Financial Structural Model For Business Information Management – A New Accounting Strategic Framework

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Abstract

In the recent past, business information impacted accounting data through the development of science and technology solutions. Therefore, new requirements for accountants arise in the latest accounting environment. Current accounting training could not meet company requirements at all. To ensure reliable accounting, improve economic and financial management, improve economic efficiency, and preserve the socialist market economy effectively, there is a need for innovation in accounts management. This paper presents an approach to improve financial reporting transparency and increase usefulness using an Advanced Financial Structural Model(AFSM). Fair value accounting and asset-impairment accounting have been inherently deficient in the present account management system. According to legal and accounting theory, the source record of accounting data should have the legal proof. The conventional accounting system of 'mixed attributes' should be replaced with a network that maintains historical cost and fair value strictly in financial statements. The simulation analysis has been performed based on business strategies. Finally, the new model achieves 97.78% of efficiency for improving economic management and financial management.

Keywords: Finance, Account Management, Economy, Statements

Introduction

This paper describes the key financial reporting technology criteria (audited accounting data) and disclosure (non-accounting)[1]. Financial reporting and communication support the improvement of information asymmetry for managers and contracting parties, including shareholders, lenders, providers, customers, and employees [2, 3]. The reliability of the financial reporting and disclosure structure of a nation is essential for creating economically productive stock and equity markets and growing an economy [4].

The economic, political, legal, and institutional difficulties involved in real change represent an informed perspective of the sudden change in systems of reporting and disclosure [5,6].The only way to implement

modern accounting standards for public financial reporting is interpreted critically [7,8]. This implies nothing more than window dressing, even in combination with a large-scale technology analysis that recognizes management and auditors' financial reporting opportunities [9].

A financial reporting and disclosure system needs economically efficient modes and needs: a sufficient audit professional training, professional skills and manager's independence to check the accuracy of their financial accounts [10]. There is a separation of the government economic reporting and corporate income tax structures as far as possible to ensure tax objects [11]. Reform of corporate ownership and governanceis to create a market financial mechanism with genuine competition for accurate, transparent information, setting up a high-quality, objective accounting standard system and implementing it [12].It needs to establish an effective and autonomous system of law on fraud, manipulation, and failure detection and consequence. These requirements are inevitably prevalent as the accounting infrastructure provides the economic, legal, and political support and services in all countries as a whole [13].

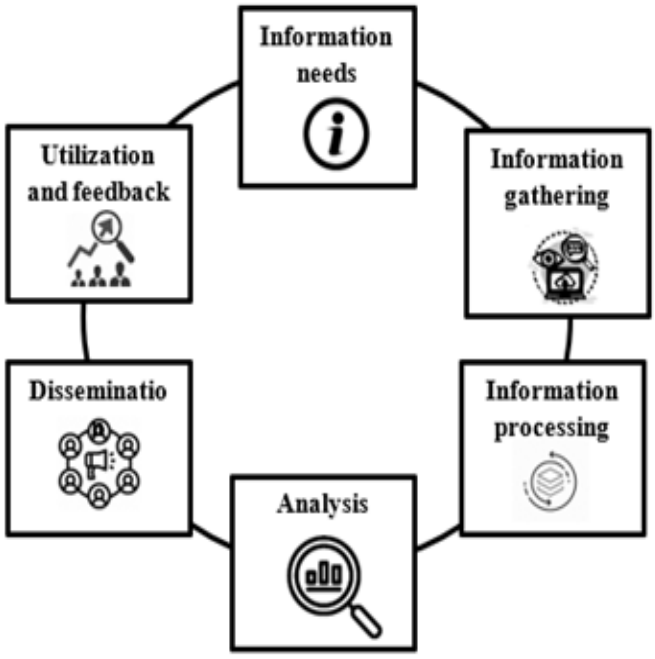


Figure 1. Needs of Business Information Management

Figure 1 shows the business information management requirements.The scope of the technology improvements required to enhance real financial reporting and accountingis extensive, that theright amount of optimism begins tobe achieved [14]. The current approach is focused on public management, company ownership and regulation, the political forces, legal structures, auditors' preparation and professional partnerships, and transparency requirements. The complementarity of these institutional variables severely limits naturalistic changes' effectiveness. Moreover, all such network complementary factors have at least some political impact, which constrains more improvements. Changing one item alone – in particular, an accounting method or, worse, just the criteria of accounting – may be a futile exercise without a wide variety of complementary technology improvements being followed. This makes it difficult and complicated for the public to improve financial reporting and disclosure of government finance [15].

To overcome the above issues, this paper introduced a method to improve financial reporting transparency using the Financial Structural Model(FSM). In the existing financial management system, equal value accounting and asset-default accounting are fundamentally inadequate. The source record of accounting data will be defined correctly in legal and accounting theory.

Literature Survey

Mithas et al. [16] suggested that knowledge technology capability plays a significant role in the creation of new organization capacities for client services and process management. Such skills have a positive effect on the metrics of firm performance by the clients, the economy, human capital, and organization. Top management needs to concentrate on developing the environments required to grow IT technology and knowledge management skills, as they are central to construct certain technologies for better organizational efficiency. The Baldrige Framework(BF) needs to make some improvements such that the position and value of information management capability can be more easily understood such that senior managers know where to continue on the path of business excellence. This Baldrige Framework still have less efficiency for business information management.

