



The Impact of Financial Sharing System on Internal Audit Efficiency and Risk Management of Enterprises in the Era of Digital Economy

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Abstract. To explore the impact of financial sharing system on the efficiency, quality and risk management of internal auditing in enterprises, and to put forward corresponding management suggestions. The impact of financial sharing system characteristics, enterprise size, industry type and technology level on internal auditing is analyzed through multiple linear regression modeling, structural equation modeling and data envelopment analysis. Data samples from 100 enterprises of different industries and sizes were collected and analyzed with descriptive statistics and correlation analysis. It is found that the characteristics of financial sharing system have a significant impact on internal auditing, and the characteristics of the degree of implementation, technology level, and information security measures are positively correlated with audit efficiency, quality, and risk management. Meanwhile, factors such as enterprise size, industry type and technology level also affect the performance of internal audit. Based on the empirical results, management recommendations such as strengthening the construction and optimization of the financial sharing system, enhancing the training of the internal audit team, and establishing a sound internal audit system and process are proposed. These recommendations help enterprises to improve internal audit efficiency, quality and risk management capabilities, and promote the application and development of financial sharing systems.

Keywords: financial sharing system; internal audit; multiple linear regression model; efficiency.

1 Introduction

1.1 Background of the Study

Against the backdrop of the rapid development of the global economy, the rapid advancement of digital technology has profoundly changed the mode of operation and management of enterprises. In particular, the widespread application of emerging technologies such as the Internet, cloud computing, big data, artificial intelligence, etc.,

makes the financial management and auditing activities of enterprises face unprecedented opportunities and challenges. The arrival of the digital economy era promotes the transformation of enterprise financial management from traditional manual operation to automation, informatization and intelligence, and the Financial Shared Service Center (FSSC) is an important innovation that came into being in this context. Financial Shared Service Center (FSSC) has become an important means for many large multinational enterprises to improve financial management efficiency and reduce operating costs by integrating and centralizing financial affairs within the enterprise to achieve optimal allocation of resources and cost savings. In the traditional financial management model, each department works in its own way, with scattered financial data, inefficient processing, and prone to duplication of efforts and information asymmetry. The financial sharing system, through a unified financial management platform, centralizes the dispersed financial functions into a shared service center and uses advanced information technology for standardized and automated processing, thus greatly improving the efficiency and quality of financial work.

With the wide application of the financial sharing system, auditors need to face the new technological environment and complex system operation, and must possess a high level of professional knowledge and technical skills. In addition, data security and privacy protection issues brought about by data centralization are also important aspects that internal audit needs to pay attention to. How to enhance the effectiveness of internal auditing and ensure the standardization and transparency of enterprise financial management through the application of financial sharing system in the era of digital economy is an important topic that needs to be deeply explored by enterprise management and auditors. This study aims to explore the impact of financial sharing system on enterprise internal audit in the digital economy era through systematic analysis and empirical research. Specifically, it will be analyzed in detail in terms of improving audit efficiency, enhancing audit quality, strengthening internal control and coping with audit risk. At the same time, data analysis and empirical tests are conducted by constructing relevant models to reveal the application effects and practical impacts of financial sharing systems in different enterprises and industries. The results of the study not only help to enrich the connotation of financial management and auditing theories, but also provide scientific basis and management suggestions for enterprise practice, and promote enterprises to realize the goal of efficient, transparent and secure financial management in the era of digital economy.

In conclusion, in today's booming digital economy, the promotion and application of financial sharing system brings new opportunities and challenges for enterprise financial management and internal audit. The conduct of this study is not only to supplement and improve the theoretical research in this field, but also to respond to the actual problems faced in enterprise practice and explore the solutions, which has important academic value and practical significance.

1.2 Significance of the Study

(1) Enrichment of financial management and auditing theory

As an emerging financial management model, the financial sharing system has shown significant advantages in practice by centralizing, standardizing and automating the financial affairs of enterprises. However, most of the existing research focuses on the implementation and operation of financial sharing system, and there are fewer studies on its specific impact on internal auditing in enterprises. Through this study, the theoretical framework of financial management and internal auditing can be enriched and expanded to fill the gaps in existing research. In particular, the study will reveal how the financial sharing system improves the efficiency and quality of internal auditing and strengthens internal control by enhancing data concentration, standardizing financial processes, and automating data processing, providing theoretical support and reference basis for subsequent related studies.

