

The Impact of Book Value per Share and Earnings per Share on Stock Prices: Evidence from the Indonesian Banking Sector

Marlizar^{1*}, Zulfan², Cut Afrida Yulianti³

^{1,2} Department of Management, Universitas Muhammadiyah Aceh, Indonesia

³ Department of Islamic Economics STAI Nusantara, Banda Aceh, Indonesia

*Corresponding Author: marlizar@unmuha.ac.id

Abstract. *Stock prices of banking sector companies listed on the Indonesia Stock Exchange (IDX) have fluctuated in recent years, indicating an inconsistency between theory and empirical evidence. Theoretically, the growth of Book Value per Share (BVS) and Earnings per Share (EPS) is expected to positively influence stock prices. However, empirical findings suggest that BVS and EPS may have no effect or even a negative effect on stock prices. This study aims to examine and analyse the extent to which BVS and EPS affect the stock prices of banking companies listed on the IDX. The research employs a quantitative approach using secondary data obtained from the official IDX website. The sampling technique is purposive sampling, focusing on banking companies categorized as KBMI 4 over a 10-year observation period from 2012 to 2021. The data used are panel data. Data analysis is conducted using panel data regression with the Lagrange Multiplier test to determine the appropriate model. The results indicate that the random effect model is the most suitable for this study. The findings reveal that BVS and EPS simultaneously have a significant effect on stock prices. Partially, both variables also show a significant influence. Overall, BVS and EPS explain 60% of the variation in stock prices, while the remaining 40% is influenced by other variables outside the research model.*

Keywords: *Book Value per Share (BVS), Earnings per Share (EPS), Stock Prices, Banking Sector, Indonesia Stock Exchange (IDX)*

1. Introduction

Investment is an economic activity aimed at generating future returns through the allocation of funds into various financial instruments. One of the most widely used investment platforms is the capital market, which serves as an intermediary between parties requiring funds and those with excess funds. For companies, the capital market functions as a source of financing for business expansion, while for investors, it provides opportunities to earn investment returns.

Among the various instruments available in the capital market, stocks are the most popular due to their potential to generate high returns, although they are also associated with higher risks. Stock prices reflect the value of a company, which is determined by supply and demand mechanisms in the market and influenced by both internal and external factors (Hartono, 2017; Fahmi, 2015). In the long term, stock prices tend to be influenced by a company's fundamental performance, making fundamental analysis a key approach in investment decision-making.

In fundamental analysis, financial indicators such as Book Value per Share (BVS) and Earnings per Share (EPS) are commonly used to assess a company's performance and valuation, as both are accounting metrics relevant in explaining stock prices in the capital market. Studies in the value relevance literature indicate that accounting information in the form of earnings and book values significantly contributes to explaining variations in

stock prices. For instance, Ohlson (1995) developed a valuation model demonstrating that stock prices can be predicted based on a company's earnings and book value, and empirical research by Al-Hares (2012) confirms that both EPS and BVS have value relevance for stock prices in emerging markets.

Book Value per Share represents the book value per share, that is, the total net assets available to common shareholders after deducting liabilities, serving as a proxy for the company's equity value and helping investors assess whether a stock is trading above or below its book value. Meanwhile, Earnings per Share reflects the amount of profit earned per share, serving as an indicator of profitability and the company's ability to generate returns for shareholders (Tran & Lam, 2023). Theoretically, an increase in BVS and EPS indicates stronger company fundamentals, which is expected to drive stock price appreciation as investors adjust their expectations of fair value based on the latest financial performance (Al-Hares, 2012; Ohlson, 1995).

However, empirical evidence reveals inconsistencies between theory and actual market conditions. In recent years, stock prices of banking sector companies listed on the Indonesia Stock Exchange (IDX) (Bursa Efek Indonesia, 2022) have experienced fluctuations that are not always aligned with changes in BVS and EPS. In some cases, increases in BVS and EPS are not followed by rising stock prices, and in certain situations, stock prices even decline. This phenomenon indicates a discrepancy between financial theory and real-world market behaviour.

