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The Impact Of Using Machine Learning On Improving The Quality Of Financial Reports And Predicting Financial Distress, And Its Reflection On Unit Value

Adheem Naeem Bachi
Department of accounting, college of Economics & Administration
University of Al-Qadisiyah Iraq.
Email: atheem.paje@qu.edu.iq

Abstract: This research aims to demonstrate the role of higher education in accounting by improving the quality of financial reports prepared by economic units, the role of machine learning in predicting future financial distress and its impact on unit value, and the effect of using machine learning on unit value through improved report quality and predictive financial distress. To achieve the research objectives, solve the problems, and prove or disprove the research hypotheses, the researcher analyzed the financial reports of the units in the research sample from 2021 to 2024. Using quality improvement equations, predicting financial distress, and measuring unit value based on economic value added measures, as well as using statistical programs, the researcher reached a set of conclusions and recommendations, including that machine learning helped improve the quality of financial reports through the large volume of data and information that will be dealt with and presented in a timely manner, and that the use of machine learning also contributes to helping management and those interested in identifying and analyzing predicting financial distress by helping in analyzing a large set of data and information. The research identifies information that influences users and determines their ability to predict financial distress. Key recommendations include the need for management to enhance staff's machine learning skills to improve data and information processing capabilities, thereby improving the quality of financial reporting. Furthermore, it is essential to train decision-makers in using modern methods to identify the unit's strengths, weaknesses, and risks that could contribute to future financial difficulties.

Keywords: Machine learning, quality, improving the quality of financial reports, financial distress, methods for predicting financial distress.

1. INTRODUCTION

The scientific progress achieved in the field of information technology, the use of computers, and artificial intelligence programs has led to a qualitative leap in the field of collecting, storing, and analyzing data and information. Therefore, all work has become dependent on the use of computers, programs, and modern technologies to accomplish its tasks. In order to keep pace with developments, it has become necessary for those working in data collection and analysis, especially accountants, executive management, and information users, to have the necessary skills and knowledge to deal with these technologies, The current research attempts to demonstrate the impact of using machine learning in improving the work procedures of accountants and management in preparing and submitting financial reports, its importance in improving mechanisms for predicting financial distress, the role of machine learning in maximizing unit value, identifying the relationship between the research variables and the relationship between them, and the extent of the impact of using higher education on the remaining variables and its reflection on unit value. [1]

First: Research Methodology

1- **Research Problem**: The use of modern technologies in preparing and presenting financial reports is not without its problems related to the security, storage, and protection of information, and the ability to deal with developments in these technologies. What advantages does machine learning offer in improving the quality of financial reports and predicting financial distress?

- What are the advantages of machine learning?

- What is the impact of using machine learning on improving the quality of financial reports?

- What is the impact of machine learning on predicting financial distress?

- Is there a reflection of the impact of machine learning on improving the quality of financial reports and predicting financial distress on unit value?

2- **The importance of the research**: stems from the role and importance of machine learning in various social and human sciences, including accounting, and its importance in improving and developing the capabilities of workers in performing their work in various fields. These capabilities have an impact on improving the quality of data and information collection and preparation, which contributes to improving decisions and predictions, thus contributing to raising the value of the unit.

3- Research Objectives: This research aims to:

- Identify the advantages that machine learning offers to accountants.
- Identify the role of machine learning in improving the quality of financial reports and predicting financial distress.
- Identify the impact of machine learning on unit value in light of the improvements in the quality of financial reports and the prediction of financial distress.

4- **Research Hypothesis:** This research is based on a primary accounting hypothesis: (Is there a reflection of the impact of machine learning on unit value through improved quality of financial reporting and financial forecasting?) From this hypothesis, the following two hypotheses can be formulated:

- There is a statistically significant impact of machine learning on improving the quality of financial reporting and financial forecasting.
- There is a statistically significant impact of machine learning on unit value through improved quality of financial reporting and financial forecasting.

