Measuring corporate M&A performance from a two-dimensional perspective of economic and social benefits

以经济效益与社会效益二维视角衡量企业并购绩效

Written by:
Kui Liu[1]
https://orcid.org/0000-0002-8523-0918

Abstract

With the development of digital economy, Chinese companies have set off waves of M&A boom. The current mainstream methods of measuring corporate M&A are based on corporate finance level such as event study method and financial analysis method. Based on the literature research method, this paper points out the problems of the relatively single perspective and narrow scope of the measurement of M&A based on corporate finance. To this end, this paper uses the hierarchical analysis method (AHP) to comprehensively measure the economic and social benefits of M&A enterprises from the perspective of corporate finance and social contribution, constructs a corporate M&A performance evaluation model, and establishes a corresponding evaluation index system to promote a more comprehensive, scientific and reasonable measurement of M&A enterprise performance and promote sustainable development of enterprises.

Keywords: economic benefits, social benefits, mergers and acquisitions, performance, hierarchical analysis**.**

摘要

随着数字经济的发展，中国企业**掀起了一波又一波的并**购热潮。目前主流衡量企业并购的方法基于企业财务层面的事件研究法和财务分析法等。本文基于文献研究法，指出了基于企业财务的衡量企业并购方法存在衡量视角相对单一、衡量范围相对狭窄的问题。为此，本文运用层次分析法（AHP），**从企**业财的务角度和社会贡献角度，综合衡量并购企业的经济效益和社会效益，构建了企业并购绩效评价模型，确立了相应的评价指标体系，以促进更加全面、科学、合理的衡量并购企业绩效，推动企业可持续发展**。**

关键词：经济效益；**社会效益**；**并**购绩效；层次分析法

Introduction

As a kind of autonomous corporate behavior in the market economy, M&A is the choice of many companies to optimize resource allocation and achieve strategic goals, especially in the market environment with fierce competition and high uncertainty factors. With the development of China's economy and the improvement of its international status, the M&A boom has been long lasting, with more and more cross-border and domestic M&A events. Information from China's Ministry of Commerce shows that the global M&A scale exceeded US$5 trillion for the first time in 2021, with 9,464 M&As occurring in China and US$622 billion in M&A value, including such influential M&A events as Byte Jump's US$4 billion acquisition of Mu Hit

---

[1] Lecturer, PhD candidate of Philippine Christian University, Manila.

Technology and High Tide Investment's €4.4 billion acquisition of Philips Home Appliances. The main internal motivation for enterprises to be keen on M&A is to gain competitive advantage and create more value. Studies have found that M&A enables enterprises to give full play to the advantages of management synergy, operational synergy and financial synergy, which can reduce operating costs through the effect of economies of scale, achieve resource complementarity and improve the competitive strength of enterprises. However, the actual operation of enterprises after M&A is not optimistic, as some enterprises achieve their strategic goals and many more do not. According to McKinsey & Company, the percentage of successful M&A is only 30-40%. There are many successful cases, typical of which is the acquisition of Volvo by Geely Automobile, which acquired 100% of Volvo for US$1.8 billion on March 28, 2010. With the technical advantages of Volvo, Geely Automobile has significantly improved its technology and industrial chain, and embarked on a high-speed development path, growing from a little-known regional enterprise to the most influential domestic automobile enterprise. Volvo has also opened up sales in the Chinese market with Geely, giving the brand a new life and vitality. More cases of failure, high visibility and influence is the acquisition of Time Warner by America Online.

There are many factors affecting the success or failure of M&A, such as government policies, market environment, technological progress, management level, cultural integration, etc. So, is there any method to scientifically and rationally measure the quality of operation of enterprises after M&A, and to serve as a warning and guide for enterprise management operation?

Based on the research results of experts and scholars, this paper attempts to explore a new method or structure to provide a new path for measuring corporate M&A performance and promote the healthy and orderly development of enterprises with reference to the existing methods for measuring corporate M&A performance.

Literature Review

As a management tool, performance evaluation has several functions such as planning assistance, forecasting judgment, monitoring support, incentive constraint and resource optimization (Qingjun, 2012, 25-27). In the case of M&A firms, the mainstream performance measurement methods are event study method, financial analysis method, economic value added method and balanced scorecard (Yuxi, 2020, 26-28).

