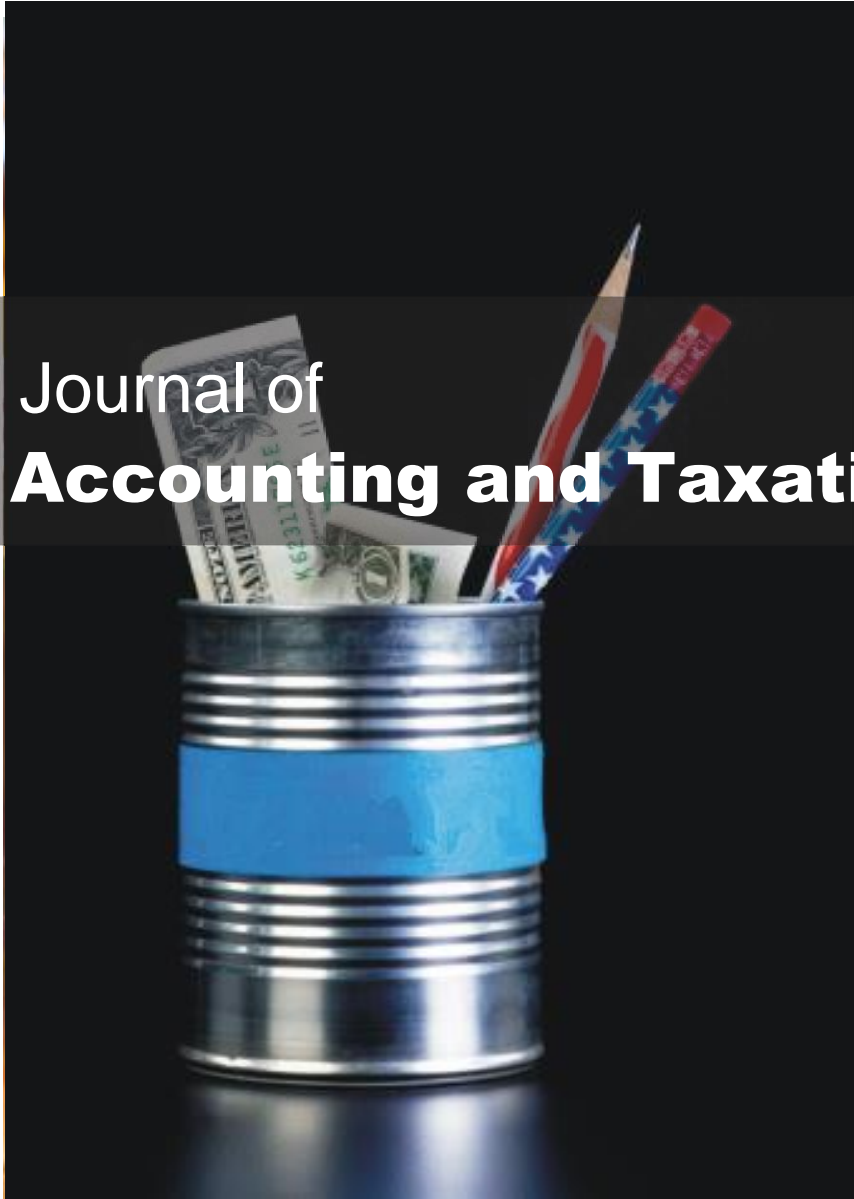


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*Full Length Research Paper*

# Investors' perception and profitability of listed companies: Evidence from Nigeria

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**The stock market has continually been a source of economic development in most developing countries. This study examined the relationship between investors' perception and profitability of quoted companies in Nigeria using secondary data obtained from the annual reports of forty (40) companies. The study employed the multiple regression techniques to analyze the relationship between investors' perception (measured by dividend per share and earning per share) and profitability (measured by the return on equity). The results show that investors' perception, when proxy by earnings per share, have a positive and significant impact on profitability. However, the study noted that investors' perception, when measured by dividend per share, tend to have a positive effect on profitability, but it is statistically insignificant. By implication, investors and other stakeholders that are interested in investing in stocks can predict the earning capacity of listed firms in the stock market.**

**Key words:** Investors, perception, listed companies, profitability, Nigeria.

## INTRODUCTION

Investment decision made by investors is a crucial issue that affects listed companies as a whole, and the stock market generally (Thair and Thair, 2016). Factors that affects investors' perception and decisions ranges from financial to non-financial, economic and political, but specifically, investors are more concerned with the financial indicators also known as stock market indicators in the context of this study and they are; earnings per share, dividend per share, share price and price earnings ratio (Solomon et al., 2016; Adefila et al. 2004). Thus, this study used earnings per share and dividend per share as a measure of investors' perception and used return on equity as a measure of profitability.

Most investors, existing and potential investors are less interested in investing in stocks due to factors like; prevalent corporate scandals, creative or cosmetic accounting, low returns from investment, global financial crisis, lack of transparency and inadequate supervision and high cost of transaction (Ikeobi, 2015). For instance, the total number of investors in Nigeria is over three million in a country whose population is over 150 million (Ikoku, 2015). So also, Investors lost about 6.9 trillion naira when the Nigerian stock Exchange had a major crash in the year 2008; as a result, investors are avoiding the Stock Exchange because they are still recuperating from the losses (Ayodeji and Adeniran, 2018). Therefore,

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the major aim of this study is to help potential investors in making the right economic decisions based on key stock market indicators identified in this study. Hence, the central objective of this study is to examine the relationship between investors' perception and profitability. But specifically the sub objectives are; to ascertain if there is any relationship between return on equity and dividend per share of the selected quoted companies and to determine if there is any relationship between return on equity and earnings per share of the selected quoted companies.

## LITERATURE REVIEW

### Theoretical review

#### *The bird in hand theory*

The basic theory underpinning this study is the bird in hand theory. The bird in hand theory introduced by Lintner (1956) connotes "a bird in hand (that is, dividend) is preferable than two birds (that is, future capital gain) in the bush". This theory also establishes the fact, that firm value is affected by dividend payout, and that most investor will prefer dividend to capital gain because it is less risky than capital gain which is receivable in the future (Amidu, 2007). The theory also suggests that firms paying a high dividend to its shareholder will have a higher market value because its shareholder will only require a minimal discounting rate.

### Empirical review

It has been empirically proven that stock market indicators influence investors in making an economic decision regarding an entity. For instance, an empirical study on investors' behavior on the Athens Stock Exchange indicates that investors base their investment decisions on stock market indicators and other non-financial variables (Merilkas et al., 2003). One of the essential stock market indicator investigated by extant studies is earnings per share (EPS) (Ikoku, 2015; Amidu, 2007). Equity stockholders use earnings per share to evaluate the financial performance and the imminent prospect of a company and also serve as a means of estimating the disposal value of shares (Solomon et al., 2016).

Asides EPS, another important stock market indicator that forms investors' perception and investment decision, is dividend per share (DPS). Dividend payment can be referred to as the act of sharing profits to the shareholders of a company (Thafani and Abdullah, 2014). Dividend also connotes the part of the company's net earnings that the directors recommend to be distributed to shareholders which is usually in proportion to their existing shareholding in the company (Pandey, 2005; Al-

Malkawi, 2007; Bierman, 2012).

DPS indicates how profitable a company is and most importantly, indicates the financial health of an organization and dividend disbursement is one of the key factors that indicate that a good corporate governance structure (Jo and Pan, 2009; Miller and Modigliani, 1961). Dividend payment decisions have also been identified as one of the primary element of corporate finance policy (Uwuigbe et al., 2012; Baker et al., 2001).

Thus, the earning capacity and the profitability of listed companies are essential because dividends are paid out of profit earned by the organization and the non-payment of dividends indicates a poor financial status (Uwuigbe et al., 2012). As a matter of fact, profitability reveals the company's capability to generate profit and adequate return on investment. Similarly, profit indicates the residual of income after the deductions of all expenses, but profitability determines the degree and sustainability of profit (Blakely-Gray, 2017; Gupta, 1989). Therefore, stock market indicators and profitability affects investors' perception and investment decisions which invariably have an impact on the growth of the capital market (Ikoku, 2015; La Porta et al, 2012).

Apart from the aforementioned stock market indicators, other indicators investors commonly look out for are, price-earnings ratio, and share price. For instance, the result from the study conducted in Nairobi based on secondary data extracted from eleven companies listed on the Nairobi Stock exchange between years 2001 to 2005 indicate that EPS, Dividend yield, price earnings ratio and share price all have a positive correlation with the changes in share price (Musyoki, 2011).

Furthermore, investors tend to relate profitability of stock or companies with the growth of share price, and most extant literature use share price as a measure of the listed stocks earning capacity and profitability. In particular, earliest studies on investors' ratio and share price indicated a positive relationship (Asienwa, 1992; Brown, 1993).

Additionally, Menaje (2012) studied the impact of financial variables on the share price of listed companies in Philippines using EPS, Return on Assets (ROA) as proxies for financial variables. The result from the study shows that there is a strong positive relationship between EPS and share price, while there is a negative relationship between ROA and share price.

On the contrary, evidence from another study in Nigeria, based on secondary data extracted from 140 companies listed on the Nigeria stock exchange from 2005 to 2009 show that EPS does not have a prognostic influence on stock prices (Umar and Musa, 2013). One prominent question that investors tend to ask is the predictability capacity of these variables in indicating a viable stock and it is crystal clear that a single stock market indicator or investor ratio is not sufficient to have an influence on the profitability of firms except by combining it with other performance indicators (Gatuhi

and Macharia, 2013).

In this study, the return on equity is used as a measure of profitability, and it has been defined as an indicator of profitability determined by dividing net income for the past 12 months by common stockholder equity (adjusted for stock splits) (Kennon, 2018). Investors use ROE as a measure of how a company is using its financial resources. A high return on equity indicates that the company is spending wisely and is likely profitable; a low return on equity indicates the opposite. As a result, high returns on equity lead to higher stock prices. ROE has been described as the topmost benchmarking tool for profitability because it indicates the true financial health of an organization.

## MATERIALS AND METHODS

This study is based on an Ex-post Factor research design, which emphasises the use of past data to predict the current behaviour of the selected variables. The population of the study for this research work comprises of all the quoted companies in the Nigeria stock exchange which according to the Nigeria stock exchange website, are two hundred (200) in numbers, however for the purpose of this study, and because of the sampling method adopted, only 40 companies will be used. The companies are Tripple GEE and Co PLC (TRIPPLEG NL), Trans-Nationwide Express PLC (TRANSEXP NL) Secure Electronic Technology PLC (NSLTECH NL), Skye Bank PLC (SKYEBANK NL), SCOA Nigeria PLC (SCOA NL), Transnational Corp of Nigeria PLC (TRANSCOR NL), Transcorp Hotels Plc (TRANSCOH NL), Tourist Co of Nigeria PLC (TOURIST NL), Total Nigeria PLC (TOTAL NL), Tantalizers PLC (TANTALIZ NL), Studio Press Nigeria PLC (STUDPRES NL), Sterling Bank PLC (STERLNBA NL), Stanbic IBTC Holdings PLC (STANBIC NL), Sovereign Trust Insurance PLC (SOVRENIN NL), Smart Products Nigeria PLC (SMURFIT NL), McNichols Consolidated PLC (MCNICHOL NL), May & Baker Nigeria PLC (MAYBAKER NL), AXA Mansard Insurance PLC (MANSARD NL), Northern Nigeria Flour Mills PLC (NNFM NL), NPF Microfinance Bank PLC (NPFMCRFB NL), Nigeria Enamelware Co PLC (ENAMELWA NL), Niger Insurance PLC (NIGERINS NL), Nestle Nigeria PLC (NESTLE NL), NEM Insurance PLC (NEM NL), Neimeth International Pharmaceuticals PLC (NEIMETH NL), NCR Nigeria PLC (NCR NL), Nigerian Breweries PLC (NB NL), Nigerian Aviation Handling Co PLC (NAHCO NL), Mutual Benefits Assurance PLC (MBENEFIT NL), Pharma-Deko PLC, Omoluabi Mortgage Bank PLC, Okomu Oil Palm PLC (OKOMUOIL NL), Oando PLC (OANDO NL), Multiverse Mining and Exploration Plc (MULTIVER NL), Regency Alliance Insurance Co PLC (REGALINS NL), Red Star Express PLC (REDSTARE NL), Arbico PLC (ARBICO NL), PZ Cussons Nigeria PLC (PZ NL), Newrest Asl Nigeria Plc (AIRSERVI NL), AIICO Insurance PLC (AIICO NL) and MRS Nigeria PLC (MRSOIL NL). Furthermore, the analysis for this study is based on secondary data obtained from the financial statement of the companies understudied; the data obtained includes earnings per share, dividend per share, and return on equity. The statistical analysis for this study was done using regression analysis and correlation. Also, the sampling method adopted was purposive sampling technique.

### Model specification for regression analysis

The model specification used in this study is based on the description of the relationship between the dependent and

independent variables of this research work.

$$Y = f(X_i) \quad (1)$$

Where Y = Dependent variable which is profitability (Return on Equity);  $X_i$  = Independent Variable which is Investors Perception; But,

$$X_i = X_1, X_2,$$

Where  $X_1$  = dividend per share;  $X_2$  = earnings per share.

The multiple linear regression model for this study is defined as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e \quad (2)$$

Here, Y = the dependent variable which was represented by the profitability of listed company using Return on Equity as a proxy;  $X_i$  = independent variable, which was represented by the Stock Market Indicators of the selected quoted companies used dividend per share and earnings per share as proxies.  $\beta_0$  represents the constant.  $\beta_1$  is the regression coefficient of regression. e = error term.

By substituting the above into the multiple linear regression models above, we have:

$$Y = \beta_0 + \beta_1 \text{DPS} + \beta_2 \text{EPS} + e \quad (3)$$

## RESULTS AND DISCUSSION

Statistical analysis of the effect of investor perception on the profitability of the selected quoted companies will be examined in this segment. Analysis of the trend of the variables will be examined first to describe the characteristics of the variables, followed by the correlation of the variables, the VIF, and tolerance analysis to check multi-collinearity of the model will also be presented before presentation and discussion of the regression result.

### Descriptive statistics

To show the descriptive statistics for each of the variables; return on equity (ROE), dividend per share (DPS) and earnings per share (EPS), the mean, standard deviation, minimum, maximum, skewness and Kurtosis values will be presented. It will help in understanding the measures of central tendency, measures of variances associated with the variables of the study, and the normality of the data used in the study.

Table 1 demonstrates that the mean value of return on equity of all the companies understudied is 7.479692 with a range of -64.404 to 58.776 while the level of dispersion is 22.20159. By this, it means the average profitability of selected quoted companies in Nigeria is 7.479692 to 58.776, and the deviation from both sides of the mean is 22.20159. This implies that the dispersion of the data from the mean is too wide because the standard deviation is higher than the mean value. The peak of return on equity is indicated by the kurtosis value of

**Table 1.** Descriptive characteristics of the impact of investor perception on profitability of selected quoted companies.

Variable	Obs	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
ROE	40	7.479692	22.20159	-64.404	58.776	-0.9905542	5.238077
DPS	40	1.122717	3.920647	0	21.1	4.234175	20.27767
EPS	40	2.524767	9.326997	-23.375	30.305	1.413791	7.190076

Source: Stata Output (2019).

**Table 2.** Pearson correlation matrix.

Variable	ROE	DPS	EPS
ROE	1.0000		
DPS	0.4822	1.0000	
EPS	0.3710	0.5562	1.0000

Source: Stata Output (2019).

**Table 3.** Correlation matrix.

Variable	VIF	Tolerance
DPS	1.45	0.690674
EPS	1.45	0.690674

Source: Stata Output (2019).

5.238077, suggesting that most of the values are smaller than the mean, which implies that the data meet a normal distribution assumption. The coefficient of Skewness of -0.9905542 implies that the data is negatively skewed, which means most of the data are on the left hand-side of the normal curve.

The highest of dividend per share is 21.1 with the mean of 1.122717 and standard deviation of 3.920647. The zero value recorded indicates that in a certain year the selected quoted companies declare zero dividends for every ordinary share outstanding. Within the period of the study, the earnings per share range from -23.375 to 30.305 with a mean value of 2.524767 and the data deviate from both sides of the mean by 9.326997. The peak of investors' perception is indicated by the kurtosis value of 20.27767 and 7.190076 for dividend per share and earnings per share, respectively. The coefficient of Skewness of investor's perception is 4.234175 and 1.413791, which implies that dividend per share and earnings per share respectively have long right tails.

### Correlation matrix

The relationship between the dependent variable and independent variables are presented in Table 2. The relationship between the independent variables is also shown by the table. The values were extracted from the

Pearson correlation of two-tailed significance carried out with Stata. The results in Table 2 show the degree of association between profitability as represented by return on equity (ROE) and investors' perception, which was represented with dividend per share and earnings per share. There is a positive relationship between the profitability of selected quoted companies and investor perception, as reflected in Table 2. The relationship between return on equity and dividend per share from the correlation coefficient is 0.4822. This relationship implies that as the return on equity increases the dividend per share of the sample firms will also increase. The relationship between return on equity and earnings per share from the correlation coefficient is 0.3710. This relationship implies that as the return on equity increases the earnings per share of the sample, firms will also increase.

### Multicollinearity test

The Variance Inflation Factor (VIF) and tolerance value are reasonable measures of availability of multicollinearity between the independent variables. Variance inflation factor and tolerance value are used for the investigation of the existence of multi-collinearity between dividend per share and earnings per share, which are the independent variables. The result of the multi-collinearity check is presented in Table 3. The table shows that the VIF of the two variables were consistently smaller than 10, which is an indication of the complete absence of multicollinearity. This implies that the study model that is fitted with the two independent variables is appropriate. Also, the tolerance values further substantiate the fact that there is a complete absence of multi-collinearity between dividend per share and earnings per share since the tolerance values are consistently smaller than 1.

**Table 4.** Summary of regression analysis.

Variable	Coef.	Std. Err.	T	P> t
DPS	2.261682	0.971536	2.33	0.025
EPS	0.354269	0.4083897	0.87	0.391
Cons	4.046017	3.28211	1.23	0.225
F(2, 37)	6.09	R-squared	0.2478	
Prob > F	0.0052	Adj R-squared	0.2071	

Source: Stata Output (2019).

### Multiple regression analysis

The results of the multiple regression analysis which examine the effect of investor perception on the profitability of selected quoted companies in Nigeria were discussed. The summary of the multiple regression analysis results is presented in Table 4.

Cumulatively, as shown in Table 4, the coefficient of determination for the regression is 0.2478 as depicted by the  $R^2$  which implies that about 24.78% of the systematic variation of the profitability of selected quoted companies in Nigeria is accounted for by the investor perception.

The F-statistic of 6.09 is greater than the F-tabulated (3.25192385), this shows that the model of the study is well fitted, and this is further established by the significant value of 0.0052 which is smaller to 0.05 and it shows that the cumulative effect of the investor perception measured with (dividend per share and earnings per share) was significant at 0.05% to profitability of selected quoted companies, which can be inferred that impact of investor perception on profitability of selected quoted companies.

Table 4 reveals that the t-value for dividend per share (DPS) is 2.33 with a coefficient value of 2.261682 with a P-value of 0.025 while the t-tabulated is 2.02107539. This implies that dividend per share is not statistically significant to the profitability of selected quoted companies in Nigeria.

Earnings per share as depicted in Table 4 shows t-value of 0.87 and a coefficient value of 0.354269 with a P-value of 0.391 while the t-tabulated is 2.02107539. This signifies that earning per share has a significant impact on the profitability of selected quoted companies in Nigeria. This implies that for every one percent increase in earnings per share, the profitability of selected quoted companies will increase by 35.43%.

