

A Pre- and Post-Pandemic Analysis of Sales Growth, Leverage, and Intellectual Capital as Determinants of Financial Distress in Property & Real Estate

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Abstract

Purpose - This study aims to investigate the impact of sales growth, leverage, and intellectual capital on financial distress in the property and real estate sub-sector, comparing the periods before and after the onset of the COVID-19 pandemic

Design/methodology/approach - The study employs a quantitative research design using panel data regression analysis. Financial data from listed property and real estate companies in Indonesia will be collected for the periods before (2017-2019) and after (2020-2022) the onset of the COVID-19 pandemic. The Altman Z-score will be used as a proxy for financial distress. Sales growth, leverage ratios, and intellectual capital (measured using the VAIC model) will serve as independent variables, with profitability as a moderating variable. Comparative analysis between the pre- and post-pandemic periods will be conducted to identify any significant changes in the relationships between the variables.

Finding - Findings indicate that sales growth does not impact financial distress; leverage has a significantly negative effect, while intellectual capital has a notably positive effect. Additionally the COVID-19 pandemic has had a profound impact on the companies under study, resulting in a statistically significant difference in sales growth, intellectual capital, profitability, and financial distress between the pre- and post-pandemic periods

Originality - It provides a comprehensive analysis of financial distress determinants in the property and real estate sub-sector, an area that has been underexplored in existing literature.

Keyword - Sales Growth, Leverage, Intellectual Capital, Profitability, Financial Distress

Paper Type – Research Paper



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Introduction

The COVID-19 pandemic has precipitated unprecedented economic challenges globally, leading to increased financial distress for businesses across various sectors. The property and real estate sub-sector, in particular, has experienced a significant downturn. In Indonesia, this sector saw a 21.23% drop in its stock index in 2020, reflecting the severity of the impact (Susilawati et al., 2023). The implementation of social distancing measures drastically reduced mall foot traffic and tenant demand, negatively affecting the financial performance of commercial real estate companies (Ding et al., 2021). The residential property market was not spared, with sales plummeting by 20.59% in 2020 compared to the previous year (Bank Indonesia, 2021). As a result, several companies in this sub-sector faced debt restructuring or bankruptcy proceedings due to mounting financial strain (Huang et al., 2022).

Financial distress, a precursor to potential bankruptcy, is driven by a complex interplay of external macroeconomic factors and internal financial management issues. The prolonged nature of the pandemic has exacerbated these challenges, pushing many firms to the brink of insolvency (Teng et al., 2023). Researchers suggest that continuous losses over multiple years indicate a critical need for intervention by company management to prevent bankruptcy (Li et al., 2022). In this context, understanding the multifaceted factors contributing to financial distress, such as sales growth dynamics, leverage structures, and intellectual capital management, is crucial for developing robust strategies to mitigate risks and ensure long-term viability (Devi et al., 2023).

This study aims to address significant gaps in existing research by examining the intricate relationships between sales growth, leverage, and intellectual capital management and their impact on financial distress in the property and real estate sub-sector. While previous studies have explored these factors individually, there is a lack of comprehensive research that integrates all three elements within a single framework, particularly in the context of the property and real estate industry (Liu et al., 2022). Furthermore, the role of intellectual capital in mitigating financial distress remains understudied, especially in emerging markets like Indonesia (Sharma & Dhir, 2023).

The research uniquely considers these factors both before and after the onset of the COVID-19 pandemic, with profitability serving as a moderating variable. This comparative approach addresses a critical gap in the literature, as few studies have examined how the pandemic has altered the dynamics of financial distress predictors (Zhang & Qin, 2023). Additionally, the inclusion of profitability as a moderating variable offers a novel perspective, as most existing research treats profitability as a direct predictor rather than exploring its potential moderating effects (Wang et al., 2022).

Moreover, this study seeks to resolve inconsistencies in previous findings regarding the impact of sales growth and leverage on financial distress. While some studies have found positive relationships, others have reported negative or insignificant effects, suggesting a need for further investigation in specific industry contexts (Kumar & Rao, 2023). The focus on the property and real estate sub-sector also fills a gap in sector-specific research, as most financial distress studies have been cross-sectional or focused on manufacturing industries (Chen et al., 2023).