Brustbauer et al. [17] analyzed Enterprise Risk Management (ERM) in SMEs by creating a systemic model consisting of a distributed questionnaire. Implementation and the results of the ERM implementation are ERM methods. The results reveal that SMEs adopt an aggressive or passive ERM strategy, which influences their strategic orientation and leads to a protective and active approach.The size, industry affiliation and ownership structure of the EMR are affected. The implementation of the ERM can help SMEs to adapt to a changing environment, thus improving their competitiveness and business success.

López-Nicolás et al. [18] attempted to shed light on the consequences for business growth and corporate performance of knowledge management (KM) approaches. Organizations do not understand the specific implications that KM may have. Based on this research study consisting of 310 Spanish organizations, the results show that both KM (codification and personalization) methods have a direct and indirect impact on the performance of both innovations and organizations. Their findings will help scientists and managers to build strategic KM systems to achieve more significantchange, efficiency, efficiency, and profitability.

Valmohammadi et al. [19] developed a way to offer a systematic approach for the assessment of corporate success information management (KM) activities. The impact on the organization's results of the 4 Balance Scored Cards (BSC), including the management positions, corporate structures, and KM strategies, processes and activities, education and training, IT and incentives, and compensation systems, are evaluated by seven critical success factors (CSFs). The most significant difference in literature is that statistical and comprehensive techniques such as BSC are not sufficiently used, which means KM is changing its organizational performance.

Rao et al. [20]introduced a method to examine how and why Information Systems (IS) improve business performance. Using the knowledge-based view of the business and theoretical learning theories, they develop and empirically test a conceptual model that serves to mediate between maturity and the FP through knowledge sharing (KS). A survey of business leaders was carried out in China to collect data. Data. The model was tested using a structural equation modeling approach with partial least squares.

Based on the discussion the above-mentioned traditional methods still have problem with achieving better efficiency, performance, reliability, accuracy factors. The proposed AFSM model has better efficiency, performance, reliability, accuracy when compared to these existing methods.

Financial Structural Model For Business Information Management

Creating Feature Indicators for Financial Business Information Management

The prediction characteristic metrics must be established to improve the efficacy of a business's financial prediction as a dependent variable. These measurements can be classified as financial indicators. The financial indicators include primarily financial factors, but non-financial factors include corporate size and governance.For the selection of financial and non-financial indicators, an advanced financial structural model (AFSM) is used for defining the relative financial forecast feature indicators with Accounting Strategic Framework.

Collection of financial indicators

It shows the financial ratio analysis for the practical significance, and it is most widely utilized in financial statement research.

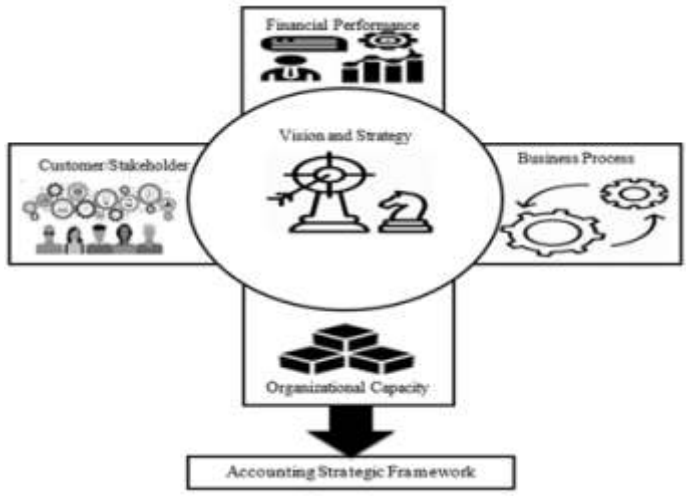


Figure 2. The framework of financial indicator

The financial indicator framework is demonstrated in Figure 2. Financial ratios use the information published by a company to represent two relevant elements for evaluating and measuring the operating results of a company and for recognizing the financial structure of the company as the basis of future investing strategy.A company that aims for continuous success and improvements must achieve objectives and goals. A method of evaluation has to be in effect to determine goals toward the desired success to achieve these objectives. When a business struggles to get results, investment income is usually smaller than the money spent, creditors are exiting, the output of the employees is poor, and the retention rate is high. Such signs are mostly related to a lack of organizational control and processes that allow a company to measure and compare its performance to its strategic and operational targets. This can be a helpful strategyfor the company to manage the key performance indicators that are called "key success indicators.

Collection of Non-Financial Indicators

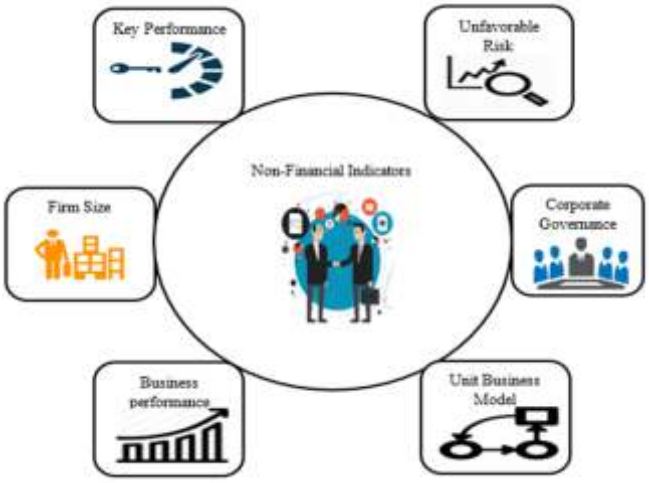


Figure 3. The framework of Non-Financial Indicator

Non-financial indicators are seen in enhancing the accuracy in the corporate financial forecasts. A variety of analysts have taken full advantage of the metric of non-financial scale to determine its impact on business predicted results and financial benefits.