Second: Theoretical Aspects of Machine Learning in Improving the Quality of Financial Reports, Predicting Financial Distress, and Unit Value

1- The Concept of Machine Learning

The current era of the information, communications and artificial intelligence revolution requires acquiring expertise and skills in dealing with modern programs and systems, in order to accomplish tasks with high accuracy and efficiency. These systems have contributed significantly to improving the capabilities for analysis and future prediction , Because of its ability to analyze, plan, and map information to collect, provide, and present it in the appropriate manner and to the extent and in the manner that suits future analysis and prediction, through indicators based on appropriate accounting standards, machine learning is considered part of artificial intelligence that focuses on developing algorithms that can learn from data and provide accurate results, thus improving the accuracy and speed of data analysis, which helps humans in planning and analyzing problems using logic ,Therefore, machine learning contributes to improving predictions through its ability and efficiency in analyzing and classifying data more efficiently, by creating different types of machine learning algorithms that enable the re-sorting and classification of unclear or ambiguous data. This contributes to improving the procedures for analyzing, planning, and logically classifying large amounts of information. [2]

• Machine learning has been defined as a branch of artificial intelligence that focuses on developing algorithms and systems capable of learning from data and automatically improving their performance over time without needing to be explicitly programmed for each task.

• It has been defined as one of the most important tools for analyzing and developing algorithms that contribute to improving future performance.

• It has also been defined as a set of algorithms that contribute to improving and developing database and information systems for units, thereby enhancing their performance

There are multiple types of machine learning algorithms (supervised learning, unsupervised learning and deep learning),The researcher believes that machine learning is among the artificial intelligence tools that have an impact on data processing and information storage tools, which contributes to improving the unit's ability to plan and predict the future.

2- Improving the Quality of Financial Reports

Improving the quality of financial reports is paramount for economic units to maintain trust, given the nature of the information users require , Financial reports are the primary tool for conveying accounting information to relevant decision-makers both within and outside the economic unit. They represent the final product of the unit's accounting process, [3] The purpose of preparing financial reports is to provide financial information about the economic unit that is useful to current and prospective investors and other creditors in making decisions regarding resource allocation. These decisions include purchasing, selling or acquiring equity and debt instruments and extending or settling loans and other forms of credit, Therefore, financial reports are prepared for general purposes, In this field, quality means the credibility of the accounting information contained in the financial statements and the benefit it provides to their users. The quality of these reports is a key indicator of the units compliance with accounting standards and the requirements of the financial markets [4]. The concept of financial reporting quality has become broad due to its importance to users, Report quality relates to the accuracy and reliability of the information it contains, Establishing transparency and credibility within the economic environment is the basis for evaluating the quality of financial disclosure. It helps to verify the accuracy and validity of the data, the clarity of the presentation, the transparency of the disclosure, and the comprehensiveness of the information provided in accordance with the approved accounting standards,There are several internal and external factors that affect the quality of financial reports, including regulatory and legislative factors such as the extent to which the entity

adheres to international accounting standards, external and internal control: the existence of an effective control system, institutional and administrative factors, the level of bank governance, the efficiency of financial and accounting management, the degree of independence of the external auditor, and environmental and economic factors such as the stability of the economic and legal environment and competitive pressure in the marke. [5]

The quality of financial reports relates to the level of adherence to the qualitative characteristics of accounting information, which makes this information more capable of meeting the needs of its users, ensuring its relevance, reliability, understandability, and comparability. The importance of report quality stems from the fact that it is the means by which the financial position and economic performance of the accounting entity are disclosed. Therefore, any weakness or deficiency in the quality of these reports may lead to misleading users.

• The FASB defined the quality of financial reports as the extent to which the accounting information presented in the financial statements can influence the economic decisions of their users, by achieving the characteristics of relevance, reliability, understandability, and comparability.

• According to the FAF, quality of accounting information is defined as simplicity, clarity, and the ability to provide information in a timely manner. The Quality Organization views it as the predictive power of information, in addition to its suitability for its intended purpose.

• It is also defined as the quality of accounting information being reflected in the degree of adherence to accounting rules and standards when preparing financial reports, ensuring adequate and appropriate disclosure to users of this information.