The findings of this research work shows that the stock market indicators used to represent investors perception in this research work have significant joint relationship with profitability of the selected quoted companies, but when individual significance relationship was examined, the significance was visible between earning per share and profitability of selected quoted companies in Nigeria which the analysis reveals that the relationship between dividend per share and profitability of selected quoted companies in Nigeria was not statistically significant. The

findings show that making a profit from investment in the capital market requires various financial indicators. Therefore, this research work established that the relationship between profitability and stock market indicators can be fully understood by combining more than one financial indicator. This is because, total dependence on one financial indicator can lead to a wrong conclusion, and this was why this study used dividend per share and earnings per share as proxies for investor perception.

### CONCLUSION AND RECOMMENDATIONS

The study concludes that investors need more than one stock market indicator to identify a viable stock when making investment decisions. Furthermore, the statistical analysis confirms that there is significant relationship between Investors' perception and profitability, but this relationship was more conspicuous when collinearity test and regression test were combined to analyse the other indicator of investors' perception (earnings per share and return on equity). Therefore, the study recommends that researchers must use more than one statistical method when studying the relationship between investors' perception and profitability in order to fully understand the strength and the direction of relationship between investors' perception and profitability, so as not to arrive at a wrong conclusion.

### CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# **The role of board characteristics on the relationship between International Financial Reporting Standards (IFRS) adoption and earnings management: Evidence from China**

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**The purpose of this study is to investigate the effect of International Financial Reporting Standards (IFRS) adopting on earning management by considering the role of board size and board independence. Univariate tests and multivariate regression analysis were employed to test whether the level of earnings management is significantly lower after the adoption of IFRS and whether the role of board size and board independence on constraining the earnings managements is higher after IFRS adoption for a sample of Chinese listed companies during the period 2003 to 2013 except 2007 over a four-year period before and a six-year period after the adoption of IFRS. The empirical results show that earning management increased after the adoption of IFRS. However, there is no relationship between board size and earnings management before and after the adoption of IFRS but board independence has significantly decreased the earning management after the adoption of IFRS in China. The findings of this study have important implications for policymakers, auditors, multinational firms, and users of financial reports. As the rapid growth of China's economy gains global recognition, the Chinese stock market is capturing the attention of international investor.**

**Key words:** Earning management, International Financial Reporting Standards (IFRS), board size, board independence.

## **INTRODUCTION**

East Asia, Europe, and the US have experienced financial scandals that have decreased the confidence of investors in the integrity of accounting information. This loss in confidence has drawn attention to compliance issues with the International Financial Reporting Standards (IFRS) and corporate governance in

developing countries and emerging markets. The International Accounting Standards Board (IASB) is devoted to developing a single set of high-quality global accounting standards which requires comparable and transparent information in the overall function of financial statements ([www.iasb.org](http://www.iasb.org)). As a result, it developed the

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IFRS to achieve the goals of enhancing the characteristics and the quality of financial reporting.

According to Verriest et al. (2013) and Pelucio-Grecco et al. (2014), regulators argue that although firms adopt IFRS to improve the quality of accounting information, the IFRS also decreases earnings management. In February 2006, the Chinese Ministry of Finance issued new accounting standards that integrated the IFRS with few exceptions. The new standards required all the traded firms on the stock exchanges of Shenzhen and Shanghai to implement the new standards of accounting starting in January 2007. Further, the Code of Corporate Governance (CCG) for the listed firms was adopted in China in 2002.

Although China intended to adopt the IFRS to promote comparability with international accounting practices, whether such objectives are achievable is not clear. The incentives of Chinese listed firms to manage earnings are particularly strong, and the business environment may be a mismatch for the IFRS. Nevertheless, Chinese financial accounting has a powerful role. Numerous securities regulations are involved; in particular earnings targets which offer strong incentives to manage the earnings of Chinese listed firms. For instance, if a firm experiences accounting losses in three successive years, it will be delisted. Furthermore, before the firms can issue more shares, they need to meet certain profitability targets, like for the return on assets. Ball et al. (2003) highlight that it is important for a firm to report its incentives in order to shape the observed quality of financial reporting. Further, the earnings management due to these incentives are unlikely to change after IFRS adoption. Despite the IFRS inducing more earnings quality in countries with well aligned financial reporting incentives, opportunities to manage Chinese firms' earnings can be presented through more principle-based standards.

Also, China generally has weak external monitoring, regulatory enforcement, and investor protection. According to Hail et al. (2010), without the availability of corporate governance and strong investor protection, managers and insiders may misuse the increased judgement that is required by more principle-based accounting standards in order to achieve private control benefits. In addition, the flexibility of earnings management increases with the availability of strong incentives. Therefore, the Chinese accounting profession is still developing. Particularly, medium and small-sized firms experience enormous variation in skill levels and in the professional competence of corporate auditors and accountants.

Finally, the reliability of financial reporting would be reduced through the subjective assessment and internal valuation that are part of the implementation of a fair value measurement. The reasoning is that China does not have any valuation arising from "arms-length" transactions in any active market. Next to the US, China was globally ranked as the second largest in terms of the

market value of publicly traded shares in 2007 as a result of the IFRS impact on Chinese earnings management. Leuz et al. (2010) indicate that China is the largest and fastest growing emerging market and has increasingly become important to global investors. This study aims to extend the research in the earnings management literature to an emerging country by examining the IFRS as a new regulatory framework in addition to discovering the functions of the board's size and independence on constraining earnings management. Precisely, this study seeks to discover the effects of the board's independence and size on earnings managements pre- and post-IFRS. This study is similar to Miko (2016) who examine the moderating institutional ownership role on the relation among some audit committee features and earnings management, and to Marra et al. (2011) who discover the moderating role of IFRS adoption on the relationship between earnings management and board monitoring.

The contribution of this study to the literature is that it evaluates whether the compulsory implementation of IFRS has reduced earnings management as well as whether board size and the board of directors have a greater impact on constraining earnings management after this implementation in China after 2007. It advances the comparative international accounting literature by studying whether the standards of intercontinental accounting indicate the acceptable benefits to the regulated markets which not speak English. The evidence shows that there is lower earnings management in general. Because the Chinese economy has a dissimilar institutional context from other regulated developing countries, this study is not only enlightening for accounting regulators but also for the international accounting standard setters which experience the same issues as in China.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

There are numerous studies on IFRS adoption and its effect on earnings management. This study extends and supplements the literature on the adoption of IFRS by examining the effects of the board's independence and size on earnings management before and after adoption in a regulated market under rapid change in a main developing country.

### IFRS adoption

The literature finds that reporting quality is different among nations with different levels of investor protection. Even if the adoption of the IFRS reduces the differences, earnings management remains different across nations. Principally, the reasons are the divergences in culture, legal structure, and practices. These differences result

from various levels of interpretation and compliance because of less comparability in financial statements. Past studies have proposed that the accounting quality is higher in strong enforcement nations as compared to weak one (Ali et al., 2017). Other studies (Peña and Franco, 2017) have stated diverse problems, such as the responses to IFRS adoption, impacts of adoption on the expense of fairness, value of accounting evidence, comparability or financial functions, impacts of pre- and post-IFRS adoption on the rate of adoption, integration and process of IFRS implementation, the cultural impact on the implementation process of IFRS. However, the anticipated benefits of IFRS adoption are far away because of the insufficient quality of financial reporting.

As countries have different regulatory, political or institutional settings, this dimension is potentially relevant for understanding variation in levels of disclosure compliance and drivers of compliance. A large number gather studies dealing with the adoption of and compliance with IFRS in China (Gao and Kling, 2012; Peng et al., 2008).

IFRS convergence in China has been driven by the Chinese government to facilitate its "Open Door" policy and by the rapid growth of the Chinese stock market. One of the most distinguishing features of IFRS implementation in China is the strong leadership provided by the Chinese Ministry of Finance (MOF) (Qu et al., 2012). China's national standards have been substantially converged with IFRS, and China has committed to the adoption of IFRS for reporting by at least some domestic companies, although there is no timetable for the completion of the process. He et al. (2012) examine Chinese firms that adopt IFRS in 2007 and examine the effect of the fair value provisions under IFRS. They found that IFRS results in increased earnings manipulation among Chinese firms with large portfolios of trading securities and debt restructuring.

According to Defond et al. (2016), local firms from developing nations may experience problems with IFRS adoption; for instance, less opportunity to impact the international accounting standard process, cost of merging may be higher than the expected benefits, and the lack of representational faithfulness.

Earlier studies show mixed results regarding the relation between earnings management and IFRS adoption. For instance, Barth et al. (2012) show the superiority of the IFRS in limiting managerial discretion. On the other hand, some studies found that IFRS offers additional flexibility to managers to manipulate accounting numbers (Rudra and Bhattacharjee, 2012; Ahmed et al., 2013; JeanJean and Stolowy, 2008). Nevertheless, each country experiences different impacts from these standards.

For instance, Bajra and Cadez (2018) use a sample of European firms to examine how the central mechanism of governance affects earnings management. They use comprehensive methods of measurements to evaluate

the qualities of the board of directors and the internal audit and found that the two mechanisms negatively affect the management of earnings but have a positive interactive effect. Nevertheless, Lam et al. (2019) point out that IFRS adoption increases earnings management, and the cumulative outcome is more noticeable in low trust countries. Similarly, DeFond et al. (2019) indicate that IFRS convergence leads to a favourable Chinese stock market, and this impact is more distinct in firms with a larger dependence on external capital.

### **Adoption of IFRS and earnings management**

Previous studies by Bakker (2017) on the influence of IFRS adoption on earnings management have inconsistencies. Universally, the research by DeFond et al. (2014) found a positive impact of IFRS adoption on accounting quality. However, according to McEwen (2014), the IFRS is expected to advance the market infrastructure, minimise the cost of processing information, improve reporting quality as well as attract foreign investments. According to George et al. (2017), a IFRS statement discloses earnings management in terms of income smoothing and loss avoidance better than the local GAAP. Research by Ding et al. (2018) shows that the IFRS adoption assists in minimising the complexity and in developing the transparency of financial reporting in Hong Kong. However, research by Zealand and Zealandb (2015) demonstrates that cross-country variances in accounting quality will continue following IFRS adoption. The reason is because the accounting quality is a function of the firm's general institutional structure that reflects the political and legal structures of the nation in which the firm resides.

Some studies have looked at IFRS adoption in the UK and have found that the introduction of the IFRS has improved the value of relevant accounting figures and decreased the level of earnings management (Iatridis and Rouvolis, 2010). By contrast, some studies indicate that after IFRS adoption in France, there has been a noted increase in the pervasiveness of earnings management. These different findings across countries show the significant role of national institutional factors in framing the characteristics of financial reporting (JeanJean and Stolowy, 2008). Moreover, Zhou et al. (2009) studied a sample of Chinese firms and observed how the adoption of IFRS affects earnings management. The difference between earlier Chinese standards and the IFRS is that the latter is principle-based while the former is rule-based. Additionally, the post-adoption earnings are less smooth, which is consistent with a reduction in earnings management. Zhou et al. (2009) point out that the improvements of IFRS adoption are, to some extent, neutralised by additional opportunities to manage earnings.

The results of studies which use a unique sample

cannot be generalised to other countries (Barth et al., 2008). Subsequently, Barth et al. (2008) create a sample of 1,896 firm-year observations for 327 firms in 21 countries which adopted the IAS for the first time between 1994 and 2003. They research how the IAS adoption affects the level of earnings management. The results show that the IAS adoption decreases the level of earnings management (Barth et al., 2008). Accordingly, the research findings claim that the IFRS allows additional flexibility to managers. Some studies found that the IFRS is descriptive in nature and allows the choice between some substitute actions.

In the current literature, the findings for earnings management are mixed. The first hypothesis has been developed based on previous research as follows:

H1: The level of earnings management is lower after the adoption of IFRS in China.

### **The role of board characteristics on constraining earnings management**

There are two reasons that motivate the board of directors to use their monitoring actions to decrease earnings managements. The first reason is to stop managers from using their power over earnings management against the interests of shareholders. The second reason is to prevent controlling shareholders from undermining resources for their benefit against the interests of minority shareholders. Accordingly, the board of directors can enforce effective constraints on earnings management.

In addition, previous studies indicate that managers could manipulate earnings to mislead shareholders which then become a possible agency cost. Furthermore, the board of directors can play a significant role in constraining earnings managements through effective monitoring that maintains the credibility of the financial reports. As well, some studies show evidence of the importance of the board's role in monitoring financial reporting and preventing the manipulation of accounting information.

The effectiveness of board governance is affected by the number of board members. Despite the fact that some studies have mixed results on the relation between board size and earnings management, numerous empirical studies confirm the existence of such a relation. Nevertheless, there are less empirical studies on the effect of board size on earnings management than those after IFRS adoption. Based on the organisation and agency behaviour theories, some researchers point out that having a big board of directors is not always the best option. Controlling and legalising strategic decisions as well as preventing the manipulation of financial information are indication of a protective board of directors. The board's objectivity on the firm helps them

to monitor it but their excellent skills and expertise also help. Numerous studies including Verriest et al. (2013) and Xie et al. (2003) emphasise that the only way to minimise the risk for a firm is through involving more directors who will, in turn, bring more external resources, involvement as well as the knowledge on decreasing earnings management. Moreover, the interests of various stakeholders on the board can be easily organised by different representatives of stakeholders. Wang and Xiao (2011) is one of earlier Chinese studies to point out that board size and earnings management normally have a negative relation.

Following the previous discussion, this study assumes that board size will constrain earnings management after IFRS adoption.

H2: The role of board size on constraining earnings management is higher after IFRS adoption.

Based on the agency viewpoint of earnings management and board independence, the ability of the board to perform successful monitoring depends on its independence from management. Moreover, many empirical studies have shown independent directors' effect on earnings management through monitoring. Further, the existence of independent directors decreases the probability of fraud in a financial statement (Beasley, 1996). The control of earnings management in addition to the financial accounting can only be effective by having more boards which are independent from the CEO. Other studies specify that earnings management is not likely to occur in firms with boards that include more independent outside directors (Xie et al., 2003). Nevertheless, studies claim that independent directors of listed firms in China play a significant role because of a higher percentage on the board lowers earnings management (Zhang and Chen, 2006). On the other hand, Cai et al. (2008) illustrate that earnings management has no substantial relationship with independent directors. Using 2002 to 2004 data obtained from listed firms, Wang (2006) observes the relationship between earnings quality and independent directors. The result of the study is that there is no significant role of independent directors in China. According to Cumming et al. (2016), financial reporting problems include high levels of technical information and therefore, a great magnitude of earnings management. According to the study by Xiong and Ganguli (2014), the restriction on earnings management involves the independent directors. However, Osma (2017) argues that independent directors as members of the audit committee minimise earnings management by wisely monitoring supervisory decision-making. Therefore, self-governing directors have incentives to earnings management.

H3: The role of independent directors on constraining earnings management is greater after IFRS adoption.

**Table 1.** Descriptive statistics.

Variable	Mean	Min	Max	Sd	N
ABAC	0.140	0	0.740	0.130	7394
LEVERAGE	0.600	0.060	2.630	0.370	22713
SIZE	21.14	9.07	41.10	1.350	22724
ROA	0.070	-0.230	0.530	0.110	22714
GROWTH	3.730	-6.300	28.84	4.120	19078
IFRS	0.600	0	1	0.490	26360
Bsize	10	5	20	2.300	18204
Blnd	4	1	10	0.870	18204
Big4	0.040	0	1	0.190	28996

## METHODOLOGY

### Data collection

This research uses Chinese listed firms from the Shenzhen and Shanghai stock exchanges. The data comes from the China Centre for Economics Research (CCER) database and from the Accounting Research Database (CSMAR) which was created by the GTA Information Technology Company. The observation period ranges from 2003 to 2013 but excludes 2007. The reason for omitting 2007 is that this was the first year in which the IFRS was adopted and it could be biased and not reflects the real situation. The observation period was divided into two subperiods. The first is the pre-IFRS period of 2003 to 2006. The second group is the post-IFRS of 2008 to 2013. The research does not include financial firms because of the differences in accounting measurements between these firms and those of other industries. Since the empirical analyses require particular test variables to enable the calculation, the sample only includes those firms with valid data.

$$[TACC]_{it} = [ [a(1 [ /ASSETS ]_{it-1}) + b( [ [\Delta REV]_{it} - \Delta REC]_{it}) + cPPE]_{it} + \varepsilon ]_{(i,t)}$$

TACC represents the total accruals for firm (i) in year (t); ASSETS<sub>it-1</sub> represents the total assets for firm (i) in period t-1;  $\Delta REV_{it}$  includes the revenues in period t minus the revenues in period t-1;  $\Delta REC_{it}$  includes the period t receivables minus the period t-1 receivables for firm i; PPE<sub>it</sub> represents the gross

$$ABAC_{it} = [\beta_1 IFRS + \beta_2 Bsize + \beta_3 Blnd + \beta_4 LEVERAGE + \beta_5 SIZE + \beta_6 ROA + \beta_7 GROWTH + \beta_8 Big4 + \varepsilon]_{(i,t)}$$

ABAC represents the absolute value of the abnormal accruals, while SIZE signifies the natural logarithm total assets. ROA signifies the return on assets ratio (control variable). LEVERAGE represents the total debt divided by total assets (control variable). GROWTH signifies the share price divided by the book value per share (control variable). The IFRS represents a dummy variable that equals one if the financial statement is prepared under IFRS, and zero otherwise. The total number of board members is represented by Bsize, while Blnd signifies board independence and equals the ratio of the number of directors on the board to the number of outside directors.

## RESULTS AND DISCUSSION

### Descriptive statistics

Table 1 summarises the descriptive statistics for the

### Measurement and empirical model

This research develops various models to segregate the total accruals into two groups: nondiscretionary and discretionary. The Jones (1991) model is used to calculate the absolute value of the abnormal accruals. Dechow et al. (1995) modifies the Jones model to measure the level of earnings management with a regression. The firms' PPE and net value revenue are the ones that this model uses to estimate the normal accruals in the same industry. The amount of accruals below or above the standard accruals represents the firms' abnormal accruals that this regression generates as residuals. The degree to which the normal accruals depart from the total accruals represents the level of earnings management which is measured as the absolute value of the residual. The low earnings quality is indicated by the high absolute value of the abnormal accruals.

property, plant, and equipment of firm i in period t; and  $\varepsilon_{it}$  is the firm's error term i in period t.

An OLS estimation evaluates whether the extent of earnings management is lower after IFRS adoption:

whole sample. The mean of the absolute values of the abnormal accruals is 0.140, while the minimum and maximum values of ABAC are 0.740 and 0. The mean size of the firms is 21.14. The mean for leverage is 0.600 with a maximum value of 2.630. Big 4 audit firms handle only 4% of the sample firms, which is unlike the audit market in the more developed capital markets. Most of the constant control variables have an approximately symmetric distribution.

