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Preface

International Joint Conference on Arts and Humanities 2024 (IJCAH 2024) features five international conferences by Universitas Negeri Surabaya (Unesa), Indonesia. They are the International Conference on Cultural Studies and Applied Linguistics (ICCSAL), the International Conference of Social Science and Law (ICSSL), the International Conference on Applied Science and Vocational Innovation (ICASVI), the International Conference on Research and Academic Community Services (ICRACOS), and the International Conference on SDGs and Bibliometric Studies (ICOSBI). The conference was held online on 8–10 August 2024. Organizing this event shows Unesa's commitment and acknowledgement of research activities. It encourages the dissemination of ideas in arts and humanities and provides a forum for intellectuals from all over the world to discuss and present their research findings on the research areas, as well as to build networks with others. In addition, this conference certainly helps improve researchers' scientific publications.

This conference has attracted much attention from the scientific community. There are 664 review and research-based papers submitted at the conference. The papers have various topics: education, arts, humanities, and social sciences. Of the submitted papers, 225 papers were selected to be published by Atlantis Press. The authors come from various countries, including Indonesia, Malaysia, and Thailand. The selection was based on the results of the rigorous review of the papers by two receivers for each paper which focused on the format, language use, and contents. The scientific papers can provide invaluable insights into those vital topics.

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Abstract. Research regarding the prediction of financial distress is an important topic in corporate finance because it serves as an early warning signal for creditors, investors, regulators, and other stakeholders. Many studies focus on prediction model with financial and macroeconomic data, but not many combine financial, macroeconomic, corporate governance and intellectual capital data. This study combines these four factors to form a comprehensive financial distress prediction model. This research uses Systematic Literature Review (SLR) with the PRISMA method. The results are expected to contribute to financial management and support the Sustainable Development Goals (SDGs) because corporate financial health supports sustainable economic growth, innovation and infrastructure. Financially stable companies can adopt responsible business practices, manage risks early, avoid bankruptcy, maintain employment, and contribute to economic and social prosperity and support the achievement of SDGs indicators as a whole.

Keywords: financial distress, prediction model, SDGs.

1 Introduction

In the era of globalization, a country's economy is greatly influenced by other countries. Like the 1997 monetary crisis which started in Thailand then spread to other Asian countries such as Malaysia, South Korea and Indonesia. Likewise, the 2008 financial crisis started with the subprime mortgage crisis in the United States. The impact was quickly felt in Indonesia because the United States was the main export destination after Japan. Furthermore, the COVID-19 pandemic caused a global health crisis which led to an economic crisis in Indonesia. The crisis caused increased operational costs, decreased income, and market uncertainty, causing many public companies in Indonesia to experience financial difficulties or even face bankruptcy. Many public companies in Indonesia experienced financial difficulties or were liquidated.

Financial distress generally arise due to various errors that occur in company operations, such as inappropriate planning, wrong judgments, and weaknesses in various parts of the company which can affect both directly and indirectly various management functions [1]. Financial distress is one of the most important threats facing companies regardless of their size and operations. Signs of potential financial distress can often be detected through financial ratio analysis, which appears long before a company experiences the risk of bankruptcy. Many researchers adopt a financial ratio

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analysis approach to anticipate potential company bankruptcy [1]. For more than four decades financial ratios have been used in empirical research related to financial distress, the earliest study regarding bankruptcy prediction can be traced back to 1932 when Fitzpatrick presented a successful way to differentiate between failing companies and healthy companies by analyzing 20 companies' financial ratios to form a prediction model [2]. In its development, macroeconomic factors are used as predictors in predicting financial distress, considering that a company's financial difficulties are also greatly influenced by economic conditions. According to [3], econometric models which only contain financial report information cannot predict with certainty whether a company will experience business failure or not.

In recent literature several articles have used itcorporate governanceto form a financial distress prediction model.Effective corporate governance enables shareholders to exercise appropriate oversight overcompany to maximize company value and ensure that it generates company profits. In research [4]-[6] shows that corporate governance is one of the factors that influences the prediction of company financial difficulties.

