The Scientific Journal of Business and Finance

https://caf.journals.ekb.eg

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(Evidence from Egypt)

Ahmed Hassan Elgayar

Lecturer, Business Administration Department, Faculty of Commerce, Tanta University, Tanta, Egypt.

Published online: March 2025.

To cite this article: Elgayar, Ahmed Hassan. **Navigating the Firm Value: The Interplay of Tax Avoidance and Sustainability Reporting (Evidence from Egypt).** *The Scientific Journal of Business and Finance*, 45 (1), 118-151.

DOI: 10.21608/caf.2025.415960

*Corresponding author: Ahmed_Elgayar@commerce.tanta.edu.eg

Navigating the Firm Value: The Interplay of Tax Avoidance and Sustainability Reporting (Evidence from Egypt)

Ahmed Hassan Elgayar
Lecturer, Business Administration Department, Faculty of Commerce, Tanta University, Tanta, Egypt

Article History

Received 5 December 2024, Accepted 3 February 2025, Available online March 2025

Abstract:

This study investigates the moderating role of sustainability (ESG) reporting in the relationship between tax avoidance and firm value, using evidence from Egypt. The research employs an empirical approach, utilizing secondary data from 2018 to 2023. Three hypotheses are formulated, and both pooled and Weighted Least Squares (WLS) panel data regression models are applied for analysis. The findings confirm the validity of two hypotheses: (1) the impact of sustainability reporting on firm value, and (2) the moderating effect of sustainability reporting on the relationship between tax avoidance and firm value. However, the hypothesis exploring the direct impact of tax avoidance on firm value is rejected.Based on the findings, the study recommends that firms enhance their sustainability reporting practices by adopting transparent and evidence-based strategies. This would not only improve the perceptions of stakeholders but also minimize potential financial risks and increase trust. Specifically, businesses should focus on integrating sustainable practices into their corporate strategy, ensuring that tax planning aligns with long-term sustainability goals. By adopting ethical tax practices, firms can mitigate the potential negative effects of tax avoidance on their reputation and financial performance. Moreover, the study suggests that businesses should emphasize the importance of balancing tax obligations with sustainable development goals, as this approach could lead to improved firm value. Companies must effectively leverage their financial resources and apply appropriate financial strategies to optimize value creation while maintaining their commitment to sustainability.For future research, it is recommended to explore how external factors—such as regulatory frameworks, evolving stakeholder expectations, and industry-specific dynamics—affect the interplay between tax avoidance, sustainability reporting, and firm value. Investigating the influence of these variables could offer a deeper understanding of the contextual factors that shape corporate practices. Additionally, future studies could focus on analyzing the long-term effects of sustainability strategies on firm value and conducting cross-country comparisons. Such research would provide valuable insights into how different cultural, institutional, and regulatory environments impact the relationship between tax avoidance and sustainability practices, offering a global perspective on these issues.

Keywords: *Firm Value; Tax Avoidance; Sustainability Reporting; ESG; Pooled Panel Data Regression Model; Weighted Least Squares (WLS) Panel Data Regression Model; Egypt.*

1. INTRODUCTION:

In recent years, there has been increasing emphasis from society, market participants, policymakers, and scholars on the relationship between sustainability reporting and tax avoidance. While there are clear and convincing arguments for why firms engage in strategic sustainability initiatives and/or tax avoidance, this remains an open debate (Adomako & Nguyen;2024 ; Adu et al., 2020; Al-Shaer, 2020; Adayi). A key question remains: to what extent are managers effectively reducing their firms' tax liabilities while improving business sustainability? This raises the challenge of balancing the interests of shareholders and other stakeholders (Inger & Vansant, 2019). Although the relationship between sustainability reporting and corporate irresponsibility, such as tax avoidance and earnings manipulation, has been explored in the literature, the results have not yet been conclusive (Baudot et al., 2020; Gallemore; Kim, et al., 2023).

Several studies suggest that sustainability initiatives signal a managerial commitment to ethical conduct, as demonstrated by Kim et al. (2011). However, other researchers argue that the implementation of sustainability strategies can enhance an organization's reputation, potentially masking tax avoidance and earnings manipulation (Prior et al., 2008). Moreover, it remains unclear how shareholders perceive tax avoidance in companies with high levels of sustainability. This study aims to explore the impact of environmental, social, and tax avoidance (ESG) ratings, along with other factors, on a firm's market valuation.

In this context, tax avoidance involves the likelihood of future negative outcomes, such as tax liabilities, interest, and penalties, should tax authorities challenge a firm's tax positions (Inger & Vansant, 2019). Literature indicates that investors are often not swayed by these potential future costs. Graham et al. (2014) assert that tax avoidance reflects poor corporate ethics, while Dyreng & Hanlon (2008) and Hardeck and Hertl (2014) suggest that the reasons behind tax avoidance are more indicative of either good or poor tax management, with both reflecting ethical issues. Furthermore, tax evasion leads to reduced tax revenue, an essential factor for social welfare, thereby diminishing an organization’s moral standing and public image. Reduced tax contributions are believed to provoke negative reactions from stakeholders, as noted by Kim et al. (2011) and Gallemore et al. (2014).

However, other experts argue that tax avoidance can be beneficial, as it lowers a company’s tax burden, increases profits, and ultimately improves shareholder returns (Inger, 2014; Inger & Vansant, 2019; Drake et al., 2019). Brooks et al. (2016) contend that tax avoidance may be viewed positively by stakeholders who interpret it as a managerial commitment to safeguarding resources while aligning with the interests of various stakeholder groups. Given these mixed perspectives, this study suggests that firms with a stronger commitment to sustainability may be more likely to attract investment into tax avoidance strategies.

The voluntary nature of sustainability reporting presents a significant challenge, and companies that produce such reports typically demonstrate strong Corporate Social Responsibility (CSR) practices (Alshbili et al., 2021; Alshili & Elamer, 2019; Amin et al.). Sustainability reports are often provided by companies to meet the needs of their stakeholders (Gatimbu et al., 2018; Gunarathne & Gunnidis, 2021; Khan, 2022; Kim, et al., 2023). The benefits of firms engaging

in sustainability activities that do not immediately affect shareholder wealth have been the subject of considerable debate (Friedman, 1970; Inger & Vansant, 2019; Makhloufi et al., 2022; Rajesh N.). When companies publish sustainability reports, stakeholders may view this behavior as a reflection of strong corporate morality rather than a detriment to stakeholder well-being. Consequently, the tax avoidance generated by such companies could be used to support sustainability initiatives (Davis et al., 2016).

Moreover, studies have shown that transparency can mitigate the negative impact of tax avoidance on firm value (Alexander, 2013; Chen et al., 2014). For example, research by Clacher and Hagendorff (2012) and Kuzey and Uyar (2017) indicates that CSR disclosures reveal how firms use tax savings from avoidance to fund their CSR activities. Similarly, Khurana and Moser (2013) argue that sustainability reporting can provide insight into whether tax savings are being directed towards CSR initiatives, thus reducing the negative effects of tax avoidance on firm value. According to the researchers, investors may be uncertain about the reputational value of a company's sustainability efforts if it is also engaging in tax avoidance practices.

According to the study, ESG ratings play a crucial role in determining the impact of tax avoidance on firm value. The article highlights this fact. These findings suggest that ESG ratings are more predictive of firm value than tax avoidance, supporting the conjecture that firm valuation is negatively linked to tax avoidance, particularly in firms with high ESG scores. Although most people see ESG initiatives in a positive light, the impact of such efforts can be destabilized when tax practices are seen as aggressive or inconsistent with the sustainable values associated with high ESG scores (Bebchuk & Cohen, 2005).

A complex correlation between sustainability programs and tax avoidance in improving firm value is highlighted by the researcher. The case illustrates how selfish managers may use sustainability programs to both promote and obscure tax avoidance strategies. Earlier literature, including studies by Rudyanto and Pirzada (2020), which suggests a weak correlation between tax avoidance and firm value, is supported by this evidence. However, the current research expands on this by pointing out how ESG ratings influence the tax avoidance-firm value relationship. Even after controlling for firm-specific factors, these findings provide a more detailed understanding of the dynamics involved.

