluntary human resource disclosures allow managers to signal their business performance and differentiate their firms from competitors (Abdullah & Ismail, 2008; Fontana & Macagnan, 2013). In addition, such disclosures allow companies to receive less-expensive funding and improve the efficiency and profitability of investors' forecasting companies (Diamond & Verrecchia, 1991).

From the stakeholder perspective, a company's performance includes not only its financial results but also its global behavior (Carroll, 1979). In general, shareholders are not concerned about a firm's non-financial activities, but other stakeholders are concerned about such activities. Stakeholder theory suggests that all stakeholders have the right to be provided with information on how organizational activities impact them, even if they choose not to use it (Deegan, 2000). An organization can communicate with various groups deemed to have a controlling interest in it via annual reports (Guthrie et al., 2004). In addition, companies voluntarily disclose information, such as human resource accounting, to meet the demands of stakeholders with the power to control the required company resources. Companies have a reciprocal relationship with stakeholders,

which requires support, regular dialogue, and joint enterprise to reduce the possibility of conflicts (Oladele et al., 2018). Handling these relations require managers' use of voluntary disclosures, particularly human resource accounting disclosures, to communicate with stakeholders (Micah et al., 2012). In this sense, voluntary human resource disclosures can be a means of gaining legitimacy. They allow companies to demonstrate their socially responsible behavior to different social actors (Patten, 1991; Roberts, 1992).

## 2.2. Hypotheses formulation

### 2.2.1. Firm size

Company size is the most commonly analyzed parameter in the reviewed studies to explain the level of disclosure in general. Many researchers found a positive relationship between company size and the level of corporate disclosures (Bozzolan et al., 2003; Camfferman & Cooke, 2002; Prencipe, 2004; Watson et al., 2002). Recently, Aggarwal and Verma (2020) evaluated annual reports on human resource disclosures in India using content analysis. They suggested a positive correlation exists between human resource disclosures and organization size measured by net sales and market capitalization. The positive effect indicates that larger companies disclose more information than smaller companies (Aggarwal & Verma, 2020). From the stakeholder perspective, larger firms are more likely than smaller firms to be interested in the general public. Larger firms usually have more shareholders interested in voluntary disclosures and are more likely to use formal channels to share information (Aggarwal & Verma, 2020; Roberts, 1992). Compared to smaller companies, larger companies typically have more complete information systems, which allow them to make more disclosures due to lower costs for obtaining and publishing information (Watson et al., 2002). A smaller company is likely more vulnerable to losing its competitive advantage by making disclosures than a larger company (Fontana & Macagnan, 2013). Thus, we formulate the following hypothesis:

*H1: Firm size is positively related to the level of voluntary human resource accounting disclosures in firms.*

### 2.2.2. Profitability

A previous study argued that profitability improves human resource accounting disclosures (Ousama et al., 2012). Highly profitable companies increase the extent of their disclosures, in general, to reduce agency costs, to avoid sending negative signals to the market, and to justify earnings to avoid political costs, as recommended by agency and signaling theories (Li & Zhao, 2011). These companies are also more likely to disclose good news to investors to decrease the risk of being undervalued (Oliveira et al., 2006). The empirical evidence from previous studies is inconclusive. While some studies found a significant and positive relationship between profitability and human resource accounting disclosures (Ferreira et al., 2012; Haji & Ghazali, 2013; Ousama et al., 2012), others confirmed a negative association (Firer & Williams, 2003). Meanwhile, some researchers found that profitability does not have a significant relationship with the human resource disclosure level (Bozzolan et al., 2003; Soon Yau et al., 2009; Taliyang et al., 2011). Aggarwal (2021) found that in Indian listed companies, profitability, measured by return on total assets, has a significant and positive influence on the level of human resource disclosures. However, other profitability variables, such as profit after tax, return on equity, and earnings per share, have no significant relationship with human resource disclosure levels in Indian listed companies (Aggarwal, 2021). Based on the agency and signaling theories, in this study we hypothesize that the level of voluntary human resource disclosures is associated with company performance. Companies with good performance will voluntarily disclose more to signal their good quality to investors, in order to improve both the value of the company and the value of their human capital in the securities market (Abdullah & Ismail, 2008). Thus, we formulate the following hypothesis:

*H2: Profitability is positively related to the level of voluntary human resource accounting disclosures in firms.*

### 2.2.3. Leverage

When a firm raises debt, agency costs increase because debt holders and equity holders have different interests (Berger & Bonaccorsi Di Patti, 2006). Such costs can be reduced by disclosing more information, which acts as an incentive for firms with greater debt to disclose more to reduce agency costs (Oliveira et al., 2006). However, firms with lesser leverage also have an incentive to disclose more to present a lower debt, as explained by signaling theory (Oliveira et al., 2006). The findings of previous studies have been mixed. Some authors found that firms with greater debt make more voluntary disclosures (Aggarwal & Verma, 2020; Broberg et al., 2010; Li & Zhao, 2011). Meanwhile, other authors found no significant relationship between the level of leverage and voluntary disclosures (Aggarwal, 2021; Haniffa & Cooke, 2002; Oliveira et al., 2006; Whiting & Woodcock, 2011). In the present study, which relies on agency theory, we suppose a positive relationship exists between leverage and disclosures. Debt contracts and monitoring incur costs to restrict management behavior; hence, managers tend to reduce such costs by means of voluntary disclosures (Jensen & Meckling, 1976; Li & Zhao, 2011). Thus, we formulate the following hypothesis:

*H3: Leverage is positively related to the level of voluntary human resource accounting disclosures in firms.*

### 2.2.4. Listing age

Listing age is an important factor in human resource accounting disclosures. Companies that have been listed in the capital market for a long time have more experience in disclosing information about their social responsibility (Roberts, 1992). According to Vazakidis et al. (2013), human resource information disclosures can be affected by company listing age due to the following reasons: immature companies can suffer competitive disadvantages from voluntary disclosure of information, collecting and reporting additional information can be costly and difficult for immature companies, and immature companies may not have comprehensive information to disclose to stakeholders. Previous studies have provided inconclusive results regarding the relationship between a firm's listing age and human resource disclosures. Sarkar et al. (2016) showed a positive association, while Vazakidis et al. (2013) and Ullah and Karim (2015) exhibited no such relationship in the annual reports of the banking sectors in Greece and Bangladesh, respectively. Thus, we formulate the following hypothesis:

*H4: Listing age is positively related to the level of voluntary human resource accounting disclosures in firms.*

### 2.2.5. Foreign ownership

The presence of foreign owners in a company can influence corporate governance practices, which significantly impact firms' disclosure decisions (Ho & Tower, 2011). Many studies found a significant positive association between foreign ownership and voluntary disclosures by listed companies in Malaysia, Kenya, and Vietnam (Barako et al., 2006; Haniffa & Cooke, 2002; Pham & Do, 2015). This is in line with expectations and supports the agency theory argument in that, due to the separation of ownership and control, obtaining foreign funds means a greater need for disclosures to monitor actions by management (Ho & Tower, 2011). The increasing prevalence of foreign ownership in Vietnamese firms can influence listed firms' corporate disclosure practices. Thus, we hypothesize that the extent of voluntary human resource accounting disclosures is positively associated with a higher proportion of foreign ownership.

**Table 1. Hypotheses and expected relationship**

Hypothesis	Variable	Expected relationship
H1	Firm size	+
H2	Profitability	+
H3	Leverage	+
H4	Listing age	+
H5	Foreign ownership	+

(Source: Authors' compilation)

*H5: Foreign ownership in firms is positively related to the level of voluntary human resource accounting disclosures.*

Table 1 shows the study hypotheses and their relationship with the expected level of voluntary human resource accounting disclosures by listed companies in Vietnam.

