International Research Journal of
BUSINESS STUDIES

ISSN: 2089-6271 | e-ISSN: 2338-4565 | https://doi.org/10.21632/irjbs

Vol. 14 | No. 1

The Impact of Firm Performance on Annual Report Readability

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ARTICLE INFO

Keywords:
Readability,
firm Performance,
corporate governance,
fixed effect,
random Effect

Kata Kunci:
Keterbacaan,
Kinerja Perusahaan,
tata kelola perusahaan,
efek tetap,
Efek acak

ABSTRACT

This paper attempts to find the impact of firm performance on annual report readability. This study consists of 15 listed firms on the Ghana Stock Exchange within the period 2008 to 2017. The study applies Gunning Fog Index to measure annual report readability and measures Firm Performance using Return on Assets (ROA) by applying the fixed and random effect method. Per the Hausman test, the random effect method was accepted; the result stated that firm performance positively relates to annual report readability. In addition, the study finds out that corporate governance exerted a negative influence on the readability of the annual report. Finally, the study adopts F-MOLS to test Robustness. Regulators can consider improving and writing plain disclosure laws to improve annual report readability.

SARI PATI

Makalah ini mencoba menemukan dampak kinerja perusahaan terhadap keterbacaan laporan tahunan. Penelitian ini dilakukan pada 15 perusahaan yang terdaftar di Bursa Efek Ghana dalam periode 2008 hingga 2017. Penelitian ini menggunakan Gunning Fog Index untuk mengukur keterbacaan laporan tahunan dan mengukur Kinerja Perusahaan menggunakan Return on Assets (ROA) dengan menerapkan metode fixed and random effect. Per uji Hausman, metode efek acak diterima; hasilnya menyatakan bahwa kinerja perusahaan berhubungan positif dengan keterbacaan laporan tahunan. Selain itu, penelitian ini menemukan bahwa tata kelola perusahaan memberikan pengaruh negatif terhadap keterbacaan laporan tahunan. Akhirnya, penelitian ini mengadopsi F-MOLS untuk menguji Robustness. Regulator dapat mempertimbangkan hal ini untuk meningkatkan dan menulis undang-undang pengungkapan perusahan di publik untuk meningkatkan keterbacaan laporan tahunan.

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INTRODUCTION

The medium by which Public firms communicate their financial position to stakeholders is via the annual report. The annual report contains the Chairman's address, the director's report, vivid discussion of the company's operations, related notes and audited financial statements (Risa Wahyuni, Febrianto, & Rahman, 2018). The document expresses the previous performance of the firm, future possibilities phrased in simple language for the understanding of interested parties (Gyasi & Owusu-Ansah, 2018).

The detailed information in the annual report is prepared in line with the disclosure requirement of the Securities and Exchange Commission (SEC) in U.S. Analysts and Shareholders scrutinize the report of the firm's end of year financial details, focusing basically on the previous year's developments and incoming projects (Ho & Wong, 2004). Therefore, transparency in the annual reports is very crucial for investors and the capital market as a whole noticing the adverse opacity effects of financial information on interested parties.

Recent studies have raised concerns about the difficulty in the readability of annual reports over the years (Dyer, Lang, & Stice-Lawrence, 2016; Ginesti, Drago, Macchioni, & Sannino, 2018). In agreement to this concern, a growing body of literature states that annual report readability is necessary to prevent the imbalanced flow of information and enhance stakeholders' view of the firm (Bayerlein & Davidson, 2011; Courtis, 2004; Merkl-Davies & Brennan, 2007; Stanton & Stanton, 2002).

Previous research forgets the possible role of firm's performance on the readability of annual reports but centers mainly on firm-level business strategies Habib, Hasan, and Rahman (2018) and the implications of capital market pricing of firm disclosure opacity (Dempsey, Harrison, Luchtenberg, & Seiler, 2012). This is remarkable, as managers oversee the preparation of the annual report, scholars have the intuition that directors can alter the firm performance to influence the level of readability (Hooghiemstra, Kuang, & Qin, 2017; Kim & Starks, 2016; Liao, Luo, & Tang, 2015).

A limited number of empirical studies have focused on the impact of firm performance on annual report readability (Risa Wahyuni et al., 2018). Regardless, prior studies (Asay, Libby, & Rennekamp, 2018; Dempsey et al., 2012; Ginesti, Sannino, & Drago, 2017; Li, 2008) shares important insights relating to firm-level characteristics and creates room for further research in these areas.