The relationship between tax avoidance and firm value remains a subject of debate in the literature. Desai and Dharmapala (2009) argue that firms with strong governance only increase in value when they engage in tax avoidance, while Brooks et al. (2016) found no clear correlation. According to the researcher’s findings, the equity market’s appreciation of tax avoidance behavior is context-dependent and may be influenced by firm actions that benefit stakeholders other than shareholders. Firms must balance their financial strategies with sustainability goals to prevent a distortion of firm value due to a mismatch between tax practices and ESG commitments.

The paper is structured as follows: the next points will outline the research problem, objectives, importance, a review of the literature, hypothesis development, theoretical framework, methodology, outcomes, suggestions, and final recommendations for future research.

2. RESEARCH PROBLEM:

The relationship between tax avoidance strategies, sustainability initiatives, and firm value remains an underexplored area in the existing literature, particularly in the context of emerging markets like Egypt. While tax avoidance has been shown to influence firm value by reducing tax liabilities (Desai & Dharmapala, 2009), its interaction with sustainability practices—focused on long-term value creation and risk mitigation (Chen et al., 2014)—has not been sufficiently investigated. Furthermore, aggressive tax avoidance strategies may pose reputational risks, which could undermine the benefits of sustainability initiatives and ultimately affect firm value (Alexander, 2013).

Despite these potential interactions, there is limited research on how sustainability reporting may moderate the impact of tax avoidance on firm value, especially within the context of Egypt's market. Most existing studies take a generalized approach without focusing on specific national contexts or the unique dynamics of emerging markets (Desai & Dharmapala, 2009). This gap highlights the need for research to explore how sustainability reporting interacts with tax avoidance strategies and their combined effect on firm value. This study aims to address this gap and provide valuable insights into the interplay of tax avoidance and sustainability within the Egyptian stock market. The research question can be summarized as follows:

"*To what extent does sustainability reporting moderates the impact of tax avoidance on listed firms' value in the Egyptian stock market?*"

3. RESEARCH OBJECTIVES:

Drawing on insights from an emerging economy, Egypt, this study aims to explore the interplay between tax avoidance and sustainability reporting practices and their potential influence on the valuation of publicly traded companies. Accordingly, the main objectives of the study can be outlined as follows:

- ✓ Examining the impact of tax avoidance on the listed firms' value.
- ✓ Examining the extent by which sustainability reporting moderates the impact of tax avoidance on listed firms' value.

4. RESEARCH IMPORTANCE:

Several dimensions of this research hold practical significance. Firstly, the findings provide additional resources to help both individual and institutional investors refine their investment strategies by considering tax avoidance practices and Environmental, Social, and Governance (ESG) elements. Secondly, they guide publicly traded companies in adopting tax strategies and ESG initiatives aimed at enhancing corporate value and meeting shareholder expectations. Furthermore, the results carry important implications for regulators, standard-setting bodies, and the managerial labor market. Finally, the empirical findings of this study are particularly

valuable to tax authorities and policymakers, offering insights to inform decision-making and regulatory frameworks.

5. LITERATURE REVIEW:

5.1 Agency Theory

Siregar and Widyawati (2016) argue that agency theory provides a framework for addressing the issues faced by owners and management, focusing on two central actors. The success of the organization is attributed to management, which must communicate with the owner (the principal) through financial statements. In fact, management has more information at their disposal than the owner, as they are responsible for making decisions within the company. In this context, management functions as the agent, while shareholders act as the principals. The principal and agent have different goals and preferences, a key premise of agency theory. Agency theory posits that conflicts of interest arise when shareholders delegate decision-making authority to managers, which is a fundamental concept (Tanujaya & Herryanto, 2021).

Two significant issues in agency theory are related to tax avoidance. While tax avoidance measures may lead to improved short-term financial outcomes, they can also create friction between shareholders and management (Jensen & Meckling, 1976). Managers may resort to aggressive tax strategies to achieve personal or immediate objectives, which could potentially undermine the long-term value for shareholders (Scholes et al., 2002). To preserve the company's value, corporate governance structures must ensure that managerial and shareholder goals are well-aligned (Fama & Jensen, 1983).

Corporate governance frameworks aim to minimize agency problems by aligning managerial interests with those of shareholders (Shleifer & Vishny, 1997). By implementing strong governance structures, such as an impartial board and transparent reporting, the overall value of the agency is enhanced while costs remain manageable (Eisenhardt, 1989). Agency theory suggests that effective governance structures ensure that management decisions, including those related to preventing tax violations and fraud, align with shareholder interests (Fama & Jensen, 1983). Corporate transparency, particularly through sustainability reporting, plays a significant role in the interaction between tax avoidance, governance, and firm value (Eccles et al., 2011). Sustainability reporting can help reduce information asymmetry between shareholders and management, as it provides clearer insights into the company’s practices (Dhaliwal et al., 2011). This transparency in sustainability reporting not only impacts company value but also strengthens governance practices by enhancing accountability for tax avoidance actions (Tang et al., 2012).

5.2 Firm Value

Firm value reflects the status a business achieves after undergoing numerous operational cycles over an extended period, from its inception to the present. It serves as a key indicator of how the company is perceived in the market, often referred to as the concept of firm value (Wongskazi, 2013). Corporate value represents both the performance and future growth potential of enterprises, particularly within neo-conservative frameworks. As such, it constitutes the ultimate objective and driving force behind high valuations for any business

entity (Devi & Supadmi, 2018). Fundamentally, firm value embodies investors' perceptions of the company's performance, closely tied to its stock price (Pasaribu et al., 2019). A positive market perception of the company's performance and future prospects enhances its value (Tommy & Saerang, 2014).

In capital markets, investors require access to accurate and timely information to make informed and profitable investment decisions (Budiandriani & Mahfudnurnajamuddin, 2014). This access is essential. A strong firm value reflects robust company performance and contributes to investor wealth (Sudiani & Darmayanti, 2016). The stock price significantly influences firm value (Prasetyorini, 2013). High stock prices typically indicate strong company value and enhance shareholder prosperity. However, excessively high prices may reduce market liquidity and deter potential buyers. Conversely, low stock prices can negatively impact the company's image and performance. Therefore, optimizing stock prices is critical to balancing marketability and corporate reputation.

5.3 Tax Avoidance

As taxpayers, companies are obligated to pay taxes to the state. These contributions play a role in generating state income through taxation. However, the primary objective of businesses is to maximize profits, often by minimizing expenses, including tax obligations. This goal frequently conflicts with the government's objective of maximizing tax revenue (Anggriantari & Purwantini, 2020).

One common approach businesses employ to reduce tax burdens is tax avoidance, a legal strategy whereby taxpayers minimize their tax liabilities within the bounds of the law. While tax avoidance is legally permissible, it creates a complex dynamic: corporations leverage it as a cost-saving mechanism, whereas the government views it as a challenge to its ability to generate revenue (Putri & Putra, 2017).

5.4 Sustainability Reporting

In 1999, the Global Reporting Initiative (GRI) published its first Sustainability Report, aimed at promoting ethical and transparent social reporting. The report provided a comprehensive compilation of data on various topics, including education, employment, and finance (Aulia, 2021). Sustainability reporting involves evaluating, disclosing, and holding external stakeholders accountable for an organization's performance in the pursuit of sustainable development goals. Beyond its financial aspects, such reporting also offers a detailed analysis of the social and environmental impacts of the economy.

5.5 The Effect of Tax Avoidance on Firm Value

Attempts by companies to reduce their tax obligations are often considered tax avoidance, as these strategies remain within the bounds of relevant tax laws (Krisyadi & Mulfandi, 2021). Yopie and Elivia (2022) note that tax avoidance may be perceived as a risky practice, potentially leading to negative consequences such as difficulties in securing monopolies (Brooks et al., 2016). However, it can also support a company's corporate social responsibility efforts (Smith, 2017). While tax avoidance is not illegal, it can still cause significant harm to a company, even if it is legally permissible (Ismawati & Lutfillah, 2019).

Tax avoidance is often not a random choice but is strategically aimed at achieving efficiency (Hanafi & Harto, 2014). In certain cases, tax avoidance can increase a firm's value by reallocating wealth from the government to the company (Chen et al., 2014). However, studies in China have shown that tax avoidance may reduce firm value and increase agency costs due to heightened information transparency (Chen et al., 2014). Research in Malaysia revealed a similar trend, indicating that tax avoidance by firms leads to a decrease in firm value.