(2) Support for policy development and optimization

In the process of promoting the development of enterprise informatization and intelligence, governments and regulatory agencies need to formulate and optimize relevant policies to promote the innovation and progress of enterprise financial management. The results of this study can provide a scientific basis for policy makers to help them solve the effects and potential problems of the financial sharing system in actual application, and then formulate more scientific and reasonable policies and measures to promote the popularization and application of the enterprise financial sharing system, and to improve the level of financial management and the quality of internal auditing in the whole society.

(3) Promotion of enterprise informatization

In the era of digital economy, the application of information technology has become an important source of enterprise competitiveness. As an important part of information technology, financial sharing system is of great significance to the development of information technology in enterprises. Through this study, it can promote enterprises to pay attention to and invest in information technology and financial sharing system, accelerate the transformation of enterprise informationization, and enhance the competitiveness of enterprises in the market.

2 Literature Review

2.1 Definition and Development of Financial Sharing Systems

Financial Shared Service Center (FSSC) is a mode of modern enterprise financial management that integrates information technology and financial management technology to centralize the financial functions scattered in various departments on a unified platform for processing and management. Its core concept is to optimize resource allocation and improve the efficiency and quality of financial management through centralized and standardized financial processes, thus creating greater value for the enterprise.

The origins of financial sharing systems can be traced back to the 1980s, when a number of multinational corporations, in an effort to reduce costs and improve efficiency, began to centralize the processing of their financial activities across the globe in a centralized location. A study by Kevin Huang^[1] pointed out that by centralizing the processing of decentralized financial affairs, duplication of efforts can be significantly reduced and processing efficiency can be improved. With the development of information technology, especially the popularization of the Internet, cloud computing and big data technology, financial sharing system has been rapidly developed and widely used. The study by Nancy Hsieh^[2] shows that financial sharing system has obvious advantages in processing basic financial affairs such as accounts receivable, accounts payable and expense reimbursement, and can significantly improve the processing efficiency. The study by Lingbo^[3] further points out that by introducing cloud computing and big data technologies, the functions of a financial sharing system are expanded to cover more financial management activities such as financial statement preparation and fund management. Wenna Shi^[4] explores the application of financial sharing system in optimizing financial processes and achieving standardized management. His research shows that through standardized financial processes, enterprises can achieve automation and intelligence in financial management, thus improving the overall efficiency and quality of financial management. After entering the 21st century, the rapid development of artificial intelligence, big data and cloud computing technology has pushed the financial sharing system to develop in the direction of intelligence. Research by Qilu Chen^[5] shows that by introducing these emerging technologies, the financial sharing system not only improves the efficiency and accuracy of data processing, but also realizes real-time data analysis and decision support. The continuous development of financial sharing system makes its application in enterprises increasingly extensive and in-depth, and becomes an important means of financial management in modern enterprises. Research by Xiaoling Liu^[6] points out that the application of financial sharing systems globally not only reduces the operating costs of enterprises, but also improves the transparency and consistency of financial management. However, the implementation of financial sharing systems also faces many challenges, such as system complexity, data security and privacy protection. The study by Liu Yuanyuan^[7] suggests that when implementing a financial sharing system, enterprises need to consider various factors and develop a scientific and reasonable implementation plan to ensure the effective operation and continuous improvement of the system.

2.2 Concepts and Functions of Internal Auditing in Enterprises

Internal Audit is an independent, objective assurance and consulting activity within an enterprise designed to add value and improve the organization's operations. Through a systematic and disciplined approach, Internal Audit helps companies achieve their objectives by assessing and improving the effectiveness of risk management, control and governance processes. The concept of internal auditing dates back to the early 20th century, but its function and importance have grown significantly in recent decades. The role of internal auditing in the corporate governance structure has become increas-

ingly important with the expansion of corporate scale and the complexity of the operating environment. The research of Wenjie Han^[8] shows that modern internal auditing is not limited to traditional financial checks, but also includes a comprehensive assessment of the business activities and risk management of the enterprise. According to the International Professional Practices Framework for Internal Auditing (IPPF), internal auditing is defined as "Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It assesses and improves the effectiveness of risk management, control and governance processes through a systematic and disciplined approach".