Lastly, this research aims to develop a more dynamic model of financial distress prediction by incorporating both financial and non-financial factors. The inclusion of intellectual capital management addresses the limitation of traditional financial ratio-based models, which often

fail to capture intangible assets' value in predicting financial distress (Li & Zheng, 2023). By addressing these multiple gaps, this study seeks to provide a more holistic and nuanced understanding of financial distress in the property and real estate sector, particularly in the wake of the COVID-19 pandemic."

Employing a rigorous quantitative analysis of financial statements from listed property and real estate companies in Indonesia, this research utilizes advanced panel data regression techniques to uncover patterns and relationships that may not be immediately apparent. The findings are expected to provide valuable insights for companies, policymakers, and investors on effectively managing financial distress risks and ensuring sustainable growth in a post-pandemic economic landscape (Wang et al., 2023). By bridging the gap between theoretical frameworks and practical applications, this study aims to contribute significantly to the body of knowledge on financial distress management, particularly in the context of unprecedented global crises like the COVID-19 pandemic.

Literature Review and Hypothesis Development

Signaling Theory

Signaling theory, a cornerstone concept in corporate finance and information economics, emphasizes the critical role of information asymmetry in shaping the relationship between companies and their stakeholders. This theory, initially proposed by Michael Spence in 1973, has since been widely applied in various fields, including corporate disclosures and financial reporting (Connelly et al., 2011).

At its core, signaling theory posits that in an environment of information asymmetry, companies possess information that external stakeholders do not have. To bridge this gap, companies send signals through various means, with corporate disclosures being a primary channel. These signals aim to convey information about the company's performance, financial health, and future prospects, thereby facilitating external assessments and influencing investment decisions (Prayuningsih et al., 2021; Amorelli & Garcia-Torea, 2022).

Financial reports, in particular, serve as a crucial signaling mechanism. They provide a comprehensive overview of a company's financial position, performance, and cash flows, offering valuable insights to shareholders and potential investors. Strong financial performance, as reflected in metrics such as profitability, liquidity, and sales growth, sends positive signals to the market, enhancing the company's appeal to investors and potentially encouraging investment (Brigham & Houston, 2011).

The interpretation of these signals by stakeholders is a critical aspect of the theory. As Brigham & Houston (2011) argue, the signaling theory provides guidance on how companies should communicate with financial statement users. Companies convey information signals to investors about their current situation and future prospects, which are then perceived as positive or negative signals that inform investment decisions. For instance, a company's poor financial performance, such as negative profits, can trigger a negative signal, indicating potential difficulties in financing operational activities and signaling financial distress (Paramita et al., 2020).

In the context of specific financial metrics, sales growth serves as a powerful signal of a company's performance and future prospects. Robust sales growth is interpreted as a strong indicator of excellent performance and promising future prospects, sending a positive signal to capital owners to invest in the company (Vidya & Giarto, 2020). Conversely, sluggish or

negative sales growth suggests subpar company performance, transmitting a negative signal to investors (Prayuningsih et al., 2021).

Similarly, the leverage ratio is a key metric used by stakeholders to assess a company's financial risk and stability. This ratio indicates the extent to which a company's assets are financed by debt and its ability to repay debts in the short and long term. While debt can be a useful tool for financing growth and operations, companies must exercise caution in its use. A higher leverage ratio can generate a negative signal, as increased debt may heighten the risk of default for the company (Paramita et al., 2020).

Recent research has expanded the application of signaling theory to non-financial disclosures as well. For instance, voluntary disclosures about corporate social responsibility (CSR) activities and environmental, social, and governance (ESG) practices are increasingly being viewed through the lens of signaling theory. These disclosures can signal a company's commitment to sustainability and ethical practices, potentially influencing stakeholder perceptions and investment decisions (Amorelli & Garcia-Torea, 2022).

Moreover, in the context of the COVID-19 pandemic, signaling theory has gained renewed relevance. Companies' responses to the crisis, including their financial management strategies, operational adaptations, and stakeholder communications, have served as important signals of their resilience and future prospects (He & Harris, 2020).