On the other hand, Lestari and Wardhani (2015) found that in Indonesia, tax avoidance has a positive impact on firm value, which aligns with Krisyadi (2021). These contrasting findings suggest that the effects of tax avoidance vary across different countries. The perceived risk associated with tax avoidance may influence these outcomes (Drake et al., 2019). Their research suggests that while tax avoidance can have a beneficial impact on firm value, this is not always the case.

5.6 The Relationship of Sustainability Reports in Moderating the Effect of Tax Avoidance on Firm Value

Tarigan and Semuel (2015) define a sustainability report as "a document composed of information on the environmental, social, and financial performance of an enterprise, with the objective of promoting sustainable growth." Sustainability reporting places significant emphasis on corporate social performance, fostering better relationships between firms and stakeholders by allowing companies to disclose their social obligations (Krisyadi & Anita, 2022). Pujiningsih (2020) highlights that adopting sustainability measures can enhance a company's value by addressing social and environmental issues, which in turn attracts long-term investors.

Moreover, disclosing corporate responsibilities can add value to a company, as evidenced by equity investments and profits perceived by investors (Gunawan & Mayangsari, 2015). The costs associated with improving community welfare are typically covered by social responsibility expenditures in companies, similar to tax expenses. Sustainability reports may indicate a reduction in tax avoidance, as these corporations are seen as more transparent and accountable to both stakeholders and society (Mulyani et al., 2019). A sustainability report published by a company can be effective in reducing tax avoidance (Suteja et al., 2022); however, its effectiveness is not always guaranteed.

Based on the literature reviewed, the following three alternative hypotheses have been formulated to achieve the research objective.
H1: There is a significant impact of tax avoidance on firm value.
H2: There is a significant impact of sustainability reporting on firm value.
H3: Sustainability reports moderate the impact of tax avoidance on firm value.

6. THEORETICAL FRAMEWORK:

6.1 The Value of the Firm: Concept, Importance, and Measurement Approaches

1. The Concept of Firm Value

Different perspectives exist regarding the concept of firm value. It can be defined by the market value of a company's shares, where the primary goal is to maximize shareholder wealth by generating profits and increasing the overall market price. Alternatively, firm value can be expressed as the book value of equity or its intrinsic value, determined by impartial experts based on various factors, including profitability and investment potential (Dagiliene, 2013; Al-Zahrani, 2013; Mukhtaruddin et al., 2014; Gregory et al., 2014; Abdel-Meguid, 2023).

Given the diverse viewpoints of stakeholders, the definition of firm value is inherently non-uniform and varies depending on the perspective considered. This divergence influences how firm value is evaluated and interpreted.

2. The Importance of Firm Value

The importance of firm value is recognized by management, stakeholders, and society, including shareholders, lenders, and other key parties. For management, firm value serves as a critical metric for making both short-term and long-term financial decisions, reflecting managerial efficiency. A higher firm value enhances the company’s ability to secure loans and attract favorable funding sources (Ahmed, 2019; Andreou, 2017).

An increase in firm value directly translates to higher shareholder wealth, thereby increasing the firm's appeal to potential investors (Kargin, 2013). Additionally, firm value is a crucial determinant for lenders when evaluating creditworthiness and making lending decisions, as noted by Balakrishnan et al. (2016).

Moreover, firm value contributes to societal benefits. Greater firm stability can lead to optimized resource utilization, improved product quality to better meet consumer demands, and a positive impact on the broader community (Bancel & Mittoo, 2014; Farooq & Thyagarajan, 2014).

3. Measurement Approaches to Firm Value

Several methods exist for measuring firm value, including:

1. **Market Price of Shares**: Firm value is commonly measured using the market price of its shares, as noted by Rikkert (2014), Shibl (2018), and Ahmed (2019).
2. **Operational, Investment, and Financial Decisions**: According to Farag (2017), the value of a firm is influenced by its operational, investment, and financial decisions. Positive outcomes from these decisions strengthen the company’s financial position, increase stock prices, and enhance overall firm value.
3. **Book Value**: The book value method relies on historical data to represent a company's assets and liabilities. Al-Zahrani and Abdel-Meguid (2023) highlight this method as a means of reflecting the firm's accounting-based value.

4. **Liquidation Value**: Ahmed (2019) describes liquidation value as the net proceeds obtained from selling a company's assets and settling its liabilities, divided by the number of outstanding shares.

5. **Tobin's Q Ratio**: Tobin's Q is another measure of firm value, calculated using market capitalization. This involves multiplying the total number of listed shares by their price per share. After subtracting total liabilities, the remaining figure is divided by total assets (Rudyanto & Pirzada, 2020):

Each method offers unique insights into firm value, depending on the context and purpose of the evaluation.

6.2 Tax Avoidance, Its Motives, and Egypt's Stance on Its Practices

1. Concept of Tax Avoidance

In recent years, tax avoidance has become a significant topic of discussion, as it involves the use of procedures, activities, and strategies to reduce tax liabilities (Wang et al., 2021; Gunn, 2020; Ha & Feng, 2020), ultimately resulting in fewer tax payments to the state (Zaytoun, 2019).

Governments define tax as a financial charge imposed on individuals or legal entities. Taxes are a primary source of government revenue and play a crucial role in ensuring economic stability by redistributing income among individuals (Michael, 2002). Taxes are paid either directly to tax authorities or indirectly through intermediaries. However, some entities exploit tax systems for their own financial gain.

To better understand the implications of tax-related strategies, it is essential to distinguish between tax evasion, tax planning, and tax avoidance:

1. Tax Evasion

Tax evasion refers to the fraudulent practices undertaken by individuals or organizations to evade taxes. It involves deliberate attempts to misrepresent or conceal financial information to reduce tax liabilities. For example, filing fraudulent tax returns by underreporting income (Rusydi, 2020) or exploiting laws and regulations related to income or sales tax to avoid paying the full tax obligation constitutes tax evasion. These practices are illegal and violate tax laws.

2. Tax Planning

Tax planning involves legitimate efforts by taxpayers and lawmakers to minimize tax burdens. Lawmakers may use tax policies to incentivize beneficial economic activities by reducing the tax burden on such activities while increasing taxes on less contributory behaviors. Tax planning is a lawful practice aimed at optimizing business operations to reduce tax liabilities and enhance shareholder wealth (Inger, 2013). This strategy focuses on maximizing the value of future distributions by adhering to legal guidelines.

3. Tax Avoidance

Tax avoidance entails the use of legal strategies, procedures, or actions to minimize tax obligations. While lawful, it may sometimes be viewed as ethically questionable. Lietz (2013) categorizes tax avoidance into two types:

- **Non-Aggressive Tax Avoidance**: Businesses adopt legal methods to minimize taxes, such as investing in tax-favored bonds or using advantageous depreciation methods. These activities align with lawmakers' social and economic objectives (Knuutinen, 2014).
- **Aggressive Tax Avoidance**: When tax avoidance becomes the primary focus, businesses engage in complex transactions designed specifically to reduce tax liabilities (Lisowsky, 2010).

To distinguish between harmful and non-harmful tax avoidance, Lietz (2013) introduced the **"More Likely Than Not" (MLTN) standard**. Transactions with a higher than 50% likelihood of scrutiny are classified as acceptable (non-harmful), while those with a lower likelihood are labeled as harmful.