The non-financial indicator framework, as demonstrated in Figure 3, covers both major dimensions of corporate governance and corporate size. The business scales comprise a natural maximum asset logarithm and a natural employee logarithm. Corporate governance involves duality, board level, independent manager's ownership, management shareholdings, directors and supervisors' shareholder shares, the shareholding of the largest shareholders, and the share holds of the primary owners, shareholdings of the main shareholders.

Selection of Feature Indicator

AFSM is a non-linear and non-parametric accounting theoretical strategy which separate's training data classes into regions. It uses a technique of AFSM to select from the structure (Figure 2) and non-financial (Figure 3) of the business predictor vital indicator variables for operating profit provision of products, EPS, and free cash flow, as well as networking capital to create a financial statements model.Equation (1) is the function of AFSM, and equation (2) is used in the selection of the distribution based on the probability function that helps considerably to optimize the AFSM model. Table 1 describes the listed financial and non-financial metrics.

$$f(a) = x_0 + \prod_{p=1}^{P} \varepsilon_p + \prod_{q=1}^{Q_p} [S_{q,p}(a_{x(p,q)} - t_{p,q}] \quad (1)$$

$x_0 -$ Constant

P - Number of base functions

Q_p- Number of splits generating the p^{th} base function

$S_{q,p}$ indicates the position

$a_{x(p,q)}$ is the independent variable's label

$x(p, q)$ is the variable of the predictor

$t_{p,q}$ is the location of the knot

The splitting zone of the AFSM model is limited to the initial domain, i.e. $Q_{p=1}$;

$$V(P) = \frac{1}{Q} \prod_{a=1}^{Q} [q_a - f_P(a_i)]^2 / (1 - CQ/P)^2 \quad (2)$$

where the residual mean of $V(P)$is a valid basis function equation

$V(P)$ is a model's cost penalty test

P is an essential function

Q relates to the number of replies

a_i - actual value

$f_P(a_i) -$ Predicted value

Table 1.Indicators of Financial and Non-Financial Feature

Items	Indicators of Financial Feature	Indicators of Non-Financial Feature	
		Firm Size	Corporate Governance
Profit margin	Great sales times. The turnover of the total assets Total asset ratio gains Capital stock operational sales	Total natural asset logarithm	The largest shareholder′s stock Foreign institutional investors′ shareholdings
Share Profits	Terms of inventory sales The asset sales ratio is fixed Capital stock operational sales Non-tax profit	Index	Domestic institutional investor shareholdings International equity investors′ shareholdings
Free flow of cash	The asset sales ratio is fixed. Profit before capital stock tax	Total natural asset logarithm	Director and supervisors′ shareholdings The percentage of the managers and supervisors supported Domestic institutional investors shareholdings Foreign institutional investors′ shareholdings
Capital Net Working	Total return asset ratio Investment stock operational sales Capital profit before tax	Total natural asset logarithm	Directors and supervisors′ shareholdings The largest shareholder′s stock International equity investors′ shareholdings

Fuzzy based Financial Structural Model For weight distribution evaluation

The weight of index factors is very significant in a comprehensive decision due to its role in the overall decision-making process. Domestic and foreign researchers have explored a lot of the methods of weight measurement in recent years. The specialized approaches include process estimation method, weighted statistics and frequency statistics, etc.

These methods are based on weight statistics for the dependent variables provided by experts.Because the experts can not precisely describe the fuzzy and variability of the human brain in assessment and the complexities and decision-making issues of personal interests and other factors. Triangular fuzzy numbers and their sorting

process are effective means of analyzing the weight of index factors.

Triangular fuzzy number principles

A. Triangular number description and rules for estimation

Fuzzy triangular numbers: $\hat{a} = (k, n, s)$. The equation is described as follows,

$$f_{\hat{a}}(p) = \begin{cases} 0 & i \le k \\ \frac{i-k}{n-k} k < i \le n \\ \frac{i-s}{n-s} n < i \le s \end{cases} \quad (3)$$

Where $i \in G, k < n, s$

The degree of fuzzy $nands$ express. Where k, n, s are the fuzzy triangular numbers.

The $s-1$, the degree of fuzzy, is proportional.

The rule of estimation is calculated as follows,

$$\hat{a}_1 \oplus \hat{a}_2 = (k_1 + k_2, n_1 + n_2, s_1 + s_2)$$

$$\hat{a}_1 \otimes \hat{a}_2 = (k_1 k_2, n_1 n_2, s_1 s_2)$$

$$\gamma \otimes \hat{a}_1 = (\gamma k_1, \gamma n_1, \gamma s_1)$$

$$(\hat{a}_1)^{-1} = (1/k_1, 1/n_1, 1/s_1)$$

Triangular fuzzy numbers (k, n, s) choice of all the experts is demonstrated by the fuzzy theory for a full idea of this system. It is to have comprehensive context details as much as possible on the survey objects. In order to ensure the reliability of the judge, the number of circulations should be reduced; the experts should distinguish and determine their results into very significant, more important, general, or less important and in the various categories.

