Determinant of Green Value on Corporate Tax Avoidance

Sailendra

sailendra@univpancasila.ac.id, Universitas Pancasila

Abstract

This study investigates the relationship between green value and tax avoidance, with a focus on the moderating role of intellectual capital. Using a sample of 264 firm-year observations from Indonesian listed companies participating in the Proper program for the years 2017-2022, we employ panel data regression analysis and SEM-PLS to examine these relationships. Our findings reveal that while green value does not have a significant direct effect on tax avoidance, intellectual capital plays a crucial role both as a direct determinant and as a moderator. Specifically, we find that higher intellectual capital is associated with lower tax avoidance, suggesting that firms with strong intellectual resources tend to engage in more responsible tax practices. However, the positive moderating effect of intellectual capital on the relationship between green value and tax avoidance indicates that firms with high intellectual capital may be more adept at leveraging their environmental initiatives for efficient tax planning. These results highlight the complex interplay between environmental commitment, intellectual resources, and tax strategies in modern corporations. Our study contributes to the growing literature on corporate sustainability and tax behavior, offering implications for policymakers in designing tax regulations and environmental incentives, as well as for managers in strategically managing intellectual capital for both environmental and tax efficiency purposes.

Keywords: Corporate tax avoidance, firm age, firm size, green value, intellectual capital

Introduction

In the era of globalization and increasing environmental awareness, the concept of green value has become a primary focus for companies worldwide. Green value, reflecting a company's commitment to environmental sustainability, not only affects the company's image but also significantly impacts their financial strategies (Chen et al., 2018). One critical aspect of financial strategy that may be influenced by green value is the practice of tax avoidance. This phenomenon is intriguing to study, considering the potential conflict between a company's efforts to maximize shareholder value through tax avoidance and their commitment to social and environmental responsibility (Lanis & Richardson, 2015).

Previous research has shown that companies with strong green value tend to have better governance practices and greater transparency in their financial reporting (Zhang et al., 2016). However, the relationship between green value and tax avoidance remains a subject of debate among academics and practitioners. Some studies indicate that companies with high environmental commitment are more compliant with tax regulations (Hoi et al., 2013), while other research suggests that green value can be used as a tool to obscure aggressive tax avoidance practices (Sikka, 2010). These divergent findings highlight the need for further research to understand the dynamics between green value and tax avoidance.

In this context, the role of intellectual capital as a moderating variable becomes highly relevant. Intellectual capital, encompassing human capital, structural capital, and relational capital, has been recognized as a crucial strategic resource for a company's competitive advantage (Edvinsson & Malone, 1997). Several studies have demonstrated that intellectual capital significantly influences financial performance and company value (Mention & Bontis, 2013). However, the role of intellectual capital in the context of the relationship between green value and tax avoidance has not been extensively explored, despite its potential to impact a company's tax strategies significantly.

This study aims to fill the gap in the literature by investigating the relationship between green value and tax avoidance and how intellectual capital moderates this relationship. By understanding the complex interactions among these three variables, this research is expected
to provide new insights into how companies balance their environmental commitments with their tax strategies. This is crucial given the increasing pressure from stakeholders for more sustainable and ethical business practices (Dyreng et al., 2016) and the government's efforts to enhance corporate tax compliance.

Additionally, this study aims to offer practical contributions to policymakers and corporate managers. For policymakers, the findings of this research can aid in designing more effective regulations to encourage sustainable business practices without sacrificing state tax revenues. For corporate managers, the results can provide guidance in developing strategies that integrate green value, intellectual capital management, and optimal tax planning (Guthrie et al., 2012). Thus, this research not only contributes to theoretical development but also has significant implications for business practices and public policy.

The structure of this research will begin with a comprehensive literature review on green value, tax avoidance, and intellectual capital. Next, the conceptual framework and research hypotheses linking these three variables will be outlined. The research methodology will be detailed, including research design, data collection, and analysis techniques used. The research findings will be presented and discussed in the context of existing literature, followed by conclusions, implications, and suggestions for future research. It is anticipated that this study will significantly enhance our understanding of the role of green value and intellectual capital in corporate tax practices in an increasingly complex and sustainability-oriented business era (Khoo et al., 2017).

