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# Firm Specific Attributes and Voluntary Disclosure Information: Evidence from Listed Manufacturing Companies in Nigeria

Taiwo Agbaje*
Mary Josiah

*Department of Accounting, Igbinedion University, Okada, Edo State, Nigeria*
**Correspondence Email :* olajesumere2002@gmail.com

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**Abstract**
The study examined the effect of firm specific attributes and voluntary disclosures of listed manufacturing companies in Nigeria for period of 10 years (2014 to 2023). The study adopted the longitudinal research design, secondary data was sourced from the audited annual report of sampled 46 manufacturing companies. The fixed effect estimation technique revealed that firm size has positive effect (0.082) which is statistically significant (p=0.017) at 5% level; firm leverage has positive effect (5.05) and it is statistically insignificant (p=0.988) at 5%; firm profit has a negative effect (-0.000) and it is statistically insignificant (p=0.177) at 5%; and board independence has negative effect (0.002) and it is statistically significant (p=0.001) at 1%. The study concluded that firm size is one of the factors that increases voluntary information disclosure. The study recommended that manufacturing companies should expand their firm size through enhanced market visibility so as to have a better and robust voluntary disclosure of information in their financial statement.

***Keywords:*** Voluntary Disclosure, Firm Size, Firm Profit, Firm Financial Leverage.

## 1. Introduction

Agency conflict is the outcome of information asymmetries between management (agent) and shareholders (principal). The issue of agency conflict between managers and shareholders still persist, some firms were adversely affected as a result of agency conflict and information asymmetries these included: the debarment of two Nigerian firms Viva Atlantic Limited and Technology House Limited, and their CEOs by the World Bank over fraudulent procurement actions in January of 2025 highlights how dominant executives can leverage their positions for personal gain. Another case in hand is the Nestle Nigeria Plc and Dangote Cement, where audit disclosures and media reports highlighted governance deficiencies linked to centralized executive power (Olufemi & Olufisayo, 2023). Widening disparities in financial outcomes among manufacturing firms such as Lafarge Africa, May & Baker and Flour Mills of Nigeria in 2023.

Shareholders depend on the management to obtain vital information regarding their investment and to mitigate the flow of information asymmetries. While information asymmetry is a significant issue in today's business world because it produces a poor image of a company's stock, and results to higher cost of capital, firms' disclosure lowers asymmetric information and agency cost, thereby enhancing investors' confidence (Boshnak, 2021). Therefore, the process of communicating accounting measurements to their intended consumers is known as disclosure (Abubakar et al., 2021). Corporate disclosure is a significant tool used by corporate investors to make appropriate and feasible investment decisions. Leuz and Verrechina (2000) posited that companies can achieve reduction in information asymmetry and stock market liquidity improvement by pursuing high-quality disclosure. The primary purpose of information disclosure is to reduce agency costs and information gaps between the firm and its stakeholders (Rashid, 2018). Corporate disclosure is used by management to provide financial and non-financial information to the firm's stakeholders, such as shareholders, customers, prospective shareholders, and other relevant stakeholders.

A firm has always had numerous methods for disclosing information. The annual report is one of the most significant and required methods for listed companies to disclose and connect with their stakeholders (Bruslerie & Gabteni, 2010). In the same vein, Wawure (2018) posited that annual reports are known as instrument use to disclose information of a company. Annual disclosure is mechanism that provide financial and non-financial information to various users, viz shareholders, management, government, employees, lenders, competitors, trade unions, creditors, financial analysts and potential investors (Carmona & Trombetta, 2010). In addition, information disclosures in annual reports are strategic tools that help the company’s ability to raise capital at cheaper rate (Healy & Palepu, 2001). Mandatory and voluntary disclosures are the two most common types of information supply by firm annual reports to their stakeholders. Mandatory disclosures are the minimum material information that the law requires listed companies to include in their financial statements (Abdullah, 2009), whereas voluntary information disclosure is the voluntary release of financial as well as non-information through annual reports that goes above and beyond the mandatory requirements, whether related to International Accounting Standards (ISA) or any additional relevant regulatory standards (Abeywardana & Panditharathna, 2016). Onuagbon and Oziegbe (2016) viewed supplementary disclosure as the publication in surplus of the legal requirements characterized as open alternative through the side of corporate executives to reveal financial and non-financial information consider essential to the requirement for the judgment of the yearly account’s consumers. The disclosure of optional information serves as a medium which attract both researchers and other firm stakeholders’ attention. Companies are not statutorily obliged to abide by them but are motivated to embark on as a result of the inherent advantages thereon. Some of the advantages of voluntary disclosures are lower cost of capital, gaining investors’ confidence, improving marketability of shares (Bontis, 2013; Omoye, 2013). It is used as a device for reducing information gap between directors and other stakeholders and enhance the credibility of financial reports (Abeywardana et al., 2016). Ho and Taylor (2007) assert that in an effort to reduce agency costs, firms with greater leverage are more likely to increase the volume of corporate disclosure while high levels of profitability should reveal more information in order to increase their reputation with investors and prevent the negative headlines that comes with having excessive earnings.