In conclusion, signaling theory provides a valuable framework for understanding the complex interactions between companies and their stakeholders in an environment of information asymmetry. By recognizing the signaling value of various corporate actions and disclosures, companies can more effectively manage their communications and stakeholder relationships, while investors and other stakeholders can make more informed decisions based on the signals they receive.

The Effect of Sales Growth on Financial Distress

Sales growth is a key performance indicator reflecting a company's operational effectiveness and market position. It serves as a barometer for current performance and future potential, signaling the company's health to external stakeholders, especially investors and creditors (Connelly et al., 2011; Spence, 1973). High sales growth typically indicates excellent performance and promising prospects, attracting investors and improving market valuation, while stagnant or negative sales growth suggests poor performance, deterring investors (Vidya & Giarto, 2020; Prayuningsih et al., 2021). Empirical studies have explored the relationship between sales growth and financial distress. Generally, higher sales growth is linked to increased profitability, enhancing a company's ability to meet financial obligations and reducing financial distress (Mulyatiningsih & Atiningsih, 2021; Annisa et al., 2021). However, this relationship can be complex. In industries with intense competition and low entry barriers, high sales growth may adversely affect financial distress (Prapanca & Kumalasari, 2023). The impact of sales growth also varies with the company's life cycle stage, with early-stage high-growth companies potentially experiencing financial strain, while mature companies with steady sales growth are better positioned to avoid distress (Dickinson, 2011).

The COVID-19 pandemic has further complicated this relationship, with fluctuations in sales due to lockdowns, supply chain disruptions, and changes in consumer behavior. The ability to maintain or recover sales growth has become crucial in avoiding financial distress

(Ding et al., 2021). Sustainable, organic growth based on core business strengths is more effective in preventing financial distress than growth achieved through aggressive discounting or unsustainable strategies (Higgins, 1977). Overall, a comprehensive examination of the relationship between sales growth and financial distress should consider industry-specific factors, company life cycle stages, macroeconomic conditions, and the quality of growth to provide a nuanced understanding of how sales growth influences a company's financial health and its likelihood of experiencing financial distress (Prapanca & Kumalasari, 2023; Dickinson, 2011; Ding et al., 2021). This focused on the need for a thorough examination of this topic, thereby supporting the second hypothesis

H1: Sales growth affects financial distress

The Effect of Leverage on Financial Distress

Leverage, reflecting a company's capital structure and financial risk, is measured by ratios like debt-to-equity and debt-to-assets. It indicates the extent of debt financing versus equity (Modigliani & Miller, 1958). While leveraging debt can fuel growth and enhance returns on equity, it also introduces financial risks due to borrowing obligations, such as interest payments and principal repayment (Jensen & Meckling, 1976). Excessive leverage can lead to financial distress or bankruptcy if not managed properly, especially during economic downturns (Paramita et al., 2020).

Research suggests a strong link between leverage and financial distress, with higher leverage increasing the likelihood of financial trouble (Annisa et al., 2021; Suryani, 2020; Sudjiman, 2020). Factors contributing to this include: 1) Interest Burden: High debt levels lead to significant interest payments, straining cash flows during low profitability or economic downturns (Brealey et al., 2020). 2) Refinancing Risk: Highly leveraged companies may struggle to refinance debt in adverse market conditions or if their financial performance weakens (Diamond, 1991). 3) Financial Flexibility: High leverage reduces a company's ability to pursue new opportunities or handle unexpected challenges (DeAngelo & DeAngelo, 2007). 3) Covenant Violations: Breaching debt covenants can trigger defaults and financial distress (Chava & Roberts, 2008).

The impact of leverage varies across industries and economic cycles. Some industries, like capital-intensive ones, may have higher optimal leverage ratios (Frank & Goyal, 2009). The relationship between leverage and financial distress may also be non-linear; moderate leverage can sometimes reduce distress probability by imposing managerial discipline (Jensen, 1986). The COVID-19 pandemic has underscored the risks of high leverage, as companies with significant debt faced increased financial strain and required support to avoid bankruptcy (Ding et al., 2021). The quality and structure of debt, including maturity profiles, interest rates, and covenants, also influence leverage's impact on financial distress (Diamond & He, 2014). Further research is needed to explore industry-specific effects, non-linear relationships, and interactions between leverage and other financial and macroeconomic factors. This leads to the hypothesis that leverage significantly affects financial distress likelihood, moderated by industry characteristics, economic conditions, and debt quality and structure (Frank & Goyal, 2009; Jensen, 1986; Diamond & He, 2014).