In today's competitive business environment, intellectual capital plays an important role in maintaining and achieving a company's competitive advantage. Intellectual capital is far more valuable than other available tangible assets in creating sustainable competitive advantage [7]. [8] stated that intellectual capital can help predict bankruptcy with a prediction model accuracy of 76.54% and has a negative effect on the possibility of bankruptcy [9].

Research on the prediction of financial distress has become one of the important topics in the field of corporate finance for academics and practitioners because this research serves as an effective early warning signal for creditors, investors, corporate regulators and other stakeholders. Existing research focuses a lot on forming prediction models using financial data and a combination of financial data and macroeconomic data, but there are not many articles that create prediction models by combining financial data, macroeconomics, corporate governance and intellectual capital. Considering the importance of forming a comprehensive financial distress prediction model, this study was carried out by combining these four factors. It is hoped that the research results will be a scientific contribution to financial management, especially in relation to the Sustainable Development Goals (SDGs), because corporate financial health supports sustainable economic growth and investment in innovation and infrastructure. Financially stable companies can adopt responsible business practices and build strong partnerships with various stakeholders. By identifying and managing financial risks early, companies can avoid bankruptcy, preserve jobs, and contribute to broader economic and social prosperity and support the achievement of overall SDGs indicators.

2 Literature Review

2.1 Financial Distress

According to [10] financial distress occurs when debtors are unable to fulfill their debt payment schedule to creditors when they are due or the company's cash flow

projections indicate that the company will soon experience difficulties in terms of liquidity. Brigham and Gapenski divide the types of financial distress as follows:

1. Economic failure
   Failure in the economic sense means that the company's revenues cannot cover its total costs, including the cost of capital.
2. Business failure
   Business whose operating activities end up causing losses to creditors. Dun and Bradstreet said it was a failure even though it never entered the formal bankruptcy process.
3. Technical insolvency
   A company is considered technically insolvent, if it cannot fulfill its obligations which must be fulfilled immediately when they fall due.
4. Insolvency in bankruptcy
   A company is said to be insolvent in bankruptcy, when the book value of its total liabilities exceeds the true market value of its assets.
5. Legal bankruptcy
   A company is said to be legally bankrupt if it has filed for bankruptcy under federal law.

Financial distressIt is very difficult to define with certainty, this is due to various events experienced by the company before the company experienced financial distress, such as losses, reductions in dividends paid, strikes and company closures [11]. So financial distress is a situation when a company's cash flow is insufficient to meet its obligations which must be paid immediately. This inability is shown by stock-based insolvency and flow-based insolvency. Stock-based insolvency is the condition of a company that has negative equity, so the asset value is smaller than the debt value. Flow-based insolvency is a company's condition when its cash flow is insufficient to meet its obligations which are due soon.

2.2 Financial Ratio

Financial ratio analysis is a significant tool in providing an indication of potential financial difficulties, providing enlightenment before a company actually faces the risk of bankruptcy. To carry out a careful evaluation of the financial condition of a company, financial ratio analysis is needed which utilizes the data contained in the company's financial reports. This analysis process includes several key ratios including liquidity, leverage, activity, profitability and market. Liquidity ratios are used to measure a company's ability to meet its immediate or short-term financial obligations. Leverage ratios are indicators that measure the extent to which a company utilizes funds from debt or its own capital. Activity ratios measure a company's efficiency in using its assets. Profitability ratios reflect the extent to which a company can achieve profits from certain levels of sales, assets, and equity. Market ratios show investors' perspectives on the company. Usually, researchers use financial ratios as a proxy for company financial management. Financial ratios are an important factor that influences financial distress both before and after Covid-19 [12]. Likewise, previous research results show that financial ratios influence financial distress in companies in China [13], the hotel sector in Spain [14], companies in developing and developed countries with

samples of companies in Pakistan and the United Kingdom [15] and companies in Malaysia during the crisis. Asia [16].