LITERATURE REVIEW
Theoretical Framework
This research is grounded in several interrelated theoretical frameworks. First, legitimacy theory (Suchman, 1995) and stakeholder theory (Freeman, 1984) form the basis for understanding corporate motivations in adopting green value practices as efforts to gain social legitimacy and meet stakeholder expectations. Second, agency theory (Jensen & Meckling, 1976) is used to explain the phenomenon of tax avoidance as a result of conflicts of interest between managers and shareholders. Third, the resource-based view (Barney, 1991) and knowledge-based view (Grant, 1996) provide a foundation for understanding the role of intellectual capital as a strategic resource that can influence company performance and decision-making, including taxation. Fourth, signaling theory (Spence, 1973) explains how companies use green value and intellectual capital as signals to the market about their quality and prospects. Fifth, institutional theory (DiMaggio & Powell, 2020) helps explain how institutional environmental pressures can influence the adoption of green value practices and corporate tax decisions. Integrating these theories provides a comprehensive framework for analyzing the complex interactions between green value, tax avoidance, and intellectual capital in the context of modern business, which increasingly emphasizes sustainability and social responsibility (Hoi et al., 2013; Lanis & Richardson, 2012).

Green Value
Green value, as a central concept in this research, is rooted in several interrelated theoretical frameworks. Legitimacy theory (Suchman, 1995) and stakeholder theory (Freeman, 1984) are fundamental to understanding corporate motivations for adopting environmentally friendly practices. These theories explain how companies strive to gain and maintain social legitimacy and meet the expectations of various stakeholders through green value initiatives (Bansal & Clelland, 2004). Furthermore, the resource-based view (Barney, 1991) highlights how green value can be a source of sustainable competitive advantage, enabling companies to differentiate themselves from competitors and achieve superior performance (Hart, 1995). Signaling theory (Spence, 1973) is also relevant in this context, explaining how companies use
green value as a signal to the market about their commitment to sustainability and social responsibility (Delmas & Burbano, 2011). Additionally, institutional theory (DiMaggio & Powell, 2020) provides insights into how isomorphic pressures can drive the adoption of green value practices among companies within the same industry (Bansal, 2005). The integration of these theories provides a comprehensive framework for understanding the complexity of green value in the modern business context, including its potential implications for corporate tax strategies and the moderating role of intellectual capital (Porter & Linde, 1995; Surroca et al., 2010).

**Green Value and Corporate Tax Avoidance**

Previous research on the relationship between green value and tax avoidance has produced diverse findings. Some studies indicate that companies with a high commitment to green value tend to be more ethical in their tax practices. Lanis & Richardson, (2012) found that companies with higher social responsibility levels, including environmental commitment, are less aggressive in tax avoidance. This is supported by Hoi et al., (2013), who showed that companies with irresponsible CSR activities are more likely to engage in tax avoidance. This argument is based on the view that companies committed to environmental sustainability tend to have better governance and greater transparency in their financial reporting (Huseynov & Klamm, 2012). Additionally, Davis et al., (2016) stated that companies with strong green value have incentives to maintain their reputations and avoid the risks associated with aggressive tax avoidance practices.

On the other hand, some research indicates a positive relationship between green value and tax avoidance, or at least finds no significant relationship. Sikka, (2010) argues that some companies might use environmental initiatives as a facade to cover up aggressive tax avoidance practices. This is consistent with the findings of Col & Patel, (2019), who showed that multinational companies with better CSR performance are more likely to engage in tax avoidance through transfer pricing. Laguir et al., (2015) found that only the economic dimension of CSR negatively correlates with tax aggressiveness, while the environmental dimension does not show a significant relationship. Based on these diverse findings, the first hypothesis of this research is formulated as follows:

**H1**: Green value has a negative effect on tax avoidance.

**Intellectual Capital and Corporate Tax Avoidance**

Previous research on the relationship between intellectual capital and tax avoidance has shown varied results. Some studies indicate that companies with high intellectual capital tend to be more efficient in their tax management. Belz et al., (2019) found that companies with higher levels of human capital tend to have lower effective tax rates (ETR), indicating higher levels of tax avoidance. This is consistent with the findings of Dharmapala & Riedel, (2013), who showed that multinational companies with significant intangible assets are more likely to engage in transfer pricing. Chen et al., (2018) also found a positive relationship between R&D investment, as a proxy for structural capital, and tax aggressiveness. This argument is based on the view that companies with strong intellectual capital have more opportunities and capabilities to plan and implement complex tax strategies (Gallemore & Labro, 2015).

On the other hand, some research indicates a negative or insignificant relationship between intellectual capital and tax avoidance. Mgammal & Ismail, (2015) found that companies with higher levels of intellectual capital tend to be less aggressive in their tax avoidance practices. They argue that these companies are more focused on long-term value creation and tend to avoid the reputational risks associated with aggressive tax avoidance practices. Meanwhile, Salehi et al., (2014) found no significant relationship between intellectual capital and tax avoidance, suggesting that other factors may be more influential in corporate tax
decisions. Hasseldine et al., (2012) emphasize the importance of considering various dimensions of intellectual capital separately, as each may have different effects on corporate tax strategies. Based on these diverse findings, the second hypothesis of this research is formulated as follows:

H2: Intellectual capital has a negative effect on tax avoidance.

**Intellectual Capital, Green Value and Tax Avoidance**

Although considerable research has been conducted on the direct relationship between green value and tax avoidance, as well as between intellectual capital and tax avoidance, studies specifically examining the moderating role of intellectual capital in the relationship between green value and tax avoidance remain limited. However, several related studies provide a theoretical foundation for this hypothesis. Zeng, (2019) found that companies with high levels of innovation, which can be considered a proxy for intellectual capital, tend to be more effective in implementing their sustainability strategies, including in the context of taxation. This aligns with the findings of Guthrie et al., (2012), which indicate that intellectual capital plays a crucial role in transforming sustainability initiatives into better financial performance. In the context of taxation, Kim et al., (2012) found that companies with high levels of CSR tend to be less aggressive in tax avoidance; however, this effect is stronger in companies with good governance, which can be considered part of intellectual capital.

Furthermore, Surroca et al., (2010) suggested that the relationship between corporate social responsibility (including environmental initiatives) and financial performance is mediated by intangible resources, which include intellectual capital. This indicates that intellectual capital can influence how green value is translated into business strategies, including tax strategies. Matolcsy & Wyatt, (2006) found that companies with strong intellectual capital are better able to exploit business opportunities and manage risks, which may include effective tax management. In the context of green value, Lev et al., (2009) demonstrated that investments in R&D and innovation, which are key components of intellectual capital, can enhance the effectiveness of a company's sustainability initiatives. Based on these findings, it can be argued that intellectual capital has the potential to moderate the relationship between green value and tax avoidance, leading to the following hypothesis:

H3: Intellectual capital moderates the relationship between green value and tax avoidance.

**METHODS**

This study employs a quantitative approach using panel data regression methods to examine the relationship between green value and tax avoidance, as well as the moderating role of intellectual capital. The dependent variable in this study is tax avoidance, measured using the effective tax rate (ETR). This includes the general effective tax rate (GETR), which is calculated as tax expenses divided by pretax income, and the cash effective tax rate (CETR), which is cash tax paid divided by pretax income, following the methods used by Lanis & Richardson, (2012) and Sailendra, (2023). The main independent variable is green value, measured using the PROPER index (Program Penilaian Peringkat Kinerja Perusahaan dalam...
Pengelolaan Lingkungan Hidup) issued by the Ministry of Environment and Forestry of the Republic of Indonesia. This index categorizes companies into five levels: gold, green, blue, red, and black, based on the approach used by Sailendra, (2023a, 2023b). Intellectual capital serves as both an independent and moderating variable, measured using the Value Added Intellectual Coefficient (VAIC) method developed by Pulic, (2000), which has been widely used in previous research (e.g., Sailendra, 2023b; Zéghal & Maaloul, 2010). Two control variables are included in the model: firm size, measured by the natural logarithm of total assets (Dyreng et al., 2008; Sailendra et al., 2019), and firm age, calculated from the year of establishment to the observation year (Attig et al., 2012; Sailendra et al., 2019).