In Nigerian context, financial and non-financial voluntary reporting practices by Nigerian firms have been empirically investigated by Ibrahim (2014), Oluwagbemiga (2014), Monday and Nancy (2016), Onuagbon and Oziegbe (2016), Rabiu and Ibrahim (2017) and Yusuf (2018). Their findings are quite similar that the Nigerian corporate voluntary reporting practices were weak. In the same vein, researchers such as Uddin and Hassan (2011), Sabo et al. (2015), and Uwuigbe et al. (2017) have all carried out research on firm attributes as being key determinants of voluntary disclosure of companies, but majority of the prior studies focused on financial sector in Nigeria. Even though, most of these studies used various firm characteristics to determine their level of influence on voluntary disclosure, there are limited studies on voluntary disclosure in the non-financial sector in Nigeria. It is on this basis that, there is the need to re-examine the relationship between firm-specific attributes and voluntary disclosure of information among non-financial firms listed on the Nigerian Exchange Group.

## 2. Literature Review and Hypotheses Development

### *Voluntary Disclosure*

Non-disclosure of vital reports has made stakeholders lack confidence in trading with such companies leading to a decline in performance (Tran, Nguyen, & Le, 2021). Information asymmetry between other stakeholders and management is the main issue. In this agency association, management benefit from information. Actions may be taken by an agent that varies with interests of other stakeholders (Hawashe, 2019). Voluntary disclosure is the provision of information by a company's management beyond requirements such as generally accepted accounting principles, where the information is believed to be relevant to the decision-making of users of the company's annual reports (Al-Theebeh, Ibraheem & Khaled, 2018). Disclosure research is conducted from two perspectives: required disclosures and voluntary disclosures. While mandatory disclosure research examines firms' compliance with appropriate financial reporting and legal regulations and standards (Tsalavoutas et al., 2011; Appiah et al., 2016), voluntary disclosure research investigates the level and quality of information transparency within a firm as a function of the overall efficiency of corporate governance in national economies (Barako, 2007; Nandi and Ghosh, 2012).

A firm has always had numerous methods for disclosing information. The annual report is one of the most significant and required methods for listed companies to disclose and connect with their stakeholders (Bruslerie & Gabteni, 2010). Annual disclosure is mechanism that provide financial and non-financial information to various users, viz shareholders, management, government, employees, lenders, competitors, trade unions, creditors, financial analysts and potential investors (Carmona & Trombetta, 2010). Asogwa et al. (2020) highlighted that mandatory disclosures are those disclosures which are in line with applicable rules, laws, regulations and standards prevalent at such point in time. Deviation attracts stiff and laid down penalties. Voluntary information disclosure is defined as the voluntary release of financial as well as non-information through annual reports that goes above and beyond the mandatory requirements, whether related to International Accounting Standards (ISA) or any additional relevant regulatory standards (Abeywardana & Panditharathna, 2016). Voluntary disclosure is a part of corporate disclosure that is discretionary and transcends beyond legal or regulatory mandates (Li et al., 2015) which is not backed by laws, regulations, and standards. Companies are not statutorily obliged to abide by them but are motivated to embark on as a result of the inherent advantages thereon. Some of the advantages of voluntary disclosures are lower cost of capital, gaining investors' confidence, improving marketability of shares (Omoye, 2013), used as a device for reducing information gap between directors and other stakeholders and enhance the credibility of financial reports (Abeywardana et al., 2016

***Firm size and voluntary disclosure:***
Size is an essential characteristic that influences the level of company disclosure. Larger organizations with more assets can efficiently handle the costs associated with voluntary disclosure (Tran, 2021). As a result, it implies that if the size is small, the level of disclosure will be reduced as well. According to evidence, larger corporations release more voluntary information (Rakiva, 2019). Rahman and Rahman (2020) discovered a favourable association between business size and corporate disclosure level.