Event study method

The event study method is based on stock price analysis, selecting a specific event according to the purpose of the study, studying the changes in the sample stock returns before and after the event, and then explaining the impact of the specific event on the price changes and returns of the sample stocks. Jiujiu Men (2016) empirically analyzed the consecutive M&A performance of Huadian International during the period of 2010-2014, and concluded that M&As were able to gain excess returns in the short term and the long-term performance of M&As kept improving. Yaoxin et al., (2021) showed that cross-border M&As can gain market recognition in the short term. Cross-border M&As are more recognized by the market when the buyer is a state-owned enterprise, and the market recognizes this type of M&As when the listed companies have less financing constraints.

Financial analysis method

The financial analysis method measures M&A performance by comparing the changes in corporate financial indicators before and after M&A. However, because of the different situations of the firms, the differences in the research samples, and the various research methods, the final conclusions of the studies are also quite different, and the conclusions reached do not have a general reference value. For example, Tang Gongshuang, & Liu Mingzhi (2007) concluded that performance improved in the year of M&A and one year after M&A, but declined thereafter to a lesser extent. In contrast, Tong, Shenghui & Jun (2015) found that M&A has a negative impact on the performance of listed companies in central enterprises.

Economic value added evaluation method

The economic value added evaluation method is based on the value added of the enterprise, and after making necessary adjustments to the accounting information, the net operating profit after tax minus the cost of capital invested is used to measure the M&A performance of the enterprise, reflecting the consumption of capital by the company while making profits, more accurately showing the efficiency of capital utilization and the rate of return, and reflecting the true value created by the company for shareholders. (Yongxiang, 2012, 45-50). As with the de facto leave research method, the results of

scholars' studies using the economic value added method vary widely. Zuo Xiaohui, & Lv Jieyao (2014) used the economic value added method to analyze the performance of corporate mergers and acquisitions, and the results showed that from the perspective of the acquirer, the EVA indicator achieved an increase in the year of the merger and the first year after the merger, and there was a small decrease in the second year after the merger; while the average value of economic value added per unit of net assets decreased year by year. Fanping Wang (2019, 36-40) concluded that economic value added did not change significantly before and after the M&A

Balanced Scorecard

The Balanced Scorecard analyzes a company's strategic planning from financial and non-financial perspectives, specifically from four dimensions: financial, learning and growth, internal operations, and customer and market. The financial dimension uses financial data to clearly and intuitively reflect the financial performance of the firm; the learning and growth dimension takes into account the improvement of employees' skills and the firm's room for growth; the internal operations dimension focuses on the firm's management processes and management capabilities; and the customer and market dimension includes the satisfaction of target customer groups and the firm's market share. Abdelmoneim & Fekry (2021) used the balanced scorecard method method to assess the impact of pre- and post-merger on the performance of non-financial firms in Egypt, and the results showed that the value of pre-acquisition operations is higher from two financial perspectives: liquidity and market value.

Existing methods for evaluating the performance of M&A firms better reflect the interests of M&A subjects, have general guidance on M&A performance, and have played an important role in the healthy development of M&A firms and in promoting the process of M&A. At the same time, these methods also have some drawbacks and disadvantages. One is the measurement perspective. The core of existing measurement methods are to study corporate M&A performance with financial data, which simply equates M&A performance with operational performance on financial indicators. Second, the scope of measurement. The existing measurement methods are based on the enterprises themselves and measure the M&A performance from a microscopic perspective, but lack a macroscopic perspective on the M&A

performance of enterprises. Third, the research methodology. The existing measurement methods basically use quantitative research to measure M&A effectiveness by analyzing financial statements, but rarely use qualitative methods to measure non-financial factors, such as corporate image, social responsibility, and consumer satisfaction, which are very important to corporate development strategies.

Methodology

The purpose of this paper is to use literature research to identify the problems in existing M&A methods in an attempt to construct a new method to overcome these problems and to measure M&A performance in a comprehensive and scientific way. In this paper, we choose the hierarchical analysis method, which takes into account both qualitative and quantitative research methods, to derive the measurement framework, measurement model and measurement index system, and then complete the construction of a new measurement method structure.

