

Research on Diversified Development Path of Media Industry in the New Media Era

Pengmai Gao

Fujing Foreign Language School, Shenzhen, China

Abstract. Research on the diversified development path of media industry in the new media era is conducive to systematically analyzing the position and role of media industry in economic development. Using statistical data to quantitatively measure the correlation effect and dependence degree among the internal organizational structures of the media industry can play a positive role in optimizing the industrial structure and promoting the rapid, coordinated and efficient operation of the media industry. In this paper, the SBM model is used to measure the operating efficiency of listed companies in the media industry, and the correlation between institutional factors and the development level of media industry in China and the degree of correlation are discussed by using correlation analysis and grey correlation analysis. The empirical results show that from 2010 to 2021, the operating efficiency of listed companies in China's media industry has been around 0.6, with the peak value appearing in 2011. The degree of media marketization has the highest correlation with the development level of China's media industry, which has a great influence on the development of China's media industry. The media needs to develop the effective allocation of media productivity and production factors, and must establish exclusive ownership system arrangement.

Keywords: New Media; Media Industry; Diversification.

1. Introduction

With the continuous optimization and development of Internet technology, the new media, with its advantages of fast transmission, strong mobility, good interaction and sufficient personalization, has achieved unprecedented development in China, and has been continuously promoted and innovated in its application practice, while the traditional media is gradually changing [1]. This is a major achievement of the new technological revolution. This kind of technology empowerment has a great impetus to the transformation of our society and our media. In the new media era, the original media market structure has changed, and the media industry will face a new round of competition and division. New media is both an opportunity and a challenge. The media industry should actively adopt industrial optimization countermeasures and development strategies to cope with the tide of the new media era.

In the media system, the old systems and ideas have been gradually abandoned, many aspects that hinder the media productivity have been improved, and the productivity development of the media industry has been greatly liberated. Therefore, the media has developed rapidly and made great achievements [2-3]. Cheng Xiaoqing's empirical research analyzes the media power in China [4]. For example, the power of China's media is empirically analyzed from an international perspective, the concept of media power is put forward, and the foundation of diffusion communication is established. Zhou et al. analyzed the influence of digital media industry and the influence of media, and refined the specific indicators of media, market structure and norms of media products production and consumption according to the economic characteristics of media industry [5]. Dallasega et al. divided media diversification into three types from the management direction: horizontal diversification, vertical diversification and cross-industry diversification [6]. Willig thinks that the diversification of newspaper industry includes the main business and diversified business outside the main business, and regards them as the relationship between inclusion and inclusion [7].

Under the free thinking of the Internet, users have gradually developed new habits of reading and choosing reading content. The interactivity of the Internet effectively reduces the information asymmetry between publishers and users, and publishers can customize reading content for users by mastering their habits [8]. Under the background of economic globalization, in order to realize the

sustainable development of the media industry, we need the guidance of updated development theory. Research on the diversified development path of media industry in the new media era is conducive to systematically analyzing the position and role of media industry in economic development. Using statistical data to quantitatively measure the correlation effect and dependence degree among the internal organizational structures of the media industry can play a positive role in optimizing the industrial structure and promoting the rapid, coordinated and efficient operation of the media industry. Can provide them with new ideas and new directions for decision-making.

2. Research Method

2.1 Index Selection

In the new media era, the traditional media industry has been impacted to some extent. The traditional media industry mainly focuses on the production and sales of products, but does not attach great importance to the upstream technology development and talent training, and the downstream derivative products and potential market development, which to some extent limits the development of the traditional media industry. The traditional media industry is still engaged in one-way information dissemination and mass communication. The content of the dissemination does not necessarily meet consumers' preferences and needs, and the market impact is not strong, and the competitive advantage of products is weak. The traditional media industry relies more on the original personnel and technology, and its innovation is poor, which poses a great threat of industry substitution.