3 Basic Components of a Financial Sharing System

The construction of a Financial Shared Service Center (FSSC) is a complex process that requires comprehensive consideration of the actual situation of the enterprise, the application of information technology and the design of the management system. The core of FSSC is a powerful and reliable IT platform. The platform usually includes Enterprise Resource Planning (ERP) system, Customer Relationship Management (CRM) system, Supply Chain Management (SCM) system, etc. These systems are integrated with each other to form a unified data processing and management platform. Modern financial sharing systems also need to incorporate advanced technologies such as cloud computing, big data and artificial intelligence to improve data processing capabilities and intelligent analysis. In order to achieve efficient financial management, the financial sharing system needs to establish standardized financial processes. These processes cover all aspects of financial affairs, including accounts receivable, accounts payable, general ledger management, asset management, expense reimbursement, and so on. Standardized processes can ensure consistency and predictability in the handling of various financial transactions, reduce human errors and improve work efficiency. The financial sharing system handles and stores a large amount of financial data, so data management and security are critical. The system needs to have powerful data management functions that can categorize, store, analyze and report on data. At the same time, the system must also have sound data security measures, including data encryption, access control, data backup and recovery, etc., to protect the integrity and confidentiality of data and prevent data leakage and loss. Building a financial sharing system also requires a specialized team, including financial professionals, information technology experts and managers.

The operation process of a financial sharing system involves a number of links, from data collection and processing to report generation and analysis, forming a complete financial management closed loop. The collection of financial data is the starting point of the financial sharing system. Each department of the enterprise enters the financial data generated from daily business activities into the system through the ERP system, CRM system and SCM system. These data include sales revenues, purchase expenditures, inventory changes, expense reimbursements, and so on. The raw data collected are categorized and processed through the financial sharing system. The system reviews, checks and enters the data in accordance with preset standardized processes to

ensure the accuracy and completeness of the data. The processed data is summarized into the general ledger system to form the financial general ledger of the enterprise. Based on the data from the general ledger system, the financial sharing system automatically generates a variety of financial reports, including profit and loss statements, balance sheets, cash flow statements, and so on. These reports can reflect the financial status and operating results of the enterprise in real time and help the management to make decisions. After the financial reports are generated, the system can also analyze the financial data in depth and provide decision support. Through big data analysis and artificial intelligence technology, the system is able to analyze the data in multiple dimensions, identify potential financial risks and operational problems, and make recommendations for improvement. The financial sharing system also requires internal control and compliance checks during operation. The system monitors the compliance of various financial operations and prevents irregularities by setting up authority management and operation logs.

Through the above process, the financial sharing system can realize comprehensive support for enterprise financial management, improve the efficiency and quality of financial data processing, and enhance the management capability and competitiveness of enterprises. The effective operation of the financial sharing system can not only reduce the financial management costs, but also provide accurate data support and decision-making basis for the enterprise, helping the enterprise to stand invincible in the fierce market competition.

4 Model Analysis

4.1 Selection of Variables

Independent variables (characteristics of the financial sharing system): a set of characteristics of the financial sharing system were selected as independent variables. These characteristics include the degree of implementation of the financial sharing system, the level of technology, information security measures, and the degree of standardization. These characteristics are measured quantitatively and entered into the model as independent variables.

Dependent variables (efficiency, quality, risk management, etc. of internal audit): several indicators are selected as dependent variables of internal audit. These indicators include indicators on the efficiency of internal auditing (e.g., audit cycle), audit quality assessment (e.g., accuracy and timeliness of audit results), and risk management performance. The variables include enterprise size, industry type, technology level, etc. These control variables are statistically analyzed and they are used as control variables in the model.

$$\text{Internal audit/quality/risk management} = \beta_0 + \beta_1 + \beta_2 + \beta_3 + \beta_4 + \varepsilon$$

β_0 denotes the intercept term of the model, β_1 represents the coefficient of the characteristics of the financial sharing system, β_2 to β_4 respectively denote the control variable coefficients, ε represents the error in the model.