### 3. Methodology

This empirical study is based on primary and secondary data sources. We consider all companies listed on the Vietnam Stock Exchange from 2016 to 2018, and select 80 companies for the final analysis. All companies that belong to the banking and financial sector, as well as companies whose annual reports and data are not available, are excluded from the study.

#### 3.1. Research design

To identify the relationship between explanatory factors and the level of disclosures, after reviewing the empirical literature, we create a model of analysis represented by the following equation:

$$HRDI_{it} = \beta_0 + \beta_1 FSIZE_{it} + \beta_2 PROF_{it} + \beta_3 LEV_{it} + \beta_4 LAGE_{it} + \beta_5 FOREIN_{it} + \epsilon_{it},$$

where  $HRDI_{it}$ : level of human resource accounting disclosures of company “i” in year “t”;  $\beta_0$ : intercept;  $FSIZE_{it}$ : size of company “i” in year “t” (measured by the natural logarithm of total assets);  $PROF_{it}$ : profitability of company “i” in year “t” (measured by return on assets);  $LEV_{it}$ : debt ratio of company “i” in year “t” (measured by the ratio of total debt to total assets);  $LAGE_{it}$ : listing age (measured by the number of years since the firm was listed on the Vietnam Stock Exchange);  $FOREIN_{it}$ : foreign ownership of company “i” in year “t” (measured by the proportion of shares held by foreign investors);  $\epsilon_{it}$ : residual errors; i: companies, from 1 to 80; and t: year or period, from 2016 to 2018. These variables have been defined in line with previous studies on voluntary disclosures (Adejuwon et al., 2020; Aggarwal, 2021; Aggarwal & Verma, 2020; Pham & Do, 2015).

There are alternative approaches to constructing the HRDI. First, a researcher can self-construct a disclosure index to measure the level of corporate information disclosures. Second, the researcher can adopt and modify an existing index to make it more appropriate for the research context. In this study, the second approach is adopted. Accordingly, as the first step, human resource disclosure items are gathered from an extensive review of prior studies. In the second step, these items are filtered based on commonalities across studies and consistency among disclosure items in this study. Based on various studies, Aggarwal and Verma (2020) developed an HRDI by studying the determinants of human resource disclosures by Indian companies listed on the NSE-100 index. This list of disclosure determinants includes 91 items, which are further divided into nine groups. Since the Aggarwal and Verma (2020) study was recently conducted in an Asian country, their HRDI checklist is used in the present study as a basis to measure the HRDI level. This list is further screened by considering Vietnam’s situation to suit the context of Vietnamese companies; as a result, several items are excluded, while some items are either modified or added. Then, an exploratory analysis is carried out with the aim of obtaining a checklist that captures the human resource disclosure items



mainly used in earlier studies. Based on the analysis, a final checklist is constructed, which includes 32 items that represent human resource information disclosures by Vietnamese companies in their annual reports. A detailed description of the HRDI is provided in Table A1.

A dichotomous approach to scoring items is adopted: an item takes a value of one if disclosed and zero otherwise. This procedure is conventionally termed the unweighted approach, and has been used successfully by other researchers (Adejuwon et al., 2020; Aggarwal, 2021; Aggarwal & Verma, 2020; Hossain & Hammami, 2009; Pham & Do, 2015; Sarkar et al., 2016). All item scores are added to find the net score of a company. Then, the HRDI is computed using the following formula:

$$HRDI = \frac{\sum_1^n d_i}{n} \times 100$$

where the HRDI is the human resource accounting disclosure index of a company,  $d_i = 1$  if the item is disclosed, and 0 otherwise; and  $n$  = number of items that are disclosed by a company ( $n \leq 32$  items).

