

โครงการสนับสนุนทุนวิจัย: เชื่อมโยงตลาดทุนไทยเพื่อเป้าหมายการพัฒนาอย่างยั่งยืน ระดับอาจารย์

สำหรับหัวข้องานวิจัย เรื่อง การค้นหารูปแบบของการดำเนินงานต่อเนื่องของกิจการ: การศึกษาวิเคราะห์ข้อมูลทางการเงินโดยใช้ Anchor Explainable AI (Enhancing Going Concern Prediction With Anchor Explainable AI and Attention-Weighted XGBoost)

Predicting a firm's going concern status accurately is vital for informed user decisions in financial analytics, auditing, investment, lending, and capital market supervision. A going concern refers to a company that has reasonable expectations of being able to continue operations into the future without incurring insolvency or being compelled to shut down. Because financial statements are prepared under the assumption that the company will remain in business for at least the following 12 months, an accurate assessment of going concern status is crucial for investors, lenders, auditors, and other stakeholders.

This study introduces a novel method that synergizes Anchor Explainable Artificial Intelligence (XAI) with an Attention-Weighted Extreme Gradient Boosting (XGBoost) model to improve both the precision and clarity of going concern predictions. Traditional models often trade off explainability against complexity, which can diminish user confidence. In response, this study integrates Anchor XAI to provide lucid and comprehensible explanations for model predictions, thereby enhancing trust, transparency, and interpretability.

The empirical analysis used data from 7,530 financial statements of 959 firms listed on the Stock Exchange of Thailand between 2013 and 2022. The study calculated 41 accounting descriptor variables and classified going concern status into three classes: non-going concern, going concern, and going concern doubt. To reduce the risk of decision-making errors and biases, the classification was based on future earnings, the Z-score model, and the EM score model rather than relying solely on auditors' professional judgments.

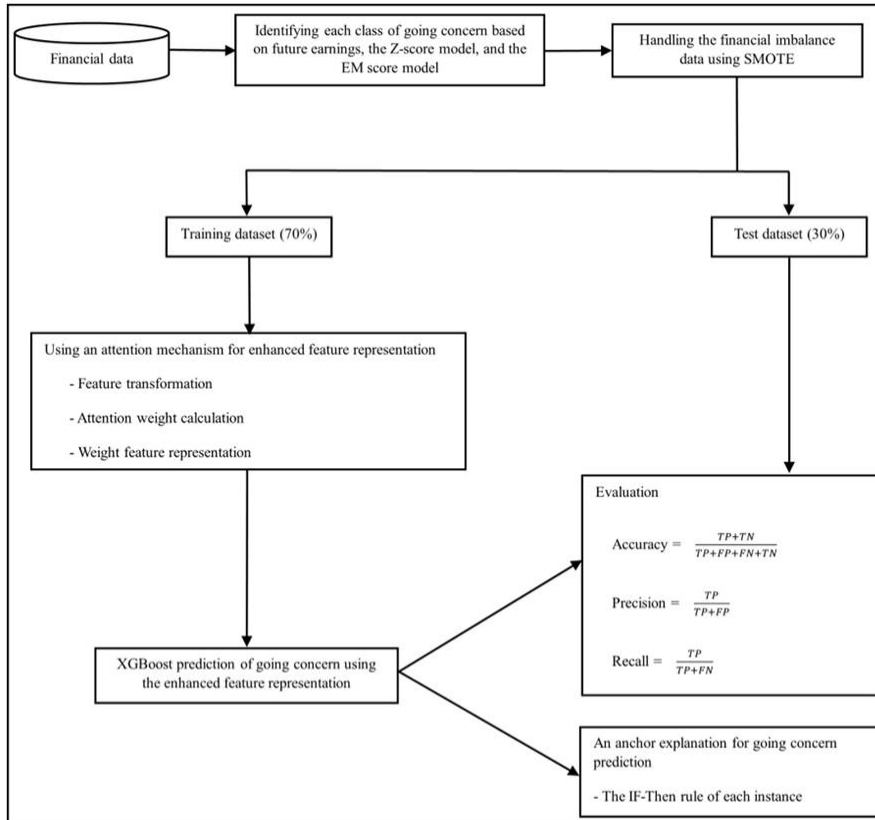
The proposed methodology consists of two principal components. First, the study improves going concern prediction through attention-weighted representation. SMOTE was used to address imbalanced financial data, while the attention mechanism helped the model focus on relevant features and data points. XGBoost was then applied as the main prediction model using

the enhanced feature representation. Second, Anchor XAI was used to explain the reasons behind the going concern predictions through human-interpretable if-then rules.