B. Triangular Fuzzy Number Complimentary Evaluation Matrix

Complimentary evaluation matrix,

$$\hat{a} = (\hat{a}_{pq})_{m \times m} \quad (4)$$

Where, triangular fuzzy number

$$\hat{a}_{pq} = (k_{pq}, n_{pq}, s_{pq}) \quad (5)$$

$$0 \le k_{pq} \le n_{pq} \le s_{pq}, \forall_{p,q} \in P_0$$

If $k_{pq} = 0.445$, $n_{pq} = 0.445$, $s_{pq} = 0.445$;

$k_p + s_p = 1$, $n_{pq} + n_{pq} = 1$, $s_{pq} + k_{pq} = 1$, $p \neq q, \forall_{p,q}$

A fuzzy triangular number is $\hat{a}$

In the $\hat{a}_{pq}$ matrix, the c_p is higher than the c_q level.

The triangular fuzzy number Complementary evaluation matrix has been used to evaluatethe expert decision. However, the fuzzy and uncertainty of the human brain in determining personal preferences and other factors, as well as the difficulty of the expert decision issue, the conclusions of experts can be inappropriate to describe the fuzzy triangular number. Triangular fuzzy numbers and their sorting methods are an effective way for weight analysis.

A comprehensive evaluation of the weight sorting system

Step 1:

Create expert matrix *B*

$$B = \{B^1, B^2, B^3, \ldots . B^m\} \quad (6)$$

Create evaluation matrix *Y*

$$Y = \{Y^1, Y^2, Y^3, \ldots . Y^m\} \quad (7)$$

The expert matrix *B* and evaluation matrix *Y* have been used to create the weight sorting system for evaluating the weight distribution for financial management. Both the matrix has been processed for designing all preferential information.

Step 2:

Calculate the weighting method for designing all preferential information.

$$\hat{a}_{pq} = h_1 \hat{a}_{pq}{}^{(1)} \oplus h_2 \hat{a}_{pq}{}^{(2)} \oplus \ldots . \oplus h_3 \hat{a}_{pq}{}^{(3)} \quad (8)$$

The weighting factor *h*

$$\prod_{p=1}^{m} h_p = 1 \quad (9)$$

The weighting factor h has been used to calculate the weight of all preferential financial information.

Step 3:

Calculating the fuzzy comprehensive $\hat{s}_p$ evaluation value. Figure 4 shows the process of evaluation of comprehensive fuzzy value.

$$\hat{s}_p = \left(\prod_{q=1}^{m} k_{pq}, \prod_{q=1}^{m} n_{pq}, \prod_{q=1}^{m} s_{pq}\right) \otimes \left(\prod_{p=1}^{m}\prod_{q=1}^{m} k_{pq}, \prod_{p=1}^{m}\prod_{q=1}^{m} n_{pq}, \prod_{p=1}^{m}\prod_{q=1}^{m} s_{pq}\right)^{-1} = \left(\frac{\prod_{q=1}^{m} k_{pq}}{\prod_{p=1}^{m}\prod_{q=1}^{m} s_{pq}}, \frac{\prod_{q=1}^{m} n_{pq}}{\prod_{p=1}^{m}\prod_{q=1}^{m} n_{pq}}, \frac{\prod_{q=1}^{m} s_{pq}}{\prod_{p=1}^{m}\prod_{q=1}^{m} k_{pq}}\right) \quad (10)$$

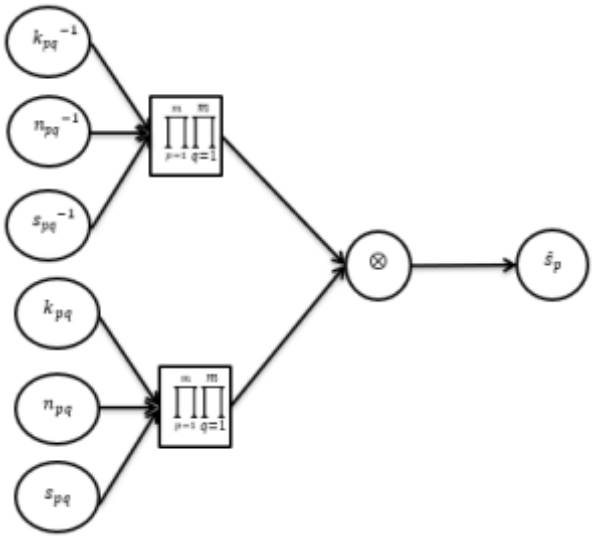


Figure 4. Fuzzy comprehensive evaluation

A comprehensive and harmonious fuzzy-based evaluation from several different aspects must be developed as an essential factor infinancial management. Therefore, restructuring of accounting administration is mostly necessary today. The fuzzy-based comprehensive evaluation has been used to find the weighted distribution function to determine accounting compliance standards scientifically.