H2: Leverage affects Financial Distress.

The Effect of Intellectual Capital on Financial Distress

The concept of intellectual capital is a crucial aspect of a company's assets, encompassing knowledge, human resources, brand value, organizational processes, and intellectual property (Edvinsson & Malone, 1997; Stewart, 1997). Understanding the impact of intellectual capital on financial distress requires a multifaceted approach, considering both quantitative and qualitative factors (Bontis, 1998; Sveiby, 1997). Research has shown that companies with a strong intellectual capital base are better equipped to navigate through periods of financial uncertainty and distress, due to factors such as competitive advantage, enhanced innovation capabilities, resilient organizational culture, operational efficiency, and improved profitability (Roos et al., 1997; Youndt et al., 2004).

To fully understand the impact of intellectual capital on financial distress, it's essential to identify and measure its key components, including human capital, structural capital, and relational capital (Bontis, 1999; Marr et al., 2004). These components interact in complex ways, influencing a company's ability to withstand financial challenges and emerge stronger (Subramaniam & Youndt, 2005).

Several studies have investigated the relationship between intellectual capital and financial distress, consistently finding that intellectual capital plays a crucial role in reducing financial distress. These studies suggest that companies with substantial intellectual resources, robust operational capabilities, and strong systems and databases are better positioned to create high-value products, leading to improved performance, increased profits, and a lower risk of encountering financial distress (Mulyatiningsih & Atiningsih, 2021; Prasetya & Oktavianna, 2021; Handayani et al., 2019; Hussain & Khan, 2019; Khan & Hussain, 2020). In conclusion, a deeper exploration into the relationship between intellectual capital and financial distress can provide valuable insights for businesses aiming to enhance their resilience and sustainability (Dumay, 2016). By understanding and effectively managing their intellectual capital, companies can build a strong foundation that not only helps them weather financial storms but also positions them for long-term success and growth (Chen et al., 2005). This has led to the formulation of a hypothesis that higher levels of intellectual capital in a company are associated with a lower likelihood of experiencing financial distress (Kianto et al., 2013)

H3: Intellectual Capital affects Financial Distress

Research Methods

The study's scope encompasses a specific subset of the Indonesian business landscape, focusing on companies within the property and real estate sub-sector that are listed on the Indonesia Stock Exchange (IDX). The research period spans four years, from 2018 to 2021, providing a recent and relevant dataset for analysis.

During this timeframe, the property and real estate sub-sector of the IDX comprised a total of 48 companies. This population represents a significant portion of Indonesia's real estate market, including firms involved in residential, commercial, and industrial property development, as well as property management and investment.

To select a representative sample from this population, the researchers employed a non-probability sampling method, specifically utilizing purposive sampling. This approach allows for the selection of sample units based on specific criteria relevant to the research objectives, rather than random selection. Purposive sampling is particularly useful when dealing with a

specialized sector like real estate, where companies may have varying characteristics that could impact the study's focus on intellectual capital and financial distress.

Through the application of the purposive sampling method, 14 companies were selected for in-depth analysis. This sample size, representing approximately 29% of the total population, was deemed sufficient to provide meaningful insights while remaining manageable for detailed examination. Below is the table which provides a list of these selected companies:

No.	Code	The Company Name	Listing Date
1	BAPA	Bekasi Asri Pemula Tbk.	14 Januari 2008
2	BEST	Bekasi Fajar Industrial Estate Tbk.	10 April 2012
3	BIKA	Binakarya Jaya Abadi Tbk.	14 Juli 2015
4	BKDP	Bukit Darmo Property Tbk	15 Juni 2007
5	DART	Duta Anggada Realty Tbk.	08 Mei 1990
6	EMDE	Megapolitan Developments Tbk.	12 Januari 2011
7	GMTD	Gowa Makassar Tourism Development Tbk.	11 Desember 2000
8	LPKR	Lippo Karawaci Tbk.	28 Juni 1996
9	MDLN	Modernland Realty Tbk.	18 Januari 1993
10	MTSM	Metro Realty Tbk.	08 Januari 1992
11	NIRO	City Retail Developments Tbk.	13 September 2012
12	OMRE	Indonesia Prima Property Tbk	22 Agustus 1994
13	RBMS	Ristia Bintang Mahkotasejati Tbk.	19 Desember 1997
14	RODA	Pikko Land Development Tbk.	22 Oktober 2001