The differences between tax planning, tax avoidance, and tax evasion can be clarified through the following Table (1):

Table 1: The differences between tax planning, tax avoidance, and tax evasion

Comparison Criteria	Tax planning	Tax avoidance	Tax evasion
Concept	It refers to the strategies and procedures employed by taxpayers to structure their activities in a manner that allows them to comply with tax legislation while minimizing their tax burden.	It refers to any benefit gained by the taxpayer that results in a reduction or exemption from tax liability without constituting tax evasion. However, such practices may conflict with the spirit of the law and may be classified as harmful tax avoidance.	The taxpayer employs illegal methods to evade tax obligations, often by submitting false or inaccurate information to avoid paying taxes.
Characteristics	It results in a reduction of the tax liability or, in some cases, the complete elimination of taxes due. It allows taxpayers to manage their financial position over the long term by implementing strategic approaches. Additionally, it encourages organizations to invest in tax-favorable areas. However, such practices can lead to a decline in public revenues, as taxes are not fully paid due to the savings achieved through these planning strategies.	It is restricted to specific transactions and is confined to dealing with tax legislation. It often involves exploiting gaps in the law that legislators intended to address but were unable to cover fully. Importantly, it requires the disclosure of all taxpayer data to the Tax Authority without deliberately concealing any transactions.	The taxpayer fraudulently arranges his situation and affairs for the purpose of reducing or not paying the tax. The motive behind it is violating tax laws and not disclosing data and transactions. The taxpayer was referred to the Tax Authority as a result of his intentional concealment. The financier obscures or distorts the nature of... Transactions and their truth about management
Legal position	It is not prohibited by law	It is not prohibited by law	It is criminalized by law

Source: Al-Shwarbi, (2012, p. 13)

2. Motives for Tax Avoidance

The value of a company can be enhanced through tax avoidance, among other benefits. Tax avoidance is often viewed as a strategy to create value, aimed at increasing shareholder wealth (Turwanto & Irawan, 2020). By minimizing tax obligations, the company can strengthen its financial stability by generating cash flow to repay debts or improve its overall financial position, thereby reducing the cost of obtaining necessary financing (Lastiati et al., 2020).

According to Goh et al. (2016), tax avoidance practices contribute to the growth of companies by increasing available cash for investment or dividend payouts, thereby helping owners build wealth through higher investment volumes or direct cash distributions. Their research supports this notion. Moreover, tax avoidance strategies can enhance a company's value by generating substantial tax savings, which increase future cash reserves. These reserves can be used for reinvestment or research and development, further boosting the company's value (Khuong et al., 2020).

However, tax avoidance practices may also have detrimental effects. Chen et al. (2016) found that tax avoidance can harm society by facilitating the submission of false claims, as companies may not contribute their fair share of taxes, resulting in long-term negative impacts on the community. Furthermore, the company's reputation and overall value may be compromised. To evade detection by tax authorities, companies may engage in complex transactions that conceal assets from both shareholders and regulators. While tax avoidance may reduce tax payments and provide additional resources for company growth, it may also lead to the concentration of wealth in the hands of shareholders, often at the expense of broader societal interests.

3. Egypt's Stance on Tax Avoidance

Egypt has taken significant steps to curb tax avoidance. In July 2017, Egypt became a member of the OECD's Action Plan, joining ten countries in adopting measures aimed at addressing base erosion and profit shifting (BEPS). This initiative involved implementing 15 measures to tackle issues such as the digital economy, preventing the spread of harmful tax practices, and reducing base erosion caused by interest payments and other financial strategies. The Global Forum on Transparency and Exchange of Information for Tax Purposes also included Egypt as a member in recognition of its efforts (Ibrahim, 2021).

Egypt's Income Tax Law, No. 91, includes provisions to address related party transactions that differ from those between unrelated parties, which could result in a reduction of the tax base or a shift of tax liabilities. In such cases, the tax authority is empowered to adjust taxable profits by applying an objective-neutral price. Additionally, Egypt employs techniques to mitigate tax avoidance resulting from income division, such as recognizing the corporate identity of partnerships and imposing restrictions on profits for reinvestment. The law also places limits on tax deductions for personal wages and gifts (Ibrahim, 2021).

6.3 Egyptian Corporate Social Responsibility Index (EGX ESG)

The Egyptian Corporate Social Responsibility Index (EGX ESG) was launched on March 22, 2010, as a collaborative initiative between the Egyptian Directors' Center, the Egyptian Center for Corporate Social Responsibility, Standard & Poor's, and CRISIL, in partnership with the Egypt Stock Exchange. It marked the first ESG-focused index in the Arab region and the second globally, following India's ESG index introduced in 2008. The index aims to evaluate the top-performing companies listed on the Egyptian Stock Exchange based on environmental, social, and governance (ESG) criteria, alongside market size and liquidity. Companies voluntarily disclose their ESG practices, which are assessed annually to select the top 30 companies from the EGX 100 for inclusion (Egyptian Directors' Center et al., 2010).

The EGX ESG index employs a robust methodology involving both quantitative and qualitative assessments. Companies are scored on governance, environmental, and social criteria using publicly available disclosures, with additional points awarded for supplementary information (Ramadan, 2013). The final rankings incorporate both quantitative scores and qualitative evaluations, such as independent assessments of actual performance and transparency practices (Eccles & Serafeim, 2013). The index is calculated based on the aggregated scores of selected companies, adjusted for market value and trading volume, ensuring a dynamic and reflective measure of ESG performance (Egyptian Directors' Center et al., 2010). The index not only aids investors in identifying socially responsible and financially stable companies but also supports broader sustainable development goals by encouraging corporate adherence to international standards like the UN Global Compact (Said El-Din, 2013).

Sustainability reporting plays a pivotal role in enhancing the index's utility by reducing information asymmetry and fostering investor confidence. These reports contribute to market efficiency by aligning stock prices with actual risk and promoting transparency, which lowers capital costs and increases activity. For companies, such practices improve long-term competitiveness by meeting environmental and social expectations, thereby boosting their reputation and market standing. Overall, the EGX ESG index underscores the importance of integrating financial and non-financial performance measures to support sustainable growth in Egypt (Ramadan, 2013; Gharib, 2010).

7. METHODOLOGY:

7.1 Analytical framework

Econometrics defines panel data as a set of observations aggregated across multiple variables over different time intervals for the same individuals, units, or entities. This results in a multidimensional dataset that enables the analysis of data over time. Statistical methods, such as panel data analysis, are commonly used across various fields, including social sciences and economics, to examine data that spans multiple time periods and involves the same individuals or entities (Adefemi, 2017).

Using secondary panel data collected from 2018 to 2023, this study is conducted in a practical manner. The analysis includes descriptive statistics, and panel-based statistical analysis.

7.1.1 Descriptive Analysis

Descriptive analysis is a statistical method that provides detailed representations of data from varying sources. This involves examining the nature and distribution of data through various techniques. Data can be presented in the form of charts, pictograms, graphs, or frequency distributions. Examples of such techniques include measurements like the mean, median, and standard deviation (Anggraeni et al., 2021), which help to explain the central tendency and variability of the data. Descriptive analysis offers valuable insights to researchers about the main features and patterns within the data.

7.1.2 Panel Data Regression Analysis

A basic panel data regression model can be written as follows (Adefemi, 2017):

$$Y_{it} = a + bX_{it} + \varepsilon_{it}$$

Where:

- ✓ Y_{it} denotes the dependent variable,
- ✓ X_{it} represents the independent or explanatory variable,
- ✓ **a** and **b** are coefficients to be estimated,
- ✓ **i** and **t** correspond to the individual and time indices, respectively,
- ✓ ε_{it} is the error term.

Panel data regression analysis can be conducted using three main approaches (Adefemi, 2017):

1. **Independently Pooled OLS Regression Model**: This simple method treats observations as independent and pools data across time and units to calculate regression coefficients, assuming they are consistent (Ramadan, 2017). However, it overlooks unit-specific and time-dependent effects, leading to potential bias (Wooldridge, 2010; Baltagi, 2008). This model's simplicity is often inadequate for complex data structures, leading researchers to prefer fixed or random effects models (Ramadan, 2017).
2. **Fixed Effects Model**: This model accounts for heterogeneity by assigning each cross-sectional unit a unique intercept, isolating the effect of time-invariant factors on the dependent variable (Amer, 2015). It focuses on within-unit variation and effectively controls for unobserved characteristics (Wooldridge, 2010). The Fixed Effects Model provides unbiased estimates, particularly when individual-specific characteristics are significant (Amer, 2015).
3. **Random Effects Model**: The Random Effects Model allows for variability across both cross-sectional units and time periods (Amer, 2015). Unlike the Fixed Effects Model, it assumes that individual differences are uncorrelated with the explanatory variables, offering a more efficient estimation method when applicable (Baltagi, 2008). The choice between Fixed and Random Effects depends on whether individual-specific effects are correlated with the independent variables (Wooldridge, 2010).