Step 4:

Fuzzy comprehensive risk expectations are calculated as follows

Left expectation of $\hat{s}_p$ is

$$p_L(\hat{s}_p) = (k_p + n_p)/2 \quad (11)$$

Right expectation of $\hat{s}_p$ is

$$p_R(\hat{s}_p) = (n_p + s_p)/2 \quad (12)$$

Where δ is optimistic/positive where $\delta = 0.5$ it is optimistic; when $\delta = 0.5$ is neutral; when $\delta < 0.5$ is a pessimistic perception. Where $\delta > 0.5$, this is optimistic. If the $\delta = 0.5$ is calculated the expectation of $\hat{s}_p$ by the equation

$$p(\hat{s}_p) = \frac{k_p + 2n_p + s_p}{4} \quad (13)$$

The larger $p(\hat{s}_p)$ is the greater the average value of the comprehensive fuzzy evaluation.

Step 5:

Weight vector calculations are described as follows,

$$w_p = p(\hat{s}_p) / \prod_{p=1}^{m} p(\hat{s}_p) \quad (14)$$

The rating weight (w_p) is larger, and the index is more significant. It measures the weighted scores using the above estimation method and establishes a group of decisions containing four experts for the study of the index weights of the company's industrialization.

The expert matrix is

$$B = \{B^1, B^2, B^3, B^4\} \quad (15)$$

It uses an expert evaluation method to evaluate various business levels in accounting management. The indexes of this evaluation are primarily contextual, analytical indexes. The only way to achieve objective results is through the combination of expert know-how and current social-economic situation, to achieve a higher level of results.

Advanced Financial Structural Model for the Financial Crisis

The advanced structural financial model has now entered the market to exchange claims.It defines and solves the equilibrium price random $\hat{R}$ variable for reasonable expectations in several steps on the simple market.First of all, imagine the Advanced

Financial Structural Model that describes financial price behavior.

$$\hat{R} = \beta 10 + \frac{\gamma}{2}(\hat{x}E + \hat{x}W) - \frac{\delta}{2}\hat{Y} \quad (16)$$

Where $\beta + \gamma = 1$ and $\hat{x}Eand\hat{x}W$ business information observed by the AFSM model.

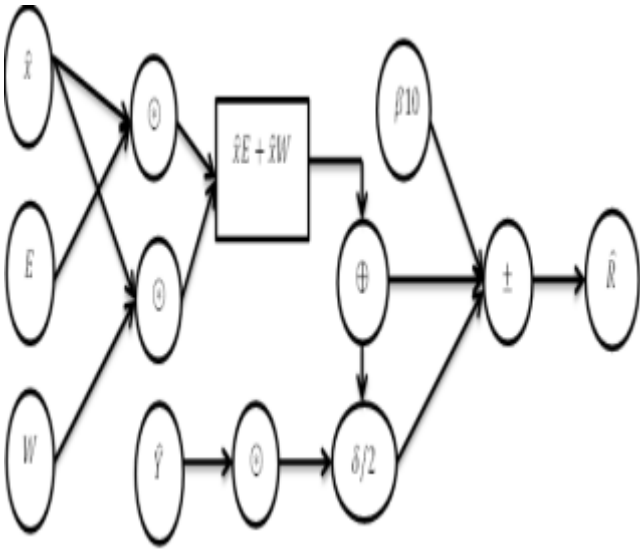


Figure 5. Business Information Analysis

Figure 5 shows the business information analysis of the proposed AFSM model. One reason for this scenario was that when markets are in excess, it investigated the effects of knowledge. Another explanation for this was noted because comparing two almost similar "should be" conditions is an acceptable approach to determine the "financial interest" of knowledge: one without publicly accessible knowledge, and one with it, with no chance of insuring against its implications until it came.

This ensures that $\hat{R}$ has a standard distribution of mean and variance$\gamma^2 + \frac{\gamma^2}{2} + \frac{\beta^2}{2}V$.

If it assumes that the financial price is as in equation (16), the vector has five variables of average (10, 0, 0, 10, 10) and covariance matrix of the random variants peculiar to the situation (v, Y, YE, XE, R).

$$\begin{matrix} 1 & 0 & 0 & 1 & \gamma \\ 0 & 2V & V & 0 & -\beta\gamma \\ 0 & V & V & 0 & -(\beta/2)V \\ 1 & 0 & 0 & 2 & (3/2)V \\ \gamma & -\gamma V & -(\gamma/2) & (3/2)\gamma & \beta^2 + (\beta^2/2) + \gamma^2(\frac{V}{2}) \end{matrix} \quad (17)$$

The vector of random variables peculiar to this scenario will be the same$(\hat{v}, \hat{Y}, \hat{Y}E, \hat{X}E, \hat{R})$

However, it means that when $\hat{Y}E = YE$, $\hat{X}E = XE\hat{R} = R$and is observed and P = P (only random elements observed) and when the properties of the probability distribution are being used, it derives that it has a normal distribution and mean:

$$E[\hat{v}\big|\hat{Y}E = YE, \hat{X}E = XE\hat{R} = R] = 10 + \frac{\gamma\beta\hat{x}E + \beta^2V(yE-10) + 2\gamma(R-10)}{2\beta^2V + 3\gamma^2} \quad (18)$$

and the variance is:

$$Var[\hat{v}\big|\hat{Y}E = YE, \hat{X}E = XE\hat{R} = R] = \frac{\beta^2V + \gamma^2}{2\beta^2V + 3\gamma^2} \quad (19)$$

In addition, information preferences are represented by an exponential utility function, which means that the demand of companies for claims on the risky process is given by:

$$D_E = \frac{E[\hat{v}|\hat{Y}E=YE, \hat{X}E=XE\hat{R}=R] - P}{Var[\hat{v}|\hat{Y}E=YE, \hat{X}E=XE\hat{R}=R]} \quad (20)$$

Similarly, it demands for the D_z of a company is determined by the term identical to equation (20), except for that the term$\hat{x}E = xE, \hat{y}E = yE$, and the same finance price $\hat{R} = R$.