This inconsistency is particularly evident in KBMI 4 banking companies, which are categorised as banks with large core capital, such as PT Bank Rakyat Indonesia Tbk, PT Bank Mandiri Tbk, PT Bank Negara Indonesia Tbk, and PT Bank Central Asia Tbk. Data show that despite improvements in fundamental indicators such as BVS and EPS, stock prices do not always move in the same direction. This raises questions regarding the actual influence of BVS and EPS on stock prices, particularly within the banking sector.

Previous studies have generally found that BVS and EPS have a positive effect on stock prices. For instance, studies by Astuti et al. (2018) and Kemalasari and Ningsih (2019) indicate that EPS has a significant influence on stock prices, while BVS has also been shown to affect stock prices in several studies. Nevertheless, these findings are not always consistent with empirical observations, highlighting the need for further investigation.

Based on these issues, further research is necessary to re-examine the influence of BVS and EPS on stock prices, particularly in banking sector companies listed on the IDX. This study is important as it provides a more comprehensive understanding of the relevance of fundamental indicators in determining stock prices and offers valuable insights for investors in making investment decisions.

Therefore, this research aims to empirically analyse the relationship between BVS, EPS, and stock prices, as well as to determine whether these fundamental variables remain significant determinants of stock value in the Indonesian capital market.

2. Method

Research Design

This study adopts a quantitative approach with an associative research design aimed at examining the relationship between financial performance indicators and stock prices. The research focuses on analysing the effect of Book Value per Share (BVS) and Earnings per Share (EPS) on stock prices of banking sector companies listed on the Indonesia Stock Exchange (IDX). The study utilises panel data, which combines cross-sectional and time-

series data to provide more comprehensive and efficient estimates. The observation period spans ten years, from 2012 to 2021.

Population and Sample

The population of this study consists of all banking sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2012–2021. The sampling technique used is purposive sampling, which selects samples based on specific criteria. The criteria applied in this study include banking companies classified under KBMI 4, which refers to banks with core capital exceeding IDR 70 trillion. Based on these criteria, the final sample includes four major banking institutions:

- a) Bank Rakyat Indonesia (BBRI)
- b) Bank Mandiri (BMRI)
- c) Bank Negara Indonesia (BBNI)
- d) Bank Central Asia (BBCA)

Research Instrument and Data Collection Technique

This study uses secondary data as the main research instrument. The data are obtained from official financial reports published on the Indonesia Stock Exchange (IDX) website. The data collection technique employed is documentation, which involves collecting and recording relevant financial data such as stock prices, BVS, and EPS from published reports. This method ensures data reliability and consistency for quantitative analysis.

Data Analysis Technique

The data analysis in this study is conducted using panel data regression analysis, which integrates cross-sectional and time-series data to examine the relationship between variables (Gujarati & Porter, 2009).

The regression model is formulated as follows:

$$Y_{it} = \alpha + \beta_1 BVS_{it} + \beta_2 EPS_{it} + \varepsilon_{it}$$

where:

Y_{it} represents stock price,

BVS_{it} and EPS_{it} are independent variables,

α is a constant,

β represents regression coefficients, and

ε_{it} is the error term.

To determine the most appropriate model, three panel regression models are considered: Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Model selection is conducted using the Chow test, Hausman test, and Lagrange Multiplier test. Prior to regression analysis, classical assumption tests are performed, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests, to ensure the validity of the model. Hypothesis testing is conducted using the t-test (partial effect), F-test (simultaneous effect), and coefficient of determination (R^2) to evaluate the explanatory power of the model, with a significance level of 5%.

3. Results and Discussions

Overview of Banking Sector Companies Listed on the Indonesia Stock Exchange

Banking sector companies are financial institutions that operate in the banking industry. A bank itself is a business entity that collects funds from the public in the form of deposits and distributes them back to the public in the form of loans and/or other forms in order to improve the standard of living of society. Banking sector companies can be categorised into two types: private companies and public companies. Companies listed on the Indonesia Stock Exchange (IDX) are referred to as public companies. Therefore, banking sector companies listed on the IDX are companies whose shares are traded openly to the public and can be owned by anyone. Banking sector companies are further divided into four categories based on their capital size. This classification is known as the Bank Group based on Core Capital (KBMI). The classifications are explained in more detail in the table below:

Table 1. Classification of Bank Groups Based on Core Capital (KBMI)