### 3.2. Data collection

Annual reports of Vietnamese listed companies are examined to obtain data regarding the level of human resource accounting disclosures. Most studies on disclosures considered annual reports to obtain data (Adejuwon et al., 2020; Aggarwal & Verma, 2020; Hossain & Hammami, 2009; Pham & Do, 2015; Sarkar et al., 2016). It is mandatory for listed companies' annual reports to be audited by external independent auditors, and the reports are approved by the State Securities Commission of Vietnam. Therefore, the information presented in companies' annual reports is considered reliable and comparable. Listing age data are collected from the websites of the two stock exchanges in Vietnam, namely, the Hanoi Stock Exchange (HNX) and Ho Chi Minh Stock Exchange (HOSE), and monthly reviews by both exchanges.

The population for this study comprises all companies listed on the HNX and HOSE that publish their annual reports by the end of the financial year from 2016 to 2018. Firms that include banks, insurance, and securities companies were excluded as their reports were prepared under different or specific regulations. Furthermore, 455 companies were excluded because their annual reports were not available or they had an insufficient database (newly listed or missing variables); 21 companies were excluded as they had been delisted for the study period. Therefore, the final sample consists of the data of 80 companies from the period 2016 to 2018, resulting in 240 annual reports that are reviewed in this study. The annual reports are analyzed using content analysis in which human resource disclosures are examined. Stata software is used to process the data and obtain statistical results of the empirical investigation.

Multiple linear regression using panel data is used to analyze the factors explaining the level of voluntary human resource disclosures, and is preceded by three analyses: (i) descriptive analysis of the level of disclosures, (ii) correlation analysis between explanatory variables, and (iii) analysis using pooled-ordinary least squares (OLS), the fixed effects model (FEM), and the random effects model (REM) on panel data.

## 4. The empirical investigation

### 4.1. Descriptive analysis

Table 2 presents the distribution of human resource disclosure levels in terms of the number of items disclosed as a percentage of the total disclosure.

The modal class of HRDI, 31–40 %, indicates that the human resource accounting disclosure level of 85 companies is 31 to 40 %, while 59 companies disclose 21 to 30 % of the total disclosure items. The table also shows that nearly 86 % of the sample companies disclose less than 50 % or

**Table 2. Human resource accounting disclosure levels**

HRDI (%)	No. of observations (N)	Percentage of total observations	Cumulative percentage
10–20	15	6.25	6.25
21–30	59	24.58	30.83
31–40	85	35.42	66.25
41–50	47	19.58	85.83
51–60	21	8.75	94.58
61–70	11	4.58	99.17
71–80	1	0.42	99.58
81	1	0.42	100
Total	240	100	

(Source: Data analysis)

Legend: HRDI is the human resource accounting disclosure index.

up to 50 % of the human resource accounting disclosure items. The remaining 14 % of the companies have an HRDI between 51 and 81 %.

Table 3 provides the descriptive statistics of the dependent variable (HRDI) and independent variables (FSIZE, PROF, LEV, LAGE, and FOREIGN).

On average, the HRDI is 36.82 % with a standard deviation of 12.52, varying significantly among companies, from 9.38 % (minimum) to 81.25 % (maximum). The descriptive analysis implies that the level of human resource accounting disclosures by companies listed on the Vietnam Stock Exchange is quite low, and there is still significant room for improvement. The low score of disclosures can be explained by the fact that the disclosure items are all voluntary in nature. Like in other developing countries, such as India, the concept of human resource disclosures in Vietnam is in the experimental stage and great effort is required in this regard (Aggarwal, 2021). Hence, it is not surprising that the mean score of HRDI is 36.82 %, only lower than that disclosed by Indian public sector companies (41.47 %) as found by Aggarwal (2021).

Table 4 further shows the human resource disclosure components' scores of studied companies. The results indicate that the highest disclosure component is work-related information with a disclosed score of 729, accounting for 25.76 %, followed by employee-related information (682, 24.10 %), board of directors (BOD)-related information (615, 21.73 %), and training-related information (424, 14.98 %). The least-disclosed component is related to health and safety-related information with a score of 378, contributing 13.36 % to the overall of HRDI of studied companies.