Firms' size can be assessed as the total assets, total sales, market value and equity as well as their natural logarithm terms (Onguka, Iraya & Nyamute 2021). Using Rbin and R size class inter- changeably, the average firm size in each size bin is calculated by dividing the number of employees by number of firms (Robert & Rabih, 2018). Firms' size means the scale or volume of operation turned out by a single firm. The study of firm's size is important since it affects its efficiency and its profitability (Edunote, 2022). Quite a number of empirical literatures have been conducted using firms' size. Voluntary disclosure refers to the provision of financial and non-financial information by firms beyond statutory requirements. Kolsi (2017) defines it as management's intentional release of information deemed useful to financial statement users. Its extent varies across industries, firm sizes, and regulatory contexts (Abubakar & Mogauri, 2020), influenced by governance structures and managerial strategy. In practice, however, several organizations have been reported to have voluntarily revealed more information in their reports than is statutorily required under the legal framework of their business environments (Adebayo and Ezejiofor, 2021). Voluntary disclosure complements mandatory reporting by offering stakeholders timely and forward-looking insights, including strategic, environmental, and governance data (Garko, 2016). It reflects managerial transparency, enhances investor confidence, and can improve market valuation (Samaha et al., 2015).

Modern practices include websites, press releases, and analyst calls. In multinational contexts, voluntary disclosure also aids competitive positioning in markets with high transparency demands (Hassan & Hosain, 2014). Such disclosure of financial information is relevant to business stakeholders, as a result of the growing concern that firms should show some level of responsibility in terms of community development, environmental responsibility and staff welfare (Nworie, Obi, Anaike & Uchechukwu-Obi, 2022). That is to say, other indices of corporate policies and results must be disclosed so that end users of the annual reports of the firms can wholly appreciate the behavior of the firm towards its employees, the environment, host communities and its shareholders (Adeyemi, Fagboro & Udofia, 2020). The financial reporting framework is designed to cater for the information needs of the shareholders and also other classes of capital providers. In recent times, customers, social activities and environmentalists are beginning to ask questions as regards to how companies' carryout their activities in the environment while considering the environmental and social impacts of such economic activities. Thus, this justifies the growing call for more disclosure of corporate practices and policies, in addition to the disclosure of financial indices of firm's financial performance (Elikanah, 2019).

*H1: Firm size has no significant effect on voluntary disclosures of manufacturing companies listed in Nigeria.*

***Firm financial leverage and Dependent variable***

Financial leverage is the mixes that exist within debt security with equity in its capital structure (Hassan, Kadiri & Oloba 2022). A study survey revealed that firms which had better access to finance and export diversification were found with better firm performance. The report found better access to finance that could have positive causal effect on firm performance, stating with examples that firms who perceived access to credit as a constraint to their business had, on average around eighty percent lower growth and around thirty percent lower performance viability capacity utilization growth compared to firms where access to finance was not perceived as constraint (International Monetary Fund 2019).

The extent of debt a business or company incurs as against several other accounts in the statements of financial position, statement of financial performance or the statement of cashflow, indicates the extent to which company's assets and business is financed with either debt or equity and at such a company with higher leverage is exposed to a higher financial risk (Corporate Finance Institute 2021). On the other hand, a lower-level leverage can motivate management to turn their disclosure process towards shareholders more than lenders. Therefore, management are encouraged to release additional information in their financial statements to minimize their costs and to evade any creditor's request. A number of studies could not find any impact of leverage on voluntary disclosure. Leverage depicts the dominance of fixed interest in the capital structure of a company, and the management of the debt capital portfolio is of a great value (Ibadin & Omoye, Citation2013). Whether a company has high or low gearing with the associated benefits and problems are largely dependent on the skills, knowledge and competences inherent on the management ability to manage the debt portfolio (Hannifa et al

Citation2002; Flaida & Lemmes, Citation2015). For instance, firm with greater proportion of leverage may increase disclosure plan for managers and motivate them to release additional information to get investors' interests (Albitar, 2015). On the other side, a lower level of leverage can motivate management to turn their disclosure process towards shareholders more than lenders. Therefore, management are encouraged to release additional information in their financial statements to minimize their costs and to evade any creditor's request. Investors and lenders rely only on financial statements to assess a company's financial standing or credit rating for leverage and liquidity. As a result, managers are inclined to raise information regarding the risk associated with the company's short-term and long-term credits (Hendra & Evelyn, 2015). An organization having a high gear would have more agency costs as a result of the value shift from debt owners to shareholders. Furthermore, the firm with more debt has greater willingness to send out news, thus bringing down agency cost (Corrado et al., 2015).