• The quality of accounting information is defined as the extent to which this information meets the needs of specific decisions ,The utility criterion is one of the most important indicators for measuring this quality

• Quality is one of the main factors that contribute to maximizing competitiveness among economic units and various services by increasing consumer awareness in choosing high-quality services. This has led to increased attention and intensified efforts to achieve the quality of accounting information included in financial reports. [6]

The quality characteristics of financial reports depend on the basic qualitative characteristics, which are: relevance, which relates to the ability of information to influence users' decisions; truthful representation, which indicates that the information should accurately reflect the economic reality of financial transactions; and enhancing characteristics, which include: comparability, which allows users to analyze differences and similarities between different financial periods or between different entities; understandability, which presents financial information in a clear and organized manner, enabling users with reasonable knowledge to understand it; verifiability, which includes verifying the accuracy of information through independent sources that arrive at similar results; and timeliness, which indicates the need to provide information in a timely manner in order to maintain its usefulness in decision-making.

3- Methods of Measuring the Quality of Financial Reports

There is no single, universally agreed-upon measure of report quality, and several methods exist for measurement. These include measuring the quality of financial reports through the characteristics of accounting information. However, the most common method is quantitative measurement, relying on the figures presented in the financial reports to reflect various aspects of report quality. Examples of such models include: [7]

1- **Jones' 1991 Model:** This model was proposed to mitigate the impact of fixed non-discretionary receivables from one period to another. It considers the effect of changes on the economic situation of the economic unit and incorporates two factors for estimating

discretionary receivables: turnover and total fixed assets. It is expressed by the following equation: NDAit / Ait-1 = α1(l / Ait-1) + α2(ΔREVit / Ait-1) + α3(PPEit / Ait-1). [8]

2- **Modified Jones' 1995 Model**: In 1995, Dechow et al. developed the Jones 1991 model by adjusting the change in net revenue less the change in accounts receivable. The modified model identifies non-discretionary receivables and changes in accounts receivable, which are expressed using the equation The following:TAi,t/Ai,t-1=α+β1(1/Ai,t-1)+β2{(ΔREVi,t-ΔRECi,t)/Ai,t-1}+β3(PPEi,t/Ai,t-1)+εi,t. [9]

3- **The Kothari et al. model (2005):**, also known as the performance-adjusted discretionary accruals model, links accruals to the performance of the economic unit and incorporates a new element into the equation (ROA), which is the return on assets. It can be represented by the following equation: TAit = α0 + α1(1/Ait-1) + α2 ΔREVit + α3PPEit + α4ROAit(or it-1) + αit. [0]

Excellence in the quality of accounting information depends on the quality of financial reports, which are determined according to certain standards. The factors affecting the quality of financial statements are (laws, legislation, accounting standards, auditing standards and the extent of application of governance rules), which are among the factors affecting the nature of accounting disclosure and thus the quality of financial statements and the extent to which they meet the requirements of various internal and external users, Other factors include (the legal and political system of the state, the quality of standards, the motives for preparing financial statements for the purpose of developing the financial market, the capital structure, the ownership structure and the tax system, and to improve the quality of accounting information, it is necessary to use modern techniques in a detailed study of financial data and information and the relationship between them) financial analysis and to raise questions about their implications in an attempt to interpret. [11]

4- Machine Learning and Predicting Financial Distress

Machine learning has helped accountants and auditors learn modern methods and techniques that enable them to provide high-quality accounting information. It assists users in measuring and predicting various types of risks, improving resource allocation efficiency, helping investors make sound investment decisions, reducing the cost of capital, and improving its allocation efficiency by minimizing information asymmetry between managers and investors and reducing agency cost, Predicting financial distress is reported through several models, including the Sherrod model for predicting bank failure to determine the success or failure of these banks, and the extent of their continued operation in light of their loan defaults, as well as CAMELS indicators and the data encapsulation analysis model for predicting financial distress by comparing the performance of these banks in terms of capital adequacy, asset quality, management quality, profits and liquidity, and sensitivity to market risks, and the Zmejevski model for predicting the continuity or bankruptcy of an economic unit, as well as reliance on financial ratios. [12]