#### 4.2. Correlation analysis

The correlation analysis between explanatory variables, the results of which are presented in Table 5, only allows for the selection of variables that are not significantly correlated. Following the guide that Evans (1996) suggests for the absolute value of correlation ( $r$ ): (0–0.19 = very weak), (0.20–0.39 = weak), (0.40–0.59 = moderate), (0.6–0.79 = strong), and (0.8–1.0 = very strong), the model includes only variables with correlations lower than 0.59. Therefore, among the five tested cases, there is no significant correlation between the explanatory variables, which could affect the consistency of the results.

#### 4.3. Multiple regression analysis

This study first uses pooled-OLS, a simple technique for panel data; however, it ignores individual specific effects (Wooldridge, 2009). Therefore, the FEM and REM are more appropriate. The decision

**Table 3. Descriptive statistics of dependent and independent variables**

Variable	Obs.	Mean	Minimum	Maximum	Std. Dev.
HRDI	240	36.82	9.38	81.25	12.52
FSIZE	240	14.31	11.82	18.18	1.46
PROF	240	8.44	-3.76	41.63	8.24
LEV	240	43.6	3.10	87.0	21.93
LAGE	240	8.89	2	17	2.90
FOREIN	240	16.0	0	76.9	16.92

(Source: Data analysis)

Legend: HRDI: human resource accounting disclosure index; FSIZE: size of company; PROF: profitability; LEV: leverage; LAGE: listing age; FOREIN: foreign ownership.

**Table 4. Scores of human resource disclosure components for studied companies**

No.	Human resource disclosure components	Disclosure score	Disclosure percentage
1	Training-related information	424	14.98
2	Employee-related information	682	24.10
3	Health and safety-related information	378	13.36
4	Work-related information	729	25.76
5	Board of Directors (BOD)-related information	615	21.73

(Source: Data analysis)

to use either FEM or REM is determined after running the Hausman test (Wooldridge, 2009). Table 6 below summarizes the results of the regression models using OLS, the FEM, and the REM.

Due to the limitations of the pooled-OLS model, the FEM and REM are employed. Using the Hausman test, we find that one or more variables are correlated with the unobserved effect. For this reason, a regression is performed using the fixed effect.

Table 6 presents the results of the statistical regression. Given the R-squared value, we can infer that 18.52 % of the variations in the level of disclosures can be explained by variations in explanatory variables. A review of the regression analysis results for H1 shows that there is a significant positive relationship between firm size and human resource accounting disclosures. The findings show that the p-value (0.015) and t-statistic (1.96) are lower than the 5 % significance level. Therefore, we can say that the results support H1. This implies that larger firms encourage management to disseminate more human resource information. This result is in agreement with other studies, which showed a positive relationship between firm size and human resource accounting disclosures (Adejuwon et al., 2020; Camfferman & Cooke, 2002; Prencipe, 2004). However, the results of the present study contradict those of some other studies, which found an insignificant negative relationship between these variables (Sarkar et al., 2016; Ullah & Karim, 2015; Vazakidis et al., 2013). This contradiction between studies might be explained by the fact that the settings and/or the analysis periods are very different.

**Table 5. Correlation matrix of explanatory variables**

	HRDI	FSIZE	PROF	LEV	LAGE	FOREIN
HRDI	1.000					
FSIZE	0.4069	1.000				
PROF	0.1614	-0.118	1.000			
LEV	0.0406	0.4254	-0.5175	1.000		
LAGE	0.0196	0.1991	-0.0285	-0.1023	1.000	
FOREIN	0.3281	0.3746	0.2441	-0.2324	0.3889	1.000

(Source: Data analysis)

Legend: HRDI: human resource accounting disclosure index; FSIZE: size of company; PROF: profitability; LEV: leverage; LAGE: listing age; FOREIN: foreign ownership.