*H2: Firm financial leverage has no significant effect on voluntary disclosures of manufacturing companies listed in Nigeria.*

***Firm profit and Dependent variable***

Profitability is defined as the excess of income over expenses during a specific time. When a company's profitability is strong and its profit margin is large, management is motivated to provide more information to demonstrate a good reputation to customers, shareholders, investors, and other stakeholders (Jullobol & Sartmool, 2014). Profitability is one of the variable that is widely used in prior disclosure studies. Firms that have high profits may release additional information in their financial statements than firm that have low level of profits or losses for different purposes. According to political costs theory, management of high profitable firms are encouraged to release additional information to validate their earnings (Hamid & Abubakar 2019). Stakeholder theory also supported the opinion that profitability of a company is one of the fundamental information needs by different stakeholders, then shareholders.

However, signaling theory states that companies with high profits need to differentiate themselves from unprofitable companies through additional disclosures (Hamid & Abubakar 2019). On the other hand, if a company records losses for a particular year, the managers would be motivated to disclose more information voluntarily to minimize the danger of legal liability and serve the share reduction or losses of reputation (Abubakar, Zaharadden, Abbas & Ibrahim 2021). Various theories can predict different ways of the relationship between profitability and corporate voluntary information disclosure.

Financial performance denotes to the extent to which a firm used available resources to generate earnings. It is a measure of the firm's ability to generate profits, manage resources and create value for its shareholders. It is an aspect of corporate performance that concentrates on profitability, that is the ability to generate more revenue in excess of the costs incurred by the firm (Nworie & Mba, 2022). It is often cited that a firm that engages in good voluntary disclosure practices has better chances of improving its financial performance for three major reasons. Nworie, Obi, Anaike and Uchechukwu-Obi (2022) argue that such a disclosure will make investors see the firm in good light. Also, voluntary disclosure convinces creditors that the firm is accountable and so reduces the cost of borrowing. ). Similarly, Hieu and Lan (2015) examined the effect of firm attributes on voluntary disclosure of manufacturing firms in Vietnam for the year 2012. The study used 42 voluntary disclosure checklists items. The multiple regression result shows negative and insignificant associations among profitability and voluntary disclosure.

*H3: Firm profit has no significant effect on voluntary disclosures of manufacturing companies listed in Nigeria*

***Review of Theories***

Several theories have been found through the literature to explain voluntary disclosure practices, including agency theory, signaling theory, capital need theory and legitimacy theory.

**Agency theory:** Jensen and Meckling (1976) define the agency relationship as a contract under which one or more people (the principals) engage another person (the agent) to perform some service on their behalf which involves delegating some- decision-making authority to the agent. Agents correspond to managers, whereas principals correspond to shareholders from a companies, perspective. Agency costs stem from the assumption that the two parties, agent and principals, have different interests. Monitoring costs are paid by the principals, shareholders, to limit the agent's aberrant activities. Bonding costs are paid by the agents and managers, to guarantee that no harm of the principal's interest will result from their decisions and actions. Residual loss stems when decisions of the agents diverge from decisions that would maximize the principal welfare. Accordingly, the agency cost is the summation of the monitoring cost, bonding cost, and the residual loss (Jensen & Mackling). The agency relationship leads to the information asymmetry problems due to the fact that managers can access information more than shareholders (Jensen & Mackling, 1976). Optimal contracts is on the means of mitigating the agency problem as it helps in bringing shareholders' interest in line with managers interest (Healy & Palepu, 2001). In addition, voluntary disclosure is another means of mitigating the agency problem, where managers disclose more voluntary information reducing the agency of costs (Barako, 2006) and also to convince the external users that managers are acting in an optimal way (Watson, 2002). Regulations are another means of mitigating the agency problem as they require managers to fully disclose private information (Healy & Papelu, 2001). However, full disclosure is never guaranteed even in the presence of regulations (Al-Razeen & Karbhari, 2004). The absence of full disclosure is explained by the conflict that exists between the interests of managers and shareholders (Lev & Penman, 1990). In addition, corporate reporting regulations are intended to provide investors with the minimum quantity of information that helps in the decision-making process (Al-Razeen & Karbhari, 2004).