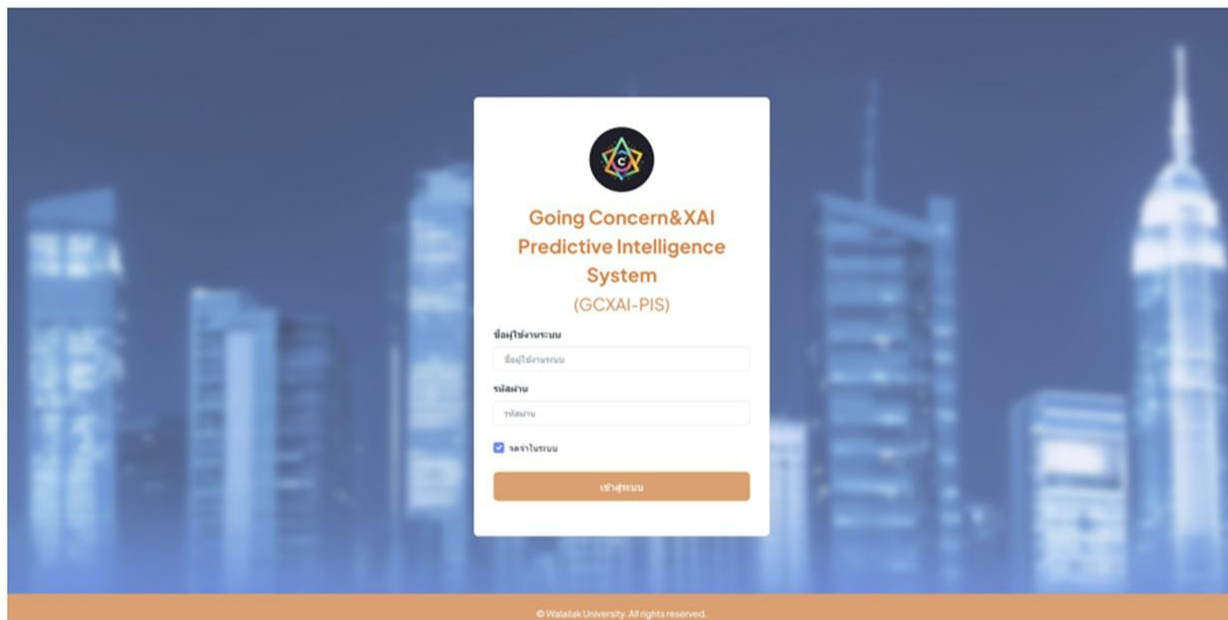
The results demonstrate that the Attention-Weighted XGBoost model achieved strong predictive performance, with approximately 98% accuracy and high precision, recall, and F-measure across the three going concern classes. The findings show that the combination of SMOTE, attention mechanism, and XGBoost can enhance the model's ability to identify complex patterns in financial data and accurately distinguish among non-going concern, going concern, and going concern doubt cases.

Beyond predictive accuracy, the study contributes by making going concern predictions understandable. Anchor XAI provides if-then rules that explain why a particular prediction is made. This enables financial statement users to apply prediction outcomes and their explanations in investment decisions, borrowing, lending, and other transactions with companies. The approach also highlights important features specific to each going concern class, including working capital/total assets, total equity, retained earnings/total assets, EPS, ROE, debt ratio, current assets to total liabilities ratio, number of independent directors, change of CPA firm, and BIG4 audit status.

In conclusion, this study demonstrates the effectiveness of melding explainable AI with attention mechanisms to bolster the trustworthiness and clarity of financial forecasts. The proposed method advances going concern prediction by combining high predictive performance with transparent and comprehensible explanations. It offers practical value for auditors, investors, lenders, listed companies, and capital market regulators by supporting more cautious, informed, and interpretable financial decision-making.



**FIGURE 1.** Proposed method for enhancing going concern prediction.



**FIGURE 2.** User Login Interface of the Going Concern and XAI Predictive Intelligence System (GCXAI-PIS).