Studies such as Risa Wahyuni et al. (2018) employed the multiple regression analysis on a sample of 1222 firm years from 2013-2017. The study results indicated no association between firm performance and annual report readability. Biddle, Hilary, and Verdi (2009) add up with results of a positive association between annual report readability and the investment efficiency of the firm, indicating that companies with easy to read annual report readability face minimum problems of overinvestment and underinvestment. Li (2008), finds that easy to read annual report means firms have higher earnings. The study continues that, a firm with positive performance indicates persistence positive earnings, thus such firm publishes readable annual report. Habib et al. (2018) further employed a large set of US data, and records that there is a significant impact between business strategy and annual report readability. Specifically, the annual reports of prospector-type companies are difficult to read than that of defender-type businesses.

In the Ghanaian context, there are limited literatures relating to textual analysis. Documenting the few, Gyasi and Owusu-Ansah (2018) examined the readability of annual reports within the period 2011 to 2015 of the Social Security and National Insurance Trust (SSNIT). The study demonstrated the readability trend in Ghana. The measurement used for annual report readability was the SMOG index and employed descriptive statistics and ANOVA

to analyze the data. The results were that, SSNIT's annual report is difficult to read. This scarcity in literature on readability motivated the research on annual report readability in the Ghanaian setting. The main contribution of this study is, it adds to the previous literature on firm performance and annual report readability adopting diverse perspective of analysis particularly in the case of Ghana. This study employs Return on Assets (ROA) as the measurement for firm performance and FOG Index to measure annual report readability. The method used for the study is the fixed and random effect model on a sample of 15 listed firms in Ghana over the period 2008 to 2017. In addition, the study considered the role of corporate governance in analyzing the impact of corporate governance on annual report readability.

The paper follows in such a way that section two reviews the literatures, section three talks about methodology, section four examines the results and analysis, whereas section five concludes the paper including policy implications and recommendations.

METHODS

Data

The sample consists of 15 firms listed on the Ghana Stock Exchange at the time 2008-2017 for which annual reports were available on the Ghana Stock Exchange in electronic form. Reports that were not assessable on the Ghana Stock Exchange (GSE) is directly from the company's website. The 15 firms chosen continuously appeared on the Ghana Stock Exchange between the years of study. Those firms also publish data consistently from 2008-2017. These criteria result in 150 observations for the period.

The dependent variable for the study is annual report readability. The readability measure for the study is FOG Index popularly used by many authors in readability studies (Ajina, Laouiti, & Msolli, 2016; Ginesti et al., 2017; Kumar, 2014; Lang & Stice-Lawrence, 2015). Fog came about by (Gunning, 1952) to assist staff in the corporate environment improve upon their communication by means of writing. Lehavy, Li, and Merkley (2011) states that, the FOG index has an easy computation, usable in any narrative disclosure. The formulae for Fog Index is below:

$$FOG = 0.4 \times \frac{Words}{Sentence} + \% \text{ (complex words)} \quad \ldots\ldots\ldots\ldots (1)$$

Where complex words refer to any word with three or more syllables.

The FOG Index calculates both the average sentence length, by comparing the number of words to a number of sentences and the average number of difficult words with a comparison of a number of words to a number of complex words. A readability score over 18 is complex; below 18-14 means the text cannot be read, below 14-12 means the text is simple, below 12-10 is acceptable and from 10 down to 8 means the text is simple to read.

Concisely, a higher readability score indicates a complex text.

The study further uses two independent variables. They are firm performance (FP) and corporate governance (CG). The main independent variable of focus is firm performance measured by Return on Assets similar to (Dempsey et al., 2012; Risa Wahyuni et al., 2018). Return of Assets (ROA) is a profitability ratio that measures the ability of a firm to put all its assets to use to produce income for a period of time (Weygandt, Kimmel, Kieso, & Elias, 2010). Where Net income denotes income before extraordinary items. The study calculates Return on Assets (ROA) as;

$$ROA = \frac{Net\ Income}{Total\ Assets} \quad \ldots\ldots\ldots\ldots (2)$$

Prior studies have used many corporate governance characteristics as a measure for corporate governance. This study adopts the measurement

of ÈšarÈ (2015) to extract the corporate governance index. The mathematical function used to construct the corporate governance index is,

$$F(x) = (\sum_{i}^{n} = C_i \times p_i) \times 100 \text{ .....(3)}$$

Where:

i = (1, 2...n);

x = the firm for which index is calculated, n = 6, for this case, because the criterion is 5.