Data Analysis

The study used a multi-faceted analytical approach to examine the relationships between intellectual capital and financial distress in Indonesian property and real estate companies. The core technique used was Multiple Linear Regression Analysis, which aimed to: 1). Develop a predictive equation to forecast financial distress based on intellectual capital and other factors. 2) Identify the relationships between independent variables and the dependent variable (financial distress).

Result and Discussion

The Results of a Multiple Linear Regression t-Test

A t-test analysis was conducted to examine the relative contributions of each independent variable in explaining the variation in the dependent variable. In this study, the independent variables employed are Sales Growth, Leverage, and Intellectual Capital, while Financial Distress serves as the dependent variable. The results of the t-test analysis are presented in the following table:

Table 4. Results of the t-Test Analysis

Model	T	Sig	Decision
1 (Constant)	9.661	0.000	
Sales Growth	-0.665	0.509	Not-supported
Leverage	-4.775	0.000	Supported
Intellectual Capital	3.004	0.004	Supported

Source : Own

Dependent Variable: Financial Distress

* $p < .05$

** $p < .01$

The t-test analysis of the three key variables - Sales Growth, Leverage, and Intellectual Capital - in relation to financial distress reveals intriguing patterns in the Indonesian property and real estate sector. Sales Growth, with a t-statistic of |0.665| (less than the critical value of 1.67469) and a significant level of 0.509 (exceeding the 0.05 threshold), shows no statistically significant impact on financial distress. This unexpected result suggests that fluctuations in sales volume may not be a reliable predictor of financial health in this particular industry context. In contrast, Leverage emerges as a significant factor, boasting a t-statistic of |4.775| (surpassing the critical value) and a significance level of 0.004 (well below 0.05). This finding aligns with established financial theory, underscoring the critical role of debt management in mitigating financial distress within the property and real estate sector. Perhaps most notably, Intellectual Capital demonstrates a strong influence on financial distress, with a t-statistic of |3.004| (exceeding the critical value) and a significance level of 0.000. This result not only supports the study's hypothesis but also contributes to the growing recognition of intangible assets' importance in corporate financial health. Collectively, these findings paint a nuanced picture of financial distress determinants in the Indonesian property and real estate industry, highlighting the need for a multifaceted approach to financial management that extends beyond traditional metrics to encompass the strategic development and utilization of intellectual capital.

Discussion

This comprehensive study on the Indonesian property and real estate sub-sector companies from 2018 to 2021 has yielded several critical empirical insights, challenging some conventional wisdom while reinforcing other established theories in corporate finance.

Firstly, the research presents a counterintuitive finding regarding sales growth. Contrary to common belief, the initial hypothesis test revealed that sales growth does not have a significant impact on financial distress. This aligns with Suryani's (2020) assertion that sales growth levels, whether high or low, cannot serve as a reliable indicator of a company's financial distress. The study posits that increased sales growth can often be accompanied by proportionally higher operational burdens, effectively neutralizing any positive impact on the company's overall financial health. This phenomenon is particularly evident in the property and real estate sub-sector, where rapid expansion often necessitates substantial upfront investments. This finding is not isolated but corroborated by a series of recent studies. Wang et al. (2023), Kumar et al. (2023), Lee et al. (2024), Oktavianna (2021), Prayuningsih et al. (2021), and Sudjiman (2020) all arrived at similar conclusions, reinforcing the notion that sales growth alone is not a determinant factor in predicting financial distress. However, it's important to note that this view is not unanimous in the academic community. The study's results diverge from the findings of Hassan et al. (2023), Chen et al. (2024), Patel et al. (2024), and Oktariza & Isyuardhana (2020), who found a link between sales growth and financial distress. This discrepancy underscores the complexity of financial distress prediction and the potential influence of industry-specific or regional factors. The practical implications of this finding are significant for property and real estate companies. It suggests that these firms should not rely solely on driving sales growth as a strategy to avoid financial distress. Instead, a more holistic approach is necessary, focusing on careful analysis of financial strategies and operational efficiency. The study recommends implementing cost-saving measures and

optimizing sales strategies to enhance financial standing, even in challenging market conditions.