2.3 Macroeconomic

Macroeconomic factors such as inflation, interest rates, exchange rates and stock indices are external factors that influence company operations. Macroeconomic conditions have a significant impact on a company's financial distress. Slowing economic growth or a recession can reduce consumer demand, reducing a company's revenues and profits. High interest rates increase borrowing costs and interest expenses, reducing profitability. High inflation can increase raw material and operating costs, squeezing profit margins. Fluctuating exchange rates can affect export competitiveness and import costsBusiness failure is basically a microeconomic symptom that describes the company's financial condition, but the results are greatly influenced by the macroeconomic conditions in which the company operates [17]. Empirical research proves that macroeconomic variables influence financial distress in non-financial companies in the UK [18] and non-financial companies in European countries [19] and macroeconomics influence financial distress across countries [20].

2.4 Corporate Governance

Corporate governance is a set of principles, practices and procedures that govern the way a company is run and supervised to ensure that shareholder interests are protected and the company's activities run smoothly and transparently. In accordance with the principles of corporate governance, namely transparency, accountability, responsibility, independence, fairness and equality. Transparency requires companies to provide honest, complete and timely information, which increases investor and stakeholder confidence and helps them make better decisions, reducing the risk of financial shocks. Independence, especially on the part of the board of directors and audit committee, ensures objective and impartial oversight of management, so that decisions are made in the best interests of the company and its shareholders. Accountability holds individuals within the organization accountable for their actions and decisions, preventing abuse of authority and improving the quality of financial decisions. Responsibility requires management and the board to act with integrity and comply with laws and regulations, so that companies can avoid harmful business practices and better manage financial crises. Finally, fairness ensures that companies treat all stakeholders fairly and equally, which helps avoid conflicts and build positive relationships that can reduce operational and financial risks. By implementing these principles, companies can build a strong foundation for long-term stability and growth, and reduce the likelihood of facing financial distress. A good corporate governance structure can help reduce the risk of financial distress [21].The financial ratio model and corporate governance provide higher prediction accuracy than the financial ratio model alone [22],[23].

2.5 Intellectual Capital

Intellectual capital is an integral part of the value creation process in all companies [24]. Intellectual capitalis a set of dynamic resources that create competitive advantages for a company to improve its performance. Intellectual capital consists of three main components, namely human capital, structural capital and relational capital. Human capital includes the knowledge, skills and competencies of individuals in an organization. Structural capital includes infrastructure, processes and databases that support operational performance and efficiency, such as information technology and patents. Relational capital includes external relationships and networks with customers, suppliers and other stakeholders. These three components work together to create value by increasing operational efficiency, encouraging innovation, and strengthening external relationships. Several empirical studies have found evidence that intellectual capital is a significant factor in organizational performance and efficiency [25]-[28] and influences company value [29].

3 Research Method

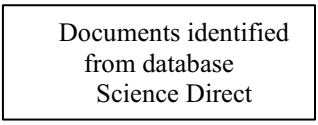
This research uses a Systematic Literature Review (SLR) approach and uses an internationally reputable database, namely Science Direct. SLR is a process that makes it possible to collect relevant evidence regarding a specific topic that meets predetermined eligibility criteria and to obtain answers to formulated research questions [30]. The method used is PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses), which consists of 4 phases, namely: identification, screening, feasibility and relevance [31]. The initial step is to use 1 keyword in accessing Science Direct data, namely "financial distress prediction model". These keyword is used to narrow down the relevance of the articles being searched and adjusted to the research objectives. The year the article was published is limited to the year 2014-2024.

Further filtering was carried out on the abstract of each article, with the following criteria: 1) the subject area is business, management; 2) the article is not a book, book chapter, proceeding; 3) the research method is not a literature review; 4) articles in English. The following are the filtering results to get relevant articles.