**Legitimacy theory:** The legitimacy theory assumes that a company has no right to exist unless its values are being perceived as matching that of the society at large where it operates (Dowling & Magness, 2006). Accordingly, the idea of the legitimacy theory resembles a social contract between the company and the society. Since the objective of accounting is to provide users with information that helps with decision-making, i.e. satisfy social interests, the theory has been integrated in accounting studies as a means of explaining what, why, when and how certain items are addressed by corporate management in their communication with outside audiences (Dowling & Magness, 2006). Since legitimacy theory is based on the society perception, management is forced to disclose information that would change the external user's opinion about their company (Cornier & Gordon, 2001). The annual report has been detected as an important source of legitimation (O'Donovan, 2002). Legitimization can occur both through mandatory disclosures- disclosures provided in financial statements because of regulations, and voluntary disclosures provided in other sections of annual report (Lightstone & Driscoll, 2008).

## 3. Methodology

This study adopted a longitudinal research design. The longitudinal research design encompasses cross-sectional and time series property. It is suitable for this study, because the study examines several cross-sections (listed companies) over a relatively short period of time (2014-2023). The data for this study is secondary. It is secondary because the data drawn from the annual report has been subjected to

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measurements in line with operational definition of variables. The data will be sourced from the annual report on sample companies. A sample size of 46 listed manufacturing companies was used for this research to examine firm specific attributes and voluntary disclosures of listed manufacturing firms in the Nigerian exchange group out of 49 listed manufacturing companies using purposeful sampling techniques. It was only companies that had complete data for the period under study that was selected.

***Model specification***

The model of Ramalan, Kurfi and Bello (2021) is adapted in this study. It is stated as:

VDI = $f$(FSIZ, FAG, LEV, PRO, LIQ, ICT) ------------------------------------------------------------------------ (i)

In econometric form, it is given as:

$VDI_{it} = \alpha_0 + \beta_1 FSZ_{it} + \beta_2 FAG_{it} + \beta_3 LEV_{it} + \beta_4 PRO_{it} + \beta_5 LIQ_{it} + \beta_6 ICT_{it} + \varepsilon i$ ------------------------------------ (ii)

Where: VDI = Voluntary Disclosure Index, FSZ = Firm Size, FAG = Firm Age, LEV = Leverage PRO = Profitability, LIQ. = Liquidity, ICT = Information Communication Technology, $\alpha_0$= Intercept/constant, $\beta_1 ... \beta_6$ = Beta coefficient, $\varepsilon$ = Residual/error term, i = firm, t = time. The model for this study is adapted below while controlling for board independence:

VDI = $f$ (FS, FP, LEV, BND) ------------------------------------------------------------------------------------------ (iii)

In econometric form, it is given as:

$VDI_{it} = \alpha_0 + \beta_1 FS_{it} + \beta_2 FP_{it} + \beta_3 LEV_{it} + \beta_4 BND_{it} + \mu_1$ ----------------------------------------------------------------- (iv)

Where: VDI = Voluntary Disclosure Index, FS = Firm Size, FP = Firm Profit, LEV = Leverage, and BND = board of directors' independence, α0= Intercept/constant, $\beta_1 ... \beta_4$ = Beta coefficient, $\mu_1$ = Residual/error term, i = firm (1---20), t = time (2014-2023).

**Table 1: Measurement of variables**

| S/n | Variable | Measurement | Justification | A priori signs |
|---|---|---|---|---|
| | | **Dependent variable** | | |
| 1 | Voluntary disclosures of information | Measured as an index score of the extent of firm corporate governance sustainability disclosure of voluntary information obtained from the proportion of the total items disclosed to the total expected items to be disclosed. | Elshandidy and Neri (2015) | Nil |
| | | **Independent variable** | | |
| 2 | Firm size | Measured as the log of total assets of the company | Aslam and Haron (2020). | + |
| 3 | Firm profit | Measured the ratio of net income to total assets | Kılıç and Kuzey (2018) | + |
| 4 | Firm financial leverage | Measured as the ratio of total debts to total equity | Uwigbe et al. (2011) | + |
| | | Control variable | | |
| **5** | Board independence | Measured as the percentage of non-executive directors to the total number of directors on the board | Aifuwa and Embele (2019) | + |

Source: Researcher's compilation (2025).