**Table 6. Comparison among OLS, the FEM, and the REM**

	OLS (1)	FEM (2)	REM (3)
FSIZE	<b>0.029***</b> (4.40)	<b>0.088**</b> (1.96)	<b>0.039***</b> (4.71)
PROF	<b>0.027**</b> (2.53)	0.012 (0.71)	0.002 (1.63)
LEV	-0.0071 (0.15)	-0.064 (-0.64)	-0.0432 (-0.73)
LAGE	<b>-0.0054*</b> (-1.92)	-0.0064 (-0.95)	0.0029 (-0.82)
FOREIN	<b>0.127**</b> (2.29)	<b>0.538***</b> (3.88)	0.0257 (0.36)
Constant	-0.0453 (-0.54)	-0.7280 (-1.21)	-0.1631 (-0.82)
R-sq	0.224	0.1852	0.1093
Observations	240	240	240
Number of ID		80	80
F test	11.98***	4.04***	
Wald chi square			24.05***
Variance inflation factor	<10		
Hausman test (Chi-square)			24.44***

Notes: \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively; the t-statistics are reported in parentheses. (Source: Data analysis)

Legend: HRDI: human resource accounting disclosure index; FSIZE: size of company; PROF: profitability; LEV: leverage; LAGE: listing age; FOREIN: foreign ownership.

Similarly, foreign ownership has a significantly positive relationship with the extent of human resource accounting disclosures. The results reveal that the p-value (0.000) and t-statistic (3.88) are less than the 1 % significance level. Hence, H5 is also accepted. This finding indicates that firms with a larger proportion of foreign ownership disclose more human resource accounting information. The results of the foreign ownership hypothesis can be explained by agency theory because the greater the foreign ownership in a company, the greater the information asymmetry between managers and foreign investors. This effect may generate greater demand for disclosures in the quest to reduce agency costs.

However, profitability has an insignificant ( $p$ -value = 0.476) and positive impact on the HRDI of Vietnamese listed companies. Hence, H2 is rejected. This result is contradictory to those of some studies (Adejuwon et al., 2020; Aggarwal, 2021), but in line with those of some other studies (Aggarwal & Verma, 2020; Soon Yau et al., 2009; Taliyang et al., 2011). Listing age has an insignificant ( $p$ -value = 0.345) and negative impact on the HRDI. Thus, H4 is rejected. This finding is in agreement with existing research, which found an insignificant relationship between listing age and human resource accounting disclosures (Ullah & Karim, 2015; Vazakidis et al., 2013). However, a significant relationship between listing age and human resource accounting disclosures is found in the study by Sarkar et al. (2016) on listed companies in Bangladesh. Meanwhile, an insignificant ( $p$ -value = 0.524) and negative association exists between leverage and the extent of human resource disclosures; this shows that higher debt reduces a firm's voluntary disclosures of human resource accounting information. Thus, H3 is rejected. This result is supported by prior studies (Aggarwal, 2021; Whiting & Woodcock, 2011), but contradicts the results of a study by Aggarwal and Verma (2020).

## 5. Discussion

This study aims to analyze the factors explaining the level of voluntary human resource disclosures by companies listed on the Vietnam Stock Exchange during the period of 2016–2018. It examines whether human resource accounting disclosures are influenced by variables, such as firm size, profitability, listing age, leverage, and foreign ownership. The study uses five hypotheses to test human resource accounting disclosures and their determinants. The results reveal a significantly positive relationship among firm size, foreign ownership, and human resource accounting disclosures. However, other variables, including listing age, leverage, and profitability, exhibit no significant association with the level of human resource accounting disclosures by firms; the possible reasons for this could be that large companies and companies with higher foreign ownership in the Vietnam Stock Exchange are motivated to disclose more human resource accounting information in their annual reports to uphold their image and differentiate themselves from other companies. Therefore, agency theory and signaling theory, as captured by these variables, are the most relevant theories for explaining the human resource accounting disclosures of Vietnamese listed companies. On the other hand, among inconclusive variables, it can be explained that in Vietnam when a firm reaches a very high level of leverage, voluntary disclosures may be less likely. This may be due to the fact that managers fear unfavorable forecasts and pressure from creditors because of the increasing risks (Watson et al., 2002). For listing age and profitability, the fact that there are no local standards and guidelines on disclosures of human resources, and the new concept of human resource disclosures, may explain the phenomenon.