### Univariate analysis

The matrix of Pearson correlations is shown in Table 2. This matrix provides the correlations among the coefficients for the variables in the regression model. The

**Table 2.** Correlation person matrix.

Correlation	ABAC	LEVERAGE	SIZE	ROA	GROWTH	IFRS	Bsize	Blnd	Big4
ABAC	1								
LEVERAGE	0.282***	1							
SIZE	-0.089***	0.050***	1						
ROA	0.030***	0.034***	-0.318***	1					
GROWTH	0.023**	-0.004	-0.205***	0.110***	1				
IFRS	-0.020*	-0.058***	0.086***	0.175***	0.139***	1			
Bsize	-0.026*	-0.123***	0.012*	0.396***	0.190***	0.331***	1		
Blnd	-0.031***	-0.006	-0.023***	0.736***	0.037***	0.191***	0.559***	1	
Big4	-0.007	0.012*	0.301***	-0.01	-0.043***	0.005	-0.002	0.036***	1

**Table 3.** VIF Collinearity test.

Variable	TF	VIF
ABAC	0.448	1.612
LEVERAGE	0.767	1.257
SIZE	0.706	1.295
ROA	0.757	1.435
GROWTH	0.644	1.368
IFRS	0.779	1.355
Bsize	0.633	1.368
Blnd	0.449	1.747
Big4	0.751	1.262
ABAC	0.382	1.367
LEVERAGE	0.454	1.369
SIZE	0.658	1.855

The sample is based on data from 2003 to 2013 but excludes 2007.

independent variables of the model correlate with the absolute value of the abnormal accruals. Consequently, the IFRS users and the absolute value of the abnormal accruals have a significantly negative association. As such, this association indicates that the firms which use the IFRS have a lower absolute value of abnormal accruals that result in high quality accruals. Consequently, there is a significantly negative correlation between the absolute value of the abnormal accruals and the period of post-IFRS. According to Ohlson (1995) and Dechow et al. (1995), higher quality accruals are related to a lower absolute value for the abnormal accruals. Another indication is that the firms that have adopted IFRS have a highly significant association if they are larger. Moreover, a positive correlation exists between the larger size and the IFRS in terms of firms that use it. Moreover, this correlation exists for a lower debt level, lower return on assets ratio and lower growth. Field (2009) confirms that "correlation coefficients measure the strength of association or relationship between two variables". The strength of the correlation is between plus and minus one. The matrix of Pearson correlations can

be used to not only detect multicollinearity between variables but also to detect the strength of the relations between variables. This study tests for multicollinearity by finding the values of the variance inflation factors for the independent variables as indicated in Table 3. The occurrence of multicollinearity in a given model is not only the factor of a tolerance nearer to zero but also VIF values larger than 10. The results indicate that multicollinearity is not a concern in the regression in the model.

### Multivariate analysis

According to Dechow et al. (1995), the absolute values of the abnormal accruals are used to estimate the model with the results that are shown in Table 4. Based on the study's hypothesis, lower earnings management should exist after the IFRS is adopted in China. However, there is a significant rise in earnings management as indicated in Table 4 (p-value 0.0650) which contradicts the hypothesis. According to Van Tendeloo and Vanstraelen (2005), this result could be because of numerous issues

Table 4. OLS models.

Variable	2003-2006			2008-2013			Full Model		
	Coefficients	t	P	Coefficients	t	p	Coefficients	t	p
IFRS	-	-	-	-	-	-	0.007*	(1.85)	0.065
SIZE	-0.005	(-1.39)	0.166	-0.020***	(-12.14)	0.000	-0.017***	(-11.90)	0.000
ROA	-0.000	(-0.01)	0.994	0.054**	(2.16)	0.031	0.051**	(2.45)	0.014
GROWTH	-0.001	(-0.46)	0.391	0.000	(0.06)	0.950	-0.000	(-0.03)	0.978
LEVERAGE	0.112***	(12.14)	0.000	0.135***	(23.39)	0.000	0.126***	(25.94)	0.000
Bsize	-0.000	(-0.86)	0.381	0.000	(0.34)	0.510	0.000	(0.64)	0.370
Blnd	-0.000	(-0.36)	0.421	-0.028***	(8.46)	0.000	-0.048**	(8.53)	0.006
Big4	0.014	(1.24)	0.217	0.014**	(1.98)	0.048	0.015***	(2.61)	0.009
Constant	0.182**	(2.22)	0.027	0.462***	(9.67)	0.000	0.431***	(11.99)	0.000
Industry	Controlled	-	-	Controlled	-	-	Controlled	-	-
Observations	1,794	-	-	4,670	-	-	6,464	-	-
Adjusted R-squared	0.098	-	-	0.143	-	-	0.128	-	-
F	8.756	-	-	32.21	-	-	37.34	-	-

T-statistics in parentheses \*\*\*p<0.01, \*\*p<0.05, \*p<0.1.

which limit the success of adopting the IFRS. And the major worry involves the greater utilisation of fair value accounting when adopting the IFRS. They argue that there is liquidity in capital markets as in the emerging markets that allows managers to greatly affect the quoted prices (Van Tendeloo and Vanstraelen, 2005). Hypothesis one is rejected because managers have a high probability of influencing the estimation through their choice of preferred parameters and models as well as estimating fair values through models of valuation which lead to noisy results. Therefore, as the results of this study show, earnings management was not controlled through the firms who adopted the IFRS. In general, these results align with several studies including Hail et al. (2010) and Van Tendeloo and Vanstraelen (2005) and who argue that those countries without appropriate institutional infrastructures and suitable capital market paradigms do not effectively implement IFRS enough to support reporting rules. Yuanhui et al. (2014) argue that firms that follow cost leadership strategy are more likely to have a higher level of real earnings management. These results have been criticized by Kim et al. (2013) for two reasons. First, the differentiation between companies adopting IFRS in full of partial adopters is not easy. Second, there is a general tendency to improve the quality of reports which makes impossible to exclude the possibility that companies applying local standards, improve the quality of their reports. Table 4 illustrates the results from using the board's independence and size. It shows that the coefficient for Bsize is not significant. Consequently, the earnings management does not have a significant association with this factor, and there is no differential effect between pre- and post-IFRS. The reason is that as the board size does not have a strong effect on controlling managers in China. On the other

hand, after the IFRS adoption, the coefficient is significant and positive for role of actors on managers.

Separate models are used for pre-and post-IFRS. The aim is to know whether each period had a significantly different coefficient for the test variables of Bind and Bsize. The results on these variables are consistent with earlier studies regarding earnings management, and they indicate that the adjusted R-square values of both models are 9.8% for the pre-IFRS model and 14.3% for the post-IFRS regression. There is no significant coefficient for Blnd in the pre-IFRS model which shows that the earnings management prior to the IFRS adoption was not affected by high numbers of independent directors. However, a larger coefficient is observed in the post-IFRS period. Using a t-test, the two coefficients statistically differ at the 1% level. The third hypothesis of this study is validated through these results in which after IFRS adoption, independent directors could efficiently constrain earnings management. In general, the third hypothesis is supported through the results in Table 4 as the results show that after IFRS adoption, the earnings management can be effectively decreased through board independence; the same results do not prove the second hypothesis which theorises that the earnings management would be affected by the board size after IFRS adoption.

### Test of robustness

This study applies a robustness test to see whether the earlier studies are robust. Using the model of Kasznik (1999), the results in Table 5 for the absolute value of the abnormal accrual estimation are checked for robustness. The following model comes from Kasznik (1999).

**Table 5.** OLS model using interaction variables.

Variable	Coefficient	t	p
IFRS	0.008*	(1.92)	0.041
SIZE	-0.016***	(-10.68)	0.000
ROA	0.037*	(1.76)	0.078
GROWTH	0.000	(0.40)	0.691
LEVERAGE	0.124***	(25.12)	0.000
Big4	0.017***	(2.80)	0.005
Bsize	0.000	(0.64)	0.370
BInd	-0.048**	(8.53)	0.006
IFRS*Bsize	0.000	(0.42)	0.730
IFRS*BInd	-0.016*	(2.67)	0.016
Constant	0.391***	(10.75)	0.000
Industry	Controlled	-	-
Observations	6,464	-	-
Adjusted R-squared	0.126	-	-
F	34.49	-	-

T-statistics in parentheses; \*\*\*p<0.01, \*\*p<0.05, \*p<0.1.

$$[TACC]_{it} = [ [a(1 [ /ASSETS ]_{(it-1)}) + b( [ [\Delta REV]_{it} - \Delta REC]_{it}) + cPPE]_{it} + [d\Delta CFO]_{it} + \varepsilon ]_{(i,t)}$$

The results from the robustness test are in accordance with the regression model that was previously performed. Thus, the results remain the same.

Further, two additional regression models are used on the entire sample (pre- and post-IFRS) by using interaction variables to validate the results. The models are defined as follows:

$$ABAC_{it} = [\beta_1 IFRS + \beta_2 Bsize + \beta_3 BInd + \beta_4 LEVERAGE + \beta_5 SIZE + \beta_6 ROA + \beta_7 GROWTH + \beta_8 Big4 + \beta_9 IFRS * Bsize + \beta_{10} IFRS * BInd + \varepsilon]_{(i,t)}$$

As shown in Table 5,  $\beta_{10}$  is statistically significant and negative in the regression. The interaction terms capture the impact of board independence on the discretionary accruals for the post-IFRS period relative to the pre-IFRS introduction period. Thus, the results show that BInd becomes more influential in affecting discretionary accruals for the post-IFRS years, which means that increasing the number of independent directors decreases the absolute value of the discretionary accruals.

## Conclusion

This research has evaluated the effects of IFRS adoption on earnings management by considering the role of board size and board independence for a sample of listed firms in China from 2003 to 2013. The sample generates a total of 6,464 observations for a four-year period before IFRS adoption and for a six-year period after the adoption. This study tests whether the level of earnings management is significantly lower after the adoption of the IFRS and explores the roles of the board's size and

independence on earning management in the two periods. The empirical results indicate that IFRS adoption increased the earnings management in China and there was no association between earnings management and board size before and after the adoption of the IFRS, however, increasing the number of independent directors decreases earnings management after IFRS adoption. The study concludes that just focusing on accounting standards alone is misleading and incomplete. It contributes to the literature by providing evidence on the effect of IFRS on earning management in developing economies. Currently, several developing economies and countries have either adopted the IFRS or have mostly converged with it, but the literature provides little evidence on its impact in a developing economy. This study adds to the literature that financial reporting quality is shaped not only by financial reporting standards, but also reporting incentives, corporate governance and institutional factors. Listed firms in China do not respond to reporting incentives due to the lack of effective governance systems, and therefore cannot monitor or provide strong investor protection by adopting superior quality accounting standards. Furthermore, the IFRS

offers greater flexibility that creates additional opportunities for managing earnings in the Chinese firms. The evidence provided by this study might be quite interesting to investors and regulators since China has become significant in the global economy. Still, the evidence is also important not only for emerging countries with similar institutional characteristics and capital markets but also to local standard setters. This study recommends additional future research to be carried out in other environments in order to reveal the effect of adopting IFRS more completely. Moreover, future studies can similarly consider other attributes of accounting quality such as timeliness, persistence, comparability, predictability and earnings conservatism while examining the role of board characteristics.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# **Do economic variables still influence tax compliance intentions of self-employed persons in developing economies? Evidence from Ghana**

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The purpose of this study was to establish whether tax compliance intentions of tax-registered self-employed persons are still influenced by economic variables instead of non-economic variables which are now at the centre stage in tax compliance research. A quantitative research design based on a survey of 453 self-employed persons randomly selected from 15 Small Taxpayers' Offices across the Greater Accra region was used. Data was analysed using the Statistical Package for Social Sciences (SPSS) version 24 software complemented with a correlation analysis and validated using multiple regression and one-way analysis of variance. Results indicate that if the Ghana Revenue Authority (GRA) conducts frequent audits on business records and activities, and imposes lower tax rates on self-employed persons, a moderate but positive effect on tax compliance could be achieved. The results also indicate that higher fines could have a moderate negative effect on tax compliance decisions. Lastly, the level of income of self-employed persons was found to have weak but positive effects on their tax compliance intentions. The overarching results from this study indicate that economic variables do have positive but moderate effects on tax compliance intentions of self-employed persons in developing economies. It was recommended that the tax administration authority should not place too much emphasis on higher fines and imposition of higher income tax rates to encourage voluntary compliance, but instead, should place more emphasis on auditing of records and returns, and engage and provide holistic support to enable self-employed persons to grow and expand their businesses.

**Key words:** Tax, compliance, self-employed persons, Ghana, underreporting.

## **INTRODUCTION**

Every government requires all taxable persons to honestly declare the full extent of their incomes for tax purposes. However, studies on tax compliance have shown that among all taxable persons, self-employed persons and individuals are the most predisposed to tax

noncompliance compared with employed persons (Spicer and Lundstedt, 1976) and that this group of taxpayers do underreport their income to the tax authorities (Andreoni et al., 1998, Clotfelter, 1983b; Feinstein, 1991). Research on tax compliance has centered on economic factors

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(Allingham and Sandmo, 1972; Alm et al., 1992) and non economic factors (Smith and Stalans, 1991; Hyun, 2005). Prior tax compliance studies have also observed that this group of persons constitutes the biggest share of the taxpaying population in many countries (Joshi et al., 2013; Engstrom and Holmlund, 2009; Joulfaian and Rider, 1998). The economic implications of these findings are that governments in developing economies are unable to derive the desired tax income from this group of taxpayers for development. This problem is compounded by the recent global economic downturn as otherwise traditionally reliable annual budgetary support from developed economies to developing economies dwindles (Brondolo, 2009). The study applies the known economic variables of tax compliance (tax rate, probability of audit, penalties and income level) to measure and predict the level of compliance of self-employed persons in a context of a developing economy to ascertain whether their taxpaying intentions were influenced by the traditional economic tax compliance determinants as proposed by Allingham and Sandmo (1972). The study could not obtain the tax compliance intentions of self-employed persons who had not been registered with Ghana's Tax Revenue Authority. The absence of this vital information implies that the full extent of the purpose of this study has not been served. Prior tax compliance studies have failed to accurately predict tax compliance intentions of tax-registered self-employed persons operating in the economy. The study is unique in its adoption of four economic determinants to test whether the traditional economic variables are still relevant in predicting tax compliance. Current studies on tax compliance have shifted from the traditional economic model to behavioral and psychological aspects of tax compliance and largely dominated by studies in the advanced economies. The study sought to test these economic models to determine whether self-employed persons would still respond to changes in these economic variables. Indeed, the study observed that self-employed persons' taxpaying intentions are largely influenced by the economic model. The implication of this finding is that, these taxpayers are still at the basic level of tax compliance and may not have reached the advanced form of compliance which is mostly non-economic. This implies that these taxpayers do comply to tax laws largely for economic reasons. It should however be noted that we could not conclude that these taxpayers are not influenced by non-economic determinants because it is outside the scope of this study. The study is also unique in Ghana because it is the only study that has combined the four principal economic models in a single study to predict the tax compliance level of self-employed persons. We believe that this prediction model could be extended to non tax-registered self-employed persons operating in the shadow economy if data is obtained on them. Getting this group of taxable persons into the tax net could help reduce budget deficit in developing economies. Unlike the

advanced economies, this study finds that taxpaying intentions in the developing economies are still largely influenced by economic factors.

The study answered the following research questions:

Research Question 1 ( ${}_{1}R_{1}$ ): Is there a statistical relationship between income level and tax compliance intentions of self-employed persons?

Research Question 2 ( ${}_{2}R_{2}$ ): Is there a statistical relationship between higher fines or penalties for evading taxes and tax compliance intentions of self-employed persons?

Research Question 3 ( ${}_{3}R_{3}$ ): Is there a statistical relationship between high audit probability and tax compliance intentions of self-employed persons?

Research Question 4 ( ${}_{4}R_{4}$ ): Is there a statistical relationship between high income tax and tax compliance intentions of self-employed persons?

The study is important in many respects it adds to existing literature on tax compliance studies by exploring the existing economic variables in a different cultural context. Existing tax compliance point to cultural dimensions as affecting individual compliance decisions (Alm et al., 1995; Gerxhani and Schram, 2006; Richardson, 2006) but current literature is dominated by compliance behaviour of individuals and self-employed persons in the advanced economies. Some few studies such as Nsor-ambala (2015) have been conducted in Ghana but did not employ the data collection tool employed in this study and none has also combined all the four economic variables in a single study. The findings from the study could also serve as policy guide for governments in developing economies to be more accurate in measuring and predicting tax compliance behaviour of self-employed persons. The government of Ghana has also set an ambitious plan to put the country on the path of economic independence under the theme 'Ghana beyond aid'. To be able to realise this plan, improved tax compliance by self-employed persons could help improve domestic tax revenue which is a cornerstone of the Ghana Beyond Aid agenda.

## REVIEW OF RELATED LITERATURE

Tax compliance behaviour has been considered by tax compliance researchers from two perspectives: economic and non-economic factors. There are those who believe that tax compliance behaviour can be explained from pure economic perspective (Allingham and Sandmo, 1972; BĂTrĂNcea et al., 2012; Helsing et al., 1992; Moser et al., 1995; Sheffrin and Triest, 1992; Other tax compliance researchers (Alabede et al., 2011; Alm and Torgler, 2011; Cummings et al., 2009; Orviska and Hudson, 2003; Pickhardt and Prinz, 2014; Song and Yarbrough, 1978; Torgler et al., 2010; Vogel, 1974),

believe that tax compliance behaviour should be explained from behavioural, political, sociological and psychological dimensions.

Tax researchers and scholars who view tax compliance from pure economic perspectives have, in addition, made an observation that tax compliance decisions made by self-employed persons or individuals are primarily economic in nature and could be affected by the probability of being audited, detected and fined, level of income and how much to disclose, and the level of tax rates applicable to their declared income (Allingham and Sandmo, 1972; Clotfelter, 1983a; Moser et al., 1995; Sheffrin and Triest 1992; Hessing et al., 1992, Mason and Calvin, 1978; BĂTrĂNcea et al., 2012; Devos, 2014). This study was guided by the following theories:

### **Economics-of crime theory**

According to Allingham and Sandmo (1972), the pioneers of the economics-of-crime theory or the standard economic model, every taxpayer may be faced with two options: to declare the full income to the tax authorities or to declare only a portion of such income. Being a decision under uncertainty, failure to report total revenue does not automatically attract a fine unless the tax authorities audit the taxpayer. However, with the possibility of being audited, the taxpayer is better off declaring his full income if the penalty for evasion is greater than the benefit envisaged by evading. If there is no auditing, then the taxpayer is better off with option two. The theory again considers the tax compliance individual as aiming to maximize expected utility from evading taxes and weighs the benefits of successful cheating and risk of tax fraud through detection and punishment. Where the taxpayer perceives high probability of being detected and fined through auditing, non-compliance should decrease. Under this theory, therefore, the only source of motivation for the individual to honour their tax obligation is the fear of detection and punishment. In order to change the tax compliance behaviour therefore, punitive and preventive measures such as penalties and regular audits are necessary.

### **Fiscal psychology model**

As tax researchers and scholars became increasingly convinced that the economics-of-crime theory was inadequate to explain tax compliance behaviour, parallel research studies had begun, which sought to modify or improve upon the pure economic-of-crime theory. The fiscal psychology model is an integration of some aspects of the economic deterrence model and the social psychology model (Devos, 2014). The authors of this theory believed that tax noncompliance and evasion was not only influenced by economic factors but by a

combination of both economic and social norms that shaped the behaviour of taxpayers (Alm et al., 1995).