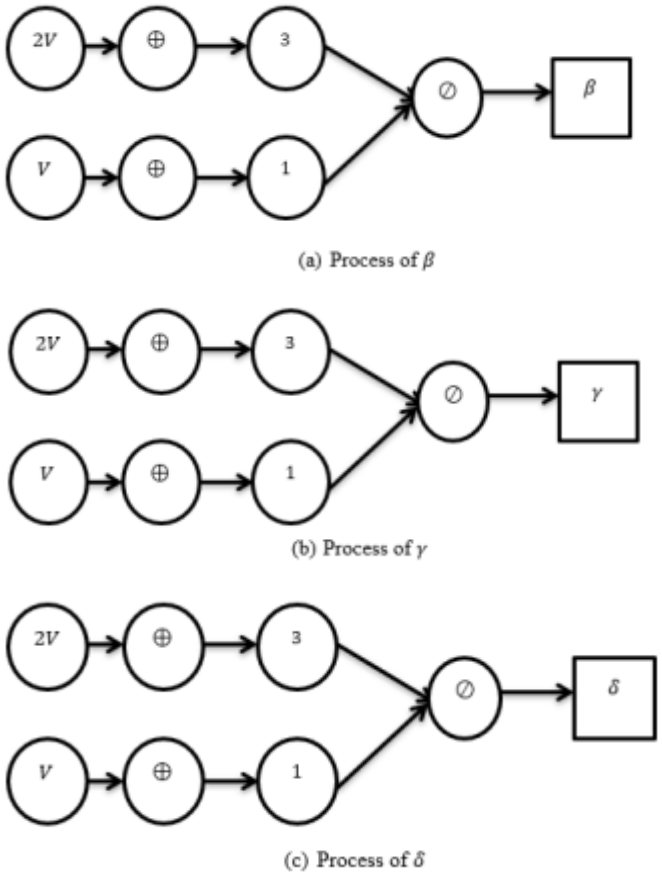
The requirement for the market clarification of claims on the risky asset is:

$$\hat{Y} = \hat{x}E + \hat{y}E = D_E + D_z \quad (21)$$

$$\hat{Y} = \frac{E[\hat{v}|yE, xE, \hat{R}] - P}{Var[\hat{v}|yE, xE, \hat{R}]} + \frac{E[\hat{v}|yZ, xZ, \hat{R}] - P}{Var[\hat{v}|yZ, xZ, \hat{R}]} \quad (22)$$

Original assumption on future business comes true when equation (16) and equation (22) are the same; and only if:

$$\beta = \frac{V+1}{2V+3}, \gamma = \frac{V+2}{2V+3}, \delta = \frac{V+2}{2V+3}$$



(a) Process of β

(b) Process of γ

(c) Process of δ

Figure 6. Process of $\beta, \gamma and \delta$

By the fair value ($\beta, \gamma and \delta$) characteristics, and the principle of implementation, estimation of fair value should adequately represent the ability of all merchants, the true identity of the financial sector, and the accounts system in the country.Such considerations are common in a direct connection, estimating fair value very difficult. To this point, the calculation of financial assets (pricing and forecasting) will address the value evaluation problem of the internal financial accounting controls by way of fuzzy theory. The fair value ($\beta, \gamma and \delta$) has been used to analyze the financial assets.

Figure 6 shows the process of $\beta, \gamma and \delta$. It can be used to analyze the rational competitive equilibrium based on finance management. A competitive analyticalbalance may be broadly defined as a circumstance under which market beliefs of traders are met, whereby all measurable natural factors are spread, and markets depend on knowledge by supply and demand.

$$h = 2 + \frac{1}{2V+1} \qquad (23)$$

The algebraic analysis is easy to make economic analysis inaccessible. The distinguishing features of an analytical expectancy balance are the belief that expectations on financial value are endogenously conditioned and that the traders' predictions of financial price behavior (which also is endogenously based on supply and demand) are achieved.

Results and Discussion

The preparation and the research databases for financial prediction are established and based on the selected companies in the Saudi Arabia from all sectors(https://www.tadawul.com.sa/en) https://www.tadawul.com.sa/wps/portal/tadawul/home/). These datasetscontaineconomic statistics, personnel, and sample organization's sizes from 2010 to 2020. From Saudi open database and Saudi Stock Exchange (Tadawul), 600 companies are taken and analyzed with this proposed AFSM model.

To ensure that the proposed method is then correct, both financial statements (financial indicators) and policy and corporate sizes of the list companies are sampled. Subsequently, predictive accuracy is assessed to show its effectiveness by comparing the approach followed by the other prediction methods.