Measurement Framework

An enterprise is a legal person or other social and economic organization that uses various factors of production to provide goods or services to the market for the purpose of profit, and operates independently, is self-sustaining, and is independently accounted for. Business enterprises maximize market value as the ultimate goal (Zhiyang & Lufeng, 2019, 82-91), and create value for customers by integrating production factors. The market value of the enterprise is realized after exchanging its products or services, with the value of customers or consumers. The enterprise has economic benefits and earns profits in order to continue to survive and realize the interests of the enterprise, shareholders and stakeholders. The products or services provided by enterprises, on the one hand, need to meet the needs of consumers, prosper the social economy and promote social development, and on the other hand, within the scope allowed by laws and regulations and social morality, in this sense, "enterprises are organs of society, not only to meet a specific market demand, but also need to assume responsibility for society " (Drucker, 2006). Therefore, the benefits pursued by enterprises are divided into two parts, one is economic benefits and the other is social benefits. Economic benefits are the gainful results achieved by enterprises in social and economic activities; social benefits are the beneficial effects on social life in addition to

economic benefits. Business operators can not only meet the requirements of stakeholders, but also ignore social responsibility, which will be extremely detrimental to the sustainable development of enterprises.

Economic and social benefits of enterprises are never opposites. Economic responsibility is the lifeline in the survival and development of enterprises. Enterprises rely on economic responsibility to maintain the production and operation of enterprises, to maximize the ultimate profit in the development and operation of enterprises, and to create enterprise economic value and benefits for related business associates (Lei, 2018, 96-97). Social benefit is an important condition to promote economic benefit. 1953, Bowen in his book "Social Responsibility of Businessmen" made the first clear definition of the term corporate social responsibility: the obligation of businessmen to align themselves with relevant policies, make corresponding decisions and take desirable concrete actions in accordance with the goals and values of society. In Bowen's definition, CSR is a businessman's obligation to take the initiative to do things that are in line with the goals and values of society, thereby contributing to the development of a moral quality that prevents "companies from doing things that infringe on social interests, damage the natural environment, or violate human rights in their daily production and operations to the detriment of social justice in the pursuit of maximum profit. "(lanfen & Li, 2006,

49-53). On the other hand, social responsibility is also "a management method to maintain a balance between enterprises and their stakeholders and society (Zuo, 2022) ", thus promoting sustainable development of enterprises. Therefore, enterprises need to grasp the dynamic balance between economic and social benefits, adhere to the concept of sustainable development, and strive to achieve the coordinated development and positive interaction between enterprises and society.

The economic and social responsibilities of enterprises are two inseparable components, and it is more scientific and reasonable to consider the performance of M&A from the economic and social benefits. On the one hand, it still measures M&A performance from the financial perspective in the traditional method, focusing on the actual operating conditions of enterprises, which is in line with the strategic purpose of M&A; on the other hand, it discards the problems of single perspective and single dimension in the traditional method, takes into account the stakeholders, guides the comprehensive development of enterprises, promotes enterprises on the road of sustainable development with a broader strategic vision, and better reflects the M&A and development quality. In this regard, we have constructed a two-dimensional measurement framework for M&A performance to measure the effectiveness of M&A from a more scientific and macro perspective.
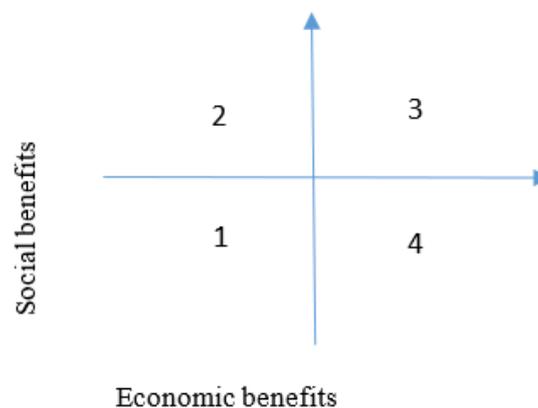

Figure 1. Corporate M&A performance measurement framework.
(The figure is the author's own design according to the content of the article)

The measurement framework classifies corporate M&A performance into four categories. The first type is low economic performance and also low social performance; the second type is high economic performance and low social performance; the third type is high economic

performance and high social performance; and the fourth type is low economic performance and high social performance. The first kind is the mergers and acquisitions with low performance; the second kind is more government-led mergers; the third kind is the mergers and acquisitions

performance that effectively balances social and economic benefits; and the fourth kind is more market-led mergers and acquisitions performance. Obviously, the third kind is the goal to strive for in the process of corporate mergers.

