

“Impact of factors on fair value accounting: empirical study in Vietnam”

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ARTICLE INFO

Bui Thi Ngoc (2020). Impact of factors on fair value accounting: empirical study in Vietnam. *Investment Management and Financial Innovations*, 17(3), 10-26.
doi:[10.21511/imfi.17\(3\).2020.02](https://doi.org/10.21511/imfi.17(3).2020.02)

DOI

[http://dx.doi.org/10.21511/imfi.17\(3\).2020.02](http://dx.doi.org/10.21511/imfi.17(3).2020.02)

RELEASED ON

Friday, 07 August 2020

RECEIVED ON

Friday, 10 April 2020

ACCEPTED ON

Friday, 24 July 2020

LICENSE



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JOURNAL

"Investment Management and Financial Innovations"

ISSN PRINT

1810-4967

ISSN ONLINE

1812-9358

PUBLISHER

LLC “Consulting Publishing Company “Business Perspectives”

FOUNDER

LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

29



NUMBER OF FIGURES

1



NUMBER OF TABLES

13

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BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine
www.businessperspectives.org

Received on: 10th of April, 2020

Accepted on: 24th of July, 2020

Published on: 7th of August, 2020

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Conflict of interest statement:

Author(s) reported no conflict of interest

Bui Thi Ngoc (Vietnam)

IMPACT OF FACTORS ON FAIR VALUE ACCOUNTING: EMPIRICAL STUDY IN VIETNAM

Abstract

Due to the ongoing process of globalization, enterprises need to provide financial statements in accordance with international practices, in which information about assets and liabilities should be presented at fair values rather than at original prices. Fair value is supported by the International Accounting Standards Board and the Financial Accounting Standards Board. The purpose of this study is to evaluate the adoption of fair value accounting in Vietnam and the impact of factors on the adoption of fair value. The paper used the analytical framework of previous studies to identify factors affecting the adoption of fair value. Additionally, this study applied quantitative research methods and collected data by sending questionnaires to 127 accountants and directors of listed companies. Particularly, binary logistic regression was conducted to investigate the extent of the impact of each factor on the adoption of fair value. The results have shown that human resources have the strongest and positive impact on the adoption of fair value, and this is followed by the benefits of fair value. Difficulties and markets negatively affect the use of fair value. Furthermore, the control variables that affect the use of fair value are sector, size and length of operation with different levels of impact. The accuracy rate of the overall predictive model is 85.8%. The findings provide guidance of the application of fair value accounting in companies and give recommendations to policy makers in establishing a legal accounting framework in Vietnam.

Keywords

accounting, fair value, measurement, benefits,
difficulties, markets, Vietnam

JEL Classification

G32, G41

INTRODUCTION

The concept of fair value has appeared recently, yet it has been discussed as a new direction for valuation in accounting. Fair value accounting reflects market prices and records market changes, thereby providing early signals of inflation and overcoming limitations of historical cost. Thus, fair value is a valuation method with noteworthy advantages compared to other valuation techniques, and it helps financial information to be more appropriate for different users' needs in the context of a free market economy.

Fair value was first mentioned by the International Accounting Standards Board (IASB) in International Accounting Standards 16 (IAS 16) – Property, Plant and Equipment. However, at this time, regulations on fair value regarding determination, presentation, and information disclosure are inconsistent. Therefore, in May 2011, IASB officially issued IFRS 13 – Fair Value Measurement (effective from January 1st 2013). IFRS 13 was issued as a result of cooperation between IASB and FASB in developing requirements for determination and presentation of fair value in accordance with IFRS and Generally Accepted Accounting Principles (US GAAP). IFRS 13 was issued to have a consistent definition of fair value and guide organizations on how to determine and present fair value in financial statements. Accordingly, preparation and presentation of the financial statements under IFRS 13 can reduce the complexi-

ty of applying fair value accounting and ensure consistency in the implementation of accounting standards related to fair value.

In Vietnam, historical cost is a basic principle in accounting, while the role of fair value has been debated for just over ten years, but there exist many limitations of fair value accounting, and differences exist between it and international practices and standards. Particularly in Vietnam, fair value is only applied at the time of initial recognition. This has created a barrier for Vietnam when adopting IFRS. To accelerate economic integration, Vietnam needs to increase the extent of harmonization of accounting laws, especially accounting standards in terms of measurement; in particular, it is necessary to apply fair value accounting after initial recognition. Currently, the Ministry of Finance of Vietnam is looking forward to further international accounting harmonization, the main issue of which is the application of IFRS. Fair value is identified as a challenge in accepting IFRS in Vietnam.

Therefore, this study was conducted with the following objectives:

- investigate enterprises' opinions about the adoption of fair value in accounting;
- assess the benefits and difficulties of adopting fair value from an enterprise perspective;
- assess the impact of factors, including benefits, difficulties, personnel, laws, markets, and control variables (business sector, firm age, and firm size), on the adoption of fair value accounting in listed companies;
- propose recommendations to help policy makers in the process of applying fair value accounting in Vietnam.

1. LITERATURE REVIEW

The concept of fair value was first introduced in the 1990s and was standardized in 2001 by FASB in SFAS 141 – Business combinations and SFAS 142 – Goodwill and other intangibles. In 2011, IASB officially issued IFRS 13 – fair value measurement. Nowadays, Fair value accounting (FVA) is applied in almost all transactions, especially financial investments, intangible assets, inventories, revenues and expenses.

FVA has the following advantages: Fair value measurement provides accurate and adequate financial information according to the market prices, ensuring the comparability among companies. Thereby, users of information can evaluate the actual values and performance of companies. There has been much research on the applications of FVA. Such research focused on examining the impact of FVA on stock prices, efficiency, and incomes of enterprises and investors. Some studies tried to answer the question of whether fair value is better than historical cost in explaining investor reactions? Generally, research has proved that using FVA to measure assets and liabilities is appropriate. Specifically:

In China, studies on fair value accounting have mainly focused on the real estate, banking, and information technology sectors since the early 2000s. The process of applying fair value accounting has caused many controversies regarding the benefits and limitations of this valuation technique. Hsu and Wu (2019) examined real estate companies in China during the period from 2007 to 2011. The findings showed that fair value reporting was not used widely. It raised doubts about the concealing of information. The study also found a negative relationship between fair value reporting and bankruptcy risk, especially in enterprises with strong management systems. Bewley et al. (2018) investigated the applications of FVA in Chinese enterprises by collecting secondary data from accounting book systems. The results provided that FVA benefits, including national interests, social infrastructure, transparency and comparability, are important driving forces in the application of FVA in China. The study also pointed out the difficulties, which led to the failure of FVA in China. These issues include inconsistent legal systems, enterprises' lack of voluntary disclosure of information using FVA, staff qualifications and operating markets. Songlan et al. (2014) stated that China had been applying FVA since 2000

but failed. Companies do not support fair value measurement because they think that fair value measurement is less reliable when the assets are not traded in an active market. Since the financial accounting field of China has many institutional features of a socialist country, research conducted in China can contribute to the foundational theories for other countries in the region. Yichao (2010) examined advantages of applying FVA in China. Particularly, FVA is more reliable because it accurately reflects companies' incomes, assets and liabilities. Accurate information can help decision makers and, more importantly, reduce the gap between Chinese and international accounting standards. Furthermore, the study provided other FVA benefits, including increased reliability, transparency and comparability of financial statements, which enhance investors' confidence in making decisions and create opportunities for companies to attract investment and increase operational efficiency. In addition, challenges of applying FVA include language barriers, accounting proficiency to understand and apply IFRS 13, attitudes and responsibilities of enterprises, issues of active markets, and current legal systems.

In Malaysia, studies on fair value in real estate, catering, and pharmaceutical companies were conducted from 2005 to 2012. Those studies acknowledged the benefits of fair value such as attracting investment, easier access to international capital markets, and more updated information. Specific studies include Benjamin, Niskalan, and Marathamuthu (2012) who investigated the application of FVA of 11 real estate companies in Malaysia during the period from 2007 to 2008. Fair value measurement helps them increase the value of assets, attract investment, and facilitate access to capital markets. Difficulties in applying FVA include market problems to determine fair value of some typical assets, problems related to skills and attitudes, which determine the truthfulness of information on fair value. Ting and Soo (2005) examined FVA in Malaysian enterprises. The results showed that fair value measurement enabled more suitable and reliable accounting information, met the goals of the financial statements and users, and expanded the capital market. As a result, fair value measurement is widely used in the financial statements because such information is considered to be more suitable for investors and creditors than historical cost information. However,

it is difficult to determine the reliability of fair value, since it requires subjective judgments and estimates. Especially, in the cases where transactions are not conducted on the market, valuation costs are often expensive. To increase the FVA reliability, companies can use experts' valuation or financial statements audited by large audit companies. These actions can substantially increase the costs of transactions. As a result, many companies are hesitant to apply FVA.

In the United Kingdom, Christensen and Nikolaev (2013) investigated factors affecting the use of FVA in companies in the UK and Germany. The study used the logit regression to identify the difficulties and leverages affecting the recognition at fair value. The difficulties examined in this study include high costs of determining fair value, complex techniques to identify fair value, adverse information for companies due to fair value measurement, and easy manipulation of fair value. The results showed that all variables of difficulties and financial leverages affected the use of fair value at the significance level of 5%, with the mean values ranging from 2.8 to 3.9. Cairns (2011) investigated the use of FVA of 228 listed companies in the UK and Australia during the period of implementing IFRS since 2005. Financial instruments recognition and measurement at fair value (IAS 39) and shared-based payments (IFRS 2) improved comparability. The optional recognition of assets at fair value (IAS 16) increases comparability, while the optional recognition of main assets and other financial liabilities reduces comparability. The options of using FVA with other items (intangible assets, factories, equipment, and investments) are usually not applied. The difficulty in using FVA is the subjective nature of human, which increases the risk of financial statement fraud. Moreover, the annual cost of determining fair value is much higher than the cost of determining historical cost. Danbolt and Rees (2008) investigated 446 real estate companies in the UK in the period of 1993–2002 and found that “under the FVA, incomes are more appropriate than incomes measured at historical cost accounting or incomes measured according to UK GAAP”. The fair value of liabilities is appropriate as it reflects debt obligations. Recognition at fair value provides a basis for users to assess the actual value of companies at the time of reporting, strengthens the confidence of domestic and international investors. Aboody et al. (1999) analyzed

738 enterprises in the UK from 1983 to 1995. The results showed that the revaluation of assets and liabilities on the financial statements promoted the stock prices and profits of companies. This has helped businesses to access international capital markets more easily, contributing to the process of international accounting convergence. However, if market information is not available, the use of subjective estimates and assumptions can make the information less reliable.

In Australia, Sangchan, Habib, Jiang, and Bhuiyan (2020) investigated the real estate industry in Australia and concluded that there was no link between recognition at fair value and audit costs. However, the study revealed that FVA strengthened the confidence of real estate investors. Their current concern is how to determine the fair value objectively. Accordingly, qualifications, skills, and attitudes of people are the key factors that determine the reliability of fair value data. Chen et al. (2019) examined the effect of the adjustment of fair value for dividend policy of financial companies in Australia. The study found a positive relationship between the adjustment of fair value for financial instruments and the dividend payment of companies. FVA provides information users with a framework for assessing the actual value of businesses at the time of reporting and enhancing investor confidence. Fargher (2001) conducted a study based on a sample of 117 observations of the Australian Financial Markets Association. The results showed that 54.6% respondents supported the application of FVA for financial instruments, regardless of banking or commerce. The study also showed that the reliability has the strongest impact on the decision to use FVA. Barth and Clinch (1998) conducted a study on 846 companies in Australia between 1991 and 1995. The subjects of the study were financial assets, real estates, factories, equipment and intangible assets. The results showed that recognition at fair value for financial assets, fixed assets and intangible assets provided appropriate information in cases where the revaluation of such assets was higher or lower than the historical cost. The dependent variable in this study is the stock price estimated from future earnings, and it has a positive relationship with the level of disclosure of fair value. Brown, Izan, and Loh (1992) investigated the motives of recognition at fair value of companies in Australia, including

usefulness, reliability fair value and other control variables. The results showed that FVA enhanced international cooperation, opportunities to access international capital markets, and foreign investment opportunities. The results from the logit regression showed that the ratio of debt/total tangible assets and the ratio of real estate/total fixed assets affected the use of FVA for revaluation.