Table 1. Article Search

Data Base	Identification	Screening	Relevant
Science direct	7.836	5.934	15

From the Science Direct database, 7.863 article titles were found that matched the specified keywords. After the filtering process according to the criteria, 15 articles were relevant. Processing and storing article data using Ms. Excel. In more detail, the flow of the article filtering process using the PRISMA method is carried out according to the following figure



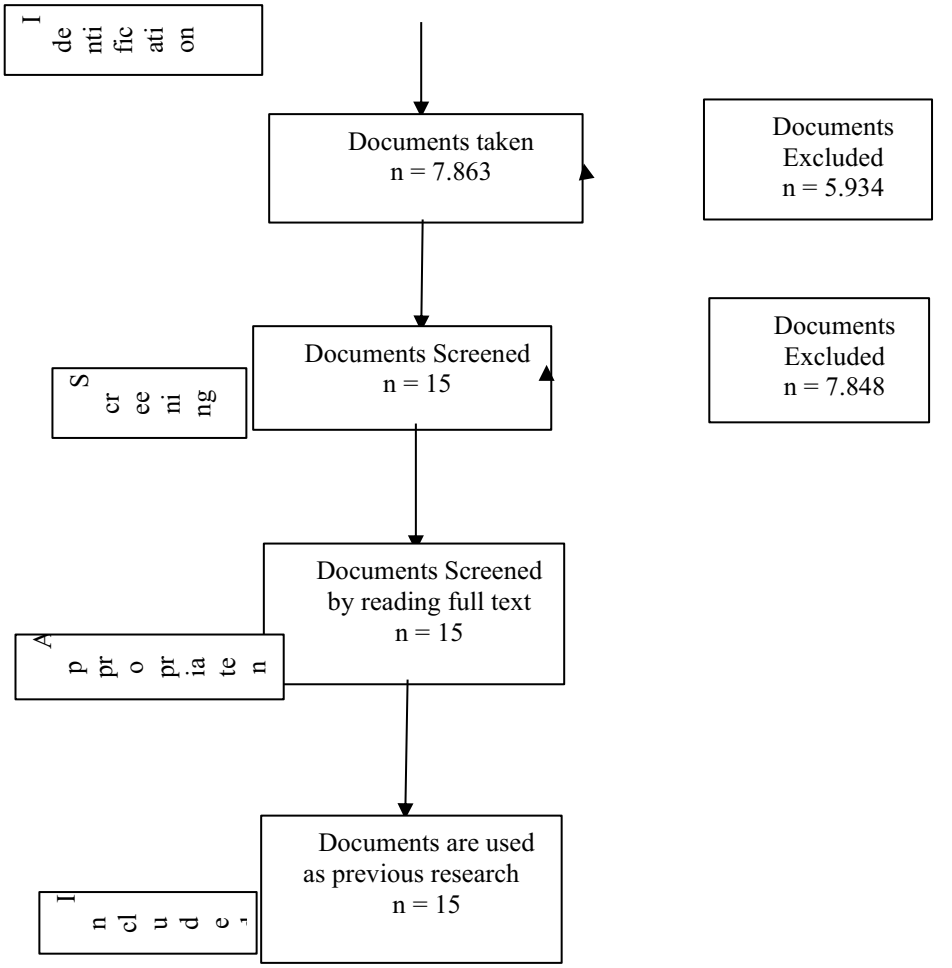


Figure 1. Article search flow using the PRISMA method

4 Result and Discussion

4.1 Meta Analysis of Research Results

Based on the article search flow using the PRISMA method, 15 suitable articles were obtained. A summary of these articles is presented in table 2

Table 2. Meta Analysis of Articles

Researcher	Location	Method	Research Results
(Citterio & King, 2023)	United States and European Union	Quantitative	Inclusion of market information, macroeconomic indicators, and non-financial information can improve the accuracy of financial distress model predictions and the effectiveness of bank supervision
(Ding et al., 2023)	China	Quantitative	The non-linear prediction model with financial ratios is able to identify companies at risk of experiencing financial distress with a classification accuracy of 86.6% before COVOD-19 and 90.9% after COVID-19
(Wu et al., 2022)	China	Quantitative	The average correct classification rate in the MLP-ANN financial distress prediction model (99.40%) is higher than the Altman Z-score prediction model (86.54%)
(Li et al., 2021)	China	Quantitative	The ability of corporate governance tools to identify financial concerns is limited. Financial ratios are comparatively more accurate in identifying potential financial problems. But when the two are combined, the forecast accuracy rises dramatically Significantly
(Crespí-Cladera et al., 2021)	Spanish	Quantitative	The financial ratio prediction model can detect companies that have the potential to experience financial difficulties during the Covid-19 crisis in the Spanish hospitality sectorl.
(Liang et al., 2020)	United States	Quantitative	An ensemble stacking approach that combines corporate governance indicators with financial ratios can increase the accuracy of company bankruptcy predictions
(Ashraf et al., 2020)	Pakistan and United Kingdom	Quantitative	model 1 of 17 accounting variables and 2 market based variables only 6 are included in the prediction model with a classification accuracy of 77% in