5- The Concept of Financial Distress:

Researchers differ in providing a unified definition of the financial imbalances affecting an institution. There is significant overlap between some terms such as financial failure, insolvency, bankruptcy, and financial distress. Some consider them to be synonymous, while others believe each term represents a different degree of risk to the institution. Bankruptcy is defined as an institution's inability to meet its obligations to third parties on their due dates, followed by a court-ordered declaration of bankruptcy. Financial distress refers to a situation where an institution's available cash flow is insufficient to meet its obligations to third parties. Financial failure is defined as a bank's inability to cover all costs, including the cost of financing working capital. [13]

Financial distress is defined as a financial imbalance that an organization faces as a result of its resources and ability to meet its short-term obligations. This imbalance is mainly caused by an

imbalance between the organization's various resources (internal and external) and its short-term obligations that have fallen due or are due to be paid. This imbalance between internal resources and external obligations ranges from a temporary, incidental imbalance to a real, permanent imbalance. The more structural or close to structural this imbalance is, the more difficult it is for the organization to overcome the crisis caused by this imbalance. Symptoms of financial distress appear before the organization enters the stage of financial distress that can lead to its demise. These symptoms are divided into financial and non-financial, and we mention them below: [14]

1- Financial Symptoms: The increasing deterioration of the company's financial situation is reflected in two main indicators

- Declining Profitability: Profitability is a crucial indicator of a company's deteriorating financial position, reflecting its poor performance. The reasons for this decline are often due to increased operating costs or weak sales profits resulting from reduced sales volume.
- Cash Crisis: Weak (or negative) cash flow reflects a state of financial imbalance and poor liquidity management. This leads to the company's inability to meet its financial obligations on time. Furthermore, if the company continues in this state of imbalance, it will eventually lead to bankruptcy.
- Paying interest on medium-term loans through short-term borrowing.
- Postponing payments on notes payable and installments on medium-term loans.
- Distributing profits to shareholders through loans.
- Failing to create sufficient provisions and reserves for the replacement and renewal of fixed assets.
- Financing fixed assets with short-term loans.

7- Non-Financial Symptoms: These include the following: [15]

- A tense social climate: The struggling company experiences conflict between workers and management, especially if the company fails to pay wages or refuses to do so under the pretext of severe financial difficulties.
- Deterioration of the company's reputation with customers: This is due to the poor quality of products or services or their failure to meet customer expectations, leading to a decrease in demand for the company's products.
- Deterioration of the company's reputation with suppliers: This is due to delays or refusal to fulfill its obligations to them, creating supply difficulties for the company.
- The emergence of conflicts between partners or shareholders and the company's management.

6- The Importance of Predicting Financial Distress and Its Causes

Several interconnected factors can lead an organization to financial distress. Forecasting is generally defined as "planning and making assumptions about future events using specific techniques across different time periods." It is the process managers and decision-makers rely on to develop assumptions about future conditions. Because economic organizations operate in a volatile and risky environment, they must use quantitative techniques in their decision-making. Hence, the importance of forecasting in general is highlighted, as it ensures the organization's efficiency and effectiveness in adapting to the external environment, and helps identify its short- and medium-term needs, thus contributing to mitigating the risks it may face. [17]

7- Stages of the Forecasting Process

The stages of forecasting are divided as follows:

Stage One: Defining the objective of the forecast.

Stage Two: Gathering the necessary data for the phenomenon being forecasted.

Stage Three: Analyzing and selecting the data for use.

Stage Four: Choosing the appropriate model from the available forecasting methods for the phenomenon under study.

Stage Five: Making the appropriate decision.