In Europe, research on fair value is applied primarily in the real estate, banking, and catering sectors. Vergauwe and Gaeremynck (2019) investigated real estate companies in Europe during the period from 2007 to 2010. The study found a negative relationship between fair value disclosure and price. The reason is that fair value is heavily influenced by the political factors, management practices, accounting rules, auditors and the valuation system. Sundgren, Mäki, and Somoza-López (2018) examined the fair value disclosure and solvency of European real estate companies. and investigated methods of determining the fair value of assets according to IAS 40 and IFRS 13. The results showed that the quality of publication according to IFRS 13 was significantly improved, but the amended disclosure requirements in IFRS 13 could not address market imperfections. To effectively use FVA, financial statement users must have certain knowledge about FVA. From the perspective of investors, FVA is considered relevant and useful. However, from the banks' perspective, there is a strong and negative relationship between FVA and incomes. Dumitru, Maria, and Carmen (2013) analyzed the impact of information disclosures of fair value on financial statements in European listed companies. The results showed that the disclosure of fair value information had a positive impact on the value of enterprises and stock prices. Ghosh, Liang, and Petrova (2020) examined the applications of FVA in listed real estate companies in Europe. IAS 40 requires companies to disclose investment assets at fair value. As a result, fair value information does not reduce comparability or increase liquidity. Additionally, fair value does not contribute to economic crisis.

In Nigeria, Ijeoma (2014) examined the contribution of FVA to financial information of companies in Nigeria. The study collected information through questionnaires with 562 observations. Descriptive statistics and Kruskal-Wallis test were

used. The results showed that fair value measurement provided more useful information to investors than historical cost accounting. Difficulties in applying FVA include capital market structure and valuation methods. Where an entity's assets and liabilities are specific or the transaction market is inefficient, the determination of fair value is complicated. This complexity is mainly due to the collection of information and the determination of the market price adjustment, identifying assumptions and input data to measure fair value and the necessary explanatory information presented in the financial statements.

In the United States of America, Jung, Pourjalali, Wen, and Daniel (2013) examined 209 US companies to evaluate the financial directors' adoption of fair value for non-financial assets. The results showed that 19 out of 209 companies (accounting for 9%) supported the use of FVA to measure non-financial assets. This can be explained by the complexity of fair value measurement and high costs of applying FVA. In addition, large enterprises, enterprises with large amount of loans, enterprises with large amount of non-financial assets, and those with extensive experience in fair value measurement are more likely to apply FVA.

In Fiji, Rajni, Joycelyn, Rashika, and Charlotte (2012) investigated the benefits and drawbacks of using FVA in Fiji from the perspective of people preparing financial statements and financial statement users. The results showed that both subjects had an understanding of FVA. Some measurement techniques used include using information of active markets and independent valuation. The use of FVA provides better information for decision making, while the biggest challenge in using FVA is determining the reliability of fair value measurement due to the limitations of valuation methods, training and recruiting experts and the use of subjective judgment.

In Sri Lanka, Kumarasiri and Fisher (2011) conducted a survey of 156 auditors in Sri Lanka. The study showed that auditors supported the recognition at fair value even though they encountered difficulties in the audit process in developing countries. These issues include the lack of technical knowledge, inactive markets, pricing methods and future pricing conditions.

Human resource training and technical guidance are considered the main ways to mitigate these difficulties. The study emphasized that FVA could help promoting the regularization of international accounting practices. This awareness can motivate enterprises in each country to use FVA.

In France, Richard (2004) investigated companies in France and showed FVA was the dominant method to present the balance sheet in the 19th century. During this period, accounting moved from historical cost accounting to FVA. Therefore, companies can determine prices based on future profits. The study also pointed out factors hindering the process of determining fair value: the environment, the role of political organizations, the clarity of FVA standards, attitudes of managers and accountants.

Thus, research proved that FVA provided appropriate, useful and reliable information for those preparing financial statements and those using such information. FVA has many benefits such as (1) increasing reliability, transparency and comparability; (2) providing a basis for investors, managers to make decisions; (3) increasing the confidence of users of financial statements; (4) increasing business performance, stock price, and income; (5) increasing opportunities to access international capital markets; (6) promoting the process of international accounting convergence. Furthermore, previous studies pointed out difficulties in applying FVA. Particularly, subjectivity of FVA leads to issues regarding the reliability of the fair value information. Many people are still skeptical about reliability and argue that FVA increases the risk of financial reporting fraud. Other challenges in applying fair value include high costs, human resources, legal and market issues.

2. METHODOLOGY

This study used the results of previous studies and analyzed the factors that are compatible with the specific characteristics of Vietnam. Factors examined in this study are (i) benefits of applying FVA; (ii) difficulties in applying FVA; (iii) personnel; (iv) laws; and (v) markets. The measurement scales are shown in Table A1 of the Appendix.

The benefit scale (BEN) consists of four observed variables: (i) Increasing reliability, transparency, comparability; providing a basis for investors' and managers' decision making; increasing the confidence of users of financial statements; (ii) Increasing business performance (increasing stock prices, market opportunities, incomes, market shares, reducing risks); (iii) Accessing international capital market more easily; and (iv) Promoting the regularization of international accounting practices.

The difficulty scale (DIF) is composed of four observed variables: (i) Difficulty in determining fair value and it requires subjective judgment; (ii) Difficulty in determining reliability of fair value measurements; (iii) Increasing the risk of financial statement fraud; and (iv) High costs of determining fair value.

The personnel scale (PER) is composed of three observed variables: (i) Knowledge; (ii) Skills; and (iii) Attitudes of accountants and managers.

The law scale (LAW) is composed of three observed variables: (i) FVA is not legalized; (ii) Legal environments of valuation activities are not synchronized; and (iii) There are conflicts in the legal system.

The market scale (MAR) consists of three observed variables: (i) The commodity markets and stock markets are developing; (ii) Market factors are complicated and changeable; and (iii) There are no technique nor market bases to apply FVA.

The fair value accounting scale is a binary variable: (1) Have adopted FVA; (0) Have not adopted FVA

Control variables are: Field (manufacturing, commerce, service); Firm size (less than 300 people, more than 300 people); Years (less than 10 years, 10-20 years, more than 20 years).

2.1. Research hypotheses

H1: The benefits have a positive impact on the application of FVA.

H2: The difficulties have a negative impact on the application of FVA.

H3: Personnel have a positive impact on the application of FVA.

H4: Law has a negative impact on the application of FVA.

H5: The market has a negative impact on the application of FVA.

H6: The business sector (field) has a positive impact on the application of FVA.

H7: The length of operation (years) has a positive impact on the application of FVA.

H8: The firm size has a positive impact on the application of FVA.