No	Description	Minimum Core Capital
1	KBMI 1	Core capital up to IDR 6 trillion
2	KBMI 2	Core capital of more than IDR 6 trillion up to IDR 14 trillion
3	KBMI 3	Core capital of more than IDR 14 trillion up to IDR 70 trillion
4	KBMI 4	Core capital of more than IDR 70 trillion

Source: Financial Services Authority Regulation No. 12/POJK.03/2021 concerning Commercial Banks (Peraturan Otoritas Jasa Keuangan, 2021)

The banking sector companies examined in this study are those classified under the KBMI 4 category. The KBMI 4 banking companies include PT Bank Rakyat Indonesia Tbk (BBRI), PT Bank Mandiri Tbk (BMRI), PT Bank Negara Indonesia Tbk (BBNI), and PT Bank Central Asia Tbk (BBCA). All four of these companies are listed on the Indonesia Stock Exchange (IDX).

Description Analysis

Descriptive statistics are used to obtain information about the data through the mean, median, maximum, minimum, and standard deviation. The mean is the average of a set of data. The median is the middle value. The maximum is the highest value in the data set, while the minimum is the lowest value. The standard deviation is the square root of the variance. Table 2 presents the descriptive statistics of the study.

Table 2. Descriptive Analysis Results

	Y	X1	X2
Mean	4.888.500	2.544.450	3.520.000
Maximum	9.900.000	6.702.000	8.330.000
Minimum	1.360.000	4.240.000	9.600.000
Std. Dev.	2.186.229	1.824.152	2.004.729
Observations	40	40	40

Source: Data processing results, 2023

Based on Table 2, the observation value indicates that the number of data used is 40, with an observation period from 2012 to 2021. From the table, the average stock price is 4,888.5. The lowest stock price is 1,360, while the highest is 9,900. These results indicate that the stock prices of banking sector companies listed on the Indonesia Stock Exchange (IDX) used as the research sample range from 1,360 to 9,900, with a mean

value of 4,888.5 and a standard deviation of 2,186.229. The lowest stock price was recorded for BBRI in 2012, while the highest stock price was recorded for BBNI in 2017.

Classical Assumption Test Results

The classical assumption test is used to detect whether the model deviates from classical assumptions before the data is further analysed using panel data regression analysis.

Normality Test Results

The normality test aims to examine whether the regression model has a normal distribution or not. In this study, the normality test was conducted using a histogram. The results of the normality test in this study can be seen in Figure 1.

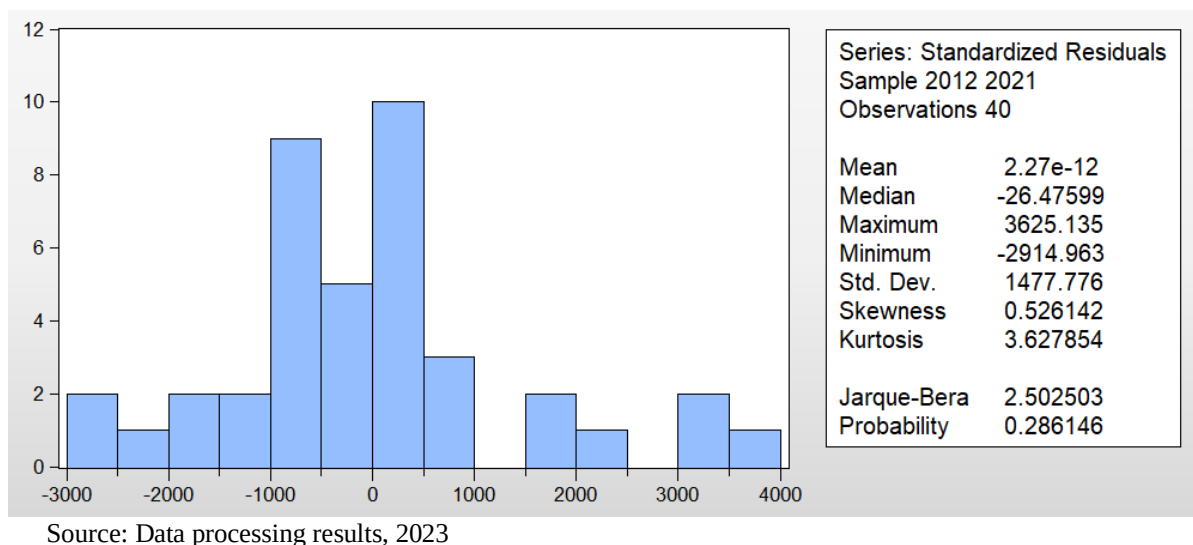


Figure 1. Results of the Normality Test

Based on the histogram in Figure 4.1, the probability value is 0.286146, which is above the significance level of 0.05. It can be concluded that the research data are normally distributed