Altman developed his model in 1968 using financial ratios and relying on multivariate linear discriminant analysis. Through this model, he was able to distinguish between successful and failing institutions in a particular sector. [18]

8- The Relationship Between Machine Learning and the Quality of Financial Statements, on the Accuracy of Default Prediction and Unit Value

Unit value is affected by the nature of the information provided. The better and more consistent the information provided to users about the unit and its current and future activities, the more capable users become of making appropriate decisions. This positively impacts the unit's reputation and consequently reduces the cost of capital. Machine learning contributes to improving the quality of financial reports and the accuracy of future predictions, which in turn contributes to informed decision-making by management and other users. These decisions improve the unit's performance, which is reflected in its market value, taking into account the cost and benefit of the information provided. There are several models for measuring unit value, including model (**TobinQ**), which provides users with information that helps them understand the impact of using machine learning on unit value and its contribution to improving quality [19]

The Relationship Between the Quality of Accounting Profits and the Prediction of Financial Failure: The profit figure disclosed by banks in their financial reports is part of the accounting information that plays an active role in the forecasting process, especially since predictive ability is one of the characteristics of the quality of accounting information. Some studies have indicated that the predictive value of accounting information does not mean that the accounting figures represent predictions of the results of future events, but rather that this accounting information is relied upon as a basis for the forecasting process by the bank's administrative decision-makers. In other words, the accounting information is what is relied upon in forecasting processes and does not, in itself, constitute future predictions, The better and more economical the earnings information is in the financial periods, the better it will enable its users to predict future events and improve their efficiency and capabilities in this field. [20] If the accounting information is presented in interim (quarterly) financial periods, it must be more accurate than annual information, and therefore it must be of higher quality and more efficient in helping users form more realistic predictions that help predict the financial distress or failure of banks positively by providing early warning of the possibility of distress or failure before it occurs, and thus help the bank's management to take the necessary measures and procedures to address the distress or failure before reaching the stages of bankruptcy and liquidation. This would spare shareholders, lenders and other parties related to the bank from being exposed to the risks and negative effects associated with financial distress and what it leads to in terms of financial failure . [21]

The predictive ability of accounting profits to project future goals based on past data, and the quality of accounting profits with the main characteristics of the bank that can affect the risk of financial distress, such as the size of the bank, the frequency of losses, and the volatility of cash flows. The second trend is the relationship between the level of quality of accounting profits and bank management, through its earnings management practices that disclose low-quality profits, which is an indicator of early financial distress. [22] That is, banks with low-quality profits will face increased uncertainty and doubt about the credibility of the profits and a decrease in the ability to predict future profits and cash flows, which is reflected in an increase in the rate of

return required to compensate for those risks. This means the possibility of those banks being exposed to problems and financial pressures that may lead them to the risk of financial distress if they fail , Machine learning models can continuously learn and adapt to evolving financial patterns, ensuring that accounting systems remain up-to-date and efficient. They also improve fraud detection. Artificial intelligence technology helps in the early detection of fraudulent activities by analyzing patterns, anomalies, and deviations in financial transactions. Machine learning automates routine processes that, before machine learning, accountants manually entered data, verified invoices, and classified transactions. It can also be used for financial forecasting and planning, such as predicting cash flows, future sales, or bank profits. [23]It relies on advanced models like neural networks or machine regression to provide accurate forecasts. Benefits include supporting strategic financial decision-making and reducing risk, improving internal controls, and detecting fraud. Models can be trained to recognize suspicious or unusual transactions. However, machine learning depends on data quality. Cost and technical considerations include the need for significant resources to develop and maintain models, and the requirement for expertise , Accountants need to understand how to interpret the results provided by the system. [24]

Result and Discussion

Third: The practical aspect

The independent variables are measured through multiple linear correlation coefficients (for the effect of using machine learning) for the mediating variable, improving the quality of financial reports and predicting financial distress and their reflection on the unit value. Here, Pearson's correlation coefficient was used since the financial ratios are real values. This analysis method is based on finding the highest linear correlation coefficient between each pair of variables, noting that the significance level used in this study is 5%. The effect of these two independent variables on the dependent variable is equal. Accordingly, several variables were identified and analyzed as shown in the following table:

Table No. (1) shows the variables that were identified, their correlation coefficients, and their significance levels

Correlation coefficient,	significance level	Variable
The Impact of Machine Learning	0.027	0.867
Improving the quality of financial reports	0.032	0.801
Predicting financial distress	0.042	0.884
Unit value	0.004	0.892

The table was prepared by the researchers based on factor analysis.