The findings from this study may fill the gap in research as no prior rigorous studies have examined Vietnamese firms' human resource disclosures and their determinants. The research findings motivate Vietnamese companies to disclose human resource information to improve their level of disclosures by referring to the HRDI created in this study. In addition, Vietnamese regulators should standardize regulations and guidelines on human resource disclosures to encourage wider disclosure.

This study has several limitations. For example, it considered only non-financial companies listed on the Vietnam Stock Exchange for the three-year period from 2016 to 2018. Therefore, future studies should conduct a longitudinal study that considers a longer time period. Additionally, this study can be replicated as a comparative study by considering a sample of firms from the financial sector; this will enhance the understanding of the factors that explain the level of voluntary human resource accounting disclosures. This study was limited to examining only the presence or absence of voluntary human resource accounting disclosures in annual reports. Therefore, the analysis of other modes of communication used by companies, such as information disclosure on the Internet, could be an area for future research.

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### Author details

Duc Hieu Pham<sup>1</sup>

E-mail: [hieu.pd@tmu.edu.vn](mailto:hieu.pd@tmu.edu.vn)

ORCID ID: <http://orcid.org/0000-0003-2362-5911>

Thi Huyen Chu<sup>2</sup>

Thi Bich Ngoc Hoang<sup>3</sup>

Thi Thu Thuy Lai<sup>4</sup>

<sup>1</sup> Dean of Accounting and Auditing Faculty, Thuongmai University, Hanoi, Vietnam.

<sup>2</sup> Department of Managerial Accounting, Thuongmai University, Hanoi, Vietnam.

<sup>3</sup> Head of Department of Managerial Accounting, Thuongmai University, Hanoi, Vietnam.

<sup>4</sup> Department of Auditing, Thuongmai University, Hanoi, Vietnam.

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Please contact the authors.

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## Appendix

<b>Table A1. Human resource accounting disclosure checklist (32 items)</b>	
<b>Number</b>	<b>Disclosure items</b>
<b>Training related items (five items)</b>	
01	Training and education statement
02	Number of training courses
03	Training hours/day per employee
04	Training hours/day per employee, breakdown by gender
05	Money invested in training
<b>Employee related items (nine items)</b>	
06	Policy of recruitment and selection
07	Senior managers, breakdown by gender
08	Number of employees in the company/branch/subsidiary
09	Number of employees, breakdown by gender
10	Number of employees by qualifications
11	Employees' age distribution
12	Average age of employees
13	Talent recruitment and retention
14	Employee survey
<b>Health and safety related items (six items)</b>	
15	Occupation health and safety
16	Providing low-cost health care to employees
17	Sick/absence level
18	Sick/absence level breakdown by gender
19	Information on accident statistics (injuries and accidents)
20	Injuries/accidents per million working hours
<b>Work-related items (nine items)</b>	
21	Equal opportunity statement
22	Labor and management relations
23	Collective agreements/activities
24	Providing recreational activities/facilities
25	Providing staff accommodation/staff home ownership schemes, food, fuel, other benefits
26	Information about support for day-care, maternity and paternity leave, holidays and vacations
27	Disclosing policy for company's remuneration package/schemes
28	Information of employees share purchase schemes
29	Reporting on company's relationship with trade unions/workers
<b>Board of Directors (BOD) related items (three items)</b>	
30	Age of BOD members
31	Board breakdown by gender
32	Education level of the board

(Source: Adapted and modified from Aggarwal & Verma, 2020)





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