Statistical tests, such as the **"Breusch-Pagan Test"** and the **"Correlated Random Effects-Hausman Test"**, are used to compare these models and determine the most appropriate for a given dataset. The **Breusch-Pagan Test** examines the significance of individual effects to

decide between random effects and pooled models (Breusch & Pagan, 1980). When the test indicates significant individual effects, the Random Effects Model is preferred (Greene, 2020). The **Hausman Test** compares the Fixed and Random Effects models, with a p-value less than 0.05 favoring the Fixed Effects Model when individual effects are correlated with explanatory variables (Wooldridge, 2010; Baltagi, 2014). These tests ensure that the chosen model best reflects the data structure and enhances the reliability of panel data analysis (Le, 2015).

"Heteroskedasticity" refers to the violation of the assumption of constant variance in error terms in regression models, which undermines the effectiveness of Ordinary Least Squares (OLS) regression. This issue leads to biased and inefficient estimates in pooled models, which aggregate data from multiple cross-sectional units. These models assume uniformity across units, failing to account for differences in residual variances, which can distort the accuracy of estimated coefficients. Heteroskedasticity also complicates hypothesis testing by producing biased standard errors, affecting the statistical significance of variables (Greene, 2020).

The **"White Test"**, introduced by Halbert White in 1980, is a common method for detecting heteroskedasticity. It checks the relationship between independent variables and squared residuals, identifying heteroskedasticity even when the error terms do not follow a normal distribution. A small p-value from this test suggests the presence of heteroskedasticity, leading to the rejection of the null hypothesis of homoscedasticity (White, 1980). This test is more flexible than others, like the Breusch-Pagan test, but may over-reject the null in small samples or when autocorrelation or model specification errors are present (Davidson & MacKinnon, 1993).

To correct for heteroskedasticity, the **"Weighted Least Squares (WLS)"** method is recommended. WLS adjusts for varying error variances across observations, leading to more efficient and unbiased estimates in the presence of heteroskedasticity. It assigns weights based on the estimated error variances, giving more importance to observations with smaller error variances (Gujarati & Porter, 2009; Greene, 2018). This approach improves both estimation accuracy and the reliability of statistical inference (Baltagi, 2013). However, WLS can be challenging to apply in complex panel data models, especially when both heteroskedasticity and autocorrelation are present. In such cases, **"Generalized Least Squares (GLS)"** may offer a more comprehensive solution (Greene, 2018).

Figure (1) shows the main empirical model used to test the 3 hypotheses of this research, as shown below:

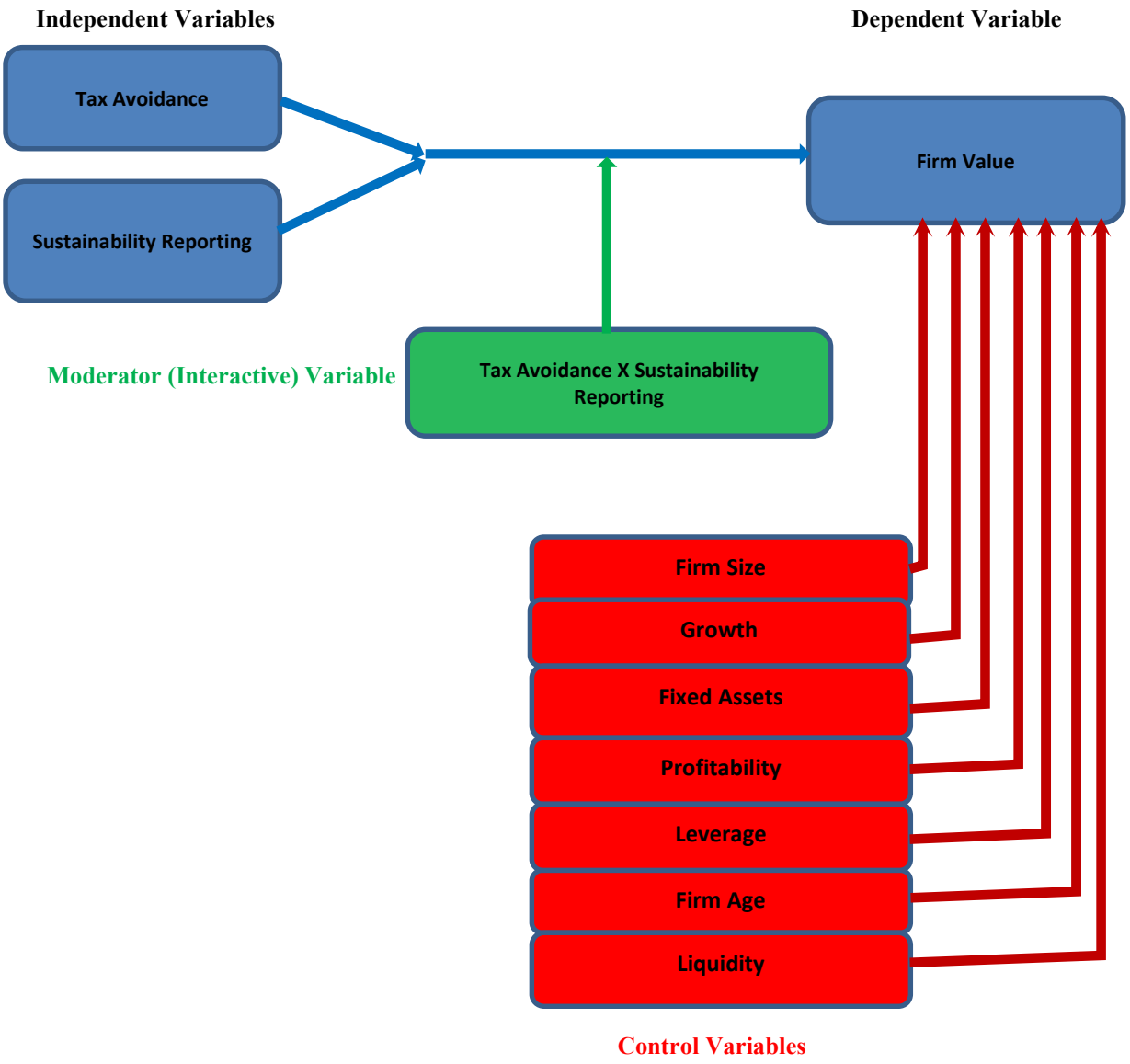

Figure1: The General Empirical Model
Source: prepared by the researcher

7.2 Data and Sample Selection

The research utilized secondary data obtained from published financial reports and statements of companies listed on the Egyptian Stock Exchange. The dataset encompassed 22 companies included in the SP/EGX ESG index, spanning a six-year period (2018–2023). Notably, the years 2018 to 2020 represent the period prior to the disclosure of ESG metrics, while 2021 to 2023 signify the post-disclosure phase of ESG activities (Said et al., 2024). The data collection process involved reviewing official reports based on predefined selection criteria and extracting relevant information about the companies. This information included, but was not limited to, market capitalization, total assets, total liabilities, net income, and other data essential for measuring the variables of the study.

The methodology for data analysis and hypothesis testing in this research employed a multifaceted approach, incorporating pooled and Weighted Least Squares (WLS) panel regression analyses. These techniques were critical for examining the complex relationships among the dependent variable, independent variable, moderating variable, and control variables. The analysis was based on a combination of cross-sectional and time-series data. The statistical software used for panel data analysis was Gretl 2024. However, it is essential to note that the effectiveness of these methods can vary significantly due to the complexity inherent in the dataset. While the software facilitated the analysis, interpreting the results demands careful consideration and a high level of expertise.