1- Statistical Analysis Results: In the statistical analysis, multiple linear regression (B) coefficients were calculated between the independent variable (the effect of using machine learning on the mediating variable, improving the quality of financial reports and predicting financial distress) and the dependent variable (unit value). After conducting the statistical analysis, the regression (B) coefficients were extracted between the independent and dependent variables. The regression coefficient represents the amount of change in the dependent variable that occurs as a result of a one-unit change in the independent variable. The values of the multiple linear regression coefficients are shown in the table below.

Table (2) shows the financial ratios and their relative weights for the research variables

Financial ratio (variable)	Relative Weight B
Machine learning	4.309
Financial reporting quality	1.870
Financial distress prediction	1.709
Unit value	21.787

The table was prepared by the researchers based on regression analysis

These variables indicate that machine learning has an impact on the quality of financial reports and the prediction of financial distress, which is reflected in the value of the banks in the research sample as the ideal standard for the efficiency of banks and the extent of the use of modern technologies to improve the quality of financial reports through the size and nature of the information they provide, its suitability and degree of reliability in the information provided, and what this information provides to users in terms of information that helps them predict financial distress through the clarity of this information and its comparability and verifiability.

2- Calculating the Value Added of the Banks in the Research Sample

TobinQ was used to measure the value added of the banks in the research sample for the years 2021 to 2024, as shown in the table below.

Table (3) Value Added of the Banks in the Research Sample Based on TobinQ

Bank	2024	2023	2022	2021	Moderate
Ashwar	0.879	0.896	0.825	0.764	0.841
Al Rajhi	0.879	0.914	0.811	0.764	0.842
Al Taif	0.880	0.898	0.854	0.764	0.849
Al Ahli	0.880	0.915	0.818	0.759	0.843
Al Amin Investment	0.880	0.888	0.809	0.759	0.834
Zain	0.874	0.880	0.869	0.748	0.843
Al Mosul	0.878	0.885	0.869	0.748	0.845
Economy	0.888	0.933	0.869	0.729	0.855
Babylon	0.888	0.959	0.869	0.729	0.861
Across Iraq	0.897	0.978	0.878	0.747	0.875
Asia Investment	0.904	0.912	0.878	0.747	0.860
Qurtas	0.887	0.940	0.878	0.757	0.866
Moderate	0.886	0.909	0.860	0.750	0.851

Prepared by the researcher based on data from banks audited by auditing firms.

Table (3) shows that the highest average Tobins index (0.875) was for the Bank of Economy,

while Asia Investment Bank achieved the lowest average index (0.834). These results indicate that the market values of most banks in the research sample are lower than their book value, reflecting a negative performance for most of these banks according to the scale. This means that the value of shares of most banks listed on the Iraq Stock Exchange is undervalued, resulting from investors' negative perceptions of growth opportunities and future profits. This, in turn, affects investors' decisions regarding whether or not to invest in the shares of the banks in the research sample.

Testing the first sub-hypothesis: Machine learning has a statistically significant effect on improving the quality of financial reports and financial forecasting.

To test this hypothesis, the researcher performed the following:

1- Measuring the risk of financial default: The Altman model was used to predict financial default based on information available in financial reports concerning the quality of loans granted, the volume of credit and credit facilities, and the size and nature of amounts for which banks have legal claims to recover from customers. This was done in a selected sample of (12) banks, and the risks were classified as shown in Table (4) below.