Multicollinearity Test Results

The multicollinearity test is conducted to determine whether there is a significant relationship (correlation) among the independent variables in the regression model. The assumption of multicollinearity states that the independent variables must be free from multicollinearity issues, which is indicated by the absence of significant correlation among the independent variables. The results of the multicollinearity test can be seen in Table 3.

Table 3. Multicollinearity Test Results

	X1	X2
X1	1.000000	0.831607
X2	0.831607	1.000000

Source: Data processing results, 2023

Based on Table 3, the results show that no variable has a correlation value above 0.85. Therefore, it can be concluded that the regression model used does not have a multicollinearity problem. This means that there is no correlation among the independent variables in this study.

Heteroskedasticity Test Results

The heteroskedasticity test aims to examine whether there is an inequality of variance in the residuals from one observation to another in the regression model. If the assumption of homoskedasticity is not fulfilled, the regression model is considered invalid as a forecasting tool. The results of the heteroskedasticity test can be seen in Table 4.

Table 4. Heteroskedasticity Test Results

Variabel	Prob.
C	0.0106
X1	0.8112
X2	0.6603

Source: Data processing results, 2023

From Table 4.7, the significance values of both independent variables are greater than 0.05. Therefore, it can be concluded that there is no heteroskedasticity problem in the regression model.

Autocorrelation Test Results

The autocorrelation test is used to determine whether there is a violation of the classical assumption of autocorrelation, namely the correlation between residuals in one observation and those in another observation within the regression model. The prerequisite that must be met is the absence of autocorrelation in the regression model. The results of the autocorrelation test can be seen in Table 5.

Table 5. Autocorrelation Test Results

Autocorrelation	
Durbin-Watson stat	0.997182

Source: Data processing results, 2023

From Table 4.8, it can be seen that the Durbin–Watson (DW) value is 0.997182. This value was obtained after conducting the random effects model test. Based on the table above and by referring to the Durbin–Watson table at $\alpha = 5\%$, it can be concluded that there is positive autocorrelation in the regression model because the DW value is lower than both the lower bound (dL) and the upper bound (dU). The explanation can be illustrated using the following inequality:

$$dW < dL < dU < 4 - dU < 4 - dL = 0.997182 < 1.3908 < 1.6000 < 2.4000 < 2.6092.$$

Panel Data Regression Model Selection

Based on the research results, the model selected in this study is the random effect model, obtained from the results of the Lagrange Multiplier test. The Lagrange Multiplier test is conducted to determine the most appropriate model to be used between the common effect model and the random effect model.

Lagrange Multiplier Test Results

In this study, the selected model is the random effect model. This model was chosen based on the results of the Lagrange Multiplier test. The Lagrange Multiplier test was conducted due to differences in the results of the Chow test and the Hausman test. The Chow test results indicate that the best estimation method to be used is the fixed effect model, while the Hausman test results indicate that the best estimation method to be used is the random effect model. Due to this discrepancy, the Lagrange Multiplier test was carried out to determine the most appropriate model. The results of the Lagrange Multiplier test can be seen in Table 6.

Table 6. Lagrange Multiplier Test Results

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	5.805224 (0.0160)	2.794880 (0.0946)	8.600105 (0.0034)

Source: Data processing results, 2023

Based on Table 4.9, the Breusch–Pagan value is 0.0160. If the Breusch–Pagan value is less than 0.05, the best estimation method is the random effect model; however, if the Breusch–Pagan value is greater than 0.05, the best estimation method is the common effect model. Based on these results, the most appropriate estimation method to be used is the random effect model.