Under the strong impact of the new media, the traditional media has recognized its own drawbacks in the process of development, and is also trying to integrate with the new media step by step. In recent years, the integration practice has achieved certain results, but there are many differences between the two, so there are still some problems to be solved in the process of integration. The integration of traditional media and new media is not only a superficial integration. This one-sided integration concept may be the idea of most people, but it is not accurate, and the integration effect is not ideal. In the process of industrial integration, when developing new media products, it is necessary to ensure the rationality and feasibility of the operation process, speed up the construction of information platform, speed up the integration of new media and traditional media, and then help the media industry increase its income.

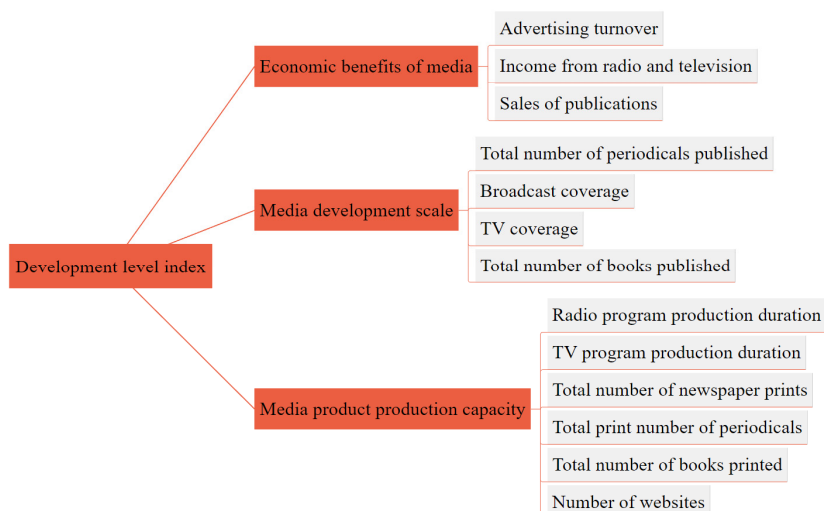


Figure 1. Indicators of the development level of China's media industry

There is a correlation between the development level of China's media industry and institutional factors. The fundamental reason for the different research results at home and abroad is the different methods of quantifying institutional factors in empirical analysis [9-10]. Different research methods

require the objectivity of data. The development index of media industry is a dependent variable in this study, so it is urgent to choose an appropriate evaluation method.

Because the description of a single index is not detailed enough for the development of the media industry, it can be reflected by a comprehensive and scientific comprehensive evaluation method. This paper selects indicators from the following aspects (see Figure 1) to comprehensively evaluate the regional development level of media industry in 31 provinces and municipalities.

The scale of media development refers to the scale in which the production factors of media are concentrated in enterprises, which indicates the production and operation ability of media. The media is the most basic element for the operation of the media industry. To some extent, it also reflects the balance of the needs of media practitioners and audiences in the media market. The economic benefit of media has become the most direct indicator of the development level of media industry in a region. Therefore, three indicators of regional radio and television revenue, advertising turnover revenue and publication sales revenue are adopted to measure the regional economic gap of China's media industry profitability.

2.2 Model Construction

The listed companies in the media industry have certain representativeness in the whole media industry. Because the profitability of listed companies is stronger than that of non-listed companies, listed companies in the media industry are the barometer of the whole media industry. Based on the above points, this paper chooses listed companies in the media industry as representatives to analyze the operating performance of the media industry.

SBM model is a DEA model considering slack variables [11]. In actual operation, it is not based on equal proportion and change in the same direction, which is the biggest advantage of SBM model compared with traditional DEA model. The efficiency value calculated by this method is more scientific and accurate, and it is more suitable for the measurement of business efficiency. Its model fractional planning form is as follows:

$$Min \sigma = \frac{1 - \frac{1}{m} \sum_{i=1}^m \frac{s_i^-}{x_{i0}}}{1 + \frac{1}{s} \sum_{r=1}^s \frac{s_r^+}{x_{r0}}} \quad (1)$$

σ is the target efficiency value, which is between 0 and 1. Vector s is slack, s_i^- is slack corresponding to input, and s_i^+ is slack corresponding to output.