Table (4) Measuring the Risk of Financial Default

Sequence	Loan category	Quality index
1	High-risk loans	Z1 = >
2	Medium-risk loans	> 1Z2.32=>
4	Low-risk loans	>2.32Z

The table was prepared by the researchers.

a- Altman's model prediction for 2021 compared to the actual results for 2022:

Table (5): Altman's prediction for 2022

Bank	Altman's predictio n (2021(	Prediction description :	EPS 2022) (	Averag e Banks	Actual Result	Predictabilit y
Ashwar	4.663	Success	0.445	0.875	Succes s	Effective
Al Rajhi	3.789	Success	0.224	0.223	Succes s	Effective
Al Taif	1.376	Failure	0.224	0.225	Failure	Effective
Al Ahli	4.112	Success	0.259	0.227	Succes s	Effective
Al Amin Investmen t	4.824	Success	0.024	0.068	Failure	Ineffective
Zain	1.243	Failure	0.710	0.068	Succes s	Ineffective
Al Mosul	-7.076	Failure	0.063	0.063	Failure	Effective
Economy	9.551	Success	1.662	0.572	Succes s	Effective
Babylon	3.503	Success	0.237	0.581	Failure	Ineffective
Across Iraq	4.342	Success	0.942	0.385	Failure	Effective

Asia Investment	1.053	Failure	0.046	0.368	Failure	Effective
Qurtas	3.644	Success	0.118	0.221	Failure	Ineffective
Moderate	4.643	Success	-0.013	0.070	Failure	Ineffective
	32.73%	The result of the model's ability to predict the financial situation two years in advance, in 2021, for the year 2022.				

Prepared by the researcher based on audited bank data from auditing firms.

Table (5) shows that the Altman model's ability to predict the financial position of banks in 2022, based on 2021 data, reached 74.6%, a high percentage. The model successfully predicted the financial condition of all banks.

B- Altman Model Prediction in 2022 Compared to the Actual Results in 2024:

Table (6): Altman's Prediction in 2022

Bank	Altman's prediction 2022	Prediction description:	EPS 2024	Average Banks	Actual Result	Predictability
Ashwar	11.046	Succeed	0.390	2.072	Successful	Effective
Al Rajhi	4.798	Succeed	0.227	0.223	Successful	Effective
Al Taif	1.070	Fail	0.015	0.225	Failed	Effective
Al Ahli	3.658	Succeed	0.063	0.070	Failed	Ineffective
Al Amin Investment	1.614	Fail	0.065	0.069	Failed	Effective
Zain	-0.218	Fail	0.051	0.068	Failed	Effective
Al Mosul	3.549	Succeed	0.290	0.583	Failed	Ineffective
Economy	3.158	Succeed	0.579	0.340	Successful	Effective
Babylon	1.725	Fail	0.018	0.346	Failed	Effective
Across Iraq	29.446	Succeed	0.445	0.227	Successful	Effective
Asia Investment	23.020	Low probability of failure	0.218	0.217	Successful	Effective
Qurtas	26.149	Low probability of failure	0.251	0.221	Successful	Effective
Moderate	26.600	Low probability of failure	0.025	0.070	Failed	Effective
The result of the model's ability to predict the financial situation two years in advance, in 2023 for the year 2024						68%78.

Prepared by the researcher based on data from banks audited by auditing firms.

Looking at the results shown in Table (6), we observe that the Altman model's ability to predict the financial situation of banks for the year 2022 was very high, reaching 68.78%. Therefore, we note that the Altman model's ability and accuracy in predicting the financial failure of banks is high for the years included in the research sample. Table (7) below shows the improvement that led to enhanced quality of financial reports through the indicators found in these reports.

Table (7) Financial Report Quality Measures

Index		Low	Normal	High
Accrual accounting quality models		(9%) relates to other activities	Accruals related to regular business operations (85%)	(6%) relates to more specialized activities
Earnings quality and indicators:	Continuity	(3) years %7	(8)years %19	More than (10) years 74%
	Earnings Management	%49	%36	%15
Qualitative characteristics of information	Relevance	%12	%79	%9
	Honest representation	%18	%78	%5
	Transparency and disclosure	%14	%81	%5
	Appropriate timing	%2	%83	%15
	Audit quality	%22	%71	%7

¶ Table (7) Impact of Machine Learning on the Quality of Financial Reports and Predicting Financial Distress

Machine learning has provided financial report preparers with significant opportunities to improve the quality of these reports. This is achieved through models of accrual accounting quality and their relevance to banking activities, as well as by enhancing earnings quality through identifying banks' viability and future sustainability, and the earnings management strategies they can employ to present a clear picture to users. Regarding the qualitative characteristics of information, these are crucial for measuring report quality, including their suitability to users' needs, their accurate representation of banking operations, their timeliness, and the transparency and disclosure of information provided to users. Machine learning has also contributed to improving the quality of internal and external audits. Table (8) below illustrates the relationship between machine learning, financial report quality, and financial distress.