Efficiency Ratio Analysis

An efficiency ratio is a simple way to determine whether investments should be transformed into revenues. The efficiency ratio has been calculated as follows,

$$Efficiency = \frac{Expense}{Revenue} \qquad (24)$$

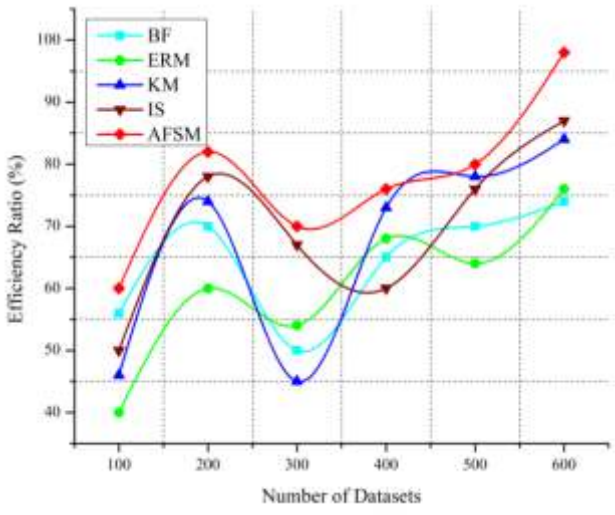


Figure 7. Efficiency Ratio Analysis

Coordination issues include an overview of how related or integrated operations are carried out in various countries with the multinational organization. Coordination involves information, goods and services, expertise, technology, and financial exchange management. Many business functions – logistics, purchase order, financial, etc. – play a role in this coordination. Coordination includes information sharing and uses through different agencies about activities within the value chain of the company.Coordination issues include an overview of how related or integrated operations are carried out in various countries with the multinational organization. Coordination involves information, goods and services, expertise, technology, and financial exchange management. Many business functions – logistics, purchase order, financial, etc. – play a role in this coordination. Coordination involves the sharing and use of information in the value chain of the company by various facilities. The Advanced Financial Structural Model (AFSM) has better efficiency to improve the financial reporting transparency, ensure reliable accounting information, to enhance economic management and financial management, to enhance economic efficiency, and effectively keeping the socialist market economy. Figure 7 shows the efficiency ratio of the proposed method.

Accuracy Analysis

The accuracy of the proposed AFSM has been calculated on the base of true positive and true negative values. The accuracy has been calculated and based on the following equation (25)

$$Accuracy = \frac{TruePositive+TrueNegative}{TruePositive+TrueNegative+FalsePositive+FalseNegative} \quad (25)$$

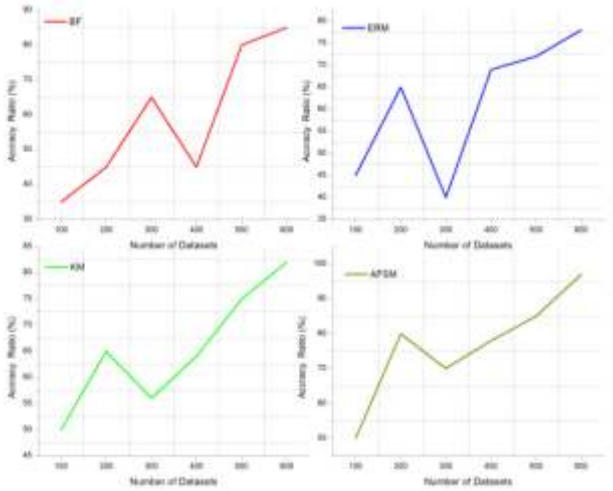


Figure 8. Accuracy Ratio Analysis

The business information system facilitates the decision-making cycle and simplifies the information delivery process.The business information system can be implemented efficiently to facilitate better communication between workers and employers. Data systems function better by keeping records and data in directories where the employee can access and share. This ensures that information flows between the management and the lower employees are monitored. That often enables employees on the leading line to be involved in decision-making, inspired, and dedicated to performing the work. This suggested that the systems which can be implemented to make the information accurate and quickly accessible on-demand should

be innovated and developed. The company with an effective management system, decision making quality, and desiring results, can be authorized to the effective information system. Figure 8 shows the accuracy ratio comparison of the existing methods and proposed AFSM method.

Reliability Ratio Analysis

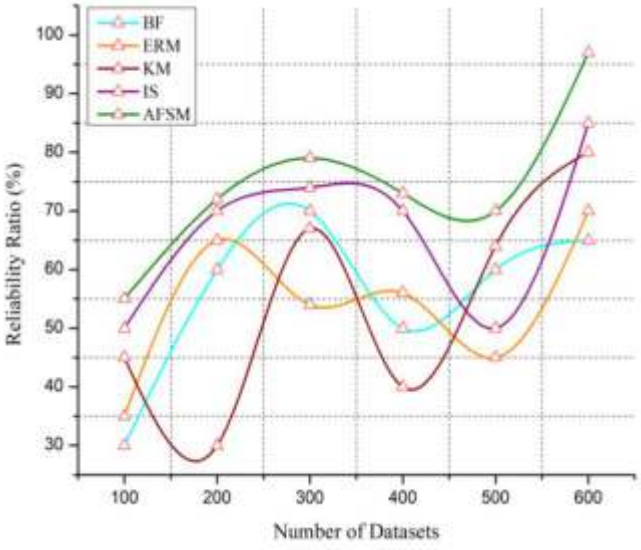


Figure 9. Reliability Ratio Analysis

The aspect in which the "reactivity" was often identified by both categories of respondents, known as efficient resources for consumers, is called service reliability. In the case of IS, sensitivity is a factor distinct from what has been implied in the definition of the previous factor (when the reaction time of the system is characterized). By comparison, the "fail rate" is usually the least significant factor among non-banking experts, with a comparatively low standard deviation.In contrast, experts from this field generally rated it in the middle of the list. The Advanced Financial Structural Model (AFSM) hasbetter reliability toimprove financial reporting transparency, ensure reliable accounting information,and effectively keeping the socialist market economy. Figure 9 shows the reliability ratio of the proposed method.