In system research, due to the existence of internal and external interference and the limitation of knowledge level, the information people get is often uncertain. With the development of science and technology and the progress of human society, people's uncertainty about all kinds of systems has gradually deepened, and the research on uncertain systems has become deeper and deeper [12].

Grey relational model, which quantitatively analyzes the dynamic process among the system factors of the system, is a combined model for quantitative and qualitative analysis. In this paper, the grey correlation analysis method is used to study the correlation degree between the regional development level of media in China and the institutional factors in the development of media industry in China.

Let's assume that the reference sequence of China's media regional development level is $Y = \{y(k), k = 1, 2, \dots, n\}$, and the compared sequence, that is, the sequence of factors that restrict China's media development is $X_i = \{x_i(k), k = 1, 2, \dots, n\}$. Then the grey correlation degree $\gamma(Y, X_i)$ of $\gamma(Y, X_i)$ is defined as:

$$\gamma(Y, X_i) = \frac{1}{n} \sum_{k=1}^n \gamma(y(k), x_i(k)) \quad (2)$$

In which $\gamma(y(k), x_i(k))$ is the grey correlation coefficient of $y(k), x_i(k)$:

$$\gamma(y(k), x_i(k)) = \frac{\min_i \min_k |y(k) - x_i(k)| + \rho \max_i \max_k |y(k) - x_i(k)|}{|y(k) - x_i(k)| + \rho \max_i \max_k |y(k) - x_i(k)|} \quad (3)$$

ρ is the resolution coefficient, and $\rho = 0.7$ is taken in this paper.

All $\gamma(Y, X_i)$ are arranged in the order from big to small, and the correlation sequence set obtained after the arrangement is used to judge the correlation degree between sequences Y, X_i .

In this paper, the index data needed for this research are selected from the data collection of press and publication statistical, China, China Publishing Yearbook, China News Yearbook, China Advertising Yearbook published by the General Administration of Press and Publication, the Statistical Report on Internet Development in China compiled by China Internet Information Center, the State Administration of Radio, Film and Television, iResearch Market Consulting Co., Ltd. and other documents and data reports. Based on multi-index correlation analysis, this paper uses SPSS as a tool for data statistics, processing and analysis.

As the original data contains both financial indicators and non-financial indicators, and part of the data is negative (negative numbers can't be brought into DEA model), before the specific efficiency value is calculated, the indicators are dimensionless. The specific calculation formula is as follows:

$$x'_{ij} = 0.1 + \frac{x_{ij} - x_{\min}}{x_{\max} - x_{\min}} \times 0.9 \quad (4)$$

x_{\max}, x_{\min} represents the maximum value and minimum value of the j index, respectively. After standardization, the values of the indexes involved in this paper are all limited to the dimensionless interval of [0,1].

3. Empirical Results and Analysis

SBM model is used to measure the operating efficiency of listed companies in media industry. The data is selected from the standardized data of 52 listed companies in the media industry from 2010 to 2021. The evaluation results of operating efficiency are shown in Figure 2:

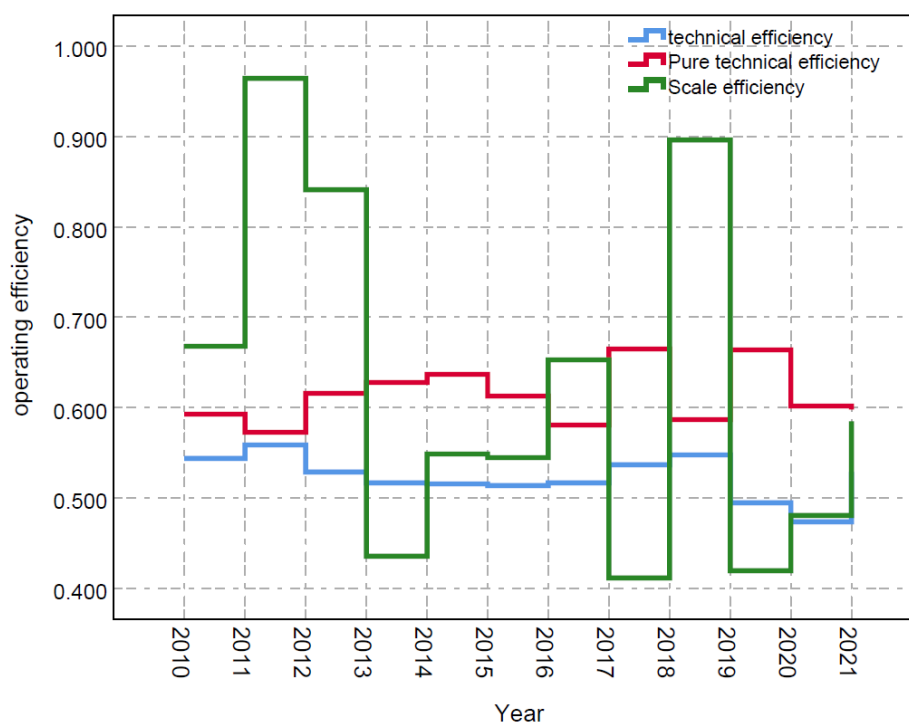


Figure 2. Evaluation results of company's operating efficiency

From 2010 to 2021, the operating efficiency of listed companies in China's media industry has been around 0.6, with the peak in 2011. On the whole, from 2010 to 2021, the overall comprehensive efficiency of 52 listed companies was relatively poor. The reason was that in the past few years, most companies had different levels of waste of resources within their industries, and the unreasonable use of resources was a common problem of these companies. Therefore, in order to improve its operating efficiency, we must solve the problems in all aspects of resource utilization, so as to improve the overall technical efficiency.

This section will analyze the correlation degree between various institutional factors (X1: the nationalization rate of the media industry, X2: the degree of marketization of the media industry, X3: the degree of opening up of the media industry, X4: the degree of marketization of credit fund allocation of the media industry, X5: the degree of protection of the legitimate rights and interests of the media industry producers) and the development level of China's media industry through grey correlation model analysis. The grey correlation coefficient is shown in Figure 3:

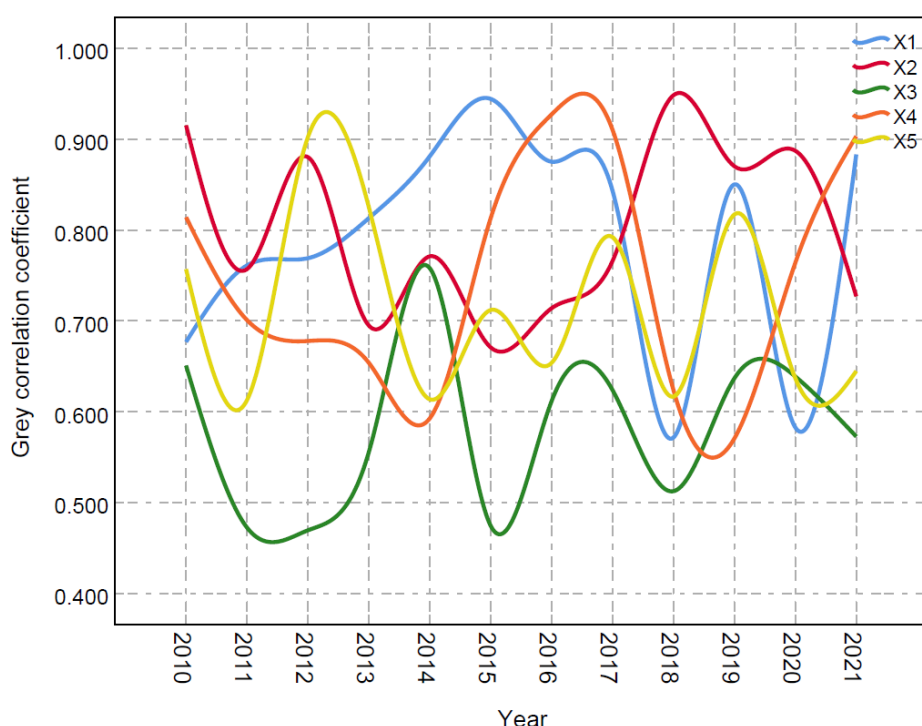


Figure 3. Grey correlation coefficient between development level of media industry and institutional factors in China

From the results of correlation analysis, the degree of marketization of media industry has the highest correlation with the development level of media industry in China, and the degree of marketization has great influence on the development of media industry in China. The media needs to develop the effective allocation of media productivity and production factors, and must establish exclusive ownership system arrangement.