## 4. Results and Discussion

**Table 2: Descriptive Statistics**

| Variables | Mean | Std. Dev. | Minimum | Maximum | Obs. |
|---|---|---|---|---|---|
| VDI | 0.392 | 0.176 | 0 | 0.830 | 460 |
| FS | 7.145 | 0.899 | 5.24 | 9.38 | 460 |
| FP | 3.194 | 15.216 | -179.92 | 108.9 | 460 |
| LEV | 61.185 | 26.569 | 3.55 | 22.97 | 460 |
| BND | 70.448 | 13.304 | 25 | 100 | 460 |

**Source:** Author's Compilation, 2025 (STATA 14 Output).

Table 2 shows the descriptive statistics of the variable which reflect the characteristics of individual variable. Voluntary Disclosure Information measure by corporate governance Index has mean of 0.392 with standard deviation of 0.176, it has minimum value of 0 and maximum value of 0.830. Firm size measured by log of total asset has mean of 7.145 with corresponding standard deviation of 0.899, minimum value of 5.24 and maximum value of 9.38. Firm profitability shows mean of 3.194% with standard deviation of 15.216%, minimum value of -179.92% and maximum value of 108.9%.

Firm leverage has mean value of 61.185 with corresponding standard deviation of 26.569, minimum value of 3.55 and maximum value of 3.55 and maximum value of 22.97. Lastly, board independent measured by percentage of independent directors to total directors, it has mean of 70.448% with standard deviation of 13.304% and minimum value of 25% with maximum value of 100%.

**Table 3: Normality Test (Shapiro-wilk)**

| Variables | W | V | Z | Prob. |
|---|---|---|---|---|
| VDI | 0.969 | 9.307 | 5.340 | 0.000 |
| FS | 0.982 | 5.401 | 4.037 | 0.000 |
| FP | 0.698 | 93.458 | 10.862 | 0.000 |
| LEV | 0.880 | 36.947 | 8.641 | 0.000 |
| BND | 0.972 | 8.551 | 5.137 | 0.000 |

**Source:** Author's Compilation, 2025 (STATA 14 Output).

Table 3 shows the test of normality for the variables using Shapiro-wilk method. All the variables have probability value of 0.000, it is significant at 1% and 5% level of significance which shows that all the variables are not normally distributed.

**Table 4: Correlation Matrix (Spearman Rank Correlation)**

| Variables | VDI | FS | FP | LEV | BND |
|---|---|---|---|---|---|
| VDI | 1.000 | | | | |
| FS | -0.089 | 1.000 | | | |
| FP | 0.004 | 0.335 | 1.000 | | |
| LEV | -0.072 | -0.123 | -0.420 | 1.000 | |
| BND | 0.084 | 0.044 | 0.012 | -0.129 | 1.000 |

**Source:** Author's Compilation, 2025 (STATA 14 Output).

Table 4 shows the correlation matrix using spearman rank correlation. This shows the relationship between the dependent and independent variables. Firm size has negative (0.089) relationship with voluntary disclosure information, firm profitability has positive (0.004) association with voluntary disclosure information, leverage has negative (-0.072) relationship with voluntary disclosure information and board independent has positive (0.084) relationship with voluntary disclosure information.

**Table 5: Multicollinearity Test (Vector Inflation Factor)**

| | VIF | 1/VIF |
|---|---|---|
| FP | 1.34 | 0.746 |
| LEV | 1.31 | 0.761 |
| FS | 1.10 | 0.912 |
| BND | 1.02 | 0.988 |
| Mean | 1.19 | |

**Source:** Author's Compilation, 2025 (STATA 14 Output).

Table 5 shows the output for multicollinearity test using vector inflation factor. It is shown that the VIF value (1.34, 1.31, 1.10, 1.02) for all the variables and the mean (1.19) for the total variable is less than 10 which is the benchmark. This implies that there is no problem of multicollinearity with the variables.