Performance Ratio Analysis

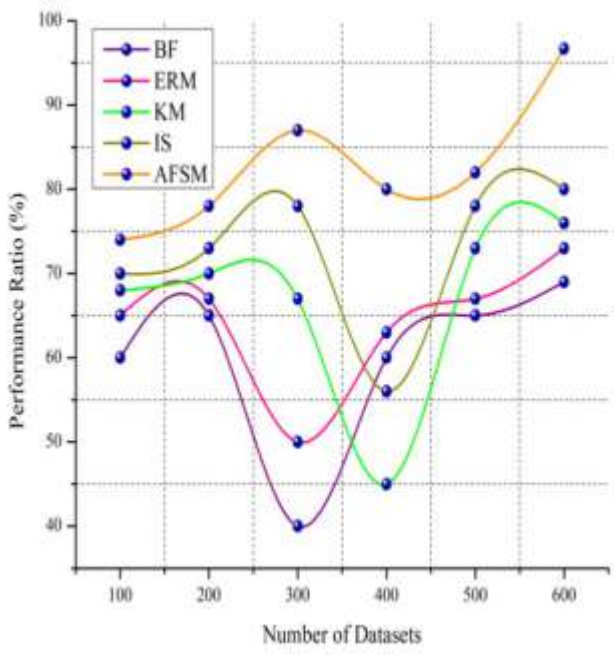


Figure 10. Performance Ratio Analysis

Most firms require a thorough examination of their financial structure at some point. Users can do such a business through an expansion project, low cash reserves, or a jump in expenses. It needs to examine the financial structure if a client wants to make large orders and demand more than standard credit terms. A close review of your financial ratios will help toanalyze and improve financial health. Rates are used to evaluate various aspects of a company's performance or how it operates in a sector, including its field.It shows some simple facts, such as if the leverage is too high, you have too much stock, or you don't receive claims fast enough. The Advanced Financial Structural Model (AFSM) has better performance for improving financial reporting transparency, to ensure reliable accounting information, and effectively keep the socialist market economy. Figure 10 shows the performance ratio of the proposed method.

Mean Square Error (MSE) Rate Analysis

The MSE has been evaluated as follows in equation (26),

$$MSE = \frac{1}{m}\prod_{q=1}^{m}(f(a_q - b_q)^2 \quad (26)$$

$f(a_q)$ -Predictive value

b_q -Actual value

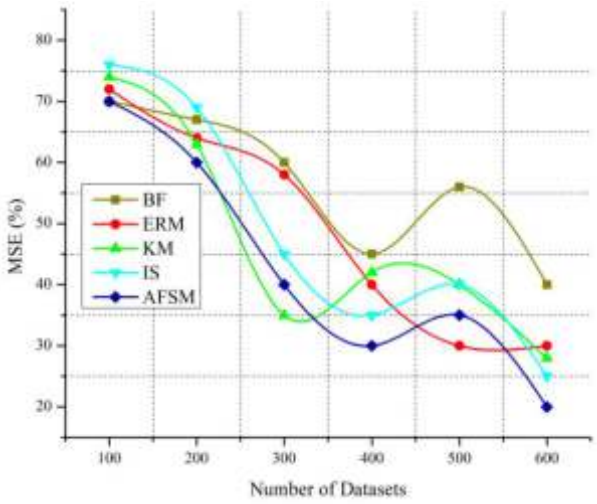


Figure 11. MSE Analysis

A basic approach is used to calculate the Mean Square Error (MSE) correlated with the quarterly calculation of profits and profit before a business reports its results. The method used profit margin forecasts resulting from the analyst's sales and income forecast to assess if predictions are likely to be positive or negative. This proposed approach estimates minimum errors to solve problems through the principle of structural risk reduction effectively. Figure 11 shows the MSE of the proposed method.

The conventional accounting system of 'mixed attributes' should be replaced with a network of 'segmentation' that maintains historical cost and fair value strictly in financial statements. The simulation analysis has been performed based on business strategies.

Conclusion

This paper presents an approach to improve financial reporting transparency and the usefulness by using an Advanced Financial Structural Model (AFSM). Fair value accounting and asset-impairment accounting have been inherently deficient in the present account management system.These research findings facilitate the execution of financial forecasts, and improve the financial accuracy of the companies, provide investor and creditor investment decision-making standards and increase profit levels.Many factors, such as global development trends, which may influence a task's operating output, could be more accurate to assess the company's financial situation.This algorithm can be enhanced or integrated into other strategic systems for forecasting and it accounts to increase its financial precision. Financial news can eventually fairly reflect an organization's operating conditions. Therefore, essential financial data may be used to predict the financial status of consumers and businesses.Finally, the proposed AFSM method achieves 97.78% of efficiency for improving economic management and financial management.

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Data Availability Statement

Not applicable

Declarations

Authors declare that all works are original and this manuscript has not been published in any other journal.

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