Research data were collected from various secondary sources. Information on green value was obtained from the PROPER index published on the Ministry of Environment and Forestry's website. Financial data used to calculate tax avoidance, intellectual capital, and control variables were sourced from annual financial reports available on the companies' websites and the Indonesia Stock Exchange. The research sample comprises 462 firm-year observations covering the period 2017-2022, including companies listed on the Indonesia Stock Exchange and assessed by PROPER. The sample was selected using purposive sampling with the following criteria: (1) companies listed on the IDX during the study period, (2) complete data for all variables under study, and (3) inclusion in the PROPER assessment. Data analysis was conducted using the statistical software SEM Smart-PLS 4.0, considering fixed effects or random effects (Wooldrige, 2010). To test the moderation effect, the interaction between green value and intellectual capital was included in the regression model, following the procedure suggested by Hayes, (2018).

RESULT AND DISCUSSION

Based on the descriptive statistical test results presented in Table No. 2, the following discussion elaborates on the characteristics of the variables in this study:

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Avoidance (TA)</td>
<td>264</td>
<td>-6.17</td>
<td>122.14</td>
<td>0.66</td>
<td>7.53</td>
</tr>
<tr>
<td>Green value (GV)</td>
<td>264</td>
<td>2</td>
<td>5</td>
<td>3.09</td>
<td>0.55</td>
</tr>
<tr>
<td>Intellectual capital (IC)</td>
<td>264</td>
<td>-119.92</td>
<td>208.93</td>
<td>4.12</td>
<td>18.24</td>
</tr>
<tr>
<td>Company size (SIZE)</td>
<td>264</td>
<td>22.40</td>
<td>32.76</td>
<td>29.22</td>
<td>1.44</td>
</tr>
<tr>
<td>Company age (AGE)</td>
<td>264</td>
<td>4.02</td>
<td>42.87</td>
<td>25.60</td>
<td>10.71</td>
</tr>
</tbody>
</table>

Sources: Smart-PLS 4.0 output

Tax Avoidance (TA), the tax avoidance variable exhibits a minimum value of -6.17 and a maximum value of 122.14, with an average of 0.66 and a standard deviation of 7.53. The positive average value indicates that, on the whole, companies in the sample tend to engage in tax avoidance. However, the relatively high standard deviation (7.53) compared to the mean suggests considerable variation in tax avoidance practices among the sampled companies. The negative minimum value may imply that some companies pay higher taxes than necessary, while the high maximum value indicates the presence of companies that engage in highly aggressive tax avoidance.

Green Value (GV), green value is measured on a scale from 1 to 5, with an average of 3.09 and a standard deviation of 0.55. This average indicates that, generally, the companies in the sample have a moderate level of green value. The relatively small standard deviation
compared to the mean suggests that there is not a great deal of variation in green value among the sampled companies.

Intellectual Capital (IC), Intellectual capital shows a very wide range, with a minimum value of -119.92 and a maximum value of 208.93. The average IC is 4.12, with a very high standard deviation of 18.24. This indicates a substantial variation in intellectual capital among the sampled companies. Negative values may reflect companies experiencing a decline in intellectual capital, while the high maximum value indicates the presence of companies with very strong intellectual capital.