			the UK and 80% in Pakistan while model 2 is model 1 plus 2 financial reporting quality variables with a classification accuracy of 81% in the UK and 85 % in Pakistan
(Fernández-Gámez et al., 2020)	27 European Countries	Quantitative	Financial variables are important indicators of financial distress, and macroeconomic factors and the regulations under which these companies operate help explain the heterogeneity of financial distress across countries.
(Shahwan & Habib, 2020)	Egypt	Quantitative	There were no statistically significant differences in corporate governance efficiency scores and intellectual capital efficiency scores during the research period. Apart from that, corporate governance does not have a significant effect on financial distress, but intellectual capital has a significant negative effect on financial distress
(Shahdadi et al., 2020)	Iran	Quantitative	The efficient function of intellectual capital in raising asset liquidity and the relationship between intellectual capital and liquidity in lowering the likelihood of bankruptcy
(Ashraf et al., 2019)	Pakistan	Qualitative	The predictive ability of all traditional financial distress prediction models decreases during periods of financial crisis. However, traditional financial distress prediction models, such as the Altman Z-Score Model and the Zmijewski Model, can be relied upon by practitioners in emerging markets such as Pakistan
(Khoja et al., 2019)	United Kingdom and United States	Quantitative	With the addition of industry and macroeconomic indicators, it provides a better understanding of the performance of healthy

			and unhealthy companies across countries
Cenciarelli et al, 2018	United States	Quantitative	Intellectual capital is negatively related to the possibility that a company will default. bankruptcy prediction model which includes intellectual capital performance has a predictive ability of 76.54%
(Manzaneque et al., 2016)	Spanish	Quantitative	Share ownership by board ownership, proportion of independent directors, and board size have a negative influence on the possibility of financial distress.
(Liang et al., 2016)	Taiwan	Quantitative	The most important features for effective bankruptcy prediction are financial ratios, namely solvency and profitability, as well as corporate governance indicators, namely board structure and ownership structure.

4.2 Development of Financial Distress Prediction Model

Since the seminal work of [32] namely the Z-score model, many researchers have attempted to improve and replicate these studies in order to obtain more accurate prediction models. Prediction models are useful as monitoring and guidance tools that need to be considered because they complement the approach of financial report analysis [33]. Predicting financial difficulties is important and formulating methods to measure financial difficulties before they actually occur is also important. As a consequence, developing accurate and efficient financial distress prediction models has become an important goal in the accounting, finance and computing communities [34]. This study focuses on developing a prediction model by adding macroeconomic variables, corporate governance and intellectual capital.

Based on the results of 15 articles that have gone through a screening process using the PRISMA method, it was found that although there were differences in the financial ratios used, the researchers in the 15 articles overall stated that financial ratios were a very important factor in determining a company's financial distress. [12] shows that the financial leverage factor has the greatest predictive power during the COVID-19 period. High financial leverage will most likely cause the company to experience financial difficulties because the company has to pay debt and interest. Most companies experiencing financial difficulties will face solvency problems, with total assets

insufficient to pay all their debts [14]. Qualitatively, prediction models with financial ratios such as Z-score are still accurate for developing countries. [35]

Prediction models with the addition of macroeconomic indicators such as inflation and economic growth increase the accuracy of predicting bank financial difficulties [36]. While in the study of [19] the most significant macroeconomic factors include risk premiums and inflation rates, the impact of which is more pronounced on companies outside the Eurozone. Research results from [20] found that macroeconomic variables represented by inflation, interest rates, and stock market liquidity play a role in corporate financial difficulties across countries.