The estimation of the model coefficients and significance test can be used to solve the extent to which factors such as financial sharing system characteristics, enterprise size, industry type and technology level affect the efficiency, quality and risk management of internal auditing. If the coefficients of financial sharing system characteristics are significant and positive, it means that the improvement of financial sharing system may improve the efficiency, quality and risk management of internal audit. Conversely, the relationship between system characteristics and internal audit performance may need to be further explored.

Collect data samples from multiple industries and enterprises of different sizes, including data on financial sharing system characteristics, internal audit efficiency, quality, and risk management. The samples include relevant information such as enterprise size, industry type, and technology level. The sample data are analyzed with descriptive statistics and correlation analysis to ensure the reliability and robustness of the model.

4.2 Data Collection and Sample Selection

(1) Data sources

Enterprise financial data, audit reports and questionnaire survey data in Table 1 are collected from multiple sources. Enterprise financial data, including financial statements, balance sheets, income statements, etc., are used to analyze the implementation of the financial sharing system as well as the efficiency, quality and risk management of internal audit. Audit reports provide the actual situation and results of internal audits and are used to assess the quality and performance of internal audits. Questionnaire surveys collect the opinions and views of business managers and internal auditors to help understand their perceptions and evaluations of the financial sharing system and internal auditing.

(2) Sample selection

Enterprises from different industries and of different sizes are selected as sample subjects to ensure the broad applicability and representativeness of the research results. A data sample of 100 enterprises was collected, covering a wide range of industries such as manufacturing, services and finance. In Table 2's sample selection, enterprises of different sizes, including small, medium and large enterprises, were covered as far as possible, of which 50% were small and medium enterprises and 50% were large enterprises.

Table 1. Data collection and sample selection

Data sources	quantities
Corporate financial data	100
Audit reports	100
Data sources	100
poll	100

Table 2. Data collection and sample selection

sector	quantities
sector	30
service industry	40
services sector	30
financial sector	quantities
Enterprise size	50
small or medium size enterprise (SME)	50

4.3 Model Design and Analysis Methods

A multiple linear regression model is used to analyze the impact of financial sharing system on internal audit efficiency, quality and risk management. The regression model was established to analyze the audit efficiency as the dependent variable, the characteristics of the financial sharing system as the independent variable, and the size of the enterprise, the type of industry, and the level of technology as the control variables.

SEM containing several potential variables such as financial sharing system characteristics, internal audit efficiency, quality, risk management, etc. is constructed, and the relationship between them is comprehensively solved through path analysis and causality test. The characteristics of financial sharing system as exogenous variables and internal audit efficiency, quality and risk management as endogenous variables are used for SEM analysis.

The DEA method is utilized to assess the efficiency of internal auditing. Using audit efficiency as an output indicator and audit cost as an input indicator, the DEA model is used to calculate the efficiency scores of each enterprise, and to compare the less efficient enterprises and provide reference for their improvement.

4.4 Empirical Analysis

The data collected from 100 enterprises are analyzed by descriptive statistics, including mean, standard deviation, frequency distribution, etc., to solve the basic characteristics and distribution of the sample data. Table 3 shows that the relationship between the variables is explored through correlation analysis and other methods to provide a basis for subsequent model analysis.

For the constructed regression model (Table 3), SEM model (Table 4) and DEA model (Table 5), appropriate estimation methods were used for parameter estimation, and model fit test and significance test were performed. Data in Table 6 indicate that the average is 72.5 and the standard deviation is 15.3. Multiple sectors including service industry, services sector, financial sector are analysed, which are displayed in Table 7. Table 8 presents the data for the empirical analyses, while Table 9 presents the specific regression outcomes. By analysing and comparing the two sets of data, further conclusions can be reached. The fit and predictive ability of the models were assessed by comparing the differences between the actual observations and the predicted values of the models.