Company Size (SIZE), Company size, measured by the natural logarithm of total assets, has an average of 29.22 with a standard deviation of 1.44. The range from 22.40 to 32.76 shows that the sample includes companies of various sizes, but the relatively small standard deviation suggests that most companies are not drastically different in size, and than Company Age (AGE). Company age ranges from 4.02 years to 42.87 years, with an average of 25.60 years and a standard deviation of 10.71 years. This indicates that the sample includes companies with various levels of maturity, from relatively new to well-established ones. Overall, these descriptive statistics reveal substantial variation in the characteristics of the sampled companies, particularly in terms of tax avoidance practices and intellectual capital. This provides a solid foundation for further analysis of the relationships between these variables and the moderating role of intellectual capital in the relationship between green value and tax avoidance.

Based on the statistical test results presented in table no. 3, the following discussion elaborates on the relationships among the variables in this study:

### Table No. 3. Statistical Results

|                       | Original Sample (O) | Sample Mean (M) | Standard Deviation | T Statistic (|O/STDE|) | P Values |
|-----------------------|---------------------|-----------------|--------------------|----------------|----------|
| GV → TA               | 0.056               | 0.058           | 0.055              | 1.011          | 0.312    |
| IC → TA               | -0.269              | -0.276          | 0.068              | 3.966          | **0.000  |
| GV*IC → TA            | 0.162               | 0.159           | 0.059              | 2.722          | **0.006  |
| SIZE → TA             | 0.018               | 0.018           | 0.075              | 0.242          | 0.809    |
| AGE → TA              | 0.082               | 0.082           | 0.064              | 1.288          | 0.198    |

Source: Smart-PLS 4.0 output, processing by authors

The symbols: ***, **, * denote significance level at the 1%, 5% and 10%, respectively.

Notes: TA = Tax avoidance; GV = Green value; IC = Intellectual capital; AGE = company age; SIZE = company size.

Green Value (GV) and Tax Avoidance (TA). The analysis shows a positive but statistically insignificant (coefficient = 0.056, p-value = 0.312 > 0.05), indicating that GV does not have a significant impact on TA. The average GV score is 3.09 (SD = 0.55), suggesting moderate environmental commitment among the sampled firms. The variation in TA (mean = 0.66, SD = 0.55) reflects diverse tax strategies. This study result did not support research result found by Laguir et al. (2015) stated that green image (CSR) negatively correlates with tax aggressiveness. Some prior studies offer mixed results, like Lanis & Richardson (2012) and Hoi et al. (2013), suggest that higher environmental commitment reduces aggressive tax avoidance, while others, such as Sikka (2010) and Col & Patel (2019), argue that green initiatives can obscure tax avoidance practices. The complexity of this relationship is understood through various theories, including legitimacy theory, stakeholder theory, and agency theory, which suggest that while green values may enhance social legitimacy, they do not necessarily prevent tax avoidance.

Intellectual Capital (IC) and Tax Avoidance (TA). The study finds a significant negative relationship between IC and TA (coefficient = -0.269, p-value = 0.000 < 0.01), indicating that
higher IC reduces TA. The average IC score is 4.12 (SD = 18.24), reflecting significant variability across firms. This study result, consistent and support finding by Mγammar and Ismail (2015) argue that such firms prioritize long-term value creation, reducing their likelihood of aggressive TA. Previous research presents mixed findings, while Belz et al. (2019) and Dharmapala & Riedel (2013) suggest that firms with substantial IC may engage more in TA due to their capacity for complex tax strategies and Gallemore and Labro (2015), stated that strong intellectual capital have more opportunities and capabilities to plant and implement complex tax strategies. This negative relationship aligns with theories emphasizing the role of IC in fostering long-term value and reputation management. This finding is consistent with the argument that companies with strong intellectual resources may focus more on long-term value creation and tend to avoid the reputational risks associated with aggressive tax avoidance practices. This means that companies with higher intellectual capital tend to engage in lower tax avoidance.