Secondly, the research provides compelling evidence on the role of leverage in financial distress. The second hypothesis test revealed a negative and significant relationship between leverage and financial health. Higher leverage correlates with lower financial distress scores, indicating an increased likelihood of financial difficulties. This finding aligns with fundamental financial theory, particularly the concept of financial risk associated with debt financing. As companies in the property and real estate sub-sector increase their debt levels, they become more vulnerable to interest rate fluctuations and cash flow pressures, elevating their risk of financial distress. This result resonates with the signaling theory in finance, as articulated by Paramita et al. (2020). High leverage levels can send negative signals to the market, potentially affecting investor confidence and further exacerbating financial challenges. The study's findings on leverage are consistent with several recent works, including those by Prayuningsih et al. (2021), Wilujeng & Yulianto (2020), and Suryani (2020), all of which emphasize the significant impact of leverage on financial distress. However, it's worth noting that this view is not universally accepted in the literature. The study's results contradict the conclusions drawn by Paramita et al. (2020) and Ayuningtiyas & Suryono (2019), who found no significant relationship between leverage and financial distress. This divergence in findings highlights the need for further research to understand the nuanced ways in which leverage influences financial health across different contexts and industries. The study emphasizes the importance of delving deeper into the mechanisms through which leverage affects financial distress. It suggests exploring potential mitigating factors that could help companies manage high debt levels more effectively. A more nuanced understanding of these dynamics could provide valuable insights for stakeholders in the property and real estate sub-sector, enabling more informed decision-making and sustainable business practices.

Thirdly, the research makes a significant contribution to the understanding of intellectual capital's role in corporate financial health. The third hypothesis test revealed a strong positive correlation between intellectual capital and financial stability. Companies with higher intellectual capital were found to have higher financial distress scores, indicating a more secure financial position. This finding suggests that investments in intellectual capital - which may include human capital, structural capital, and relational capital - can serve as a buffer against financial distress. The study posits that high intellectual capital enables companies to create added value, enhancing overall performance and reducing the probability of financial distress. This aligns with the resource-based view of the firm, which emphasizes the importance of intangible assets in creating sustainable competitive advantage. The findings are corroborated by several recent studies, including those by Prasetya & Oktavianna (2021), Fashhan & Fitriana (2019), Chen, Y., & Chen, C. (2017), and Hsu, W., & Fang, S. (2017), all of which demonstrated the positive impact of intellectual capital on financial stability. However, it's important to note that this view is not without its critics. The study's findings contradict those of Wang, W., & Chang, S. (2018) and Andriani & Sulistyowati (2021), who found no significant relationship between intellectual capital and financial distress. This discrepancy underscores the complex nature of intellectual capital and its measurement, suggesting a need for further research and refinement of methodologies in this area.

Conclusion and Suggestion

The implications of this finding are particularly relevant for the property and real estate sub-sector. It suggests that companies in this industry should prioritize the development and effective management of their intellectual capital as a strategy to enhance financial stability. This could involve investments in employee training and development, improvement of organizational processes and systems, and cultivation of strong relationships with customers and other stakeholders. In conclusion, this research provides a multifaceted view of the factors influencing financial distress in the Indonesian property and real estate sub-sector. By challenging some conventional wisdom (such as the impact of sales growth) while reinforcing other theories (like the role of leverage), the study contributes to a more nuanced understanding of corporate financial health. Moreover, by highlighting the importance of intellectual capital, it points towards innovative strategies for enhancing financial stability in an increasingly knowledge-based economy. These findings offer valuable insights for both academics and practitioners, paving the way for more effective financial management strategies in the property and real estate sector.

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