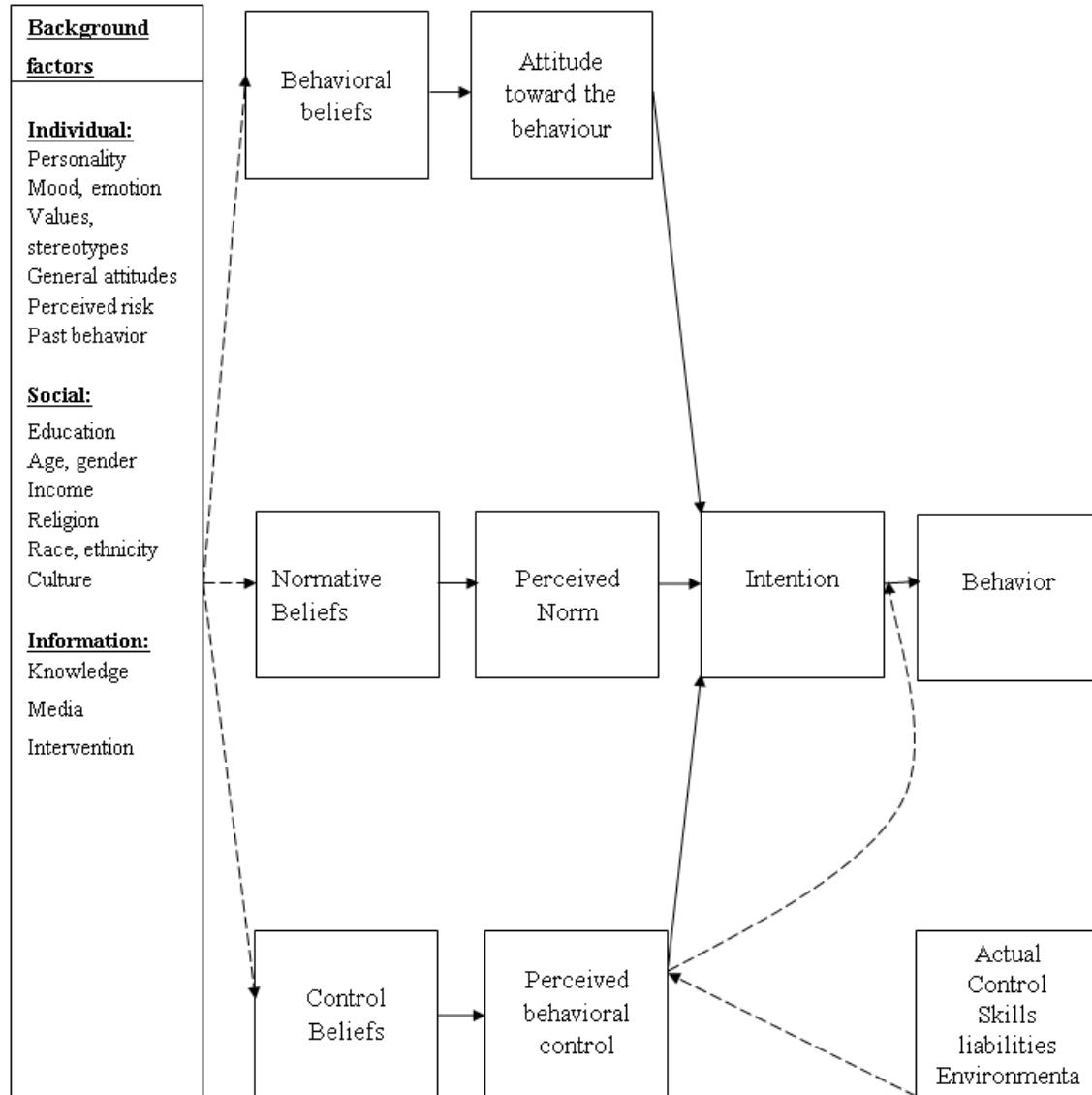
### **Theory of reasoned action**

Other tax compliance researchers argue that tax compliance decisions are not influenced by economic motives alone. Arguing under "the theory of reasoned behavior", Fishbein and Ajzen (2010: 18) believe that tax compliance behaviour cannot be explained solely from economics-of-crime theory. According to them, tax compliance decisions are behavioural and that to influence these behaviours, the underlying behavioural ingredients must be dealt with. Specifically, they argue that different behaviours call for different interventions because different behaviours are based on different set of beliefs. Second, only a small number of variables namely attitude, perceived social norm, and perceived behavioural control and its underlying cognitive foundations, are sufficient to change any socially significant behaviour. Third, because beliefs represent the information people have about behaviour, providing new information can change the beliefs and this can be an effective way of changing intentions and actions. The study conceptualizes that self-employed persons possess some inherent behaviour that are repellent to voluntary tax compliance and requires changes to these salient behaviours to improve their tax compliance behaviour.

### **Prospect theory**

Some studies on tax compliance behaviour have employed this theory to explain why non-compliance is high with individual incomes first developed by Kahneman and Tversky (2000). Applying the theory, Idson et al. (2000), found that while an employed person will consider a tax withheld at source as non-gain, the self-employed persons who have to pay the same amount of tax out of their income, will perceive it as a painful loss. The prospect theory also postulates that those in the loss domain are more risk seeking than those in the gain domain. Thus, for the self-employed persons owner, paying taxes is not only considered painful, but puts them in a decision frame that makes them risk-seekers (Figure 1).

Other researchers also found that incomes that are not subject to third party scrutiny and reporting are predisposed to noncompliance (Joulfaian and Rider, 1998; Dhami and al-Nowaihi, 2007; Jackson and Hatfield, 2005). These researchers applied the prospect theory to advance tax payments in the U.S and found that a refund from an advance tax payment constituted a gain and resulted in lower non-compliance. A recent study by Kamleitner et al. (2012) observed that self-employed persons perceive tax payment as a loss and thus an 'out



**Figure 1.** Schematic Presentation of the Reasoned Action Model. Adapted from "Predicting and Changing Behavior, The Reasoned Action Approach," by M. Fishbein, and I. Ajzen, 2010

of pocket cost', which in effect represents a loss frame.

## METHODOLOGY

This quantitative study employed a cross sectional survey design with self-administered seven-point Likert-scale and closed-ended questionnaires to measure and predict the statistical relationships when changes in the independent variables occur. According to Babbie (2002) and Creswell (2007, 2009), the purpose of a survey research is to generalize from a sample to a population so that inferences can be made about some characteristic, attitude, or behaviour of the population. Babbie's study employed a validated survey method adopted by Elffers et al. (1987) in which empirical data obtained from the Dutch tax authorities were compared with self-reported data obtained from field work in order to use the official data as a control data. The methodology used comprised Likert-scale type questions that were based on scenarios such that participants were to respond to questions that were abstract and

not directed at them.

This blend of Likert-scale questions and scenarios has been used, tested and validated by Nsor-ambala (2015) to examine the effects of ethical considerations on compliance behaviour of selected self-employed in the Greater Accra tax jurisdiction. Preliminary enquiries were made from the STO to request all the data on all the small businesses that had been registered with them for tax purposes in the Greater Accra Region. Data on location, addresses, telephone numbers and email addresses on all registered small businesses were obtained from The National Board for Small Scale Industries (NBSSI), which was used to complement the data that was obtained from the STO. The data collected from the fieldwork was analysed using Statistical Package for Social Sciences (SPSS) software and the results were then compared with the empirical data to find out if the outcome was comparable or distinct from the findings made by Elffers et al. (1987).

The steps adopted to obtain data and the processes to analyse the data obtained from this study followed strictly all the ethical

guidelines accepted in academic research and in accordance with the American Psychological Association (APA, 2002) ethical guidelines. Specifically, steps were taken to get the consent of all participants. The revenue authority was also contacted to obtain its consent to contact the taxpayers in the selected tax districts. In addition, participants were assured of the strictest confidentiality of the information they provided for the study in relation to how it was to be analysed and stored. In order to achieve these ethical and confidentiality objectives, the following steps and procedures were embarked upon to solicit information from respondents.

First, a formal contact and enquiry was made at the Small Taxpayers Office (STO) during which an official request for permission was made to the Commissioner of the Domestic Tax Division (DTD) and copied to the Deputy Commissioner in charge of the Small Taxpayer for data collection in the various STO districts in the Greater Accra Region.

The STO Deputy Commissioner declined the initial request for permission because it was not addressed to the Commissioner of DTD as required by the internal administrative procedures. The letter requesting for taxpayers' data was later re-addressed to the appropriate officer and re-submitted to the GRA Head Office. In order to ensure that the GRA was fully aware of the objectives and purpose of the study, a copy of the questionnaire was attached to the request letter. However, when the date for the collection of the taxpayers' data was due, the researchers were informed that the STO Head Office did not have the details of the taxpayers' files and that such data could only be obtained directly from the districts citing data protection law to support the decision.

Based on the setback in obtaining the data required, the researchers requested for participation directly from selected self-employed persons based on the sample size using random sampling.

The informal approach was considered most suitable in getting the consent and participation of the participants than the formal approach. The reason could be found in a similar study by Wahl et al. (2010). In this study, it was observed that contacting taxpayers formally on their taxpaying intentions could adversely affect their participation in a survey (Wahl et al., 2010).

The revised technique was inherently limited because it could not distinguish between tax-registered self-employed persons from non-registered ones. Their taxpaying status could only be established during the interview. Two days were allocated for data collection in each of the 15 STO districts. In all, 30 days were used to administer the questionnaires and the interviews to 453 sampled taxpayers in all the 15 Small Taxpayers' Districts.

The data collection instrument used in the study was a questionnaire complemented with interviews. The interviews became necessary after the authors discovered that many of the participants could not administer the questionnaires without assistance. After the respondents had completed the questionnaires and the interviews, the responses were collected, uploaded and collated and an online form using Google forms for the data entry of the questionnaire was created. Once the data entry of the questionnaires and the interview were completed, the raw data was then exported and entered to MS Excel 2013 format. The excel file was then exported from MS Excel 2013 into SPSS version 24 software where it was coded and prepared for data analysis.

**Multiple regression analysis**

Multiple regression analysis was used to examine the combined relationships between the independent variables (tax rate, income level, audit probability, and fines) and the dependent variable of tax compliance.

According to Draper et al. (1966) and Field (2013), the skeletal model for the multiple linear regression is given by:

$$y = \beta_0 + \beta_1x_1 + \dots + \beta_kx_k + \varepsilon \quad k = 1, 2, \dots$$

where  $\beta_0$  = intercept,  $\beta_1, \beta_2, \dots, \beta_k$  = regression estimates,

$y$  = dependent variable,  $x_1, x_2, \dots, x_k$  = the independent variables, and  $\varepsilon$  = the error term.

The data analysis tool was considered desirable because the dependent variable (Tax Compliance) and the independent variables are both quantitative in nature and many researchers have employed it in similar studies (Contos et al., 2009; Picur and Riahi-Belkaoui, 2006). Andreoni et al. (1998), observed that researchers mostly use standard econometric models to analyse tax non-compliance data, but where necessary, specialized models have been relied on to deal with unusual issues that usually arise in analysing compliance data.

**Correlation analysis**

Correlation analysis was also used to test the hypothesis outlined in the study. The correlation helped us to determine whether there was a significant relationship or non-significant relationship. It also helped us determine the direction of the relationship whether the relationship between the dependent variable and the independent variables were positively related or negatively related. The correlation estimate is represented by  $r$ . The value for  $r$  lies between the range of -1 and +1, respectively. The closer  $r$  approaches +1 the stronger the relationship and the closer  $r$  approaches -1 the weaker the relationship.

According to Cohen et al. (2013) and Field (2013), the classification of the structure of a correlation relationship should adhere to the following rule of thumb:  $0 \leq r \leq 0.3$ , weak relationship;  $0.4 \leq r \leq 0.6$ , moderate relationship;  $0.7 \leq r \leq 1$ , strong relationship.

Conversely, the same rule of thumb still holds:  $-1 \leq r \leq -0.7$ , weak relationship;  $-0.6 \leq r \leq -0.4$ , moderate relationship;  $-0.3 \leq r \leq 0$ , strong relationship.

The formula for the correlation coefficient is given by:

$$r = \frac{S_{xy}}{\sqrt{S_{xx}S_{yy}}}, \quad -1 \leq r \leq 1$$

$$S_{xy} = \sum(x - \bar{x})(y - \bar{y}) = \sum xy - \frac{(\sum x)(\sum y)}{n}$$

$$S_{xx} = \sum(x - \bar{x})^2 = \sum x^2 - \frac{(\sum x)^2}{n}$$

$$S_{yy} = \sum(y - \bar{y})^2 = \sum y^2 - \frac{(\sum y)^2}{n}$$

If the significance value associated with the correlation coefficient obtained from the bivariate correlation between a particular independent variable and a dependent variable is less than 0.05, then we reject the null hypothesis at a 95% confidence level. Furthermore, if the significance value is less than 0.01, then we reject the null hypothesis at a 99% confidence level. The rejection of the null hypothesis indicates the existence of a relationship between the dependent variable and independent variables. In all other cases, we fail to reject the null hypothesis because there is no association between the dependent variable and the independent

**Table 1.** Analyses the variance for multiple linear regression used in the study.

Model	Df	SS	MS	F-statistic
Regression	$k$	SSR	$MSR = \frac{SSR}{k}$	$F = \frac{MSR}{MSE}$
Residual	$n - k - 1$	SSE	$MSE = \frac{SSE}{n - k - 1}$	
Total	$n - 1$	SST		

variables, respectively (Field, 2013).

The formula and parameters for the Analysis of Variance is given by SST = Total Sum of Squares; SSE = Error Sum of Squares; SSR = Regression Sum of Squares;  $SST = SSR + SSE$ ;

$$SST = \sum(y - \bar{y})^2 = S_{yy}; \quad SSR = \sum(\hat{y} - \bar{y})^2 = \frac{S_{xy}^2}{S_{xx}};$$

$$SSE = SST - SSR = \sum(y - \hat{y})^2 = S_{yy} - \frac{S_{xy}^2}{S_{xx}};$$

$df$  = degrees of freedom;  $SS$  = Sum of Squares;  $MS$  = Mean Square;  $MSR$  = Regression Mean Square;  $MSE$  = Error Mean Square;  $F$  = F-statistic.

Table 1 analyses the variance for multiple linear regression used in the study.

**One-way analysis of variance**

One-way analysis of variance was also used to determine the relationship between independent variables (income level, fines, audit probability and tax rate) and the dependent variable (Tax Compliance). The analysis helped to determine the relationship between a particular independent variable on the dependent variable by the courtesy of the F-statistic obtained between the dependent and independent variables. Large values for the F-statistic indicate large effect and small values indicate small effect on the dependent variable (Field, 2013).

Moreover, if the p-value associated with the relationship between the dependent and a particular independent variable is less than 0.05 or 0.01, we reject the null hypothesis and conclude the existence of a relationship. On the contrary, we fail to reject the null hypothesis and conclude no relationship exists between the dependent and independent variable (Field, 2013). The formula and parameters for the one-way analysis of variance is given by:

- SST = Total Sum of Squares
- SSTR= Sum of Squares due to Treatment
- SSE = Error sum of Squares
- SSTR is also known as SSB (Between Sum of Squares) and SSE can also be referred to as SSW (Within Sum of Squares)
- $k$  = number of populations
- $n$  = total number of observations
- $\bar{x}$  = mean of all  $n$  observations
- $n_j$  = size of sample from population  $j$
- $\bar{x}_j$  = mean of sample from population  $j$

$s_j^2$  = variance of sample from population  $j$

$T_j$  = sum of sample data from population  $j$

$$SST = \sum(x - \bar{x})^2 = \sum x^2 - \frac{(\sum x)^2}{n}$$

$$SSTR = SSB = \sum n_j (\bar{x}_j - \bar{x})^2$$

$$SSTR = \sum \left( \frac{T_j^2}{n_j} \right) - \frac{\sum x^2}{n}$$

$$SSE = SSW = \sum (n_j - 1) s_j^2$$

$$SSE = SST - SSTR$$

$$MSTR = \frac{SSTR}{k - 1}, \quad MSE = \frac{SSE}{n - k}$$

$$F = \frac{MSTR}{MSE}$$

MSTR = Treatment Mean Square  
 MSE = Error Mean Square  
 F = F-statistic.

Table 2 is a one-way analysis of variance also known as ANOVA used to analyse the data obtained from the study.

Alternatively, Table 3 was used to analyse one-way variance.

When calculating the effect sizes under one-way analysis of variance, according to the formula for calculating the effect size, it is given as:

$$\text{Eta-squared} = \frac{SSW}{SST}$$

According to Cohen (1992), the following rule of thumb applies when dealing with effect sizes (Tables 4 and 5).

**RESULTS AND DISCUSSION**

**Inferential statistics**

The dependent variable for the study was Tax Compliance. Q1, Q2, Q3, Q4, Q5, Q6, Q7 and Q8 were

**Table 2.** The one-way analysis of variance (ANOVA).

Model	Df	SS	MS	F-statistic
Treatment	$k - 1$	SSTR	$MSTR = \frac{SSR}{k - 1}$	$F = \frac{MSTR}{MSE}$
Residual	$n - k$	SSE	$MSE = \frac{SSE}{n - k}$	
Total	$n - 1$	SST		

**Table 3.** The alternative one-way analysis of variance (ANOVA).

Model	Df	SS	MS	F-statistic
Between	$k - 1$	SSB	$MSB = \frac{SSB}{k - 1}$	$F = \frac{MSB}{MSW}$
Within	$n - k$	SSW	$MSW = \frac{SSW}{n - k}$	
Total	$n - 1$	SST		

MSB = Between Sum of Squares. MSW = Within Sum of Squares.

aggregated to form the Tax Compliance Variable. The independent variables for the study were income level, fines, audit probability and tax Rate. Q1 and Q2 represent income level variable; Q3 and Q4 represent the fines variable; Q5 and Q6 represent the audit probability variable; and Q7 and Q8 represent the tax rate variable.

**Hypothesis testing**

**Relationship between level of income and tax compliance**

Research Question 1: Is there a statistical relationship between income level of self-employed persons and their tax compliance intentions?

H<sub>01</sub>: There is no statistical relationship between level of income and tax compliance

H<sub>A1</sub>: There is a statistical relationship between level of income and tax compliance

Table 6 presents the results for the correlation estimate between level of income and tax compliance. According to the results, there is a weak positive relationship between the level of income and tax compliance ( $r = 0.295, p < 0.01$ ). Moreover, since the p-value was less than 0.01 we reject the null hypothesis and conclude that

higher income level does not encourage tax non-compliance.

**Relationship between higher fines and tax compliance**

Research question 2: Is there a statistical relationship between higher fines or penalties and tax compliance intentions of self-employed persons?

H<sub>02</sub>: There is no statistical relationship between higher fines and tax compliance intentions.

H<sub>A2</sub>: There is a statistical relationship between higher fines and tax compliance intentions.

Table 7 presents the correlation analysis between higher fines and tax compliance. According to the results, there is a moderate negative relationship between higher fines and tax compliance ( $r = -0.558, p < 0.01$ ). The results further imply the null hypothesis is not accepted since the p-value was less than 0.01.

**Relationship between audit probability and tax compliance**

Research question 3: Is there a statistical relationship



**Table 4.** Rule of thumb when dealing with effect sizes.

Effect estimate	Meaning
0.01	Small effect
0.06	Medium effect
0.14	Large effect

Adapted from "A power primer" by Cohen (1992). *Psychological Bulletin*, 112(1), 155-159.

**Table 5.** Definition of variables.

Variable	Variable type	Indicators under variable
Income Level	Independent	Q1 and Q2
Fines	Independent	Q3 and Q4
Audit Probability	Independent	Q5 and Q6
Tax Rate	Independent	Q7 and Q8
Tax Compliance	Dependent	Q1, Q2, Q3, Q4, Q5, Q6, Q7 and Q8

**Table 6.** Pearson correlation between income level and tax compliance.

Correlation	Tax_compliance		
	Pearson Correlation	Sig (2-tailed)	N
Income_level	0.295**	0.000	453 corrected

\*Significant at 0.05; \*\*Significant at 0.01.

**Table 7.** Pearson correlation between higher fines and tax compliance.

Correlation	Tax_compliance		
	Pearson Correlation	Sig (2-tailed)	N
Higher_fines	-0.558**	0.000	453

\*Significant at 0.05; \*\*Significant at 0.01.

**Table 8.** Pearson correlation between audit probability and tax compliance.

Correlation	Tax_Compliance		
	Pearson Correlation	Sig (2-tailed)	N
Audit-Probability	0.669**	0.000	453

\*Significant at 0.05; \*\*Significant at 0.01.

between audit probability and tax compliance intentions of Self-employed persons?

H<sub>03</sub>: There is no statistical relationship between audit probability and tax compliance intentions.

H<sub>A3</sub>: There is a statistical relationship between audit probability and tax compliance intentions.

Table 8 summarizes the results for the correlation analysis between audit probability and tax compliance. According to the results, there is a moderate positive

relationship between audit probability and tax compliance ( $r = 0.669$ ,  $p < 0.01$ ). The results further reveal that the null hypothesis rejected the null hypothesis since the p-value was less than 0.01.