C_i = rating of each criterion i based on the verification of the degree of fulfillment of the principles of corporate governance.

C_i = 0 is taken if the criterion does not exist and 1 if the criterion is completely fulfilled. Values between 0 and 1 is awarded based on the extent to which the variables included in the criterion complies with corporate governance principles.

p = the level of importance attached to each criteria C_i

The index computation is based on the following criteria as pertains to the corporate governance variables available in the annual report of the firms.

The study then added the control variable as used by other studies (Ajina et al., 2016; Ginesti et al., 2018; Li, 2008; Rjiba, 2015), firm size (SIZE). SIZE is proxies using the natural logarithm of the total assets of the firm. This was used by (Luo, Li, & Chen, 2018) by investigating the association between annual report and corporate agency costs and (Rjiba, 2015) in examining the effect of annual report readability on the cost of equity capital in French firms between 2002 and 2006. Firm size as well explains annual report readability. Larger firms with more complex operations is expected to have longer and difficult annual report readability.

Model

The main objective of the study is to develop a regression model for the estimation of the impact of firm performance on the readability of the annual report. The model developed is as follows:

$$ARR_{it} = \alpha + \beta_1 FP_{it} + \beta_2 CG_{it} + \beta_3 SIZE_{it} + \varepsilon_{it} \text{ .....(3)}$$

Where ARR is Annual report readability (FP) is Firm performance, (CG) is corporate governance and (SIZE) is Firms size, α is the intercept, *i* and *t* is the firm and time respectively $\beta_1 \ldots \beta_3$ are the

Criteria that compose the corporate governance index

No.	Criteria C	Degree of importance p (in percentage)
C1	In its annual report, the company includes a separate section with the corporate governance statement, that contains: - a statement that it has voluntarily decided to comply with this Code, or - an explanation of which special practices it departs from and the reasons	20%
C2	The company publicly disseminates all the main aspects of its corporate governance system	20%
C3	Transparency of information on risk management and internal control	20%
C4	Dissemination of board remuneration by the firm	20%
C5	Publicly making specific reference to the diversity the policy applied by the company in relation to:	10%
C6	Board composition and the percentage of each gender in the composition of the board and senior executive team	10%

Source: ÈšarÈ (2015). Projection-based on official information available in the firm's annual report.

Criteria that compose C2 section for the index concerning main aspects of the company's corporate governance system

No.	Criteria C		Degree of importance p (in percentage)
C2.1	A short description of how the board operates, including:		10%
	2.1.1 The frequency of board meetings and individual board members individual attendance;	2.5%	
	2.1.2 The frequency of board committee meetings held and committee members attendance	2.5%	
	2.1.3. A brief account of the composition, terms of reference and main subject examined by each board committee	2.5%	
	2.1.4. An brief account of how the performance evaluation of the board and its committees has been handled	2.5%	
C2.2	Information on board members including:		10%
	2.2.1. The identification of the chairman, the vice-chairman (if appointed), chief executive, chairmen and members of the board Committees	2%	
	2.2.2. Independent non-executive board members	2%	
	2.2.3. short biography of every board member Including company Secretary	2%	
	2.2.4. Term of appointment of every board member	2%	
	2.2.5. Other professional commitments of every board member	2%	

Source: ÈšarÈ (2015). Projection-based on official information available in firms' annual reports used in the study.

coefficients and ε is the error term. The main explanatory variables (firm performance, corporate governance) are expected to have a negative effect on annual report readability.

METHODS

Panel unit root test. The Im, Pesaran, and Shin (2003) and Levin, Lin, and Chu (2002) tests are being utilized in this panel study. This unit root test approach is as an average of ADF statistics. The unit root test has the following equation:

$$Y_{it} = \rho iyi,_{t-1} + \sum_{j=1}^{p} \varphi ij \Delta y_{i,t-j} + Z^{l}_{it} + \varepsilon_{it} \quad \text{.....(4)}$$

The null hypothesis indicates that all series within the panel have unit root H_0: qi = 1 and alternatively part of the series is stationary: H_1: qi < 1.

Fixed and Random effect method specification

In this study, the association between firm performance and annual report readability is empirically tested using the fixed-effects and random-effects model. The assumption underlying the fixed effect model is that, in employing the fixed effects model, the independent variable may be influenced or biased. The fixed-effect model takes away this effect and tabulates the net effect of the independent variable on the dependent variable (Baum, 2006; Wooldridge, 2002).