This investigation uses firm value as the endogenous variable, tax avoidance as the exogenous variable, and sustainability reporting as the moderating variable. Firm value reflects a corporation's condition and is often associated with stock prices. A high firm value can indicate the well-being of both owners and shareholders (Irawan & Turwanto, 2020). Enhancing firm value can boost market confidence in the company, relying not only on current performance but also on anticipated future prospects. Firm value is quantitatively assessed using Tobin's Q, calculated by adding market capitalization (total listed shares multiplied by share price) to total liabilities and dividing the sum by the firm's total assets (Rudyanto & Pirzada, 2020). Tax avoidance, the independent variable in this study, refers to a company's legal efforts to minimize its tax obligations while adhering to tax regulations. It is measured using the Cash Effective Tax Rate (CERT), calculated as the ratio of cash tax paid to pre-tax income (Wang, Xu & Sun, 2020). Sustainability reporting, which addresses the economic, environmental, and social impacts of business operations, serves as the moderating variable. This is quantified by whether a corporation has published a sustainability report in the study year. A value of 1 is assigned if the report is available, and 0 if it is absent (Rudyanto & Pirzada, 2020). Table (2) outlines the metrics used to measure sustainability reporting:

Table 2: Sustainability Reporting Measurement

Variable	Definition	Evaluation
Sustainability Reporting	Report issued by the company=1	Issued=1
	Otherwise-0	Not Issued=0

Source: Rudyanto & Pirzada (2020)

The control variables in this study include firm size, growth, fixed assets, profitability, leverage, company age, and liquidity. Firm size is measured using the natural logarithm (ln) of total assets, with larger companies typically seen as more advantageous. Sales growth represents an increase in company revenue due to heightened demand and competitive strength (Inger Vansant, 2019). Growth is calculated by subtracting the previous year's revenue from the current year's revenue. Fixed assets serve as a control variable reflecting productivity, measured by the ratio of total fixed assets to total assets. Profitability is assessed using Return on Assets (ROA), which suggests that a higher ROA may attract investors. ROA is calculated by dividing net income after tax by total assets. High leverage can enhance firm value (Endri & Fathony, 2020), with leverage defined as the ratio of total debt to total assets. Firm age represents the number of years the company has been in operation and is measured by taking the log of that number. Liquidity is calculated by adding cash and long-term investments, then dividing by the total assets from the previous year. The

researcher did not control for the type industry because of the relatively small number of this research sample (Smith, 2020). Table (3) summarizes the measurement of these control variables:

Table 3: Control Variables Measurement

Variable	Proxy
Firm Size	Log (Total Assets)
Growth	(This year's sales - Previous year's sales)/ Previous year's sales
Fixed Assets	Gross Fixed Assets/Total Assets
Profitability	Net Income/Total Assets
Leverage	Total Liabilities/Total Assets
Firm Age	Measured by taking the log of years since the company has been in operation
Liquidity	Cash and short-term investments/previous year's assets

Source: *Rudyanto & Pirzada (2020)*

8. RESULTS AND DISCUSSION

8.1 Descriptive Analysis

The descriptive statistics and correlation matrix in Table (4) provide valuable insights into the dependent, independent, moderator (i.e., interaction), and control variables under investigation. These data points are essential for understanding the underlying structure of the dataset and informing subsequent analyses. The descriptive statistics in Panel (A) highlight significant properties of the variables. The dependent and independent variables, such as Firm Value, Tax Avoidance, and Sustainability Reporting, exhibit relatively low mean and median values compared to their maximums, indicating a positively skewed distribution. This aligns with previous research, which suggests that firm value and tax avoidance behaviors vary widely among firms, particularly in emerging markets where financial practices are often inconsistent (Brealey et al., 2020). Additionally, variables such as Firm Size and Liquidity have higher mean values, underscoring their relative importance compared to other variables. The standard deviations reveal substantial variation, particularly for Firm Value (1.35) and Firm Size (0.51), highlighting the diversity in firms' performance and characteristics. This observation is consistent with prior studies emphasizing the heterogeneity of corporate behaviors and resources (Titman & Wessels, 1988). The wide range of values observed for Firm Value (-0.27 to 15.69) and Liquidity (0.17 to 117) suggest substantial differences in financial approaches across firms (Hair et al., 2019). With 132 observations for all variables, the dataset appears sufficient for statistical analysis and provides adequate variability to support robust modeling.

Panel B presents the correlation matrix, which reveals key associations between the variables. For instance, the weak negative correlation between Tax Avoidance and Sustainability Reporting (-0.09) may reflect a trade-off, as firms prioritizing tax-saving measures might allocate fewer resources to sustainability practices. This trend has been noted in prior studies on corporate trade-offs (Hanlon & Heitzman, 2010). The interaction term (Tax Avoidance × Sustainability Reporting) is significantly positively correlated with Sustainability Reporting (0.82) and weakly positively correlated with Tax Avoidance (0.10). This result is expected due

to the construction of the term and supports the hypothesis that firms engaged in tax avoidance and sustainability initiatives exhibit complex relationships (Bebbington et al., 2008). Firm Value, the dependent variable, is negatively correlated with Firm Size (-0.55) and Fixed Assets (-0.23). This finding suggests that larger firms or those with substantial fixed assets may face penalties in terms of firm value, possibly due to inefficiencies or asset-related risks (Rajan & Zingales, 1995). Conversely, the positive correlation between Firm Value and Liquidity (0.29), as well as Firm Age (0.19), indicates that older and more liquid firms tend to achieve higher valuations. These results align with studies linking financial stability to firm performance (Demirgüç-Kunt & Maksimovic, 1998).

Among the control variables, notable associations include the strong positive correlation between Profitability and Liquidity (0.64), suggesting that profitable firms maintain higher liquidity levels, as hypothesized in the pecking order theory (Myers, 1984). Conversely, the negative correlation between Leverage and Growth (-0.51) implies that firms with higher growth opportunities may rely less on debt financing, reflecting a common trade-off in financial decision-making (Frank & Goyal, 2003). Importantly, none of the correlations within the matrix exceed 0.82, alleviating immediate concerns about multicollinearity (Kutner et al., 2004).

Table 4: Describing Research Variables Panel A: Descriptive Statistics

Panel A: Descriptive Statistics

Descriptive Statistics/ Variables	*Firm Value*	*Tax Avoidance*	*Sustainability Reporting*	*Tax Avoidance X Sustainability Reporting*	*Control Variables*						
					Firm Size	*Growth*	*Fixed Assets*	*Profitability*	*Leverage*	*Firm Age*	*Liquidity*
Mean	0.32	0.32	0.5	0.10	4.15	0.28	0.38	0.11	0.56	34.82	0.21
Median	0.22	0.22	0.5	0	4.09	0.16	0.34	0.08	0.53	25	0.12
Standard Deviation	1.35	1.35	0.5	0.12	0.51	1.08	0.23	0.12	0.24	26.21	0.23
Minimum	-0.27	-0.27	0	-0.27	3.18	-0.89	0.01	-0.17	0.07	3	0.01
Maximum	15.69	15.69	1	0.37	5.31	11.84	0.94	0.53	1.21	117	1.31
Count	132	132	132	132	132	132	132	132	132	132	132

(**Source:** Excel 2019)

Panel B: Correlations Matrix

Variables		*Firm Value*	*Tax Avoidance*	*Sustainability Reporting*	*Tax Avoidance X Sustainability Reporting*	*Control Variables*						
						Firm Size	*Growth*	*Fixed Assets*	*Profitability*	*Leverage*	*Firm Age*	*Liquidity*
Firm Value		1										
Tax Avoidance		-0.06	1									
Sustainability Reporting		-0.16	-0.09	1								
Tax Avoidance X Sustainability Reporting		-0.17	-0.04	0.82	1							
Control Variables	**Firm Size**	-0.55	0.10	0.19	0.21	1						
	Growth	-0.07	0.00	0.19	0.20	0.05	1					
	Fixed Assets	-0.23	0.08	-0.03	-0.06	0.19	-0.17	1				
	Profitability	0.39	-0.12	0.15	0.05	-0.23	0.32	-0.16	1			
	Leverage	-0.06	0.12	-0.09	-0.02	0.31	-0.04	-0.20	-0.59	1		
	Firm Age	0.19	-0.04	0.06	0.04	-0.20	0.22	-0.30	0.29	-0.05	1	
	Liquidity	0.29	-0.07	0.20	0.08	-0.08	0.07	-0.22	0.64	-0.51	0.07	1

(**Source:** Excel 2019)

8.2 Panel Data Regression Analysis

Table (5) summarizes the results of a data regression analysis using pooled panels from 2018 to 2023, which examined the relationships and moderating effects between tax avoidance, sustainability reporting, and firm value. The analysis includes three hypotheses and multiple variables used as controls. A 10% significance level is used to evaluate the results.

1. **Tax Avoidance and Firm Value.**

The occurrence of tax avoidance is negative (-0.0092) and statistically insignificant (p = 0.8473), even at the 10% level. The sample's tax avoidance does not have a significant impact on its value. According to Desai and Dharmapala (2006), these findings suggest that tax avoidance may have a positive impact on firm value, but the benefits may be negated by associated risks or agency costs. This is problematic, as the situation does not allow for H1 to be supported.