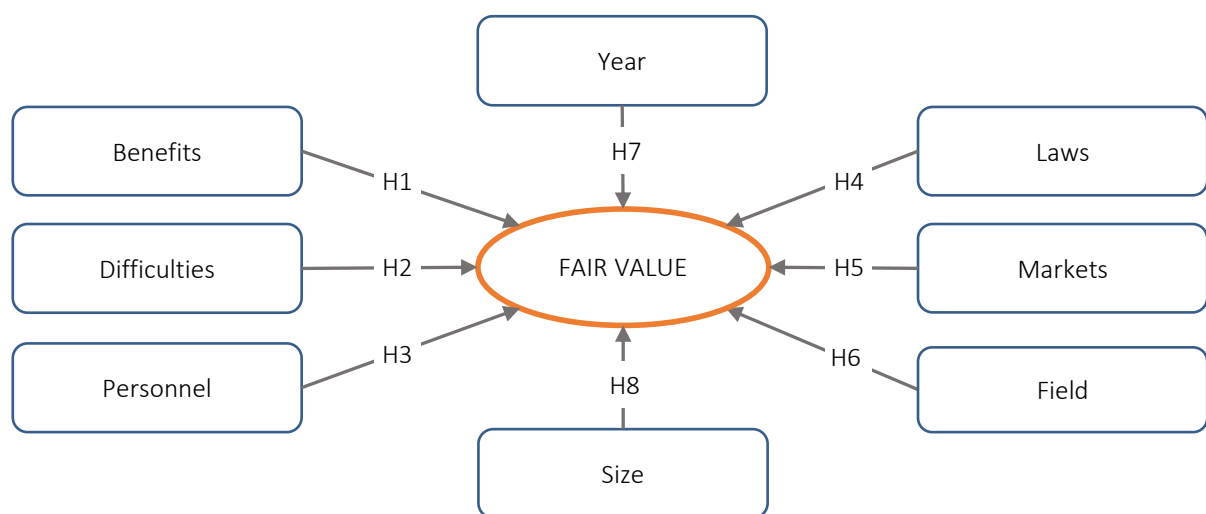


Figure 1. Conceptual framework

2.2. Regression equation

Based on the above hypotheses, a regression equation reflecting the correlation between influential factors and the adoption of FVA is as follows:

$$\begin{aligned} \text{Logit}(FV) = & \delta_0 + \delta_1 \cdot BEN_1 + \delta_2 \cdot DIF_2 + \\ & + \delta_3 \cdot PER_3 + \delta_4 \cdot LAW_4 + \delta_5 \cdot MAR_5 + \\ & + \delta_6 \cdot FIELD_6 + \delta_7 \cdot YEAR_7 + \delta_8 \cdot SIZE_8 + \mu_i, \end{aligned}$$

where independent variables are benefits (*BEN*), difficulties (*DIF*), personnel (*PER*), laws (*LAW*), and markets (*MAR*), business sector (*FIELD*), length of operation (*YEARS*), firm size (*SIZE*), dependent variables are the adoption of FVA (1: have adopted FVA; 0: have not adopted FVA) $\delta_0, \delta_1, \delta_2, \delta_3, \delta_4, \delta_5, \delta_6, \delta_7, \delta_8$: parameters, and μ_i : error.

This study applied both qualitative and quantitative research methods.

- The study used in-depth interview tools and expert consultations to identify factors affecting the adoption of FVA. Particularly, three in-depth interviews were conducted with directors and chief accountants of companies in commerce, manufacturing, and services sectors. The study then conducted three interviews with researchers who were involved in financial accounting at universities.
- *Questionnaire*: The questionnaire was divided into two parts: (i) factors affecting the adoption of FVA with 17 questions using a 5-point Likert scale (1 – strongly disagree; 5 – strongly agree); (ii) general information about the respondents and their companies.
- *Characteristics of respondents*: There were 127 respondents. Eighty-six of them were chief accountants, accounting supervisors, or general accountants, and 41 were directors or branch managers. Regarding the companies' age, there were 16 enterprises that had been operating for more than 20 years, 80 enterprises that had been operating from 10 to 20 years, and 31 enterprises with less than 10 years of operation. Regarding the business sector, manufacturing was the most common sector

(50), and that was followed by the commercial (45) and service (32) sectors.

- *Research sample*: This study used the convenience sampling method. The sample size was determined according to Hair et al. (2010) based on the minimum sample size of 50 and the number of variables in the model. The formula is as follows:

$$n = \sum_{j=1}^m k \cdot P_j,$$

where n is the sample size, m is the number of measurement scales, k is the ratio of the sample size to the number of variables (5/1), and P_j is the number of observation variables of measure j .

This research model has five variables and selects $k = 5/1$. By using the above formula, the minimum sample size is 100. In this study, the number of valid answers was 127, thereby satisfying this requirement.

- *Collecting and processing data*: Data collected from the survey were cleaned, classified, and analyzed. This study used techniques, such as (i) descriptive statistics; (ii) reliability tests; (iii) Exploratory Factor Analysis (EFA); (iv) correlation analysis; and (v) regression analysis, to investigate factors affecting the adoption of FVA. The study discussed and then made recommendations regarding the use of FVA in companies listed on the Vietnamese stock market.

3. RESULTS

3.1. Descriptive statistics

The descriptive statistics (see Table A2 of the Appendix) show that all factors had mean values ranging from 2.86 to 2.99, and that meant that all respondents' opinions were not clear about whether they wished to adopt or reject FVA. There were not significant differences in the mean values of the variables *BEN*, *DIF*, *PER*, *LAW*, and *MAR*. Generally, respondents who adopted FVA rated *BEN* and *DIF* higher than those who did not adopt FVA. Particularly, the group of respondents who

adopted FVA rated BEN higher (mean = 3.1) than the group who did not adopt FVA (mean = 2.7). However, such differences are not statistically significant.

Regarding the benefits of FVA, the variables “Increasing business performance” and “Increasing reliability, transparency, comparability; providing a basis for investors’ and managers’ decision making; increasing the confidence of users of financial statements” had mean values of 2.76 and 3.09, respectively. The other variables, “Accessing international capital market more easily” and “Promoting the regularization of international accounting practices”, had mean values of 2.87 and 3.00, respectively. Regarding the difficulties in applying FVA, four observed variables had similar mean values ranging from 2.93 to 3.01. Regarding personnel, laws, and markets, the results were similar.

3.1.1. Comparison by firm size

Table 2 shows that the *F*-test findings have a significance value of $0.302 > 0.05$ and a significance value of $0.000 < 0.05$. Thus, there is a difference in the adoption of FVA by firm size. In particular, Table 1 shows that large enterprises had higher mean value than small and medium-sized enterprises (mean values of 0.82 and 0.15, respectively).