#### **Relationship between tax rate and tax compliance**

Research question 4: Is there a statistical relationship between higher income tax rate and tax compliance intentions of Self-employed persons?

**Table 9.** Pearson correlation of higher tax rate and tax compliance.

Correlation	Tax Compliance		
	Pearson Correlation	Sig (2-tailed)	N
Higher_Tax_Rate	-0.435**	0.000	453

\*Significant at 0.05; \*\*Significant at 0.01.

**Table 10.** Conclusions for hypotheses results.

Hypothesis	Supported	Not Supported
H <sub>1</sub> : There is a relationship between income level and tax compliance	✓	
H <sub>2</sub> : There is a relationship between fines and tax compliance	✓	
H <sub>3</sub> : There is a relationship between audit probability and tax compliance	✓	
H <sub>4</sub> : There is a relationship between tax rate and tax compliance	✓	

**Table 11.** Summary for multiple regression model.

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.843	0.711	0.709	22.573

**Table 12.** Analysis of variance for multiple regression model.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	562333.444	4	140583.361	275.905	0.000**
Residual	228272.211	448	509.536		
Total	790605.656	452			

\*Significant at 0.05; \*\*Significant at 0.01.

H<sub>04</sub>: There is no statistical relationship between higher tax rate and tax compliance intentions.

H<sub>A4</sub>: There is a statistical relationship between higher tax rate and tax compliance.

Table 9 presents the results for the correlation analysis between increase in tax rate and tax compliance. According to the results, there exist a moderate negative relationship between increase in tax rate and tax compliance ( $r = -0.435$ ,  $p < 0.01$ ). The results further give credence to the fact that the study fails to accept the null hypothesis.

**Hypothesis results**

**Multiple regression analysis**

Table 10 presents the results for the model summary with regard to the multiple regression model. The correlation estimates between the dependent variable (tax\_c compliance) and the independent variables (Income\_level,

fines, Audit\_probability and tax\_rate) was 0.843, which was considered to be very strong. It further implies that there was a positively strong correlation between the dependent variable and the independent variables. The table also gives us the result for the R-Square, which was found to be 0.711. The result for the R-Square implies that 71.1% of the variation in the dependent variable is explained by the independent variables (Table 11).

**Analysis of variance for multiple regression model**

The hypothesis for the analysis of variance for the multiple regression model is:

H<sub>0</sub>: The multiple regression model is not sufficient for prediction

H<sub>A</sub>: The multiple regression model is sufficient for prediction

Table 12 presents the analysis of variance results for the multiple regression model. According to the results, the

**Table 13.** Regression coefficients of multiple regression model.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-59.167	3.945	-	-14.999	0.000**
Audit-probability	0.274	0.014	0.592	18.956	0.000**
Tax_rate	0.003	0.009	0.011	0.342	0.732
Fines	0.268	0.015	0.471	18.261	0.000**
Income_level	0.057	0.009	0.164	6.352	0.000**

**Table 14.** Collinearity statistics.

Variable	Tolerance	VIF
Audit_probability	0.662	1.511
Tax_rate	0.657	1.523
Fines	0.970	1.031
Income_level	0.967	1.034

model was significant in predicting tax compliance since the p-value was less than 0.01 ( $F = 275.905$ ,  $p < 0.01$ ), hence we reject the null hypothesis and conclude that the model is good for prediction.

### Regression coefficients

Table 13 presents the results for the coefficients of the multiple regression analysis. It summarizes the estimates of the regression coefficients and gives us the regression parameters that were significant in predicting tax compliance. All the regression parameters were significant in predicting tax compliance with the exception of higher tax rate ( $\beta = 0.011$ ,  $p > 0.05$ ). The audit probability variable was significant in predicting tax compliance ( $\beta = 0.592$ ,  $p < 0.01$ ) and it obtained the highest regression estimate, which implies that it impacted the most on tax compliance among all the independent variables. Higher fine was also significant in predicting tax compliance ( $\beta = 0.471$ ,  $p < 0.01$ ) and it was the variable that obtained the second highest regression estimate. The level of income was also significant in predicting tax compliance ( $\beta = 0.164$ ,  $p < 0.01$ ) and it obtained the third highest regression estimate.

The multiple regression model is given by:  $\text{tax\_compliance} = 0.592\text{audit\_probability} + 0.011\text{higher\_tax\_rate} + 0.471\text{higher\_fines} + 0.164\text{income\_level}$

### Multicollinearity diagnostic test

Table 14 summarizes the results for the collinearity statistics. According to Field (2013), if the Value for the Variance Inflation Factor for the independent variables are between 1 and 10 then there are no multicollinearity

issues with the model. From the results, it can be observed that the Variance Inflation Factor (VIF) values for the independent variables are between 1 and 10, respectively which implies the conditions for multicollinearity have been satisfied hence there are no multicollinearity issues with the model.

### Analysis of variance for homogeneity of variance

The hypothesis for homogeneity of variance is:

$H_0$ : The variances are not equal

$H_A$ : The variances are equal

Table 15 presents the results for the homogeneity of variance analysis. According to the results, all the variables had p-values that were less than 0.01, which is captured in the sig. column of the table. According to Field (2013), if the p-value is greater than the alpha level then we fail to reject the null hypothesis, but if the p-value is less than the alpha level then we fail to accept the null hypothesis. From the results, it can be concluded that the p-value for all the variables was less than 0.01 hence we reject the null hypothesis since the homogeneity of variance assumption has been met.

### Analysis of variance for all independent variables on tax compliance

Table 16 presents the results for the analysis of variance between the dependent variable and the independent variables. According to the results, all the variables have impacts on Tax Compliance with audit probability having the highest impact ( $F = 122.247$ ,  $p < 0.01$ ) followed by higher fines ( $F = 55.178$ ,  $p < 0.01$ ), higher tax rate ( $F = 30.093$ ,  $p < 0.01$ ) and finally higher income level ( $F = 11.948$ ,  $p < 0.01$ ).

### Calculating effect sizes

Table 17 presents the results for the effect size analysis. In order to ascertain the effect each independent variable had on eta-squared, the effect sizes had to be calculated. The effect size was calculated by  $\text{Eta-squared} = \frac{\text{sum of squares between groups}}{\text{total sum of squares}}$ .

According to Cohen (1992), the following rules of

**Table 15.** Homogeneity of variance analysis.

Variable	Levene Statistic	df1	df2	Sig.
Audit_probability	40.022	13	439	0.000**
Tax_rate	231.755	13	439	0.000**
Fines	75.572	13	439	0.000**
Income_level	148.660	13	439	0.000**

\*Significant at 0.05; \*\*Significant at 0.01.

**Table 16.** Analysis of variance of all independent variables on tax compliance.

Variable		Sum of Squares	df	Mean Square	F	Sig.
Audit_probability	Between Groups	2895354.390	13	222719.568	122.247	0.000**
	Within Groups	799806.383	439	1821.882		
	Total	3695160.773	452			
Tax_rate	Between Groups	4102439.351	13	315572.258	30.093	0.000**
	Within Groups	4603572.927	439	10486.499		
	Total	8706012.278	452			
Fines	Between Groups	1517307.714	13	116715.978	55.178	0.000**
	Within Groups	928596.026	439	2115.253		
	Total	2445903.740	452			
Income_level	Between Groups	1710688.247	13	131591.404	11.948	0.000**
	Within Groups	4834824.910	439	11013.269		
	Total	6545513.157	452			

**Table 17.** Effect size analysis.

Variable	Eta-squared
Audit_probability	0.78
Tax_rate	0.47
Fines	0.62
Income_level	0.26

**Table 18.** Calculation for the Eta-squared values.

Effect estimate	Meaning
0.01	Small effect
0.06	Medium effect
0.14	Large effect

thumb apply when interpreting the results for effect sizes. According to the results, audit probability, higher tax rate, higher fines and higher income level had large effects on tax compliance. The results give further credence to the fact that tax compliance is impacted on by the variables

under the study. Table 18 describes the Eta-squared values and their statistical meanings for the study.

The results obtained from the descriptive analyses indicate that 74.3% of the respondents sampled would increase their tax compliance if audit probability is high but 19.6% would not increase their tax compliance if audit probability is high. On the question on whether self-employed persons would comply more or less if tax rate is high, 85.4% of them would reduce tax compliance but 11.2% would not reduce their tax compliance. Responses obtained from the respondents on the effects or relationship between higher fines and their tax compliance, 75.5% would decrease their compliance due to higher fines for engaging in income tax non-compliance and 18.1% would not decrease their tax compliance due to higher fines. The results obtained from the relationship between higher income level and tax compliance among self-employed persons indicate that 97.5% of respondents would increase their tax compliance if their business income level was high and 0.2% would not increase their tax compliance. These hypothetical questions were aimed at soliciting unbiased responses from the respondents taking a clue from previous research studies (Nsor-ambala 2015). The study

observed that responses from survey on tax compliance are unreliable due to responses biases and lack of perfect recall by respondents (Wilson and Sheffrin, 2005). However, in order to obtain holistic picture of the real tax compliance intentions of self-employed persons, direct questions were also administered to the same respondents in addition to the hypothetical questions to test for consistency and reliability in their responses and the results obtained from the direct questions are shown in the following.

On the question of whether the respondents surveyed had been audited in the past, 61.4% said their accounts had been audited by their local tax office in the past and 38.6% had not been audited before. Out of the 64% of those who have had past auditing experience, 77.5% would not increase their tax compliance as a result of past auditing and 22.5 would increase their compliance as a result of the previous audits. However, 66.7% of the respondents who had not had past auditing experience said that their tax compliance has reduced as a result of the absence of past auditing experience and 33.3% have not had a reduction in their tax compliance level despite the absence of past audits. On the direct question of income level and its relationship with tax compliance, 92.9% of the respondents would increase their tax compliance if their business income increased and 7.1% said their tax compliance would not witness an increase if business income increased. On the knowledge of current income tax rates, 68.9% of the respondents know their current income tax rate but 31.1% do not. Out of those who know their current income tax rate, 98.7% view it as high but 1.3% do not view it as high, however, all the self-employed persons who know their current income tax rate would increase their tax compliance if the rate was reduced.

On the question on the knowledge of the existence of mandatory fines for non-compliance, all the respondents are aware of their existence, 89.4% had not paid a fine in the past for income tax non-compliance but 10.2% had done so in the past. An overwhelming 95.7% of those who had paid a fine for non-compliance in the past perceive the fine as enough deterrent from future non-compliance but 4.3% said the past fine payment would not deter them from future income tax non-compliance. 94.2% of respondents did not reduce their tax compliance when their income fell in the past but 5.8% had a reduction in their compliance when their business income fell in the past. 92.7% of those who had reduced their tax compliance when their business income fell in the past, said given another opportunity, they would again reduce their business income when their future business incomes fall. The results obtained from the correlation analysis indicate that there is a strong significant negative relationship between higher and tax compliance intentions. On the question of whether there is a statistical relationship between audit probability and tax compliance intentions among Self-employed persons, the

correction analysis results point to a strong positive relationship between audit probability and tax compliance. The outcome of the response consistency and reliability test show that while the responses from the direct and hypothetical questions were positive on income level, fines and tax rate, they were negative on audit probability to the extent that while respondents saw nothing wrong with other taxpayers engaging in tax non-compliance due to absence of auditing, they themselves would not engage in it.

As envisaged during the review of the tax compliance literature, self-employed persons in Ghana could be less tax compliant if there is an increase in the tax rate on their taxable incomes, but could rather declare more incomes if income tax rates are reduced. The only major study that has observed a significant positive relationship between tax rate and tax compliance was by Yitzhaki (1974) and Papp and Takáts (2008), but the current study did not support such findings. The findings of this study are also in line with the self-employed persons' awareness of the prevailing tax rates applicable to them as obtained from the descriptive analysis.

The result of the effect of fines on tax compliance did not conform to expect findings. It was expected that higher fines should induce greater tax compliance, but the results from this study point to a significant negative relationship between fines and tax compliance. Even though findings from previous related studies predominantly point to positive relationship between higher fines and tax compliance, albeit insignificant and even negligible (Ali et al., 2001; Andreoni et al., 1998; Collins and Plumlee, 1991; Fjeldstad and Semboja, 2000; Idson et al., 2000; Pommerehne and Weck-Hannemann, 1996; Spicer and Thomas, 1976). Higher fines have even been described as counter-productive and could lead to tax resistance, while some few studies do support this study's findings that higher fines induce greater tax non-compliance or increased tax evasion (Alm et al., 1992; 1995; Park and Hyun, 2003).

## Conclusions

The findings made from this study are mirrored in the observation made by BĂTrĂNcea et al. (2012), which says that developing and using adequate strategies to unearth the reasons, which drive taxpayers' compliance decisions, should be more useful to tax administrators and tax policy makers than strictly applying the tax laws and regulations to enforce compliance. This study explored the relationships between higher income tax rates, fines, audit probability and income level and tax compliance intentions of self-employed persons in Ghana surveying the registered Self-employed persons in the 15 Small Taxpayers 'Offices in the Greater Accra tax jurisdiction. Previous tax compliance studies, which explored the factors affecting tax compliance, were divided along pure neoclassical economic, behavioural

and fiscal psychology lines. Tax compliance studies based on the neoclassical economic view have not produced a clear direction on the relationships between tax rate, fines and audit rate, and income level on tax compliance intentions. According to the basic model upon which this study was based, individuals are utility-maximisers and would engage in tax non-compliance as long as the benefit of successful evasion exceeds the cost of unsuccessful tax cheating. Therefore, the model prescribes that effective enforcement and penalty mechanisms are the surest ways of curbing the non-compliance menace among self-employed persons since these taxpayers studied demonstrated that their tax compliance are still largely influence by economic factors. The results from this study support the position of the basic economic model that higher audit probability encourages greater tax compliance among individuals, but do not support the assertion that higher fines or penalty generates greater tax compliance.

The theory of reasoned action has observed that different behaviours call for different interventions and that to influence intentions and behaviour, changes in the relevant salient, normative, or control beliefs are required. Such interventions could be sanctions, fines, or penalties. However, the results from this study on the effect of higher fines on tax compliance are at variance with this theory. Whereas the theory predicts that sanctions or fines could discourage the socially undesirable behaviour such as tax evasion or non-compliance, the findings from this study suggest that higher fines do not discourage tax non-compliance and that excessive fines could lead to tax resistance.

The results from the effect of greater audits on tax compliance also support the prospect theory. This theory posited that tax compliance among individuals is low because the incomes of individuals and small business are usually not subjected to third-party scrutiny and reporting. Individuals and small business owners also view tax payment as out-of-pocket cost and, therefore, constitute a loss frame. To improve compliance, therefore, incomes must be subjected to audit scrutiny. The results obtained from the relationship between audit probability and tax compliance of self-employed persons in Ghana, suggest that higher audit probability has the most significant statistical relationship with tax compliance. Higher income levels also attract greater tax compliance, implying that taxpayers under this study could declare more income if their income is high, but lesser income if their income is low. The tax implication of this result is that self-employed persons as individuals, with lower levels of income, would always conceal income from tax authorities unless there are elaborate and frequent audit mechanisms put in place to check non-compliance.

Results from the current study also indicate that with the exception of the relationship between fines and tax compliance, the three other independent variables (audit

probability of audit, income level, and higher tax rate) have statistical relationships with tax compliance intentions as expected. While higher audit probability and higher income level generate higher compliance, higher tax rates encourage lower compliance among self-employed persons in conformity with results from related tax compliance studies. This study rather found that higher fines has an inverse relationship with tax compliance and that higher fines generate lower tax compliance and increased tax noncompliance among self-employed persons in Ghana. The result from the effect of fines on tax compliance from this study adds to the few empirical studies which also point to an inverse relationship between higher fines and tax compliance. Results from the multiple regression analyses indicate that higher audit probability had the most significant impact on tax compliance, followed by higher fines, higher tax rate, and level of income having the lowest impact on tax compliance. This means that the Ghanaian tax agency, the GRA, must place greater emphasis on tax audits and less emphasis on fines to improve tax compliance among small business owners. Generally, it is accepted that payment of taxes is not a pleasant choice for any taxpayer and therefore given the option, many individuals would opt out of the tax bracket. Therefore, non-compliance becomes an easy option for many taxpayers who observe lack of infrastructural developments from the taxes that are collected from them by the tax agency and utilized by government. The observation made in this study was that many self-employed persons especially those operating in the shadow economy deliberately do so to escape the tax net as a result of apparent lack of exchange equity from taxes paid by existing taxpayers.

Based on the observations and findings made from this study, we recommend that the tax agency (GRA) must institute elaborate tax support and provision of tangible social interventions especially in the areas where self-employed persons operate with the motive of winning back their confidence and support with an ultimate objective of improving their tax compliance. Another observation made in this study was that many self-employed persons were completely unaware of the income tax rates applicable to their business incomes and some were also not well informed about the existing penalties or fines for non-compliance. This lack of knowledge may have accounted for some unintended non-compliance decisions. Tax education has been noted in the tax literature as being very effective in improving tax compliance among individuals. The tax agency must improve or introduce new tax educational schemes targeted mainly at individuals and self-employed persons since this group presents the greatest threat to effective and efficient tax revenue generation in many tax jurisdictions across the globe especially in developing economies. The tax agency could be guided by these recommendations by ensuring that self-

employed persons are given the necessary attention and consideration in future policy formulation in order to improve tax compliance of self-employed persons.

There is empirical evidence in the literature which points to lack of prior research into compliance intentions of unregistered self-employed persons and individuals. There has been a preponderance of research into tax compliance decisions of actual taxpayers to the exclusion of non-taxpayers. Therefore, we recommend for a study to be conducted to explore factors that encourage tax noncompliance and evasion among non-registered self-employed persons, which could add to the tax compliance literature. The anticipated operational challenge with the implementation of this recommendation could bother on issues of access to official taxpayers' data and the soliciting of unconditional cooperation from this category of potential taxpayers. This challenge stems from previously observed operational difficulties encountered by tax research scholars in addressing this research problem.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

## **Effect of tax identification number on revenue generation in Southwest Nigeria**

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**This paper examined the effect of tax identification number on revenue generation in south-west, Nigeria. The ex-post facto research design was adopted and the population covered all the states in the Southwest geopolitical zone of Nigeria, out of which three states namely Ekiti, Osun and Ondo States were selected as the study elements using simple random sampling technique. Quantitative secondary data were sourced from the State Board of Internal Revenue of the sampled states spanning from 2008-2017 for a period of 10 years segregated into Pre-TIN (2008-2012) and post-TIN (2013-2017). The analysis used mean and sampled paired t-test to reveal that there was a positive and significant difference between internally generated revenue of the sampled states before and after the introduction of TIN. The paper concluded that TIN has improved revenue generation in Southwest, Nigeria. The study recommended that intermittent checks of all the platform related to TIN should be carried out so as to detect and prevent abuse and other fraudulent activities. It was equally recommended that regulatory agencies of the government should enlighten taxpayers on the benefit of Tax Identification Number (TIN) to improve revenue generation.**

**Key words:** Tax identification number, revenue generation, taxpayers.

### **INTRODUCTION**

Universally, the growth and development of any nation are based on revenue generation through which government improves the infrastructural base and the living standard of people. This informs that a nation with high revenue generation might perform better in the form of payment of salary and wages, infrastructural development, development of small and medium scales among others (Abiola and Asiwah, 2012). Revenue is that income needed by the government to finance its growing expenditure (Azubuike, 2009).

Taxation is a major contributor to the revenue pool of nations as well as a drive for economic development and growth. However, in most developing countries, it appears that governments are yet to fully enhance the generation of tax revenue owing to system dysfunctions in terms of social, economic and political interplay; over-dependence on foreign grants and aids; poor registration of taxpayers; corrupt practices and unorganized administration process of the tax system (Akintoye and Tashie, 2014). This, undoubtedly, speaks volume of the

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total number of tax avoiders and evaders in Nigeria, particularly in the Southwest part of the country.