2. **Sustainability Reporting and Firm Value.**

When describing sustainability, the coefficient is negative but not significant (-0.3448, p = 0.1340). Despite being in the vicinity of 10%, it does not offer substantial proof of a direct impact on firm value. Previous research (Clarkson et al., 2008) suggests that this result may reflect differences in how stakeholders perceive sustainability disclosures. Based on the data, H2 is not supported.

3. **Moderating Effect of Sustainability Reporting.**

The p-value for the interaction term "Tax Avoidance × Sustainability Reporting" is 0.4181, and its coefficient of 0.7385 is not statistically significant at the 10% level. This suggests that the impact of sustainability reporting is not significant in reducing the correlation between tax avoidance and firm value in this model. Therefore, there is no evidence to support the idea that sustainability reporting reduces the impact of tax avoidance on firm value (H3). These findings indicate that the moderating effect of sustainability reporting may not necessarily be significant. Eccles et al. (2014) argue that the impact of sustainability reporting on firm value can be influenced by the quality and perceived authenticity of the reports, which is consistent with this research. Additionally, Michelon et al. (2015) note that while such initiatives may be superficial, they may not necessarily mitigate the negative stigma attached to tax avoidance.

4. **Control Variables.**

Many control variables demonstrate significant correlations with firm value:

- The larger the firm, the negative and significant coefficient (-1.1983, p = 0.0001) suggests a lower value for the same size of the firm. Perhaps this is due to the inefficiencies or agency problems commonly associated with size (Cheng et al., 2006).
- Market skepticism about the quality of growth in certain contexts may be reflected by the negative and significant effect of Growth (-0.1618, p = 0.0055), which is not well-documented (La Rocca et al., 2009).
- The p-value for fixed assets is 0.1394, and therefore the correlation coefficient with other variables in the dataset is not significant.
- The correlation between profitability and firm value is strong, with a positive coefficient of 4.1787 ($p < 0.05$). Profitability has long been recognized as a critical determinant of firm worth (Modigliani & Miller, 1958).
- Leverage has a significant positive impact (2.4563, p = 0.00001), suggesting that firms that utilize debt more frequently may have greater worth (Jensen, 1986).

- A statistically insignificant relationship (p = 0.8292) exists between firm age and firm value, aligning with mixed results in the literature on its role (Coad et al., 2013).
- The positive significance of liquidity (1.2305, p = 0.0031) can be justified by the notion that reducing financial distress costs, enhancing operational flexibility, and signaling financial stability to investors, which can boost confidence and demand for the firm's stock. Additionally, liquid firms often face lower borrowing costs due to perceived lower risk. These factors collectively contribute to higher firm valuation and long-term sustainability (Wang, 2010).

The model accounts for 52.12% of the variation in firm value (R^2 adjusted = 0.5212), indicating a reasonably good fit. Overall model significance is confirmed by the F-statistic (15.2631, p = 0.0001), suggesting that the included variables play a role in explaining firm value as an aggregate. However, according to the Breusch-Pagan test, there is heteroscedasticity (p = 0.0135), which means that error variance may affect the confidence of standard errors. This may occur due to unobserved factors or model specification issues. Nevertheless, the pooled effects model is considered suitable for the analysis.

Table 5: Panel Data Regression Analysis Model (2018: 2023)

Variables/ Model		Pooled Effects			
		Coefficient	**T**	**Sig. T**	**Result**
C		4.53840	7.538	<0.0001	Significant Positive
Tax Avoidance		−0.00920564	−0.1930	0.8473	Not Significant
Sustainability Reporting		−0.344786	−1.509	0.1340	Not Significant
Tax Avoidance X Sustainability Reporting		0.738460	0.8126	0.4181	Not Significant
Control Variables	**Firm Size**	−1.19839	−8.237	<0.0001	Significant Negative
	Growth	−0.161804	−2.431	0.0165	Significant Negative
	Fixed Assets	0.516605	1.479	0.1417	Not Significant
	Profitability	4.17879	4.992	<0.0001	Significant Positive
	Leverage	2.45663	6.065	<0.0001	Significant Positive
	Firm Age	0.000549158	0.2034	0.8392	Not Significant
	Liquidity	1.23050	3.019	0.0031	Significant Positive
R^2		0.557800			
Adjusted R^2		0.521254			
F		15.26318			
Sig. F		<0.0001			
Sig. Breusch-Pagan Test		>0.10			
Appr. Model		**Pooled Effects Model is Appropriate**			
Sig. White Test		0.013484			
Decision		**Heteroscedasticity is Present**			

(**Source:** Gretl 2024)

The Weighted Least Squares (WLS) regression analysis is presented in table (6) to address the heteroscedasticity problem of the previous pooled data regression model. WLS stabilizes the variance of errors by assigning weights to observations, which helps in obtaining more accurate estimates. Data from 2018 to 2023 are presented below for the results.

1. **Tax Avoidance and Firm Value.**

Despite having a positive coefficient (0.0003) for tax avoidance, the statistical significance (p = 0.9925) suggests that it doesn't have disproportionate effects on firm value, even when heteroscedasticity is taken into account. Similarly, Desai and Dharmapala (2006) point out that tax avoidance's impact on firm value is often obscured by factors such as managerial

opportunism and the costs associated with tax planning. As a result, there is no direct correlation between tax avoidance and firm value.

2. Sustainability Reporting and Firm Value.

The impact of sustainability reporting on firm value is both negative and significant (Coefficient = -0.3447, p = 0.0434). Additionally, the conclusion can be drawn that sustainability disclosures may be perceived as a cost rather than enhancing value, particularly if stakeholders consider these efforts to be symbolic or "greenwashing" (Michelon et al., 2015). This finding supports the hypothesis that sustainability reporting has a direct and negative effect on firm value.

3. Moderating Effect of Sustainability Reporting.

The interaction term (Tax Avoidance × Sustainability Reporting) has a positive significance level at 10% (Coefficient = 1.8386, p = 0.0737). Sustainability reporting can moderate the relationship between tax avoidance and firm value. Eccles et al. (2014) argue that tax avoidance has negative perceptions, which could be mitigated through such moderation. However, some evidence suggests otherwise. This large "moderate" effect supports the hypothesis that sustainability reporting can function as a "buffer," creating greater firm value when there is tax avoidance.

4. Control Variables.

The significance of various control variables on firm value is established by economic theory and previous research:

- A negative coefficient for firm size (-0.8647, p = 0.001) suggests that larger firms have lesser value, which could be due to scale-related inefficiencies or increased scrutiny by stakeholders (Cheng et al., 2006).
- The coefficient for growth (-0.1264, p = 0.0008) indicates that growth may have negative effects on the firm's value and raise concerns about unsustainable or potentially speculative growth (La Rocca et al., 2009).
- Fixed assets exhibit a positive and significant impact (0.5186, p = 0.0300), as they increase firm value by enhancing operational capacity.
- Clearly, profitability is an important factor in the value of firms.
- The effect of leverage on firm value is positively correlated with the belief that it can increase a firm's worth when used appropriately (Jensen, 1986).
- The influence of firm age (0.0038, p = 0.0789) is minor, but it has a marginally greater impact on reputation and stability when firms are mature (Coad et al., 2013).
- The positive significant impact of liquidity (1.05210, p = 0.0081) on firm value is justified by minimizing financial distress costs, providing flexibility to capitalize on investment opportunities, and signaling financial stability, which increases investor confidence. Moreover, firms with higher liquidity are often perceived as less risky, leading to lower borrowing costs. These factors collectively support stronger firm valuation and sustainable growth (Wang, 2010).

By improving the pooled regression model and adjusting for differences, the model now accounts for 60.21% of the firm value variance (Adjusted $R^2 = 0.6021$). The overall model is deemed important based on the F-statistic (20.8267, p = 0.0001). Heteroscedasticity issues are effectively addressed by WLS, resulting in more precise parameter estimates.