Hypothesis Testing Results

Hypothesis testing in this study is used to determine both the simultaneous and partial effects of the BVS and EPS variables on stock prices, as well as to identify the proportion of BVS and EPS variables in explaining changes in stock prices.

F-Test Results (Simultaneous)

The F-test, or simultaneous test, is a statistical tool used to examine the regression coefficients of the BVS and EPS variables on stock prices collectively. The F-test in this study is used to determine whether all variables, namely BVS and EPS, jointly (simultaneously) have an effect on stock prices. The results of the F-test can be seen in Table 7.

Table 7. F-Test Results (Simultaneous)

F-statistic	28.04006
Prob(F-statistic)	0.000000

Source: Data processing results, 2023

Based on Table 4.10, the results of the F-test show that the calculated F-value is 28.04006 with a probability level of 0.000000. If the probability level is below 0.05, then all independent variables simultaneously affect the dependent variable. Therefore, it can be concluded that the BVS and EPS variables simultaneously have a significant effect on

stock prices in banking sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2012–2021.

T-Test Results (Partial)

In this study, the t-test is used to examine whether the BVS and EPS variables partially affect the stock price variable. This test is conducted by comparing each calculated t-value with the t-table value in determining the proposed hypotheses, or by comparing the probability value of each variable with the significance level of 0.05. The results of the t-test can be seen in Table 8.

Table 8. Partial T-Test Results

Variabel	t-Statistic	Prob.
X1	4.553244	0.0001
X2	2.608910	0.0130

Source: Data processing results, 2023

Based on Table 4.11, the results of the t-test show that the BVS and EPS variables partially have a positive and significant effect on stock prices. This can be proven by the probability value being less than 0.05. If the probability value of t-statistic > 0.05 , then partially the independent variables do not have a significant effect on the dependent variable. However, if the probability value of t-statistic < 0.05 , then partially the independent variables have a significant effect on the dependent variable.

R² Test Results (Coefficient of Determination)

In this study, the R² test is used to assess how much the BVS and EPS variables explain the stock price variable. The coefficient of determination describes the proportion of the total variation that can be explained by the model. The higher the R² value, the better the model's accuracy. The results of the R² test can be seen in Table 4.12.

Table 9. R² Test Results (Coefficient of Determination)

R-squared	0.602493
Adjusted R-squared	0.581006

Source: Data processing results, 2023

Based on Table 9, the results of the R² test above show that the coefficient of determination is 0.602493, which means that 60% of the stock prices in the banking sector on the IDX can be explained by the BVS and EPS variables, while the remaining 40% is explained by other variables outside the model.

Discussion

From the results of the Lagrange multiplier test, the model that is appropriate for use in this study is the random effect model. Table 4.13 shows the estimation results using the random effect model.

Table 10. Random Effect Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1042.532	798.6884	1.305306	0.1998
X1	0.892871	0.196096	4.553244	0.0001
X2	4.471883	1.714081	2.608910	0.0130

Source: Data processing results, 2023

Based on the results of the random effect model presented in Table 10, it can be observed that all variables are statistically significant in the model. Consequently, the estimated random effect model can be expressed as follows:

$$Y_{it} = 1042.532 + 0.892871BVS_{it} + 4.471883EPS_{it} + 798.6884e_{it}$$

From this model equation, the interpretations are as follows:

1. The constant term of 1042.532% indicates that BVS and EPS have a positive relationship with the stock price, holding a baseline level of 1042.532%. This implies that if both BVS and EPS are equal to zero, the stock price would remain at 1042.532%.
2. The BVS coefficient of 0.892871 indicates that BVS has a positive effect on stock prices, increasing by approximately 0.9%. This suggests that a 1% increase in BVS would result in an approximate 0.9% increase in stock price. This finding implies that higher profits in banking sector companies lead to an increase in BVS, assuming that not all profits are distributed to shareholders. A portion of the profits may be retained as retained earnings, which in turn increases the BVS value. These retained earnings can be utilized by the company for business development and expansion.
3. The EPS coefficient of 4.471883 indicates that EPS has a positive effect on stock prices, increasing by approximately 4.47%. This suggests that a 1% increase in EPS would result in an approximate 4.47% increase in stock price. This implies that as banking sector companies generate higher profits, the EPS also increases. Profits may be distributed to investors as dividends or retained within the company as capital for further business growth.