Prediction models with a combination of financial ratios and corporate governance indicators can improve the performance of prediction models when compared to models based on financial ratios alone [6], [23]. The composition of the board of directors, monitoring of independent directors is significantly related to the risk of financial distress [5]. Independent directors are expected to be able to carry out their duties so that they can provide advice effectively and improve performance based on their knowledge of the company. State ownership and institutional ownership reduce the risk of companies experiencing financial stress. Active investors such as institutional shareholders have the ability to detect potential risks in the companies in which they invest.

According to research from [7], performance in terms of intellectual capital is linked to a decreased likelihood of default in the future. Higher performance in intellectual capital can lead to long-term financial stability as well as improved performance in the future. Better profitability makes it possible to pay off debt and passive interest on time, which decreases the cost of debt that bondholders and outside lenders impose on a company and minimizes its credit risk. Reduced credit risk also raises the value of the business and profitability. Organizations should put in more effort into building their human capital, relational capital, and structural capital—the three components of intellectual capital. The company's competitive position and financial performance will improve by developing and implementing information technology, knowledge management, ethical standards, and learning organization processes that support the intellectual capital base [37].

Briefly, the following is a summary of the results of 15 studies that comply with PRISMA principles

Table 2: Summary of Themes

Theme	Researcher	Amount
Financial ratio prediction model	(Ding et al., 2023; Wu et al., 2022; Crespí-Cladera et al., 2021; Ashraf et al., 2020; Ashraf et al., 2019)	5

Financial & macroeconomic ratio prediction model	(Citterio & King, 2023; Fernández-Gámez et al., 2020; Khoja et al., 2019)	3
Prediction model for financial ratios & corporate cogernance	(Liang et al., 2020; Manzaneque et al., 2016; Liang et al., 2016)	3
Prediction model for financial ratios, macroeconomics & corporate governance	(Li et al., 2021)	1
Prediction model for financial ratios & intellectual capital	(Shahdadi et al., 2020;Cenciarelli et al., 2018)	2
Prediction model for financial ratios, corporate governance & intellectual capital	(Shahwan & Habib, 2020)	1

A framework related to financial distress prediction models can be reshaped based on the meta-analysis results and summaries that have been presented. Development of a predictive model framework using financial ratios, macroeconomics, corporate governance and intellectual capital.

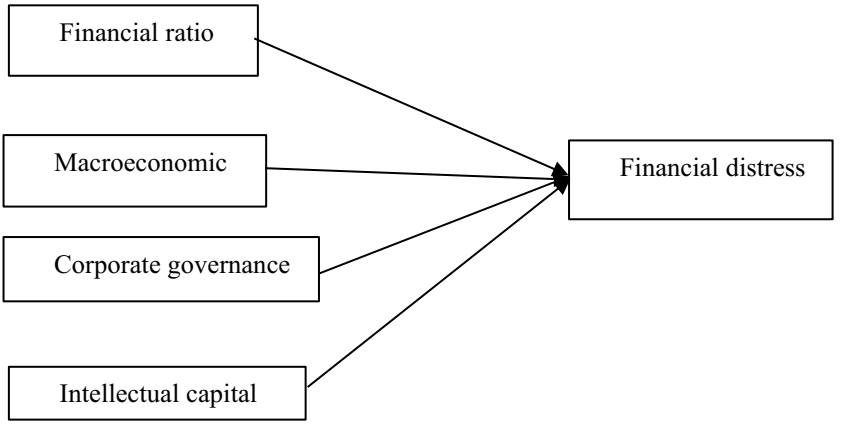


Figure 2. Development of Financial Distress Prediction Model

5 Conclusion

By using the PRISMA principle, it can be summarized into 15 articles related to financial distress prediction models. Financial difficulties can be detected early through financial ratio analysis, adding macroeconomic and corporate governance factors to the financial distress prediction model can increase prediction accuracy. Intellectual capital also plays an important role in maintaining and achieving a company's competitive advantage and helps predict financial difficulties with significant accuracy. It is hoped that the research results will be a scientific contribution to financial management, especially in relation to strengthening companies so that they can anticipate financial distress.

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