Table 6: Panel Data Weighted Least Squares (WLS) Regression Analysis Model (2018: 2023)

Variables/ Model		Weighted Least Squares (WLS)			
		Coefficient	**T**	**Sig. T**	**Result**
C		3.14410	6.899	<0.0001	Significant Positive
Tax Avoidance		0.000319369	0.009462	0.9925	Not Significant
Sustainability Reporting		−0.346469	−2.041	0.0434	Significant Negative
Tax Avoidance X Sustainability Reporting		1.18861	1.804	0.0737	Significant Positive
Control Variables	**Firm Size**	−0.864703	−7.995	<0.0001	Significant Negative
	Growth	−0.182648	−3.532	0.0006	Significant Negative
	Fixed Assets	0.518566	2.196	0.0300	Significant Positive
	Profitability	4.87947	6.600	<0.0001	Significant Positive
	Leverage	2.02485	6.708	<0.0001	Significant Positive
	Firm Age	0.00381846	1.772	0.0789	Significant Positive
	Liquidity	1.05210	2.692	0.0081	Significant Positive
R^2		0.632517			
Adjusted R^2		0.602147			
F		20.82669			
Sig. F		<0.0001			

(Source: Gretl 2024)

9. CONCLUSION, RECOMMENDATIONS, & SUGGESTIONS

9.1 Conclusion

Using pooled regression and Weighted Least Squares (WLS) models, this study evaluates the direct and moderating effects of tax avoidance and sustainability reporting on firm value, along with several control variables. Heteroscedasticity was a significant issue with the pooled regression model, but it was resolved using WLS to produce reliable and robust results. In both models, the evidence suggests that tax avoidance has little impact on firm value and instead offsets reputational risks and costs (Desai & Dharmapala, 2006). Sustainability reporting has a significant negative impact on the value of firm in the WLS model. The outcome indicates that sustainability disclosures can be viewed as expensive and potentially harmful, particularly if they are not supported by substantial improvements in corporate practices (Michelon et al., 2015).

In the context of the WLS model, the interaction term (Tax Avoidance × Sustainability Reporting) is significant as it shows how tax avoidance negatively impacts firm value. Eccles et al. (2014) contend that sustainability practices can reduce stakeholder concerns about tax avoidance, leading to the protection or enhancement of firm value through this finding. Viable control variables such as profitability, leverage, and liquidity are consistently positively correlated with firm value, thus supporting their crucial role in financial performance (Modigliani & Miller, 1958; Jensen, 1986).

9.2 Recommendations

1. **Enhancing the Credibility of Sustainability Reporting:** Organizations should focus on reporting genuine sustainability initiatives, rather than engaging in superficial disclosures. Effective, honest reporting, supported by measurable actions, can strengthen stakeholder trust and mitigate potential financial losses associated with sustainability efforts.

2. **Balancing Tax Planning and Reputation Management:** Businesses need to find a balance between ethical tax planning and public perception. While tax avoidance strategies can improve financial outcomes, they may harm a company's reputation. By integrating sustainability reporting with tax strategies, companies can position themselves as more valuable and reduce stakeholder concerns.
3. **Optimal Use of Financial Resources and Maximizing Leverage:** Firms should focus on creating value by efficiently using financial resources and leveraging opportunities. Despite analysis showing mixed results, these factors remain critical for enhancing firm value, as they continue to be significant in the models examined.

9.3 Suggestions

Building on this study, future research could explore the following topics:

1. **Regulatory Environments and Stakeholder Expectations:** These factors can influence the relationship between tax avoidance, sustainability reporting, and firm value. Research focusing on specific industries or regulatory settings could provide more precise insights into how these elements interact.
2. **Long-Term Impact of Sustainability Practices:** Future studies could examine whether sustainability practices generate long-term benefits for firm value or if they are seen as short-term costs. Understanding the lasting effects of sustainability can help firms evaluate their long-term strategies.
3. **National and Cultural Contexts:** The role of tax avoidance and sustainability reporting may vary based on national and cultural contexts. Cross-country studies could explore how different institutional frameworks shape the relationship between these factors and firm value.
4. **Exploring Various Methodologies:** Future research could adopt alternative methods, such as Generalized Method of Moments (GMM) or dynamic panel models, to address potential endogeneity issues. These techniques would enhance the robustness of causal inferences in the studies.
5. **Stakeholder Perception of Tax Avoidance and Sustainability Reporting:** Investigating how stakeholders—such as investors, employees, and customers—perceive tax avoidance and sustainability disclosures can help better understand the mechanisms that influence company value. This research could shed light on how perceptions of corporate practices impact stakeholder decisions.

In summary, this research emphasizes the significant effects of tax avoidance and sustainability reporting on company value. While tax avoidance may not have a direct impact on firm value, sustainability reporting can indirectly influence value by mitigating the negative perceptions associated with tax avoidance. These findings highlight the need for firms to adopt more integrated, transparent, and socially responsible approaches to enhance both their financial and non-financial performance.

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المستخلص:

يهدف هذا البحث إلى دراسة الدور المعدل لتقارير الاستدامة (ESG) في العلاقة بين تجنب الضرائب وقيمة الشركة، باستخدام بيانات من مصر. يعتمد البحث على منهج تجريبي، باستخدام بيانات ثانوية تمتد من عام 2018 إلى 2023. تم صياغة ثلاث فرضيات، وتم تطبيق نماذج تحليل البيانات المقطعية باستخدام طريقة المربعات الصغرى المجمعة (pooled) وطريقة المربعات الصغرى الموزونة (WLS). تؤكد النتائج صحة فرضيتين: (1) تأثير تقارير الاستدامة على قيمة الشركة، و(2) التأثير المعدل لتقارير الاستدامة على العلاقة بين تجنب الضرائب وقيمة الشركة. ومع ذلك، تم رفض الفرضية المتعلقة بالتأثير المباشر لتجنب الضرائب على قيمة الشركة.استنادًا إلى النتائج، يوصي البحث بضرورة تعزيز ممارسات تقارير الاستدامة في الشركات من خلال تبني استراتيجيات شفافة وقائمة على الأدلة. هذا من شأنه أن يُحسن من تصورات أصحاب المصلحة ويقلل من المخاطر المالية المحتملة ويزيد من الثقة. على وجه الخصوص، يجب على الشركات التركيز على دمج ممارسات الاستدامة في استراتيجياتها المؤسسية، وضمان توافق تخطيط الضرائب مع الأهداف المستدامة طويلة المدى. من خلال تبني ممارسات ضريبية أخلاقية، يمكن للشركات التخفيف من الآثار السلبية المحتملة لتجنب الضرائب على سمعتها وأدائها المالي. علاوة على ذلك، يوصي البحث بأن تركز الشركات على أهمية تحقيق التوازن بين التزامات الضرائب وأهداف التنمية المستدامة، حيث إن هذه المقاربة يمكن أن تؤدي إلى تحسين قيمة الشركة. يجب على الشركات الاستفادة بشكل فعال من مواردها المالية وتطبيق استراتيجيات مالية مناسبة لتحقيق أقصى قيمة مع الحفاظ على التزامها بالاستدامة.أما بالنسبة للبحث المستقبلي، فإن الدراسة توصي باستكشاف كيفية تأثير العوامل الخارجية، مثل الأطر التنظيمية، وتوقعات أصحاب المصلحة المتزايدة، والديناميكيات الخاصة بالصناعة، على التفاعل بين تجنب الضرائب، وتقارير الاستدامة، وقيمة الشركة. إن دراسة تأثير هذه العوامل يمكن أن توفر فهمًا أعمق للعوامل السياقية التي تشكل الممارسات المؤسسية. بالإضافة إلى ذلك، يمكن أن تركز الدراسات المستقبلية على تحليل الآثار طويلة المدى لاستراتيجيات الاستدامة على قيمة الشركات، وإجراء مقارنات عبر الدول. من شأن هذا البحث أن يوفر رؤى قيمة حول كيفية تأثير العوامل الثقافية والمؤسسية والتنظيمية في تشكيل هذه العلاقات، مما يوفر منظورًا عالميًا حول هذه القضايا.

الكلمات المفتاحية: *قيمة الشركة؛ تجنب الضرائب؛ تقارير الاستدامة؛ ESG؛ نموذج تحليل البيانات المقطعية المجمعة؛ نموذج تحليل البيانات المقطعية باستخدام المربعات الصغرى الموزونة (WLS)؛ مصر.*