Moderating Effect of Intellectual Capital (IC) on Green Value (GV) and Tax Avoidance (TA). IC significantly strengthens the positive relationship between GV and TA (coefficient = 0.162, p-value=0.006< 0.05), suggesting that firms with higher IC may leverage green values to enhance their tax strategies. Descriptive statistics show an average IC score of 4.12 (SD = 18.24) and GV score of 3.09 (SD = 0.55). This found IC positive relationship between GV and TA, supporting research result indicated by Zeng (2019) that considered a proxy for intellectual capital tend to be more effective in implementing sustainability strategies, including taxation, and company with high level green value tend to be less aggressive in tax avoidance (Kim et al. 2012) due intellectual capital plays a crucial role in transforming sustainability initiatives (Guthrie et al., 2012). While direct studies on this moderation effect are limited, related research supports the finding. Theoretical frameworks such as the resource-based view, knowledge-based view, and signaling theory explain how IC can enhance the effectiveness of green initiatives, including in tax planning. This indicates that intellectual capital moderates the relationship between green value and tax avoidance. Specifically, the influence of green value on tax avoidance becomes more positive when intellectual capital is high. This may suggest that companies with strong intellectual capital are better able to leverage their green value initiatives for efficient tax planning purposes.

Control Variables (Company Size and Age) and Tax Avoidance. The influence of company size (coefficient = 0.018, p = 0.809>0.005) and age (coefficient = 0.082, p = 0.198>0.05) on TA is not statistically significant, indicating no substantial impact of these variables on TA in this study. The average company size is 29.22 (SD = 1.44), and the average age is 25.60 years (SD = 10.71). The literature offers mixed results. Some studies, like Dyreng et al. (2008) and Richardson et al. (2013), suggest that larger and older firms may engage more in sophisticated tax planning, while others, such as Hoi et al. (2013), propose that these firms avoid aggressive tax strategies due to reputational risks. The complexity of these findings can be contextualized within frameworks like agency theory and institutional theory, which highlight the diverse factors influencing tax strategies in firms.

Therefore, the results of this study indicate that the relationship between green value and tax avoidance is not straightforward. Although green value itself does not have a significant direct influence on tax avoidance, intellectual capital plays an important role both as a factor directly affecting tax avoidance and as a moderator in the relationship between green value and tax avoidance. These findings highlight the importance of considering the role of intellectual resources in understanding how companies' environmental initiatives relate to their tax strategies. Further research may be necessary to explore the specific mechanisms behind this moderating effect and its implications for business practices and tax policy.
CONCLUSION

This study provides new insights into the complex relationship between green value, intellectual capital, and tax avoidance. The main findings indicate that although green value does not have a significant direct impact on tax avoidance, intellectual capital plays a crucial role both as a direct factor affecting tax avoidance and as a moderator in the relationship between green value and tax avoidance. The significant negative influence of intellectual capital on tax avoidance suggests that companies with strong intellectual resources tend to be more responsible in their tax practices. However, the positive moderating effect of intellectual capital on the relationship between green value and tax avoidance indicates that companies with high intellectual capital may be better able to leverage their environmentally friendly initiatives for efficient tax planning purposes. Based on these findings, it is recommended that policymakers consider the role of intellectual capital in designing tax regulations and environmental incentives. Companies are also advised to manage their intellectual capital strategically, not only to enhance environmental performance but also to optimize ethical and efficient tax strategies.

Suggestions for Future Research

This study has several limitations that should be noted. First, the use of secondary data and proxy measurements for the main variables may not fully capture the complexity of the concepts being studied, especially for green value and intellectual capital. Second, this research is limited to a specific context and time period, which may affect the generalizability of the findings. Third, although this study identifies the moderating role of intellectual capital, the specific mechanisms behind this effect have not been fully explained. For future research, it is suggested to use more comprehensive measurement methods for green value and intellectual capital, possibly incorporating qualitative data for a deeper understanding. Additionally, longitudinal and cross-country studies could provide insights into how these relationships evolve over time and vary across different contexts. Finally, further research could explore additional moderator or mediator variables that might influence the relationship between green value, intellectual capital, and tax avoidance, such as corporate governance structures or institutional factors.

REFERENCES