Table 1. Group statistics

Source: Compiled by the author based on research results.

Variable	Size	N	Mean	Std. deviation	Std. error mean
FV	Less than 300 people	30	.15	.358	.046
	More than 300 people	97	.82	.389	.048

Table 2. Independent sample test

Source: Compiled by the author based on research results.

Variable		Levene's test for equality of variances		t-test for equality of means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference	
									Lower	Upper
FV	Equal variances assumed	1.075	.302	-10.094	125	.000	-.671	.066	-.802	-.539
	Equal variances not assumed	—	—	-10.128	124.998	.000	-.671	.066	-.802	-.540

3.1.2. Comparison by business sector and length of operation

Table 3. Test of homogeneity of variances

Source: Compiled by the author based on research results.

FV	Levene statistics	df1	df2	Sig.
Business sector	99.899	2	124	.000
Length of operation	66.718	3	123	.000

Table 3 shows that the significance value is smaller than 0.05. This means there are differences in the variances among groups. Therefore, data are not suitable for ANOVA. Thus, there is not enough evidence to confirm the differences in the adoption of FVA among groups of enterprises by business sector and length of operation.

3.2. Cronbach's alpha

Cronbach's alpha is a measure of internal consistency of items in a group. The reliability test is shown in Table A5 of the Appendix, which shows that FVA benefits (BEN) had an overall Chronbach's alpha = $0.729 > 0.6$. This means that for observable variables are internally consistent and reliable. Besides, each observable variable, BEN1, BEN2, BEN3, and BEN4, have Chronbach's alpha > 0.5 . Difficulties in applying FVA (DIF) have an overall

Chronbach's $\alpha = 0.917$, and all observable variables (DIF1, DIF2, DIF3, DIF4) have Chronbach's alpha coefficients > 0.5 . Similarly, personnel (PER) have Chronbach's $\alpha = 0.836 > 0.6$, and observable variables have Chronbach's alpha coefficients of 0.708, 0.718 and 0.794 > 0.5 . Two variables, laws (LAW) and markets (MAR), have Chronbach's alpha coefficients of 0.872 and 0.823, respectively. Thus, five factors and 17 observable variables are reliable and suitable for further analysis.

3.3. Exploratory factor analysis

Table 4. KMO and Bartlett's Test

Source: Compiled by the author based on research results.

Kaiser-Meyer-Olkin measure of sampling adequacy		.815
Bartlett's test of sphericity	Approx. chi-square	1599.909
	df	156
	Sig.	.000

Table 4 shows that $KMO = 0.815 > 0.05$; this means the research data are appropriate for factor analysis. Furthermore, Bartlett's test had a significance value = 0.000, which indicates the appropriateness of exploratory factor analysis (EFA). Therefore, it can be confirmed that the observable variables generally correlate with each other.

Table 5. Total variance explained

Source: Compiled by the author based on research results.

Component	Initial eigenvalues			Extraction sums of squared loadings	
	Total	% of variance	Cumulative %	Total	% of Variance
1	5.166	30.388	30.388	5.166	30.388
2	3.481	20.474	50.862	3.481	20.474
3	3.239	19.055	69.916	3.239	19.055
4	1.231	7.247	77.163	1.231	7.247
5	1.115	6.562	83.725	1.115	6.562

Table 5 shows that five factors with eigenvalues greater than 1 explained 83.73% of the variability of all factors. In other words, they explained about 83.73 % of the underlying factors that influence the adoption of FVA.

Table 6. Rotated component matrix^a

Source: Compiled by the author based on research results.

Variables	Component				
	1	2	3	4	5
DIF3	.916	–	–	–	–
DIF1	.902	–	–	–	–
DIF2	.891	–	–	–	–
DIF4	.867	–	–	–	–
MAR2	–	.848	–	–	–
MAR1	–	.798	–	–	–
MAR3	–	.789	–	–	–
LAW2	–	–	.781	–	–
LAW3	–	–	.728	–	–
LAW1	–	–	.662	–	–
BEN3	–	–	–	.831	–
BEN2	–	–	–	.745	–
BEN1	–	–	–	.715	–
BEN4	–	–	–	.683	–
PER2	–	–	–	–	.877
PER1	–	–	–	–	.822
PER3	–	–	–	–	.682

Table 6 shows that all factor loadings are greater than 0.5; therefore, 17 observable variables are appropriate. In particular, DIF1 has the strongest impact on the dependent variable (0.916) and LAW1 has the smallest impact on the dependent variable (0.662). It can be seen from the table that item loadings on each component measure a specific variable with loading factors greater than 0.5, creating five groups. Therefore, all variables are considered strong and valid, and can be incorporated in the model to investigate factors influencing FVA adoption.

3.4. Correlation analysis

Correlation analysis is conducted using five independent variables, three control variables and a dependent variable, which is the adoption of FVA. Correlation analysis (see Table 9) shows that all independent variables, BEN, DIF, LAW, PER, MAR, FIELD, YEAR, and SIZE, are correlated with the dependent variable, since the significance value < 0.05 . However, the Pearson correlation coefficients between variables are relatively small (< 0.7), which reflects poor correlations. Furthermore, two pairs of independent variables (PERT and BEN; LAW and BEN) are correlated with each other but at a low level; therefore, there is no multicollinearity. Three pairs of independent variables have strong cor-

Table 7. Omnibus tests of model coefficients

Source: Compiled by the author based on research results.

		Chi-square	df	Sig.
Omnibus tests of model coefficients	Step 1	96.421	7	.000
	Block	96.421	7	.000
	Model	96.421	7	.000
Model summary		-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
		79.630 ^a	.532	.709
Hosmer and Lemeshow test		Chi-square	df	Sig.
		4.840	8	.775

Note: a. Estimation terminated at iteration 4 because parameter estimates changed by less than .001.

relations: LAW and PER ($r = 0.976$); MAR and PER ($r = 0.937$); and MAR and LAW ($r = 0.903$). Thus, the data are appropriate for binary logistic regression analysis to determine factors affecting the adoption of FVA.

3.5. Binary logistic regression

The results of binary logistic regression are shown in Table 7.