The imperfections of the tax structures could be attributed to the lack of electronic means to record basic information of the taxpayers accurately so as to collect taxes from them as at when due without any problem (Aderinto, 2005; Jocet, 2014). In the time past, the government has rolled out policies to combat these imperfections however; this appears not to be productive. Olaoye and Awe (2018) noted that despite the government effort to checkmate the activities of tax evaders and avoiders, a lot of them are still being recorded every year. This necessitated the various tax reforms in Nigeria of which Taxpayer's Identification Number (TIN) is one of them.

TIN is a system, producing special index numbers, issued and assigned to each person registered in its database. TIN which became effective in Nigeria from February 2008 is a 10(ten) digit number, that is given exclusively to only a taxpayer and taxable companies that earn a consistent income (Ezugwu and Agbaji, 2014). Evidence reveals that there was a geometric increase of taxpayers from 6001 in 1991 to 21,724 in 2003 in Montenegro when the registration process of taxpayers was simplified (USAID, 2005). The same report that simplification of the registration process of taxpayers stimulates revenue base was given in Colombia and Sri Lanka (Oviedo, 2009).

In the South-western States of Nigeria, it seems that tax administration is faced with the problem managing the unsystematic design and clashes of interest in tax collection from the informal sector resulting to low revenue generation. The introduction of Tax Identification Number (TIN) is expected to engender increase in the tax revenue since it electronically captures more enterprises, individuals, and companies thereby reducing the wide gap between individuals and companies registered in Nigeria with the Corporate Affairs Commission (CAC) and those already in the tax net (Omesi and Nzor, 2015).

Studies in this context are few in Nigeria and the available ones are reduced to just one state such as Asaolu et al. (2015), Ezugwu and Agbaji (2014), Ngozi and Obioma (2018), Ofurum et al. (2018), and Olaoye and Awe (2018). One thing that stands out from the studies reviewed is that TIN has the capacity to improve revenue generation. Although the studies were different in terms of geographical location, method of analysis and time, the findings were not disaggregated. This connotes that TIN has an inbuilt mechanism through which individuals and firms are brought to the tax net. To carry out a more elaborate study thereby pushing forward the frontier of knowledge on how TIN could engender increase in revenue generation; this study was designed to examine the impact of Tax Identification Number (TIN) on revenue generation in Southwest, Nigeria.

The timeliness of this study is found on the ground that state governments will know the indispensability of

sensitizing and educating the people through radio and television programmes and jingles the need of TIN for prompt and adequate payment of taxes, since the reduction in the price of crude oil has necessitated the unavoidable reduction in federal allocation. The rest of the paper is divided into 4 sections. Section 2 covers the review of the literature, section 3 centers on the research methodology, section 4 presents and discusses the results of the analysis, and section 5 covers the conclusion, recommendations and suggestions for further studies.

## LITERATURE REVIEW

### Conceptual issues

#### *Tax identification number (TIN)*

According to Ebifuro et al. (2016), TIN helps to accelerate the processing of information of taxpayers and also fosters enforcement, awareness and increase revenue generation. This is supported by Jocet (2014), who deduced that TIN promotes agreement and coordination of taxpayers' identification system that is based on a mechanized system. TIN connects the space between the information of taxpayers and the history of their payments thereby increasing their obedience level.

Taxpayer identification number (TIN) is a system that aids taxpayer identification and registration, thereby minimizing mistakes and errors accompanied by registering manually and strengthening existing weaknesses in the tax system of the country. TIN is an idea developed by the Joint Tax Board (JTB), Federal Inland Revenue Service (FIRS) and State Boards of Internal Revenue (SBIR) for the 36 states of Nigeria (Joint Tax Board Handbook, cited in Olaoye and Awe (2018). TIN is an electronic system for taxpayers' registration and it permits easy identification of taxpayers and is available for everybody (Olaoye and Awe, 2018). As cited in Olaoye and Awe (2018), the following are regulations for obtaining TIN:

Regulations to be noted for coming into possession of TIN by a company or business registered with the Corporate Affairs Commission (CAC)

- (1). A properly completed application form of TIN
- (2). Certificate of incorporation clearly indicating the registered number in each situation

The document includes the following essential details:

- (i). Address of the company or business
- (ii). The principal location of the business
- (iii). Date of commencement of the business.

Regulations for obtaining TIN by an individual or business

that is not registered with the CAC

- (1). A properly completed application form of TIN
- (2). Any of the following legitimate identification documents
  - (i). International passport
  - (ii). National identity card
  - (iii). Staff identity card (employed persons)
  - (iv). National driver's license

### **Tax revenue**

Tax is a mandatory levy enforced by the government which includes federal, state and local government, on the assets, goods, services, and incomes of taxpayers (Chigbu et al., 2012). Payment of taxes is a legal obligation and a necessary duty, imposed by the government on individuals and corporations to fund its operations, run public utilities and perform other social responsibilities. This makes tax to be the primary source of revenue for the government. Tax is a method of enforcing necessary levies on all assets, goods, services, and incomes of individuals, firms, businesses, companies, corporations, etc. by the government (Smatrakalev, 2006; Ojo, 2008).

Tax revenue does not just make up the major means of revenue for the government but is in fact the vital part of an effort to build societies, economies and even nations. In view of this, Mckerchar and Evans (2009) stated that taxes make it possible to provide securities, provide the major needs or promotes economic development as well as validity and agreement (aiding to improve democratic, accountable and representative government). It is the major focus of every good citizen to improve and increase the image of his society; therefore, tax compliance should not be forced. However, it has been noticed over the years, that willful disobedience in paying tax has been a main issue in every society around the world (Bhatia, 2009; Stephen, 2010).

Taxes can be classified majorly into two: direct and indirect taxes. Direct taxes are a form of taxes collected basically on the wealth and income of individuals and companies. These include Personal Income Tax (PIT), Company Income Tax (CIT), Petroleum Profit Tax (PPT) and Capital Gain Tax (GTA). Indirect tax is a form of tax collected on goods and services payable only when such goods and services are bought e.g. Customs and Excise Duties (CED) and Value Added Tax (VAT) (Omotosho, 2001; Arowomole and Oluwakayode, 2006).

### **Conceptual framework of state government revenue composition**

The three main sources that constitute the revenue profile of state governments could be vividly seen from the framework above. The first source is the federal

allocation. The second source is Internally Generated Revenue (IGR) which comprises revenues from taxes and non-tax sources. The third source is other financial arrangements such as excess crude oil, other statutory receipts, grants, internal and external loan, ecological fund, etc (Figure 1). The economic resources from the diverse bases are directed to the outflow responsibilities in the form of recurrent capital expenditure. This is typically founded on the State primacies and requests that are echoed in the medium-term plans. Based on the above conceptual context, this study gives prominence on appraising the impact of taxpayer identification number on revenue generation in Southwest states in Nigeria.

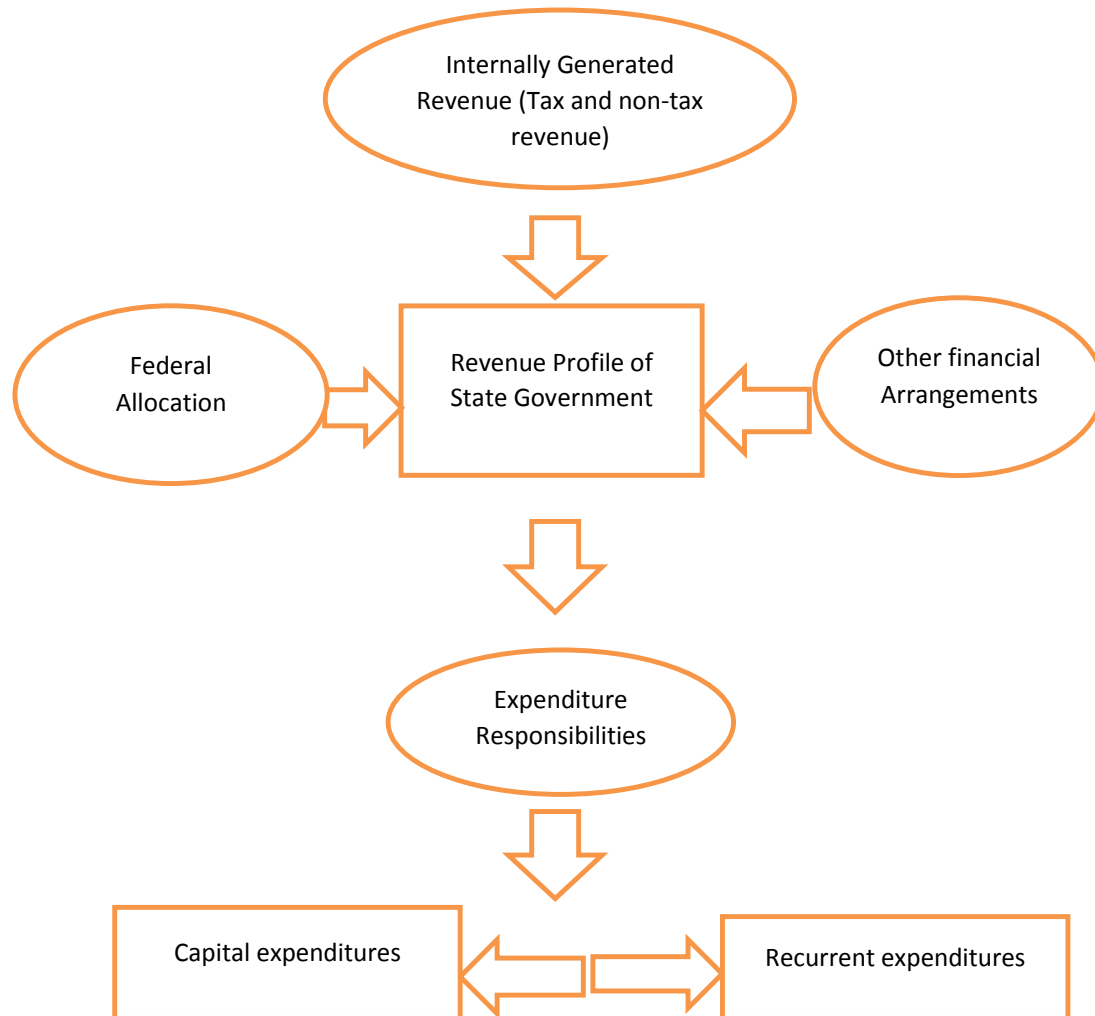
### **Theoretical paradigm**

Theoretically, this study was anchored on the Laffer theory of Taxation and Ability to pay to theory. Laffer theory of taxation propounded by Laffer in 1979 and popularly called the "Laffer curve" is -a hypothetical drawing of the correlation between tax revenue created by the government and all possible rates of taxation. It considers that at extreme tax rates, no revenue would be created (Laffer, 1979). This is due to the fact that, at extreme tax rates, taxpayers have no reason to earn an income again. Likewise, a very low tax rate will bring absurd tax revenue and the main reason for tax revenue would be far-fetched. It, therefore, informs that without a reasonable tax rate, the importance of any tax policy or reform to improve the revenue base of the government might be a mirage as taxpayers might find it burdensome to pay higher tax rate, especially small businesses (Laffer, 1979).

Ability to pay theory, developed by Slade Kendrick in 1939, is the most common developed principle of equity or justice in taxation. Individuals should pay taxes to the government in line with their ability to pay (Kendrick, 1939). It seems fair and reasonable that taxes should be imposed on an individual, based on his/her taxable ability. The establishment of TIN to promote the registration of taxpayers and tax administration without a functioning principle of equity and justice in taxation will minimize the efficiency of the reform. This is because citizens earning meager income will find the tax burden uneasy. Therefore, tax avoidance and evasion will be inevitable (Aguolu, 2001).

### **Empirical literature**

With the aim of assessing the essence of tax reforms in Nigeria, Oriakhi and Ahuru (2014) conducted a study on the impact of tax reforms on federal revenue generation in Nigeria. The analysis carried out through Johansen co-integration revealed that there exists a long-run



**Figure 1.** Conceptual framework of state government revenue composition.  
Source: Adapted from Olaoye and Awe (2018).

relationship between tax reform and federally collected revenue in Nigeria. Findings revealed that by reducing tax avoidance and evasion, improving the tax system and reducing tax burden may have enhanced government ability to produce more revenue through taxation. It was concluded that tax reforms have the capacity to stimulate increase in revenue generation.

Corroborating the findings of Oriakhi and Ahuru (2014), Olaoye and Awe (2018) looked closely at the impact of taxpayer identification number on revenue generation in Ekiti State. Their study revealed that full adoption of taxpayer identification number exerts a significant impact on internally generated revenue of the state. Data collected were analyzed using correlation and regression analysis, the study makes use of a single equation model in which revenue generation was proxied using internally generated revenue (IGR) in Ekiti State. It was concluded in the study that full adoption of taxpayer identification number in Ekiti State has the ability to spur revenue

generation within the state.

A similar study by Ngozi and Obioma (2018) on the effect of TIN on non-oil tax revenue through a comparative analysis of pre and post TIN years of 2000 to 2015 revealed that there has been a significant increase in total non-oil tax revenue with the introduction of TIN. Data were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin (2010). The study employed both descriptive and pairwise t-test statistical techniques for analyses with total non-oil tax revenue as the dependent variable while CIT, VAT, and TET were the independent variables. The study concluded that TIN could engender increase in revenue generation.

Ezugwu and Agbaji (2014) assessed the application of Taxpayer Identification Number (TIN) on Internally Generated Revenue in Kogi State. The analysis carried out using tables and regressions revealed that TIN has improved revenue generation in that state. It was discovered that before the introduction of TIN, Internally

Generated Revenue (IGR) was significant and that its introduction causes a greater increase in the revenue generated. The conclusion made was that revenue generation could be greatly enhanced through TIN.

Asaolu et al. (2015) examined the impact of tax reforms on revenue generation in Lagos State. Using Time Series quarterly data between the period of 1999 and 2012, the ordinary least square (OLS) regression technique was used to analyze the secondary data collected from the Lagos State Internal Revenue Service (LIRS) in the form of taxpayer statistics and revenue status report. Findings showed that there is a long run relationship between tax reforms and revenue generation in Lagos State. Findings further revealed that the State depended on tax reforms more than other sources of revenue generation. It was therefore concluded that the states should work out modalities through other sources of revenue could be enhanced.

One thing that stands out from the studies reviewed is that TIN has the capacity to improve revenue generation. Although the studies were different in terms of geographical location, method of analysis and time, yet the findings were not disaggregated. This connotes that TIN has an inbuilt mechanism through which individuals and firms are brought to the tax net. The significance of this study lies in its coverage, South-west Nigeria.

## METHODOLOGY

### Research design

Ex-post facto research design was adopted because the examination was based on already existing data.

### Population and sample

The population covered all the states in the South-west geopolitical zone of Nigeria (Ekiti, Ogun, Ondo, Osun, Oyo and Lagos), out of which three states namely Ekiti, Osun, and Ondo States were selected as the study elements using simple random sampling techniques.

### Sources of data

Secondary data were sourced from the State Board of Internal Revenue of the sampled states.

### Scope and method of data collection

Data were collected on Internally Generated Revenue for the period of 10 years segregated into Pre-TIN (2008-2012) and post-TIN (2013-2017).

### Variable description, model specification and estimation technique

Revenue generation is captured by Internally Generated Revenue

(IGR) of the sampled States. The data collected were analyzed using descriptive and inferential statistics. Descriptively, mean was made use of to explain the differences in the internally generated revenue before and after the introduction of the TIN while inferential statistics of paired sampled t-test was used to test if there was any important difference in the internally generated revenue before and after the introduction of TIN. The basic null hypothesis for the paired sampled t-test is that the population means difference is equal to a hypothesized value,

$$H_0: \mu_{diff} = \text{Hypothesized value}$$

With three common alternative hypotheses

$$H_a: \mu_{diff} \neq \text{Hypothesized value}$$

$$H_a: \mu_{diff} < \text{Hypothesized value}$$

$$H_a: \mu_{diff} > \text{Hypothesized value}$$

In the most common paired t-test scenario, the hypothesized value is 0, in which the null hypothesis becomes

$$H_0: \mu_{diff} = 0$$

With alternative hypotheses options of,

$$H_a: \mu_{diff} \neq 0$$

$$H_a: \mu_{diff} < 0$$

$$H_a: \mu_{diff} > 0$$

## RESULTS AND DISCUSSION

### Data presentation

The section covers the presentation of data that was divided into two parts, reflecting internally generated revenue before and after the introduction of the Tax Identification Number (TIN) (Table 1).

### Data analysis

Depicted in Figure 2 is the trend analysis of the internally generated revenue of Osun, Ondo and Ekiti State for the period of 10 years segregated into Pre-TIN (2008-2012) and post-TIN (2013-2017). Overview of the trend analysis reveals that the introduction of Tax Identification Number (TIN) produces increase in the internally generated revenue of the South-Western States in Nigeria. The corollary of these findings is that TIN has the capability to develop the revenue pool of the state government in Nigeria in that it has an inbuilt mechanism to curb tax evaders and avoiders. It could be deduced from Table 2 that pair 1 has a mean value of -4.316 billion and a standard deviation of 1.889. Based on the subtraction method, it implies that the value of post internally generated revenue after the introduction of TIN was 4.316 billion higher than internally generated revenue before the introduction of internally generated revenue for the periods covered. The *t-statistics* and *p-value* reported being 5.110 and 0.007 respectively imply that there is a significant effect of Tax Identification Number on revenue

**Table 1:** Data on Internally Generated Revenue before Tax Identification Number (TIN)

Year	OSUN	ONDO	EKITI
2008	3,376,735,645.43	3,984,678,519.91	1,434,955,465.56
2009	3,735,812,456.63	3,751,817,815.35	1,464,124,402.88
2010	3,376,735,645.43	6,480,372,918.69	1,554,020,325.64
2011	7,398,572,036.48	8,015,725,375.26	2,489,797,191.33
2012	5,020,250,633.94	3,376,735,645.43	3,735,812,456.63
2013	7,284,225,003.77	10,498,697,469.99	2,339,670,199.77
2014	8,513,274,186.67	11,718,741,502.49	3,462,341,448.32
2015	8,072,966,446.00	10,098,000,000.00	3,297,707,703.96
2016	8,884,756,040.35	8,684,406,578.63	2,991,041,855.48
2017	11,731,026,444.38	10,927,871,479.76	4,967,499,815.79

Source: State Boards of Internal Revenue



**Figure 2.** Trend analysis of internally generated revenue, Osun, Ekit and Ondo State before and after the introduction of tax identification number (TIN).

generated in Osun State. Put differently, it implies that TIN exerts a positive significant influence on revenue generation in the Osun States.

Reported in Table 3 is the paired t-test conducted to show the effect of Tax identification number on revenue generation in Ekiti State. There was a statistically

**Table 2:** Pre-Post Analysis of the Internally Generated Revenue of Osun State. Paired Sample Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 PRE-TIN- POST-TIN	-4.316E9	1.889E9	8.446E8	-6.661E9	-1.971E9	-5.110	4	.007

Source: Data Analysis, 2019

**Table 3:** Pre-Post Analysis of the Internally Generated Revenue of Ekiti State. Paired Sample Test

	Paired Differences					t	df	Sig.(2- tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 PRE-TIN- POST-TIN	-1.276E9	6.084E8	2.721E8	-2.031E9	--5.205E8	-4.690	4	.009

Source: Data Analysis, 2019

**Table 4:** Pre-Post Analysis of the Internally Generated Revenue of Ondo State. Paired Sample Test

	Paired Differences					t	df	Sig.(2- tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 PRE-TIN- POST-TIN	-5.264E9	3.079E9	1.377E9	-9.087E9	-1.440E9	-3.822	4	-0.19

Source: Data Analysis, 2019

significant increase in the revenue generated after the introduction of TIN in Ekiti State to the tune of  $t(4) = 4.690$ ,  $p(0.009) < 0.005$ . the mean and standard deviation values reported to be -1.276 and 6.084 respectively indicates that the introduction of TIN improved the revenue pool of Ekiti State by 1.276 billion for the period covered. It could, therefore, be said that there was a significant difference between the revenue generated in Ekiti State before and after the introduction of TIN.