**Table 6: Panel Regression Analysis (Fixed Effect Model)**

| | Coff. | T | Prob. |
|---|---|---|---|
| FS | 0.082 | 2.40 | 0.017 |
| FP | -0.000 | -1.35 | 0.177 |
| LEV | 5.05 | 0.002 | 0.988 |
| BND | -0.002 | -3.44 | 0.001 |
| F Stat. | | | 3.80 |
| Prob. | | | 0.004 |
| Breusch and Pagan Lagrangian Multiplier Test for Random Effect | | | |
| Chi2 | | | 565.68 |
| Prob. | | | 0.000 |
| Hausman Test: | | | |
| Chi2 | | | 10. 69 |
| Prob. | | | 0.030 |
| Heteroskedastic Test: Breusch-Pagan / Cook-Weisberg test | | | |
| Chi2 | | | 0.00 |
| Prob. | | | 0.998 |
| Pesaran's Test of Cross-sectional Independence | | | |
| Chi2 | | | -0.230 |
| Prob | | | 0.818 |
| Wooldridge Test for Autocorrelation in Panel | | | |
| F. Stat | | | 48.489 |
| Prob. | | | 0.600 |

**Source:** Author's Compilation, 2025 (STATA 14 Output).

Table 6 shows the panel regression analysis result and results for other pre and post estimation test for panel regression. Pooled Ordinary Least Square was carried out and Random Effect Model while random effect test (Breusch and Pagan Lagrangian Multiplier test) was carried out to choose the appropriate model between the pooled ordinary least square and random effect, the result shows chi2 of 565.68 with corresponding p value of 0.000 which indicated that random effect model was appropriate. In order to choose between the random effect model and fixed effect model, Hausman test was estimated and the result shows chi2 of 10.69 with corresponding p value of 0.030, this implies that fixed effect model is more appropriate. Therefore, fixed effect model was adopted for the panel regression analysis.

Other post estimation test for fixed effect model was carried out among others are heteroskedastic test, the result shows chi2 value of 0.00 with corresponding p value of 0.998, this indicated that there is no heteroskedastic problem in the residual. Also, Wooldridge test for autocorrelation was carried out, it shows F stat. value of 48.489 with corresponding value of 0.600. This implies that the residual is free from autocorrelation problem. Pesaran's test for cross sectional independence test was carried out, it has p value of 0.818 which implies that the residual is free form cross sectional independence.

The Fixed Effect Model result shows that firm size has positive (0.082) and significant (0.017) effect on the voluntary disclosure information of manufacturing companies in Nigeria, this implies that an increase in the firm size will result in 8% increase in level of voluntary disclosure information. Firm profit has negative (-0.00) and insignificant (0.177) effect on voluntary disclosure information of manufacturing companies in Nigeria. Leverage has positive (5.05) and insignificant (0.988) effect on voluntary disclosure information of manufacturing companies in Nigeria. Board independence which was used as the control has negative (-0.002) and significant (0.001) effect on voluntary disclosure information of manufacturing companies in Nigeria. The F stat for the model shows a value of 3.8 with corresponding value of 0.004 which shows that the model is of good fit.

***Discussion of Findings***

The results above have shown firm profitability (coef. -0.000; p =0.177) has negative and insignificant effect on voluntary disclosure information, this is in contradiction to that of Rakiva (2019) while no findings were in line with the study finding to the best of the knowledge of the researcher. Firm size has positive and significant (coef. 0.082; p = 0.017) effect on voluntary disclosure, this result is supported by the findings of -Uyar, Kilic and Bayyur (2015) and contradict that of Hasan (2015). Leverage has positive and insignificant (coef. 5.05; p = 0.988) effect on voluntary disclosure information, this finding is in line with the finding of Hasan (2015) and contradicts that of Elfelly (2014). From the findings of the study, we discovered that firm size is one of the crucial factor or variables that determine the level and extent of voluntary information disclosure among manufacturing companies in Nigeria.

## 5. Conclusion and Recommendations

Sequel to the findings of the study, we discovered that firm size is an important variable to be considered in determination of the level of voluntary disclosure information. This implies that the larger the size of the company, the better voluntary disclosure information.

On the contrary, the profitability level of the manufacturing companies does not have any significant effect on the voluntary disclosure information. Also, the firm's leverage does not have any significant effect on the voluntary disclosure of information. Therefore, we concluded that larger firms should give full disclosure of the activities.

Based on the findings of the study, the following recommendations were suggested:

i. That manufacturing companies should expand their firm size through enhanced market visibility so as to have a better and robust voluntary disclosure of information in their financial statement.
ii. That effort should be made to increase firm profitability in order to give room for voluntary disclosure information.
iii. That manufacturing companies should have minimal borrowed money in running business in order to increase their level of voluntary disclosure information.

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