4. Conclusions

Based on the results of the analysis, this study concludes that, simultaneously, Book Value per Share (BVS) and Earnings per Share (EPS) have a significant influence on the stock prices of banking companies listed on the Indonesia Stock Exchange (IDX). This finding indicates that improvements in both BVS and EPS collectively contribute to an increase in stock prices. Furthermore, the partial test results reveal that each variable—BVS and EPS—individually exerts a significant effect on stock prices. This implies that an increase in either BVS or EPS alone is sufficient to positively influence stock price movements, reflecting the importance of both indicators as measures of company performance and financial health.

Based on the findings and analysis presented in this study, several recommendations are proposed. First, companies are encouraged to consistently maintain and enhance their financial performance by generating sustainable profits. Stable and increasing profitability will contribute to higher BVS and EPS, which in turn can strengthen investor confidence, boost stock prices, and enhance the overall attractiveness of the banking sector in the capital market.

Second, investors who intend to invest in banking sector companies are advised not only to monitor stock price fluctuations but also to carefully evaluate fundamental indicators such as BVS and EPS. These indicators provide valuable insights into a company's financial strength and long-term growth potential. Companies with strong and improving fundamentals are more likely to offer attractive returns, both in terms of dividend income and capital gains, while also presenting relatively lower investment risk.

Third, future researchers are encouraged to expand upon this study by incorporating

additional variables that may influence stock prices, such as macroeconomic factors, market sentiment, interest rates, or corporate governance indicators. The results of this study show that BVS and EPS account for approximately 60% of the variation in stock prices, while the remaining 40% is explained by other factors not included in this research. Therefore, further studies are recommended to adopt a more comprehensive approach by including a broader set of explanatory variables.

Finally, future research is also suggested to widen the scope of the sample by including all banking companies listed on the Indonesia Stock Exchange (IDX). This study is limited to banking institutions categorized under KBMI 4, namely those with core capital exceeding IDR 70 trillion. Expanding the sample to include banks from different KBMI categories would provide a more comprehensive understanding of the relationship between financial performance indicators and stock prices across various segments of the banking industry.

5. References

- Al-Hares, O. M. (2012). Value relevance of earnings, book value and dividends in equity valuation: Evidence from Kuwait. *Journal of International Accounting*, 47(3), 345–366. doi: [10.1016/j.intacc.2012.04.003](https://doi.org/10.1016/j.intacc.2012.04.003)
- Astuti, P., Sari, Y. L., & WA, A. R. (2018). Analisis pengaruh return on equity, earning per share, price to book value, book value per share, price earning ratio dan kepemilikan institusional terhadap harga saham perusahaan. *Jurnal Ekonomi*, 20(2), 170–183.
- Bursa Efek Indonesia. (2022). *PT Bursa Efek Indonesia*. Diakses pada 22 Maret 2022. www.idx.co.id.
- Fahmi, Irham. (2015). *Analisis Laporan Keuangan*. Bandung: Alfabeta.
- Gujarati, D. N., & Dawn C. Porter. (2009). *Basic Econometrics*, 5th edition. Douglas Reiner, New York.
- Hartono, Jogiyanto. (2017). *Teori Portofolio dan Analisis Investasi*. Yogyakarta: BPFE.
- Kemalasari, Ayu & Ningsih, Desrini. (2019). Pengaruh Earning per Share, Return on Equity, Price Earning Ratio dan Debt to Equity Ratio Terhadap Harga Saham (Perusahaan Yang Tergabung Dalam Indeks LQ45 di Bursa Efek Indonesia). *Jurnal Akuntansi Barelang*, Vol. 3, No. 2, Hal. 1-11.
- Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661–687. doi: [10.1111/j.1911-3846.1995.tb00461.x](https://doi.org/10.1111/j.1911-3846.1995.tb00461.x)
- Peraturan Otoritas Jasa Keuangan No. 12/POJK.03/2021 Tentang *Bank Umum*.
- Tran, Q. H., & Lam, T. K. (2023). The value relevance of earnings and book value at Vietnamese listed enterprises. *Accounting and Finance Research*, 12(2), 48–63. <https://doi.org/10.5430/afr.v12n2p48>