Measurement methods and models

In the framework of economic and social benefits, the economic benefit dimension is supported by specific data and can be measured based on actual business performance and indicator data; however, the social benefit dimension cannot be measured by specific quantitative data, which requires us to choose a method that can measure both quantitative and qualitative indicators. After screening, the analysis method used in this paper is the hierarchical analysis method. Analytic Hierarchy

Process (AHP) is a multi-objective decision analysis method that combines quantitative and qualitative analysis (Zhibo, 2013, 51-53), whose basic idea is to decompose complex problems into a recursive hierarchy according to the research content and objectives, quantify the indicators in the evaluation process, and obtain the weights of each indicator by solving the judgment matrix.

According to the requirements of hierarchical analysis, a progressive hierarchy is built, divided into target layer, dimension layer and indicator layer. The target layer is the effectiveness of M&A, the dimension layer is the two dimensions of economic benefits and social benefits, and the indicator layer is the specific component indicators under the two dimensions, thus forming the M&A performance evaluation model.
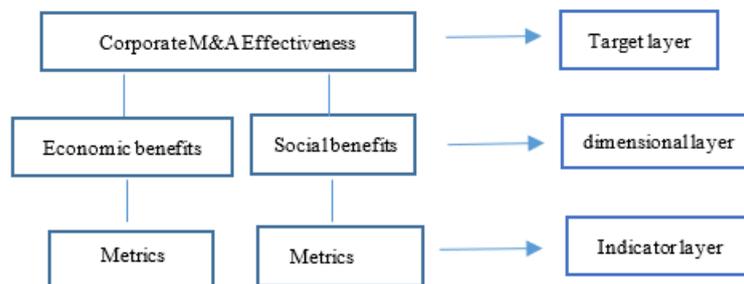

Figure 2. Corporate M&A performance
(The figure is the author's own design according to the content of the article)

The evaluation index system is built according to the enterprise M&A performance evaluation model. The primary indicators are the economic and social benefits, the secondary indicators are the perspectives of economic and economic benefits and social benefits measurement; the tertiary indicators are the specific composition of the secondary indicators. Then determine the index weights. If the weight of economic benefits and social benefits is based on the percentage system, the score of economic benefits plus the score of social benefits should be equal to 100; the weight of the corresponding secondary indicators of economic benefits and social benefits each add up to 100; the weight of the tertiary indicators under each secondary indicator also add up to 100. In this way, we can deduce the specific score of the tertiary indicators and the weight of the tertiary indicators to the secondary indicators based on the specific score of the tertiary indicators. The score of the second-level indicators is then derived from the score of the first-level indicators, and finally the total

score of the M&A performance of the enterprise is obtained. After determining the median values of economic and social benefits, the effectiveness of M&A can be judged by comparing the specific scores with the median values. Because the determination of the median value and the construction of judgment matrix and determination of evaluation index weights in the hierarchical analysis method require analysis and discussion by a team of experts to produce specific data, we do not discuss them here, but rather provide a new perspective, ideas and methods.

Measurement index system

The most important thing to establish the index system is to solve the problems of scientificity, objectivity, representativeness, operability, and the combination of average and total indexes. After defining the primary indicators, we need to establish the secondary indicators and the

corresponding tertiary indicators, so as to establish a complete indicator system.

Components of the economic efficiency dimension

The main purpose of corporate M&A is to pursue economic efficiency, and the selection of economic efficiency performance indicators is mainly based on the financial accounting perspective to reflect the profitability and profitability level of enterprises. Regarding the economic efficiency dimension, different scholars have different views. Zhang Tienan et al., evaluated three dimensions of efficiency, scale, and effectiveness, involving 14 evaluation elements such as total asset contribution ratio, cost margin, total profit, and so on (Tienan et al., 2012, 121-130). Liu Quanzhou divided the economic efficiency of enterprises into three aspects of enterprise profitability, solvency and operating capacity (Quanzhou & Ying, 1999, 1-8), and Yu Ze believed that the economic efficiency of enterprises is reflected in five dimensions of enterprise profitability, cash flow capacity, operating capacity, development capacity, and debt servicing capacity (Ze, 2014). After comprehensive evaluation, we believe that the five dimensions of profitability, cash flow capacity, operational capacity, development capacity, and debt servicing capacity are more consistent with the reality of M&A enterprises. Profitability includes four indicators: sales margin, total assets return rate, capital return rate, and capital maintenance appreciation rate; cash flow capacity includes one indicator: cash flow ratio; operational capacity includes two indicators: accounts receivable turnover rate and inventory turnover rate; development capacity includes three indicators: brand awareness, market share, and investment in new areas and amounts; debt service capacity includes two indicators: asset-liability ratio and current ratio, Current ratio are two indicators.