In Table 7:

- **Omnibus Tests of Model Coefficients:** The chi-square statistics and its significance level show that regression coefficients of independent variables do not equal 0, at the same time, significance values of Step, Block and Model are equal to and greater than 0.05. This means the regression model is statistically significant. It proves the correlation between independent variables and the dependent variable FV is statistically significant with confidence intervals above 95%.
- **Model Summary:** This study uses an enter method, there is only one model with the explanation of the model of 79.630. The smaller the -2 log-likelihood value is, the better the model is. In this model, the Log-2 likelihood is not high, so the fit is quite good for the overall model. Nagelkerke R Square = 0.709, this means that the model can predict 70.9% of cases.
- **Hosmer and Lemeshow test** shows that $\text{Sig} = 0.775 > 0.05$. This means the model is consistent with the research data.

Table 8. Classification table^a

Source: Compiled by the author based on research results.

Observed			Predicted		
			FV		Percentage correct
			Not adopt FV	Adopt FV	
Step 1	FV	Not adopt FV	53	11	82.8
		Adopt FV	7	56	88.9
	Overall Percentage		—	—	85.8

The cut value is .500.

Table 8 shows that 64 observations have not adopted FVA, and the model predicts 53 cases that have not adopted FVA. This means the overall percent of cases that are predicted correctly by the model is 82.8%. Furthermore, there are 83 cases that have adopted FVA, and the model predicts 56 cases. This means the prediction is 88.9% accurate. Thus, the average accurate prediction is 85.8%. This value is relatively high.

Table 9. Variables in the equation

Source: Compiled by the author based on research results.

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
BEN	2.409	.821	8.615	1	.003	11.118
DIF	-1.695	.716	5.600	1	.018	.184
PER	2.926	1.280	5.224	1	.022	18.645
MAR	-1.771	1.171	2.288	1	.030	.170
FIELD	-1.056	.401	6.923	1	.009	.348
YEAR	1.679	.852	3.886	1	.049	5.360
SIZE	2.403	.728	10.904	1	.001	11.060
Constant	-9.941	3.534	7.913	1	.005	.000

Variable(s) entered on step 1: *BEN*, *DIF*, *PER*, *MAR*, *FIELD*, *YEAR*, *SIZE*.

$$\begin{aligned} \ln \frac{p}{1-p} = & -9.941 + 2.409 \cdot BEN - \\ & -1.695 \cdot DIF + 2.926 \cdot PER - 1.770 \cdot MAR - \\ & -1.056 \cdot FIELD + 1.679 \cdot YEAR + 2.403 \cdot SIZE. \end{aligned}$$

Based on the binary logistic analysis in Table 9, the independent variables of the model have Sig. value < 0.05. Therefore, firms that adopt FVA are characterized by independent variables (*BEN*, *DIF*, *PER*, *MAR*) and control variables (*FIELD*, *YEAR*, *SIZE*). The relationship between the adoption of FVA and the variables is statistically significant with a general confidence level of more than 95%. Therefore, independent variables and control variables are suitable and meaningful. The *LAW* variable is deleted from the model because it is unsuitable.

4. DISCUSSION

The study confirmed hypotheses *H1*, *H2*, *H3*, *H5*, *H6*, *H7* and *H8* and rejected hypothesis *H4*. Details are as follows:

BEN (H1): The benefits have a positive impact on the application of FVA.

This study examined the following FVA benefits: (1) increasing reliability, transparency, comparability; providing a basis for investors' and managers' decision making; increasing the confidence of users of financial statements; (2) increasing business performance (increasing stock prices, market opportunities, incomes, market shares, reducing risks); (3) accessing international capital market more easily; and (4) promoting the regularization of international accounting practices. This factor has a positive relationship with the adoption of FVA with $\delta_1 = 2.409$. In this study, FVA benefits had the second strongest impact on the adoption of FVA. This finding is consistent with research results from Hsu et al. (2019), Yichao (2010), Benjamin et al. (2012), Barth and Clinch (1998), Brown et al. (1992), and Dumitru et al. (2013).

DIF (H2): The difficulties have a negative impact on the application of FVA.

The process of converting from historical costing to FVA is a great revolution for both developed and developing countries. The concept of FVA has been applied by developed countries like the United States and the United Kingdom since the early years of the 18th century, and by Asian countries since the early 21st century. Common difficulties in adopting FVA are: (1) difficulty in determining fair value because it is subjective; (2) increasing the financial statement fraud; and (3) high measurement costs. This factor has a negative impact on the adoption of FVA with $\delta_2 = -1.695$. This result is consistent with the hypothesis and research results from Ting and Soo (2005), Christensen and Nikolaev (2013), Aboody, Barth, and Kasznik (1999), Jung et al. (2013), Songlan, Cameron, and Kathryn (2014).

PER (H3): Personnel have a positive impact on the application of FVA.

Accountants play an important role in adopting FVA. The adoption of FVA is favorable for English-speaking countries. However, the language of FVA is a barrier for accountants of non-English-speaking countries. In this study, personnel are accountants and directors who prepare and are responsible for the published information. Particularly, the study evaluated accountants' knowledge, skills and attitudes in applying FVA of IFRS 13. This factor had a positive and strongest impact on the adoption of FVA with $\delta_3 = 2.926$. The result is consistent with research in Asia by Bewley, Graham, and Peng (2018), Ting and Soo (2005), and inconsistent with research from other countries by Christensen and Nikolaev (2013), Sangchan et al. (2020), Kumarasiri and Fisher (2011), Danbolt and Rees (2008), Ijeoma (2014), and Rajni et al. (2012).

LAW (H4): Law has a negative impact on the application of FVA.

Laws are examined based on three aspects: (i) legalization of FVA requirements, (ii) general legal system regarding FVA, and (iii) legal system synchronization. In this study, laws have low correlation with the dependent variable (Pearson Correlation = 0.395), and high correlations with other independent variables such as *BEN* (Pearson Correlation 0.508) and *PER* (Pearson Correlation

0.976). Therefore, this variable is deleted from the model. Hypothesis *H4* states that the laws have a negative impact on the adoption of FVA. Currently, Vietnam has not adopted IFRS; therefore, regulations are not legalized. The Ministry of Finance of Vietnam recommends listed companies to apply FVA. However, accountants generally follow regulations set by the government to avoid risks. Therefore, when FVA is not legalized and synchronized with the legal system, it can hinder the adoption of FVA. Research in Asian countries, such as Malaysia and China, by Yichao (2010), Cairns (2011), Kumarasiri and Fisher (2011), Richard (2004) showed a negative relationship between the laws and the adoption of FVA.

MAR (H5): The market has a negative impact on the application of FVA.