It is gathered from Table 4 that pair 1 has a mean value of -5.264 billion and a standard deviation of 3.079. Based on the subtraction method, it implies that the value of post internally generated revenue after the introduction of TIN was 5.264 billion higher than internally generated revenue before the introduction of internally generated revenue for the periods covered. The *t-statistics and p-value* reported being 3.822 and 0.019 respectively imply that there is a significant effect of Tax Identification Number on revenue generated in Ondo State. Put differently, it implies that TIN exerts a significant influence on revenue generation in Ondo State.

An attempt has been made to reveal the effect of Tax Identification Number (TIN) on revenue generation in South-west, Nigeria. The analysis carried out on the

sampled states using paired sampled t-test showed that there was a significant difference between internally generated revenue before and after the introduction of TIN, indicating that TIN has improved revenue generation in South-west Nigeria. This discovery credited the rapid increase in the internally generated revenue of the states to the effect of the taxpayer identification number. The consequence of this discovery is that tax identification number could stimulate increase in the revenue generation in South-west, Nigeria. This might be due to the fact the motivation behind the introduction of TIN is the need to simplify the registration process of taxpayers and bring more people to the tax net. The old system was unreliable, cumbersome and constitutes a major challenge to authorities and taxpayers. The outcome of this study was in congruence with the submission of Ezugwu and Agbaji (2014) and Oriakhi and Ahuru (2014) that tax reforms positively improved revenue generation in Nigeria.

## CONCLUSION AND RECOMMENDATIONS

Tax reforms are imperative since the endpoint is to

improve the revenue pool of the government. Based on the discoveries of this study, it was established that Tax Identification Number (TIN) stimulates increase in revenue generation in Southwest, Nigeria. It was therefore recommended that intermittent checks of all the platform related to TIN should be carried out so as to detect and prevent abuse and other fraudulent activities; regulatory agencies of the government should enlighten taxpayers on the benefit of the Tax Identification Number (TIN), and that the government of South-western states should develop a means of bringing more people to the tax net through Tax identification number. A similar study could be extended to other geopolitical zones of the country as this will give room for a broad generalization of the effect of tax identification number on revenue generation in Nigeria.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# **Factor analysis on IFRS Adoption: A survey study on lenders, users and audit firms' perspective in West Hararghe Zone, Oromia Regional State, Ethiopia**

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The adoption of International Financial Reporting Standards (IFRS) around the world is occurring rapidly to bring about accounting quality improvement through a uniform set of standards for financial reporting standards and harmonization of reporting procedures. For the same purpose, Ethiopia begins the IFRS adoption process since the year 2014. For this study, 200 questionnaires were distributed and administered to collect the required data and the collected data were analyzed using SPSS21. This study also employed descriptive statistics and dimension reduction model to make factor analysis. Based on the model output five (5), major variables were found significant with 66.22% cumulative initial eigenvalue. The main significant variables were adaptability, suitability, constraints, necessity and perceived benefits respectively. Furthermore, upon the findings found, researchers forwarded continuous professional career development, partnership and cooperation with stakeholders and government commitment for allocation of adequate budget should be made for successful adoption of IFRS.

**Key words:** IFRS adoption, factor analysis, West Hararghe, Ethiopia.

## **INTRODUCTION**

International Financial Reporting Standards (IFRS) have been known long time ago under the name International Accounting Standard (IAS). IAS was issued since 1973-2000 by International Accounting Standards Committee (IASC). It was issued in order to fix the global accounting standard thus there would be better financial understanding of all companies. However, on April 1, 2001 International Accounting Standard Board (IASB) replaced the IASC and took over responsibility to build

international accounting standard and named it IFRS (IFRS Foundation, 2010). IFRS has been a trending topic since the European Union (EU) decides to converge their financial reporting standard to IFRS, leaving the US Generally Accepted Accounting Principles (US GAAP) (Latifah et al., 2012). The essence of IFRS was to develop a set of accounting standards that will ensure preparation of a quality set of financial statement throughout the world (IFRS, 2014).

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Since the introduction of the globalization process, the interest shown for the harmonization of the financial reporting process by introducing a unitary set of international financial reporting standards at global level has also increased. According to (AICPA, 2016) and (Masoud, 2014), IFRS has become the most popular set of financial reporting standards used globally and the number of the countries adopted IFRS at different stages reached 120. Speeding up of this process of convergence or harmonization of the local regulations with the IFRS was to fulfil the informational needs of the market players (Saidi, 2013), or the idea that the existing differences between the local accounting systems represent significant obstacles in the process of foreign investors' understanding of the accounting information disclosed in the financial statements of other countries (Constantin and Loredana, 2011).

Currently, there is a worldwide trend for a move towards converging local accounting standards with the IFRS issued by the IAS. The standards are now used by various countries around the world, and have announced IFRS convergence by 2011 (Chan et al., 2010). According to the survey by Deloitte (2010), more than one hundred countries around the world have either adopted or intend to adopt the IFRS for their domestic companies. As of December 2011, China on the other hand has substantially converged their national standards with IFRS (IFRS Foundation, 2012).

The increasing growth in international trade and investment has brought to the fore the craze for adoption of IFRS by both the developed and developing countries. A number of African countries including Nigeria, Ghana, Sierra Leone, South Africa, Kenya, Zimbabwe, Tunisia and Ethiopia among others, have adopted or declared intentions to adopt the standard. This is a welcome development considering the fact that the quality of financial reporting is essential to the needs of users who require useful accounting information for investment and other decision-making purposes. Information emanating from financial reporting is regarded as useful when it faithfully represents the 'economic substance' of an organization in terms of relevance, reliability and comparability (Spiceland et al., 2003). Thus, high-quality financial reports which IFRSs have the potential to support should produce financial information that report events timely and faithfully in the period in which they occur.

In this regard, Ethiopia has expressed an initiative to integrate its financial statements with international standards. According to World Bank on the report on the observance of Standards and Codes, there is no specific set of accounting regulations in Ethiopia and therefore accounting practices vary across institutions (ROSC, 2007). As a result, National bank of Ethiopia, Ministry of finance and economic development and other government institutions are working together towards the

adoption of this international standard in Ethiopia. The National Bank of Ethiopia has already required the banks to prepare their financial statements in accordance with IFRS. In 2011 Ministry of Finance and Economic Development (MoFED) issued a draft proclamation. The proclamation requires reporting entities in Ethiopia to follow IFRS (MOFED, 2011). For this purpose, the government through the Council of Ministers Regulation setting-up Accountants and Auditors Board of Ethiopia (AABE). The Proclamation sets out financial reporting frameworks applicable to different reporting entities and mandated AABE with the responsibility of regulating IFRS adoption and implementation process in Ethiopia (AABE, 2014).

Though the relevance of adoption of international accounting standards have always been a subject of intense controversy, yet, a number of countries in Africa have adopted or plan to adopt IFRS. However, there are many questions which relate to whether the adoption will be beneficial to the countries involved in terms of enhancing transparency in financial reporting that require to be answered. IFRS is more principled-based and does not provide issuers with the same degree of detailed guidance for the preparation of financial statements, or the use of GAAP (Iyoha and Owolabi, 2012).

The Accounting and Auditing Board of Ethiopia mandated for the adoption process of IFRS in Ethiopia and the board plans a three-phase transition over a period of three years for reporting entities in Ethiopia. Even though, the board exerted much effort on adoption of IFRS in Ethiopia before the implementation of mandatory adoption. It identified many problems associated with institutions to realize the adoption and implementation process of the system. Poor knowledge, low level of awareness for preparers and users of financial statements, regulators, educators, auditors and other stakeholders are some of the exiting gaps in IFRS adoption (AABE, 2014). Due to the above-mentioned problems and other related gaps; the researchers have been conducted this research to make factor analysis on IFRS adoption process in the study area.

## **MATERIALS AND METHODS**

### **Description of the study area**

West Hararge is one of the Zones in the Ethiopian region of Oromia. West Hararghe takes its name from the former province of Hararghe. West Hararge is bordered on the south by the Shebelle River which separates it from Bale, on the southwest by Arsi, on the northwest by the Afar Region, on the north by the Somali Region and on the east by East Hararghe.

### **Research design and strategy**

The study employed descriptive research design using qualitative and quantitative research approach.

**Primary data**

Primary data was collected from representative sample respondents using both open ended and closed ended questioners from lenders, users and audit firm employees who are serving in finance, cost and budget and general accounts department.

**Secondary data**

Secondary data was collected from different sources using document reviews on previous financial reports and other related documents. Moreover, books, journals and articles will be used to substantiate related information from different relevant sources.

**Data source and type**

The researchers used both Primary and secondary data sources to collect the desired information from representative sample respondents, documents and relevant sources. Primary data were collected from respondents using open ended and closed ended questioners using 5-point Likert scales (that is 5 Strongly Agree, 4 Agree, 3 Neutral, 2 Disagree and 1 strongly Disagree). In addition to this, secondary data were collected from books, proceedings, government reports, financial institution reports, journals and articles. Besides, the researchers made document analysis on lenders, users and audit firms of the zone to have adequate information of IFRS adoption.

**Sampling technique and sampling procedures**

Comrey and Lee (1992) offered a rough rating scale for adequate sample sizes determination in factor analysis as below 100 (poor), 200 (fair), 300 (good), 500 (very good) and greater than 500 (excellent). Thus, for this research; researchers will select representative sample sizes using rule of thumb method mentioned. The researchers selected 200 sample employees based on the rule of thumb method from selected organizations to get representative data using probability proportion to sample size method (PPSS).

**Model specification**

Factor analysis is designed for interval data, although it can also be used for ordinal data (e.g. scores assigned to Likert scales). The variables used in factor analysis should be linearly related to each other. This can be checked by looking at scatterplots of pairs of variables. Obviously the variables must also be at least moderately correlated to each other; otherwise the number of factors will be almost the same as the number of original variables, which means that carrying out a factor analysis would be pointless (Rencher, 2005).

Factor analysis uses mathematical procedures for the simplification of interrelated measures to discover patterns in a set of variables (Child, 2006). Factor analysis equation or formula is as follows:

$$X_i = A_{i1}F_1 + A_{i2}F_2 + A_{i3}F_3 + A_{i4}F_4 + \dots + V_i U_i \quad (1)$$

Where,  $F_i$  = standardized variables to  $i$ ,  $A_{i1}$  = regression coefficient to the variable  $i$  on unique factors to  $i$ ,  $V_i$  = standardized regression coefficient of variable  $i$  on factors unique to the  $i$  th,  $F$  = Common factor,  $U_i$  = unique variable to variable to  $i$ ,  $M$  = number of common factors.

Details common factors can be formulated as follows:

$$F_i = W_{i1}X_1 + W_{i2}X_2 + W_{i3}X_3 + \dots + W_{ik}X_k \quad (2)$$

Where,  $F_i$  = Factor to estimate  $i$ ,  $W_i$  = Weighting factor or factor or factor score coefficients,  $X_k$  = Number of variables

**RESULTS AND DISCUSSION**

For this study the researchers distributed and collected 200 questionnaires. The collected data was analyzed using SPSS version 20 and presented systematically using descriptive statistics and applied factor analysis model to generate determinant factors affecting IFRS adoption.

**Background of respondents and type of organizations for IFRS adoption**

As it is shown in Table 1 from the total respondents, 145 (72.5%) were males and the remaining 55 (27.5%) were females. This revealed that most of the experts in organizations are males. From the total respondents, 46 (23%) had an experience below 5 years, 102 (51%) had between 5 to 15 years and the remaining 52 (26%) had more than or equal to 15 years of experience within the organization. The data revealed that most of the employees are well experienced and skillful to understand the IFRS adoption process.

In terms of their qualification level, 13 (6.5%) were diploma holders, 153 (76.5%) were degree holders and the remaining 34 (17%) were master's degree holders. Thus, the data revealed that most respondents are first degree and master's degree holders. In line with this, the respondents' field of qualification during their graduation were accounting, management and economics that constitutes 141 (70.5%), 24 (12%) and 35 (17.5%) respectively. Thus, the highest percentage (that is 70.5%) had qualification in accountancy which helps them to understand the IFRS adoption process in their respective organizations (Table 2).

For the IFRS adoption, the Accounting and Auditing Board in collaboration with the government selected 3 priority areas of organizations. The selected organizations are Public and Private enterprises, other Public interest enterprises and SMEs to make first phase adoption for IFRS (AABE, 2014).

Accordingly, data collected from respondents showed that 113 (56.5%), 37 (18.5%) and the remaining 50 (25%) was from public and private enterprises, other public enterprises and SMEs respectively. From these enterprises, 132 (66%), 53 (26.5%) and the remaining 15 (7.5%) used modified cash base, IFRS and accrual base accounting system respectively. From these enterprises, 20 (10%), 63 (31.5%) and 117 (58.5%) were fully

**Table 1.** Background of respondents.

Background of respondent		Frequency	Percent	Cumulative percent
Sex of Respondent	Male	145	72.5	72.5
	Female	55	27.5	100.0
	Total	200	100.0	
Years of experience	< 5.00	46	23.0	23.0
	5.00 - 14.00	102	51.0	74.0
	>=15	52	26.0	100.0
	Total	200	100.0	
Qualification	Diploma	13	6.5	6.5
	Degree	153	76.5	83.0
	Masters	34	17.0	100.0
	Total	200	100.0	
Field of qualification	Accounting	141	70.5	70.5
	Management	24	12.0	82.5
	Economics	35	17.5	100.0
	Total	200	100.0	

Source: Own Survey Result (2019).

**Table 2.** Type of organizations and level of IFRS adoption.

Type of organizations and level of IFRS adoption		Frequency	Percent	Cumulative percent
Type of Organization	Public and Private enterprises	113	56.5	56.5
	Other Public Interest	37	18.5	75.0
	SMEs	50	25.0	100.0
	Total	200	100.0	
Accounting System	Modified Cash Base	132	66.0	66.0
	IFRS	53	26.5	92.5
	Accrual Base	15	7.5	100.0
	Total	200	100.0	
Level of Adoption	Fully Adopted	20	10.0	10.0
	Partially Adopted	63	31.5	41.5
	Ready to adopt	117	58.5	100.0
	Total	200	100.0	

Source: Own Survey Result (2019).

adopters, partially adopters and ready to adopt the IFRS respectively.

### Benefits of IFRS adopting for organizations

Respondents asked to explain the benefits of IFRS adoption for entities explained that; IFRS adoption has

better reflection of performance, management of the organization like it, improved comparability and smoother fiancé from abroad respectively. According to their response rate, 180 (90%) responded better reflection of performance, 170 (85%) responded management of the organization like it for better decision, 165 (82.5%) responded improved comparability and 120 (60%) responded smoother fiancé from abroad are some of the

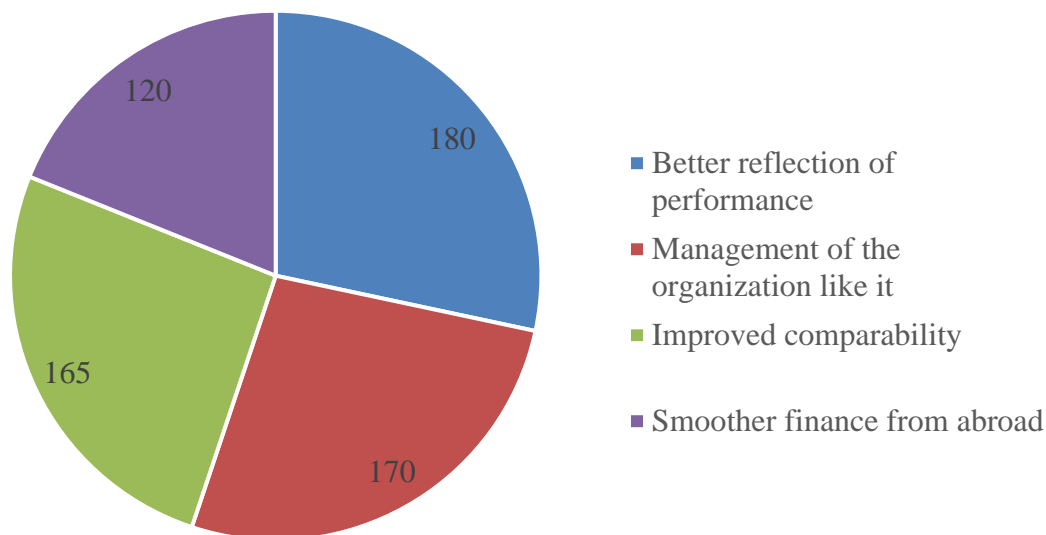


Figure 1. Pie Chart showing benefits of IFRS adoption for entities.

Table 3. Benefits of IFRS Adoption for Investors.

Benefits of IFRS Adoption for Investors (multiple response)	Frequency	Percent
Ease for communication	190	95
Better information for decision-making	189	94.5
Easier access to financial reporting	185	92.5
More confidence in the information presented	180	90
Better understanding of risk and return	117	58.5
More timely financial reports	112	56

Source: Own Survey Result (2019).

benefits of IFRS adoption for organizations. Based on their response rate, most, 180 (90%) respondents explained that IFRS adoption has better reflection of performance for entities followed by management of the organization likes for better decision-making support.

IFRS adoption has its own benefits for investors. Literatures done previously showed that investors are much benefited from the adoption process. Based on respondents response about investors benefit from the IFRS adoption 190 (95%) explained IFRS ease for communication, 189 (94.5%) responded IFRS provided better information for decision making, 185 (92.5%) expressed IFRS provide easier access to financial reporting, 180 (90%) explained IFRS guaranteed more confidence in the information presented, 117 (58.5%) explained IFRS provide better understanding of risk and return and the remaining 112 (56%) expressed IFRS provided more timely financial reports respectively (Figure 1 and Table 3).

Based on the respondents response rate, most 190

(95%) explained that the IFRS adoption has ease to have effective commination with internal and external users of information followed by better information acquired for decision making.

IFRS adoption has its own benefits for policy makers (Table 4). Different authors and literatures defined that creditability for the attraction of foreign direct investment, establishment and expansion of capital market, greater mobility of capital, efficient allocation of resources, and improved quality of financial reporting are some of the benefits of the adoption.

Similarly, for respondents asked to explain some benefits of IFRS adoption, 190 (95%) expressed more realistic planning experiences, 186 (93%) better information for controlling and decision making, 172 (86%) better access to the global capital market, 145 (72.5%) promotion of cross border investment opportunities and 130 (65%) strengthened to begin effective capital market respectively are some of the benefits acquired from IFRS adoption.

**Table 4.** Benefits for policy makers.

<b>Benefits for policy makers</b>	<b>Frequency</b>	<b>Percent</b>
More realistic planning experiences	190	95
Better information for control and decision-making purposes	186	93
Better access to the global capital markets	172	86
Promotion of cross-border investment	145	72.5
Strengthened to begin effective capital market	130	65

Source: Own Survey Result (2019).

**Table 5.** Benefits for national regulatory bodies.

<b>Benefits for national regulatory bodies (multiple response)</b>	<b>Frequency</b>	<b>Percent</b>
Improved regulatory oversight and enforcement	179	89.5
A higher standard of financial disclosure	170	85
Better information for market participants	150	75
Better ability to attract foreign companies	130	65

Source: Own Survey Result (2019).