The equation for a fixed effect model is as follows:

$$Y_{it} = \sum \beta_1 X_{it} + \alpha_i + u_{it} \quad \text{.....(5)}$$

Where α_i is the unknown intercept for each entity, $Y_{it\,is}$ the dependent variable and β is the coefficient for the independent variable u_{it} is the error term, i = entity and t = time.

The fixed effect model is then modified to suit the study in the equation below:

$$ARR_{it} = \beta_1 FP_{it} + \beta_2 CG_{it} + \beta_3 SIZE_{it} + \alpha_i + u_{it} \quad \text{.....(6)}$$

The random effect model assumes that the individual effects are held by the intercept and a random component. The random component is not related to the independent. The fixed effect and random effect is selected based on results from the Hausman test (Hausman, 1978).

The equation for a random effect model is as follows;

$$Y_{it} = \sum \beta_1 X_{it} + \alpha + u_{it} + \varepsilon_{it} \quad \text{.....(7)}$$

The random effect model is then modified to suit the study in the equation below:

$$ARR_{it} = \beta_1 FP_{it} + \beta_2 CG_{it} + \beta_3 SIZE_{it} + \alpha + u_{it} + \varepsilon_{it} \quad \text{...(8)}$$

Hausman Test

The study then adopted the Hausman test to determine the suitable method for the study. The Null hypothesis of the Hausman test states that the fixed effect is appropriate as against the alternate. Thus, we use the random effect model for the study.

RESULTS AND DISCUSSION

The descriptive statistics indicate the characteristics of the variables by estimating the mean, median, minimum including measurements like standard deviation, with the highest and lowest mean being 93.3750 and -5.6487 respectively. A standard deviation of the highest value of 6.0772 and a lower value of 0.4948. The variables also recorded a higher value and lower values of skewness at 2.660 and -10.4425 respectively (see Table 1).

Tabel 2 reports the empirical results on the relationship between all variables. The data set demonstrates that the Annual report readability positively relates to Firm performance. In addition, a negative relationship is seen between corporate governance (CG), Firm size (SIZE) and Annual report readability.

Table 3 talks of two methods of unit root test, which is Levin, Lin & Chu (LLC) and Im, Pesaran & Shin (IPS). The researcher estimated the variables for unit roots in level intercept and 1st Difference. At LLC level and 1st difference, Unit root test do not hold for Firm performance (FP) and Firm size (SIZE). By using the IPS method, however, all variables are stationary (i.e. no unit root) after the 1st difference.

Table 1. Criteria that compose the corporate governance index

VARIABLE	ARR	FP	CG	SIZE
MEAN	11.3374	0.0052	73.7439	7.4907
MEDIAN	10.3698	0.0487	71.7500	7.7207
MAXIMUM	20.3000	0.7656	93.3750	8.8799
MINIMUM	2.2188	-5.6487	69.0000	5.5093
STD. DEV.	5.6244	0.4948	6.0772	0.8303
SKEWNESS	0.0780	-10.4425	2.2660	-0.4013
KURTOSIS	1.5595	120.1053	7.7883	2.0678

Source: Computed by author

Table 2. Correlation Matrix

Variable	ARR	FP	CG	SIZE
ARR	1	0.0848	-0.1060	-0.0110
FP	0.0848	1	0.1318	0.1295
CG	-0.1060	0.1318	1	0.4398
SIZE	-0.0110	0.1295	0.4398	1

Source: Computed by author

Table 3. Unit Root Results

Variable	LLC Level Intercept	LLC 1st Difference	IPS Level intercept	IPS 1st Difference
ARR	94.7682	-16.8651***	41.2355	-7.55468***
FP	-7.67415***	-12.2512***	-3.51381***	-5.80478***
CG	-3.3173	-1.9539**	-3.1081	-6.1179***
SIZE	-1.85390**	-6.15877***	2.33752	-2.52835***

Notes: *, ** and *** denote significance at 10%, 5% and 1%, respectively. Source: Calculations by authors

Table 4. Regression Results

Variable	Fixed Effects	Random Effects
FP	1.7077	1.1128
	(1.0426)	(0.9614)
CG	-1.7347	-0.1245
	(1.1063)	(0.0864)
SIZE	2.1767*	0.2399
	(1.1619)	(0.6324)
CONS	122.9457	18.7130
	(82.8185)	(6.1076)

NB: *** Significant at the 1% level, **Significant at the 5% level, *Significant at the 10% level. Standard errors are in parentheses Source: Authors Own

Table 4 gives the summaries of the results using the random effect model. This is based on the Hausman test results conducted (see Table 4). It can be noticed that Firm performance (FP) measured by Return on Assets (ROA) has a positive relationship with Annual report readability (ARR). This can be explained that a 1% increase in firm performance (FP) leads to more than 100% increase in the readability of Annual reports on the average. The result is in line with the findings of (Courtis, 1995; Risa Wahyuni et al., 2018). On the contrary, (Dempsey et al., 2012; Habib et al., 2018) used ordinary least squares (OLS) regressions, and find that annual reports are more readable for better performing firms.