To determine fair value, it is important to identify inputs used to measure fair value. The inputs are categorized into different levels of the fair value hierarchy. At level 1, inputs are quoted prices in active markets for identical assets or liabilities that the entity can access at the measurement date. At this level, a quoted market price in an active market provides the most reliable evidence of fair value. At level 2, the inputs are inputs other than quoted market prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. Such information provides less reliable evidence of fair value compared to inputs at level 1. At level 3, the inputs are unobservable inputs for the asset or liability because the inputs are not available in the market. In developed countries, commodity markets and stock markets are driving FVA adoption according to research by Richard (2004), Vergauwe and Gaeremynck (2019), Sundgren et al. (2018). On the contrary, in developing countries like Vietnam, commodity markets and stock markets negatively affect FVA adoption with $\delta_4 = -1.770$. This result is consistent with research by Bewley et al. (2018), Songlan et al. (2014) in China, Benjamin et al. (2012) in Malaysia, and Ijeoma (2014) in Nigeria.

For control variables such as FIELD, YEAR, and SIZE corresponding to hypotheses *H6*, *H7*, *H8*,

which are accepted. In particular, hypothesis *H7* states that “*the firm age (years) has a positive impact on the application of FVA*”, and hypothesis *H8* states that “*the firm size has a positive impact on the application of FVA*”. The research results are consistent with the hypotheses. Thus, both firm age and firm size have positive impacts on the application of fair value with impact coefficients of 1.679 (YEAR) and 2.403 (SIZE). This implies that older companies are more likely to apply fair value. The reason for this is that they are familiar with information disclosure in accordance with the requirements of the Vietnam Stock Exchange as well as the preparation and presentation of financial statements in accordance with international practices. Moreover, older companies are often larger in size due to the process of accumulating personnel, assets, profits, and reputation.

Hypothesis *H6* states that “*the business sector (field) has a positive impact on the application of FVA*”. The hypothesis is proposed based on two reasons. Firstly, manufacturing enterprises account for a large proportion of enterprises in Vietnam while commercial and service enterprises account for smaller proportions because Vietnam is a developing country, so service activities have not yet developed. Secondly, based on the results of previous studies, this factor often has a positive effect on the dependent variable. However, the research results show that this factor has a negative impact on the dependent variable with a coefficient of -1.056. Regarding the business sector, manufacturing was the most common sector (50), and that was followed by the commercial (45) and service (32) sectors. The in-depth interviews showed that, in this research sample, manufacturing enterprises have the largest proportion, but their accounting systems, personnel, and employee qualifications do not have as prestigious a background as the companies in commercial and service sectors do. Meanwhile, the process of applying fair value requires many techniques from determining, recording, presenting, and disclosing information, so it is difficult for older manufacturing enterprises to apply fair value.

CONCLUSION

FVA has certain advantages over other valuation methods in helping to provide more useful and reliable financial information to decision-makers. The international integration process requires the adoption of FVA in Vietnamese companies in accordance with international practice. The adoption of FVA in Vietnamese companies requires synchronized implementations, so that in the near future, FVA will become a primary valuation method in accounting in Vietnam. Fair value accounting is a new dimension in accounting. In particular, fair value accounting has certain advantages over other valuation methods, contributing to providing more useful and reliable financial information for decision-makers. Therefore, fair value accounting should be widely adopted in Vietnam. Furthermore, fair value accounting principles must be consistent with international practice to ensure regularization of international accounting practices. However, such fair value accounting regulations must suit the specific characteristics of Vietnam with respect to existing business environment, developing commodity markets, legal accounting and auditing systems.

However, the adoption of fair value accounting should be in line with the economic characteristics in each period and requires an appropriate roadmap. The adoption of fair value accounting can be carried out in two stages: (i) Research and testing of fair value accounting by providing guidelines explaining fair value accounting and how fair value is measured, clarifying standards to eliminate conflicts and ensure consistency, adjusting accounting legislation and common standards to prepare for the release of fair value accounting in Vietnamese accounting laws, educating and raising the awareness of accountants and managers about the adoption of fair value accounting; (ii) Guiding the adoption of fair value accounting by issuing regulations on fair value measurement based on IFRS 13 issued on January 1, 2013; updating accounting standards in line with international practice; issuing necessary standards to facilitate the adoption of fair value accounting in Vietnamese companies that create legal opportunities for the development of commodity markets to provide the resources needed to measure fair value.

AUTHOR CONTRIBUTIONS

Conceptualization: Bui Thi Ngoc.
 Data curation: Bui Thi Ngoc.
 Formal analysis: Bui Thi Ngoc.
 Funding acquisition: Bui Thi Ngoc.
 Investigation: Bui Thi Ngoc.
 Methodology: Bui Thi Ngoc.
 Project administration: Bui Thi Ngoc.
 Resources: Bui Thi Ngoc.
 Software: Bui Thi Ngoc.
 Supervision: Bui Thi Ngoc.
 Validation: Bui Thi Ngoc.
 Visualization: Bui Thi Ngoc.
 Writing – original draft: Bui Thi Ngoc.
 Writing – review & editing: Bui Thi Ngoc.

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APPENDIX A

Table A1. Measurement scales

Source: Compiled by the author based on research results.