Composition of the social benefit dimensión

The development of enterprises should not only focus on economic interests, but also pay attention to social benefits, and achieve the organic combination of economic and social benefits with the concept of sustainable development, so as to achieve high-quality corporate development. Carroll (Carroll) proposed the "pyramid model", defining the content of CSR as: economic responsibility, legal responsibility, ethical responsibility and conscious responsibility (changed to "philanthropic responsibility" in 1991), which is also the mainstream doctrine of CSR. This is also the mainstream doctrine of CSR, which has far-reaching influence. According to the "pyramid model" of social responsibility, we measure the social benefits of enterprises in four aspects: economic responsibility, legal responsibility, ethical responsibility and philanthropic responsibility. Economic responsibility includes three indicators, namely, payment of national taxes and profits, direct and indirect employment, and provision of quality products or services; legal responsibility includes two indicators, namely, compliance with the law and paying taxes according to the law; ethical responsibility includes four indicators, namely, energy conservation and environmental protection, compliance with social ethics, relations with employees, suppliers and competitors, and consumer satisfaction; and charitable responsibility includes two indicators, namely, participation in social welfare and participation in social charity. Charity responsibility includes two indicators: participation in social welfare and participation in social charity.

Results and discussion

After the presentation in the third paragraph of this paper, we constructed a brand-new method based on hierarchical analysis to comprehensively measure the performance of M&A from two perspectives: economic and social benefits of enterprises. On this basis, we clarify the structure of primary, secondary and tertiary indicators for measuring the economic benefit dimension, and construct a measurement system of 2 primary indicators, 9 secondary indicators and 23 tertiary indicators. This is the most significant result of this paper, as shown in Table 1.

Table 1.
Corporate M&A performance measurement index system

Tier 1 Indicators	Secondary indicators	Tertiary indicators
Economic benefits	Profitability	Sales Margin
		Total Return on Assets
		Rate of return on capital
		Capital preservation and appreciation rate
	Cash Flow Capacity	Cash Flow Ratio
	Operating Capability	Inventory turnover rate
		Accounts Receivable Turnover Ratio
	Development capacity	Trademark visibility
		Market share
		Investment in new areas and amounts
	Solvency	Gearing ratio
		Current ratio or quick ratio
Social benefits	Financial responsibility	Taxes and profits paid to the state
		Provide employment directly and indirectly
		Provide quality products or services
	Legal Liability	Discipline and law-abiding
		Paying taxes in accordance with the law
	Ethical Responsibility	Energy saving and environmental protection
		Relationships with employees, suppliers, and competitors
		Compliance with social ethics
		Consumer Satisfaction
	Philanthropic Responsibility	Participation in social welfare
		Participation in social charity

Most corporate M&A behaviors are future-oriented and focus on the strategic value of M&A behaviors. Accordingly, the method of measuring M&A performance should also reflect the strategic demands of enterprises and meet the actual situation of enterprise reform and development in the new economy and new situation. There are various methods for measuring M&A performance, each with its own advantages and disadvantages. A good method of measuring M&A performance should be conducive to promoting the healthy development of enterprises as well as promoting enterprises to actively contribute to society; it should be able to objectively and fairly evaluate the economic benefits of enterprises as well as scientifically and accurately measure the social benefits of enterprises, actively guide enterprises to effectively balance the relationship between economic and social benefits, and guide them to take the path of sustainable and high-quality development.

The paper proposes the isomorphic perspective of economic and social benefits to measure the effectiveness of corporate M&A is only a useful attempt, and there are some areas that need to be enhanced and improved. Firstly, the scientific rationality of the method needs to be tested in practice, and secondly, the weights of the index system at all levels need to be discussed and determined by experts in academia and industry.

Conclusions

Based on the summary and analysis of previous literature and methods, this paper finds potential problems in the current method, mainly in the perspective, scope and method of measurement. To this end, based on hierarchical analysis and performance evaluation theory, this paper constructs a framework for evaluating the performance of corporate M&A with the same structure of economic and social benefits, builds an evaluation system and clarifies the evaluation path. This evaluation method takes into account not only the financial factors but also the non-financial factors of enterprises; it takes into account not only the short-term performance evaluation but also the long-term performance evaluation of enterprises; it evaluates not only from the perspective of internal operation of

enterprises but also takes into account the influence of external environment on enterprise performance.