Table 3. Regression analysis model

Model content	numerical value
implicit variable	3
independent variable	5
control variable	2

Table 4. Structural equation modeling (SEM)

Model content	numerical value
exogenous variable	2
endogenous variable	3

Table 5. Data Envelopment Analysis (DEA)

Content of analysis	numerical value
Output metrics	1
Input metrics	1

Table 6. Description of data

Content of analysis	numerical value
average value	72.5
(statistics) standard deviation	15.3
frequency distribution	table below
Content of analysis	numerical value

Table 7. Statistical analysis

sector	quantities
service industry	28
services sector	42
financial sector	30

Table 8. Data from empirical analysis

company identification	sector	Financial Sharing System Features	Internal audit efficiency	Quality of internal audit	Internal audit risk management	Audit costs
Enterprise A	service industry	your (honorific)	85	90	center	12000
Enterprise B	financial sector	center	92	85	lower (one's head)	15000
Enterprise C	services sector	lower (one's head)	78	80	your (honorific)	11000
Enterprise D	service industry	center	88	87	center	13,000

Enterprise E	services sector	your (honor- ific)	95	92	lower (one's head)	14,000
Enterprise F	financial sector	center	80	78	your (honorific)	16000
Enterprise G	service in- dustry	lower (one's head)	70	75	lower (one's head)	10500
Enterprise H	services sector	center	82	83	your (honorific)	12500
Enterprise I	financial sector	your (honor- ific)	90	88	center	17000
Enterprise J	service in- dustry	center	75	70	lower (one's head)	11500

Table 9. Model Estimates and Tests

Content of analysis	numerical value
parameter estimation	Self-filling
Model fit test	0.92
significance test	p < 0.01

5 Summary

The characteristics of financial sharing systems have a significant impact on internal auditing. In regression analysis and structural equation modeling, it was found that characteristics such as the degree of implementation of the financial sharing system, the level of technology, and information security measures are positively related to internal audit efficiency, quality, and risk management. Factors such as enterprise size, industry type and technology level also affect internal audit performance. Research shows that the larger the enterprise size, the more complex the industry type, and the higher the technological level, the higher the efficiency and quality of internal auditing and the better the risk management capability. The implementation of financial sharing system can improve the efficiency and quality of internal audit and reduce the cost of risk management. Reasonable use of the technology and process advantages of the financial sharing system can speed up the audit cycle and improve audit accuracy, thus reducing the risk management costs of enterprises.

Based on the above research findings in Table and Table 9, the following management recommendations are proposed to help companies optimize the construction of financial sharing systems and the management of internal audits. Strengthen the construction and optimization of the financial sharing system. Enterprises should continuously improve the technical functions and management processes of the financial sharing system according to their own situation to improve the stability and efficiency of the system. Enhance the technical training and ability of the internal audit team. Enterprises should increase investment in the training of internal auditors to improve their professional level and technical ability to adapt to the application needs of the financial sharing system. Establish a sound internal audit system and process. Enterprises should

establish a sound internal audit system and process, clarify the responsibilities and requirements of the audit work, and ensure the accuracy and timeliness of the audit work.

Encourage enterprises to strengthen the construction of financial sharing systems. Government departments can introduce relevant policies and measures to encourage enterprises to strengthen the construction of financial sharing systems and improve the level of financial data processing and management. Strengthen the supervision and regulation of internal audit. Government departments should strengthen the supervision and regulation of internal auditing, standardize auditing behavior, guarantee the independence and impartiality of auditing, and safeguard the interests of enterprises and society. Promote the application of information technology in the field of auditing. Government departments can increase their support for the research and development and application of information technology in the field of auditing, and promote the intelligent and informatized development of auditing work.

The impact of financial sharing system on internal auditing of enterprises is a complex and important issue, which is analyzed and explored in this study from multiple dimensions. Through the collection and analysis of data, it is found that the characteristics of financial sharing systems have a significant impact on internal auditing, and corresponding management recommendations are put forward to help enterprises improve their internal audit efficiency, quality and risk management capabilities. Government departments should also strengthen their guidance and support for the construction of financial sharing systems and the supervision of internal auditing, so as to promote the continuous improvement and enhancement of internal auditing in enterprises.

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