Factor	Variables	Items	Sources
Benefits (BEN)	BEN1	Increasing reliability, transparency, comparability; providing a basis for investors' and managers' decision making; increasing the confidence of users of financial statements	Chen et al. (2019), Hsu et al. (2019), Bewley et al. (2018), Yichao (2010), Ting & Soo (2005), Danbolt & Rees (2008), Danbolt & Rees (2008), Benjamin et al. (2012), Barth & Clinch (1998), Brown et al. (1992), Dumitru et al. (2013), Ting & Soo (2005), Fargher (2001), Aboody et al. (1999)
	BEN2	Increasing business performance (increasing stock prices, market opportunities, incomes, market shares, reducing risks)	
	BEN3	Accessing international capital market more easily	
	BEN4	Promoting the regularization of international accounting practices	
H1: FVA benefits have a positive impact on the application of FVA			
Difficulties (DIF)	DIF1	Difficulty in determining fair value and it requires subjective judgment	Jung et al. (2013), Songlan et al. (2014), Danbolt & Rees (2008), Ting & Soo (2005), Christensen & Nikolaev (2013), Aboody et al. (1999)
	DIF2	Difficulty in determining reliability of fair value measurements	
	DIF3	Increasing the risk of financial statement fraud	
	DIF4	High costs of determining fair value	
H2: The difficulties in applying FVA have a negative impact on the application of FVA			
Personnel (PER)	PER1	Knowledge: accountants do not have enough knowledge to apply IFRS 13 effectively	Sangchan et al. (2020), Bewley et al. (2018), Christensen & Nikolaev (2013), Kumarasiri & Fisher (2011), Sangchan et al. (2020), Ijeoma (2014), Rajni et al. (2012), Kumarasiri & Fisher (2011), Cairns (2011), Ting & Soo (2005), Danbolt & Rees (2008), Aboody et al. (1999)
	PER2	Skills: IFRS 13 requires complex recognition and adjustments	
	PER3	Attitude: accountants and managers need to be honest and responsible when determining fair value.	
H3: Personnel have a positive impact on the application of FVA			
Law (LAW)	LAW1	FVA is not legalized	Vergauwe & Gaeremynck (2019), Bewley et al. (2018), Yichao (2010), Cairns (2011), Kumarasiri & Fisher (2011), Richard (2004), Ting & Soo (2005)
	LAW2	Legal environments of valuation activities are not synchronized	
	LAW3	There are conflicts in the legal system	
H4: Law has a negative impact on the application of FVA			
Market (MAR)	MAR1	The commodity markets and stock markets are developing	Bewley et al. (2018), Ijeoma (2014), Songlan et al. (2014), Rajni et al. (2012), Benjamin et al. (2012), Kumarasiri & Fisher (2011), Cairns (2011), Danbolt & Rees (2008)
	MAR2	Market factors are complicated and changeable	
	MAR3	There are no technique nor market bases to apply FVA	
H5: The market has a negative impact on the application of FVA			
Fair value accounting (FVA)	1: Have adopted FVA 0: Have not adopted FVA		

Table A2. Descriptive statistics

Source: Compiled by the author based on research results.

Variables	Mean	Mean of Adopt FV	Mean of Not Adopt FV
<i>BEN1</i>	3.09	3.14	3.05
<i>BEN2</i>	2.76	3.02	2.50
<i>BEN3</i>	2.87	3.16	2.59
<i>BEN4</i>	3.00	3.21	2.80
<i>BEN</i>	2.93	3.13	2.73
<i>DIF1</i>	3.01	2.97	3.05
<i>DIF2</i>	2.96	2.92	3.00
<i>DIF3</i>	3.01	2.95	3.06
<i>DIF4</i>	3.00	2.94	3.06
<i>DIF</i>	2.99	2.94	3.04
<i>PER1</i>	2.82	3.05	2.59
<i>PER2</i>	2.95	3.08	2.83
<i>PER3</i>	3.17	3.46	2.87
<i>PER</i>	2.98	3.20	2.77
<i>LAW1</i>	2.82	3.08	2.83
<i>LAW2</i>	2.95	3.46	2.87
<i>LAW3</i>	3.17	3.05	2.59
<i>LAW</i>	2.98	3.20	2.77
<i>MAR1</i>	2.82	3.05	2.59
<i>MAR2</i>	2.95	3.08	2.83
<i>MAR3</i>	2.82	3.05	2.59
<i>MAR</i>	2.86	3.06	2.67

Table A3. Item-total statistics

Source: Compiled by the author based on research results.

Factor	Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Cronbach's Alpha of BEN: 0.729; Number of Items: 4	<i>BEN1</i>	5.85	2.536	.881	.874
	<i>BEN2</i>	5.87	2.428	.697	.693
	<i>BEN3</i>	5.75	1.936	.781	.574
	<i>BEN4</i>	5.62	2.269	.501	.895
Cronbach's Alpha of DIF: 0.917; Number of Items: 4	<i>DIF1</i>	8.97	1.428	.831	.885
	<i>DIF2</i>	9.02	1.444	.816	.890
	<i>DIF3</i>	8.97	1.539	.839	.883
	<i>DIF4</i>	8.98	1.626	.760	.909
Cronbach's Alpha of PER: 0.863; Number of Items: 3	<i>PER1</i>	5.65	1.643	.794	.754
	<i>PER2</i>	5.55	1.837	.718	.827
	<i>PER3</i>	5.73	1.785	.708	.836
Cronbach's Alpha of LAW: 0.872; Number of Items: 3	<i>LAW1</i>	6.18	1.769	.598	.872
	<i>LAW2</i>	6.29	1.716	.695	.636
	<i>LAW3</i>	6.36	1.820	.734	.628
Cronbach's Alpha of MAR: 0.823; Number of Items: 3	<i>MAR1</i>	6.40	2.877	.711	.728
	<i>MAR2</i>	6.24	2.821	.618	.822
	<i>MAR3</i>	6.33	2.810	.715	.717

Table A4. Correlations

Source: Compiled by the author based on research results.

Variables	Pearson Correlation	FV	BEN	DIF	PER	LAW	MAR	FIELD	YEAR	SIZE
FV	Pearson Correlation	1	–	–	–	–	–	–	–	–
	Sig. (2-tailed)	–	–	–	–	–	–	–	–	–
BEN	Pearson Correlation	.344**	1	–	–	–	–	–	–	–
	Sig. (2-tailed)	.000	–	–	–	–	–	–	–	–
DIF	Pearson Correlation	–.122*	–.051	1	–	–	–	–	–	–
	Sig. (2-tailed)	.017	.572	–	–	–	–	–	–	–
PER	Pearson Correlation	.335**	.517**	.000	1	–	–	–	–	–
	Sig. (2-tailed)	.000	.000	.996	–	–	–	–	–	–
LAW	Pearson Correlation	.395**	.508**	.000	.976**	1	–	–	–	–
	Sig. (2-tailed)	.000	.000	.996	.000	–	–	–	–	–
MAR	Pearson Correlation	–.288**	.554**	–.027	.937**	.903**	1	–	–	–
	Sig. (2-tailed)	.001	.000	.761	.000	.000	–	–	–	–
FIELD	Pearson Correlation	–.168*	.506**	–.103	.307**	.337**	.357**	1	–	–
	Sig. (2-tailed)	.048	.000	.247	.000	.000	.000	–	–	–
YEAR	Pearson Correlation	.539**	.005	–.028	–.013	–.023	–.014	–.502	1	–
	Sig. (2-tailed)	.000	.956	.759	.882	.782	.876	.450	–	–
SIZE	Pearson Correlation	.670**	.336**	.025	.320**	.320**	.298**	–.066	.602	1
	Sig. (2-tailed)	.000	.000	.780	.000	.000	.001	.461	.600	–

Note: ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).