**Table 6.** Reasons for non-adoption of IFRS.

<b>Reasons of not adopting IFRS</b>	<b>Frequency</b>	<b>Percent</b>
Lack of skills	200	100
Costs are more than benefits	150	75
Lack of knowledge	170	85
Unwillingness to change	120	60

Source: Own Survey Result (2019).

The benefits of effective and efficient financial reporting for companies have its own importance for different organizations. IFRS lead to improved comparability, credibility, and reliability of financial statements, enhanced transparency through disclosure of information, enhanced investor confidence, improved regulatory oversight, greater credibility and control for the accounting system used by different entities.

Based on the above table respondents mentioned some of the benefits of IFRS adoption in an organization. Upon their response 179 (89.5%) explained improved regulatory oversight and enforcement, 170 (85%) a higher standard of financial disclosure, 150 (75%) better information for market participants and 130 (65%) better ability to attract foreign companies were some of the benefits of IFRS adoption respectively (Table 5).

### **Challenges of adopting IFRS**

From the total respondents asked to respond for

challenges faced for IFRS adoption process, 185 (92.5%) answered user guide complexity, 190 (95%) answered complexity of conversion, 165 (82.5%) answered required more staff, 155 (77.5%) frequent review of standards, 180 (90%) lack of skill to implement, 120 (60%) explained retention of key employees, 140 (70%) responded compliance and enforcement and 115 (57.5%) responded cost of implementation of the IFRS were some of the challenges of IFRS adoption. Hence, from the listed challenges above complexity of conversion from GAAP to IFRS was first followed by user guide complexity in the study area.

From Table 6, respondents expressed reasons for non adoption of the IFRS in their organizations. Based on their response, lack of skills and costs are more than benefits, lack of knowledge and unwillingness to accept changes from GAPP to IFRS are some of the few reasons for non-adoption of IFRS. From these reasons, lack of skill counts for 200 (100%) followed by cost of IFRS adoption which was more than benefits that was 150 (75%). Furthermore, respondents also mentioned

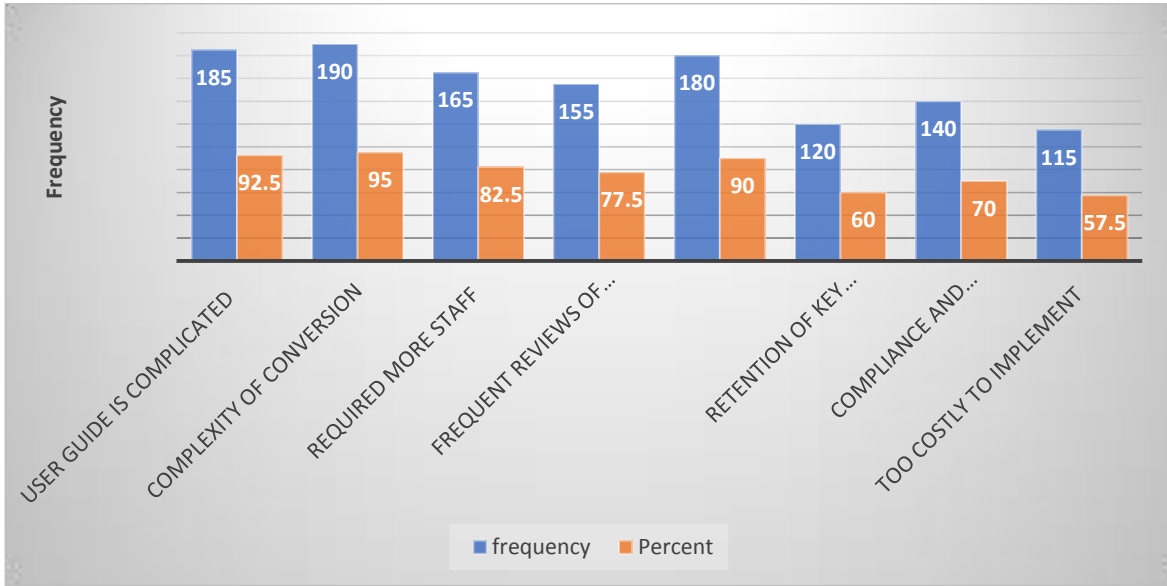


Figure 2. Bar chart showing Challenges of IFRS Adoption.

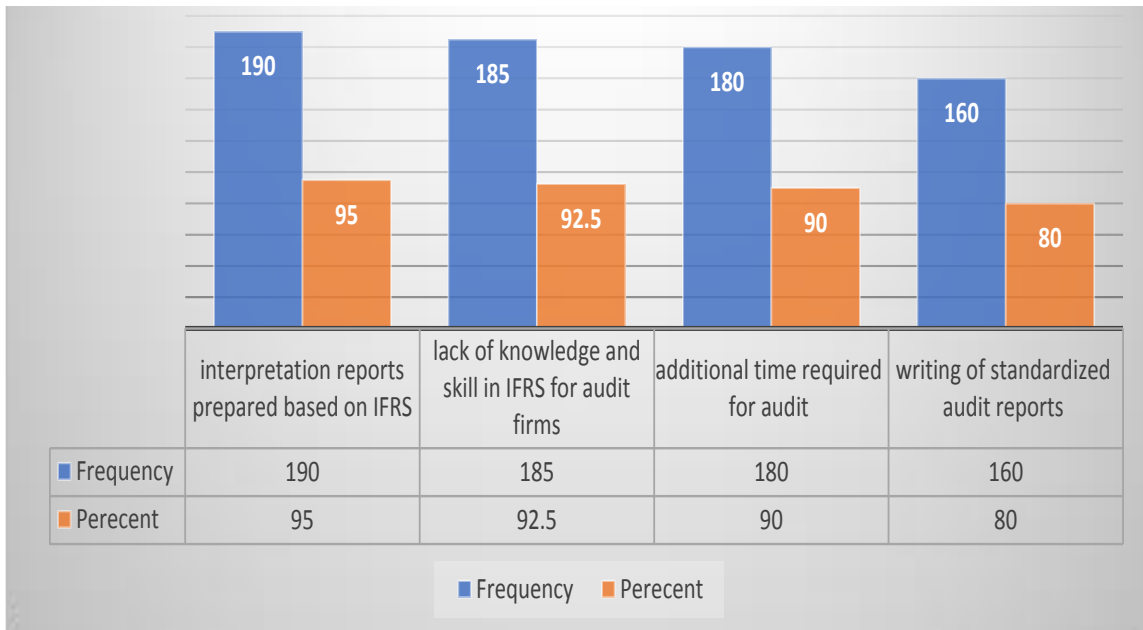


Figure 3. Challenges of IFRS for Audit Firms. Source: Own bar chart (2019).

that lack of knowledge accounted for 170 (85%) and unwillingness to accept changes accounted 120 (60%).

Figure 2 and 3 shows the challenges of IFRS adoption for audit firms. Respondents expressed some of the challenges faced by audit firms during verification of financial statements and other related documents prepared based on IFRS. The challenges are

interpretation of reports prepared based on IFRS, lack of knowledge and skill in IFRS for audit firms, additional time required for audit and writing of standardized audit reports based on respondents response. Based on the data output, 190 (95%) responded interpretation reports prepared based on IFRS is the first challenge followed by 185 (92.5) for lack of knowledge and skills for IFRS, 180

**Table 7.** Necessity for IFRS Adoption.

Necessity for IFRS adoption	Descriptive statistics				
	N	Minimum	Maximum	Mean	Std. deviation
Improve quality of financial report	200	1.00	5.00	4.48	1.01
Enhance reliability of financial report	200	1.00	5.00	4.05	1.19
Need to comply with global best practice	200	1.00	5.00	3.77	1.23
Improve accuracy of data reporting	200	1.00	5.00	3.67	1.36
Valid N (listwise)	200				

Source: Own Survey Result (2019).

**Table 8.** Perceived Benefit of IFRS Adoption.

Perceived benefit of IFRS adoption	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Dev.
Attraction of foreign investment	200	1.00	5.00	3.17	1.06
Increased access to funds	200	1.00	5.00	3.24	1.01
Attraction of local investment	200	2.00	5.00	3.28	0.97
Increased market liquidity and value	200	2.00	5.00	3.20	0.76
Better understanding of risk and return	200	1.00	5.00	3.17	1.14
Valid N (listwise)	200				

Source: Own Survey Result (2019).

(90%) for additional time required for audit firms for assurance and 160 (80%) for difficulty in writing standardized audit reports.

### Factors affecting IFRS adoption process

#### *Necessity for IFRS adoption*

In the process of IFRS adoption there are different factors that affect its adoption. Among other factors necessity for IFRS adoption is one of the major factors that determine its adoption. Under necessity there are four (4) factors. These factors have an effect on improving quality of financial report, enhancing reliability of financial report, need to comply with global best practice and improving accuracy of data reporting (Table 7).

The influence of these factors is measured using five (5) point Likert scale. The minimum is 1 (highly disagree) and the maximum is 5 (highly agree). The average mean determined showed 4.48, 4.05, 3.77 and 3.67 for the above factors respectively with a standard deviation of 1.01, 1.19, 1.23 and 1.36 respectively. This revealed that most respondents agreed for the factors to affect the IFRS adoption process.

#### *Perceived Benefit of IFRS Adoption*

The second major factor is perceived benefits for the IFRS adoption. Under this variable there are 5 factors

that mainly affects the adoption process based on the respondents' explanation. The first factor is attraction of foreign investment. This variable showed minimum score 1 (highly disagree) and maximum score 5 (highly agree) (Table 8). For this variable respondents response showed mean of 3.17 and 1.06 of standard deviation based on the likert scale score values. However, the likert scale score value for increased access to funds showed minimum score 1 (highly disagree) and 5 (highly agree) and mean value of 3.24 and 1.01 of standard deviation.

The third factor is attraction of local investment; revealed minimum score 2 (disagree) and maximum score 5 (disagree) and mean value of 3.28 with a standard deviation of 0.97. The fourth variable is increased market liquidity and value that showed minimum score of 2 and maximum score of 5 with mean value of 3.20 and a standard deviation of 0.76. The fifth variable better understanding of risk and return showed minimum score of 1 and maximum score of 5 with mean of 3.17 and standard deviation of 1.14 from the mean.

Thus, based on the mean value showed that most respondents were agreed for the above five factors to affect the IFRS adoption process and the variance revealed that the variation among respondents view point for each variables minimum.

#### *Constraints to IFRS adoption*

The third major factor for IFRS adoption process is



**Table 9.** Constraints to IFRS adoption.

<b>Constraints to IFRS Adoption</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Dev.</b>
Short time frame for adoption	200	2.00	5.00	3.42	0.89
High cost of staff training	200	1.00	5.00	2.89	1.10
High cost of acquiring technology	200	2.00	5.00	2.99	0.78
Staff Unwillingness to acquire IFRS training	200	1.00	5.00	2.95	0.91
Lack of knowledge and experience in audit firms	200	1.00	5.00	2.98	0.93
Valid N (listwise)	200				

Source: Own Survey Result (2019).

constraints to IFRS adoption. Under this variable there are 5 factors that affects the adoption process. These are short time frame for adoption, high cost of staff training, high cost of acquiring technology, staff unwillingness to acquire IFRS training and lack of knowledge and experience in audit firms (Table 9).

The descriptive statistics result for short time frame for adoption process showed 2 (disagreed) for minimum score and 5 (highly agree) for maximum for the liker scale scores and the average mean showed 3.42 and its standard deviation from the mean for all respondents were 0.89. The second factor (high cost of staff training) showed 1 for the minimum score and 5 for the maximum score value that ranges between highly agree and highly disagree with mean value of 2.89 and standard deviation of 1.10 form the average number.

The third variable that is high cost of acquiring technology showed 2 (disagree) and 5 (highly agree) for the maximum likert scale value score and its mean value score showed 2.99 and a standard deviation of 0.91. The fourth variable staff unwillingness to acquire IFRS training also showed minimum score 1 (highly disagree) and maximum score 5 (highly agree) for the likert scale values and mean of 2.95 and standard deviation of 0.93. The final variable lack of knowledge and experience in audit firms also showed minimum value 1 and maximum value of 5 for the liker scale and mean of 2.98 and standard deviation of 0.93 from the mean.

### ***Suitable for IFRS adoption***

The major factor is suitability for IFRS adoption. The respondents explained that IFRS would simplify the process of preparing financial statements for entities. The respondents response rate for this variable showed minimum score 1 (highly disagree) and maximum score of 5 (highly agree) with mean value of 3.11 and standard deviation of 1.28. The second variable is IFRS which will improve analysis for decision making process for management and the result revealed minimum score of 1 and maximum score of 5 with mean value of 3.16 and standard deviation of 1.35 (Table 10).

The third variable is IFRS's enhanced accuracy and reliability of data and reporting for organizations. The minimum response rate showed 1 (highly disagree) and maximum score of 5 (highly agree) with mean value of 3.06 and standard deviation of 1.34. The fourth variable found is IFRS has best intercompany comparison of financial statement with minimum score of 1 and maximum score of 5. The mean score showed 2.95 and standard deviation of 1.41. The last variable found is IFRS implementation will facilitate merger and combination of entities. For this variable the respondents' response revealed 1 and 5 for minimum and maximum score respectively. The mean value showed 3.36 and 1.26 for standard deviation.

### ***Adaptability for IFRS adoption***

The fifth main variable is entities ability for adaptability of IFRS adoption process (Table 11). Under this variable there are 6 variables found based on respondents answer. The first factor found was IFRS brings better corporate governance that have minimum and maximum score of 1 (highly disagree) and 5 (highly agree) respectively with mean value of 2.98 and standard deviation of 1.55. The second factor IFRS enhances better access to capital market for IFRS adoption process showed minimum score of 1 and 5 with mean value of 2.51 and 1.37 of standard deviation. The third factor IFRS will reduce cost for decision making showed mean of 2.70 with standard deviation of 1.50 and the forth factor IFRS eases using one consistent reporting standard showed mean of 2.93 and standard deviation of 1.50. The fifth factor found was IFRS will make internal audit easier that showed minimum score of 1 and maximum value of 5 with mean of 2.63 and standard deviation of 1.42. The last factor IFRS will facilitate better business risk Management also showed mean value of 2.72 and standard deviation of 1.47.

### **Factor analysis model**

As it is depicted in Table 12, the results showed that the

**Table 10.** Suitable for IFRS Adoption.

<b>Suitable for IFRS Adoption</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Dev.</b>
IFRS would simplify the process of preparing FS	200	1.00	5.00	3.11	1.28
IFRS will improve analysis for decision making	200	1.00	5.00	3.16	1.35
IFRS's enhanced accuracy & reliability	200	1.00	5.00	3.06	1.34
IFRS has best inter- company comparison of FS	200	1.00	5.00	2.95	1.41
IFRS implementation will facilitate Merger	200	1.00	5.00	3.36	1.26
Valid N (listwise)	200				

Source: Own Survey Result (2019).

**Table 11.** Adaptability for IFRS Adoption.

<b>Adaptability for IFRS Adoption</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Dev.</b>
IFRS brings better corporate governance	200	1.00	5.00	2.98	1.55
IFRS enhances better access to capital market	200	1.00	5.00	2.51	1.37
IFRS will reduce cost for decision making	200	1.00	5.00	2.70	1.50
IFRS eases using one consistent reporting standard	200	1.00	5.00	2.93	1.50
IFRS will make internal audit easier	200	1.00	5.00	2.63	1.42
IFRS will facilitate better business risk Mgt	200	1.00	5.00	2.72	1.47
Valid N (listwise)	200				

Source: Own Survey Result (2019).

**Table 12.** KMO and Bartlett's Test.

<b>Parameter</b>	<b>Value</b>
Kaiser-Meyer-Olkin measure of sampling adequacy	0.837
Approx. Chi-Square	3037.661
Bartlett's test of sphericity	df
	300
	Sig.
	0.000

Source: Own Survey Result (2019).

Bartlett test for the data were 0.000 which is less than 0.05. Thus, the result revealed that the factor analysis is significance at less than 1%. In general, the Kaiser-Mayer Olkin of 0.837 (that is 84%) and Bartlett test of 0.00 showed that the model is appropriate and significant at less than 1% level of significance (Table 12).

### Communalities

In the appendixes part, results showed the communalities before and after extraction process using the factor analysis model based on the principal component analysis works on the initial assumption that all variance is common. Moreover, Comrey and Lee (1992) suggest that communalities values greater than or equal to 0.45 are considered fair. But variables which have

communalities less than 0.45 are not having sufficient explanation and should be excluded from the analysis.

As a result, from 25 component factor indicators, 3 predictors which communalities less than the required level have excluded from the analysis. Therefore, only 22 predictors meet the acceptable level of explanation and retain for interpretation and further analysis purposes. All factors that have eigenvalues greater than one were retained for interpretation and further analysis (Kaiser, 1960). Therefore, as can be seen on appendixes in the total variance table output, only the first five (5) factors are statistically significant which have Eigenvalues >1. Based on the output factor one showed 31.52%, factor two showed 13.97%, factor three showed 8.82%, factor four showed 6.75% and factor five showed 5.156% of phenomenon for the eigenvalue and the overall 5 extracted factors explained 66.22% of studied

phenomenon.

## Conclusion

This research is conducted to make factor analysis on IFRS adoption process in west Hararghe Zone. For this purpose, dimension reduction model is applied to reduce factors that affect the IFRS adoption process. In Ethiopia, IFRS adoption process started since 2014 with the establishment of Accounting and Auditing Board of Ethiopia (AABE). The AABE is the statutory body established in terms of the Financial Reporting Proclamation 847/2014, with the primary purpose of protecting the public interest (AABE, 2014).

The board is established to take the mandate for IFRS adoption process in 3 selected financial sectors that are public and private entities, other private entities and SMEs. Accordingly, the board tried to implement the adoption process within these different entities. The entities showed its adoption process fully adopted, partially adoption and others showed willingness and readiness to begin the adoption process.

Based on the findings of our research for IFRS adoption, respondents explained some of the benefits, challenges and factors that affects the IFRS adoption process.

The finding of this research showed some of the benefits of IFRS adoption for entities are better reflection of performance, management of the organization like it for better decision, improved comparability and smoother finance from abroad. The research also identified some of the challenges of IFRS adoption process. The respondents explained user guide complexity to understand, complexity of conversion process, more staff's requirement, need for frequent review of standards, lack of skills to implement, difficult to retain key employees, compliance and enforcement and too costly for implementation are some of the major challenges of the adoption process.

Finally, the dimension reduction model run for factor reduction purposes found five (5) major variables that have 66.22% cumulative initial eigenvalue that have the capacity to explain the IFRS adoption process. Based on the model result adaptability, suitability, constraints, necessity and perceived benefits are the major variables for the adoption process respectively.

## Recommendations

Based on the main findings of this research, the researchers forwarded the following possible recommendations for further improvements:

(1) The Accounting and auditing board of Ethiopia (AABE) should take serious commitments and motivations to

enter into for full IFRS adoption process in collaboration with the 3 selected entities.

(2) Continuous professional and career development trainings should be given for employees who are working within the 3 sectors who are responsible for the IFRS adoption implementation.

(3) Government should take initiative and commitment for the IFRS adoption and implementation process by allocation adequate budget and other relevant logistics and monitoring and follow up should be taken frequently.

(4) The Federal Audit General Authority, Ministry of Financial and Economic development, Ethiopian Revenue and Custom authority and other concerned bodies should work in partnership and cooperation for the realization of the IFRS adoption process to have common understandings.

(5) Higher education institutions should review their curriculums in line with the IFRS based system for both undergraduate and postgraduate studies and appropriate short-term trainings should be arranged and given for all scholars who are in the teaching profession.

(6) Entities should higher emphasis for the five (5) major variables in the IFRS adoption process that are identified using dimension reduction model. The variables that have maximum eigenvalue are Adaptability, Suitability, Constraints, Necessity and perceived benefits respectively.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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