Table (8) The Relationship Between Machine Learning, Financial Report Quality, and Financial Distress

MODEL	Unstandardised Coefficients		Standardised oefficients	T	Sig.
	B	Std. Error			
(Constant)	9.054	0.872		0.004	0.001
Machine learning	0.287	0.081	0.272	2.902	0.008
Quality of financial reports	2.952	0.88	0.735	0.773	0.004
Financial distress	0.84	0.79	0.093	0.986	0.021

Source prepared by the researcher using SPSS software.

From argument (8), we observe the importance of the quality of financial reports in predicting financial distress and the significant role of machine learning in identifying credit risks and improving the quality of financial reports. The more machine learning is implemented, the more it contributes to improving the quality of financial reports and the greater the possibility of predicting financial distress. This proves the research hypothesis, which states that there is a statistically significant effect of machine learning on improving the quality of financial reports and financial forecasting.

A- Testing the second sub-hypothesis: There is a statistically significant effect of machine learning on the unit value through improving the quality of reports and financial forecasting.

Based on the results shown in the previous tables, statistical software was used to test the second hypothesis. To test this hypothesis, the presence and type of mediation (reflection) were examined using Sobel's test. This test considers the relationship between the independent and mediating variables when measuring their effect on the dependent variable. The results are shown in Table (9).

Table (9) Results of the test of the effect of the relationship between variables

The independent variable was influenced by the mediating variable.	The effect of the mediating variable on the dependent variable in the presence of the independent variable	The influence of the independent variable on the dependent variable through the mediating variable	Value of normal distribution at a 95% confidence level	Standard error	Postrap Trust Zone	
					UL96%	LL 93%

0.0079	0.031	0.0028	0.0026	0.009	0.0194	-0.0128

Table (9) was prepared by the researcher based on the results of the Sobel test.

Table (9) shows that the value between the lower limit of the confidence interval (LL) and the upper limit (L) is 0.386. Therefore, there is no mediation of the bank value, meaning that there is no statistically significant effect of machine learning on the unit value through improved reporting quality and financial forecasting.

Fourth: Conclusions and Recommendations:

A- Conclusions:

1. Machine learning, as an artificial intelligence tool, has contributed to improving the ability of employees and users to prepare and analyze the data and information contained in financial reports.

2. Machine learning has helped improve the quality of financial reports in the modern era due to its advanced capabilities for collecting, storing, and analyzing data and information for users.

3. Machine learning has contributed to improving the ability of management and information users to predict future financial difficulties and defaults as a result of the vast amount of historical and future market analysis it provides.

4. The value of a unit today depends largely on its market reputation and the degree of trust in the reports provided to users.

5. Machine learning has improved the quality, nature, and volume of information contained in financial reports, thus contributing to better prediction of financial defaults and consequently increasing the unit's value.

B- Recommendations:

1. Banks should utilize artificial intelligence programs for collecting, analyzing, and storing data due to their advanced capabilities and potential, which assist them in completing their operations.

2. There is a strong correlation between the use of machine learning programs and improving the quality of financial reports. 3. It is important to use machine learning to predict financial distress because the historical information it provides and the ability to analyze it contribute to improving users' ability to predict future financial difficulties.

4. There is a positive impact of using machine learning in the field of reporting and future forecasting on the value of Iraqi banks.

5. The more Iraqi banks use modern programs and technologies, the better their financial reports will be, and the better users' ability to predict the future and, consequently, financial risks will be, which will contribute to improving their value**.**

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