In addition, corporate governance (CG) is seen to be negatively related to Annual report readability (ARR) but statistically insignificant. Ginesti et al. (2017) similarly record a negative CEO duality (Corporate governance) against Fog Index, which is the measurement for annual report readability used in this study. Conversely, Aymen, Sourour, and Badreddine (2018) record positive results for Analyst (Corporate governance) and Annual report readability (Flesh Reading Ease index) by employing the fixed and random effect model on a sample of 163 companies over a period of 4 years.

Firm size (SIZE) is also reported to have a positive but insignificant association with Annual report readability (ARR) reflecting that bigger and smaller firms produce difficult and easier annual report respectively. An increase in the SIZE of a company shows that the readability result of the annual report exceeds the difficult to read annual report readability score. That is Fog ≥ 18 means the text cannot be read. Research from (Ginesti et al., 2017; Habib et al., 2018) confirms this result using the whole sample of the annual report. On the other hand, Li (2008) finds a negative relation between firm size by employing market value to measure the firm size and annual report readability.

Table 5. Hausman Test results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Cross-section random	7.79	3	0.05

Source: Authors Own

Table 6. Robustness Check Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FP	6.993300	50.32401	0.138965	0.8929
CG	-17.79605	45.24937	-0.393288	0.7044
SIZE	-3.091496	20.37990	-0.151693	0.8832

Source: Authors Calculations.

The study conducted a further robustness test for the model above employing the Panel Fully Modified Least Squares (FMOLS) estimation method. From the results, none of the variables is noticed to have a significant impact on annual report readability. The F-MOLS result is consistent with the original outcome above with the exception of firm size (SIZE). The results mean that an increase in firm performance increases annual report readability of firms whereas an increase in corporate governance (CG) and firm's size (SIZE) reduces annual report readability. It appears that, on the one hand, larger firms with complex operations increases annual report readability. On the other hand, regulatory systems in the disclosure environment necessarily give rise to more transparent reports.

MANAGERIAL IMPLICATIONS

The implications of the findings from the study are that firms influence their annual reports when they perform poorly in other to win investor sentiment. In other words, firms produce readable annual reports when their performance is good. This issue brings to light that, even though there has been general agreement among standard setters and regulators such as U.S Securities and Exchange Commission (SEC) on plain disclosure, the issue on annual report readability still aggravates. The effects of this on stakeholders must be highlighted. Regulators must take into consideration writing plain disclosure into laws when improving corporate information report, to establish a probable switch between honesty and the readability of the annual report.

The suggestions from the study show that the involvement of corporate governance in a firm puts the firm in check. Regulators should also persistently stimulate firms to improve upon corporate governance systems to ensure disclosure quality.

Control variable such as firm size is necessary to describe the association between firm performance and annual report readability. The study strongly suggests that further research should be made on the causes of the positive relationship between Firm performance (ROA) and Annual report readability (FOG Index).

CONCLUSION

Using the Fixed and Random effect model, the study investigates the impact of firm performance on annual report readability of 15 listed firms in Ghana within the period 2008 – 2017. Some prior findings are not convergent with the study's outcome. Results derived from various contexts are different, given the disparity in country settings. Findings from this study state that, the firm's performance (FP) positively relates to annual report readability (ARR). The reason is that the business operations of the firm are not focused on the firm's assets. Therefore, the firm's performance does not affect its annual report readability in any way.

Secondly, the result of corporate governance and annual report readability reveal that corporate governance (CG) has a negative influence on annual report readability. The increase in control systems and regulations of financial documents improves the readability of the annual report of firms. These governance systems aids to improve the firm's annual report readability. Void of these checks gives managers the opportunity to obfuscate information leading to complex annual report readability.

Finally, the result of the study reflects a positive relationship between the firm's size (SIZE) and annual report readability. The result indicates that complex annual report readability is more pronounced in larger firms with complex operations than in smaller firms. In all, the findings of this analysis should be viewed as a relevant move toward a complete understanding of the connection between firm performance and annual report readability. ■

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