The contribution of this paper is mainly in two aspects: one is to measure M&A performance from a broader and multifaceted perspective; the other is to measure M&A performance by constructing an indicator system and corresponding indicator weights, which takes both qualitative and quantitative approaches.

Bibliographic references

Abdelmoneim, Z., & Fekry, M.A. (2021). Using managerial and market tools to measure the impact of acquisition operations on firm performance[J]. Investment Management and Financial Innovations, 18(1). http://repository.msa.edu.eg/xmlui/handle/123456789/4483

Drucker, P. (2006). Management Mission, Responsibility and Practice (Mission), Beijing: Machinery Industry Press, https://acortar.link/gbTT3I

Fanping, W. (2019). Is EVA a better assessment tool than accounting indicators—— Research on M&A of A-share listed companies [J]. Shanghai Finance, 471(10), 36-40. https://acortar.link/hSGcCI

Gongshuang, T., & Mingzhi, L. (2007). Empirical Study on Long-term Value Creation of Chinese Listed Companies before and after Mergers and Acquisitions -- Empirical Analysis of Business Performance Based on Financial Analysis [J]. Statistics and Information Forum, 86(05), 55-61. https://acortar.link/RaTz9A

Jiujiu, M. (2016). Research on the performance of continuous mergers and acquisitions - based on the empirical data of Huadian International [J]. Friends of Accounting, 540(12), 91-97. https://acortar.link/tvfQi1

Lanfen, L., & Li, N. (2006). Corporate social responsibility and social justice [J]. Ethics and civilization, 04, 49-53. https://acortar.link/1S9gQR

Lei, Z. (2018). How to balance economic value and social responsibility of enterprises [J]. People's Forum, 598(17), 96-97. https://acortar.link/fd7jF4

Qingjun, S. (2012). Comparison between government performance evaluation and performance audit [J]. China's administrative management, 04, 25-27. https://acortar.link/nvmCjs

Quanzhou, L., & Ying, W. (1999). Research on enterprise value and its evaluation methods [J]. Journal of Guizhou University of Finance and Economics, 04, 1-8. https://acortar.link/l6BMHI

Shenghui, T., & Jun, W. (2015). Empirical study on the performance of mergers and acquisitions of listed companies of central enterprises [J]. Journal of Central University of Finance and Economics, 333(05), 46-53. https://acortar.link/t8F0FR

Tienan, Z., Aili, L., & Yingying, X. (2012) Analysis of the differences in economic benefits of industrial enterprises with different ownership in China [J]. World Economic and Political Forum, 292(03), 121-130. https://acortar.link/ACZVE7

Xiaohui, Z., & Jieyao, L. (2014). Research on the performance of listed companies' mergers and acquisitions based on EVA [J]. Financial theory and practice, 35(06), 34-39. https://acortar.link/aUVyDj

Yaoxin, H., Juntong, L., & Qi, J. (2021). Research on cross-border M&A behavior of enterprises from the perspective of industrial policy - based on event research method [J]. Macroeconomic research, 277(12), 83-94. https://acortar.link/MkJfiU

Yongxiang, L. (2012). Research on EVA performance evaluation of listed companies in China's nonferrous metal industry ［J］. Reference for economic research, 63, 45-50. https://acortar.link/LNJELt

Yuxi, W. (2020). Evaluation of financial performance analysis methods of enterprise mergers and acquisitions [J]. Journal of Shanxi University of Finance and Economics, 42(S1), 26-28. https://acortar.link/rGDi6R

Ze, Y. (2014). Research on the efficiency evaluation and capital allocation of China's cultural industry development [D] China University of Mining and Technology, 59-60. https://acortar.link/ABiPmX

Zhibo, W. (2013). Evaluation of enterprise technological innovation capability based on AHP-grey correlation model [J] Statistics and Decision, 4, 51-53. https://acortar.link/9NQaiB

Zhiyang, L., & Lufeng, W. (2019). The generation logic of Chinese social enterprises [J]. Academic Monthly, 51(10), 82-91. https://acortar.link/pqjwke

Zuo, J. (2022). Research on the relationship between corporate social responsibility and sustainable development goals in Japan [D]. Jilin University, 2022. https://acortar.link/dHJJCx