The degree of marketization has an important influence on the regional development of media industry, and can be an important indicator to measure the regional development of media industry. Areas with a high degree of marketization have developed financial systems and rich financing channels to improve the financing constraints of the media industry. At present, the marketization process in China is accelerating, especially in the central and western regions, which will surely bring about the rapid development of the media industry in these regions.

Table 1 is the correlation coefficient between netizens and network service industry. It can be seen that the number of netizens is moderately positively correlated with the number of websites, and the correlation coefficient between them is 0.863($p < 1\%$). It can be seen that the more netizens, the more websites, and vice versa.

Table 1. Correlation coefficient with Internet users' service providing industry

		Number of netizens	Number of websites
Number of netizens	Pearson Correlation	1	0.863**
	Sig.(2-tailed)	0.000	0.000
	N	12	12
Number of websites	Pearson Correlation	0.863**	1
	Sig.(2-tailed)	0.000	0.000
	N	12	12

Note: “***”Correlation is significant at the 0.01 level (2-tailed).

On the one hand, the larger the scale of Internet users, the richer their demand. Internet users are no longer simply browsing news and sending and receiving emails. Traditional portal websites can no longer meet the needs of more and more Internet users. Therefore, the expansion of Internet users' scale will bring diversified demand, which can stimulate the emergence of more application websites, and these new websites can attract more Internet users with similar needs.

An ordinary netizen's blog is a website in the standard sense. In this network environment where self-media is in power, the number of websites has been improved invisibly. It is foreseeable that the rapid development of network technology will bring more updated self-media and become a new fashion in the network field.

4. Suggestions on the Diversified Development Path of Media Industry in the New Media Era

4.1 Optimize the Allocation of Resources

Complementing and blending the strengths and weaknesses of traditional media and new media can realize the optimal allocation of development resources and improve the development speed of media. The process of mass information acceptance is the transmission and generation of information. Using new media to broaden the sources of information and further enhance the creation of content can eliminate the seriousness brought by traditional media, make the content more interesting and gain more attention. In terms of the development of the industry, it can also make use of the optimal allocation of resources to get higher benefits, resist risks, and realize the efficient use of resources.

4.2 Industrial Convergence

As a macro development strategy between new and old media, integration has great influence on some small media or organizations, and this influence is very long-term. At present, this application plays an important role in promoting the integration and replacement of new and old media.

In the process of strengthening the integration of old and new media, we should not only maintain the advantages of traditional media industry, but also actively develop the integration and innovation of both. Traditional media industry still has advantages in content. In fact, although new media is popular at present, it is only a new media in the final analysis. In order to obtain more economic benefits and improve the comprehensive competitiveness of enterprises, traditional media are trying to upgrade and transform enterprises by means of digital transformation, and looking for new media industries that are in line with economic development in the new Internet era.

4.3 Talent Strategy for Developing New Media

Because media products are content industries, the core software of their products is not in the warehouse, but in the brain, it is the reflection of human mind. As long as people's intelligence, emotion and imagination are released in a certain environment, it is possible to produce nuclear fusion energy release and realize the industrial effect out of nothing.

First of all, media enterprises should create a good creative environment; secondly, they should strengthen the protection of creative talents; and finally, managers should be good at accepting works

with creative talents, not only focusing on fame, but also providing enough development platforms and opportunities for young people. For the cultivation of all-media talents, the cultivation of educational institutions and enterprises is the key. It needs to be paid enough attention by media education institutions and media business organizations.

5. Conclusion

In the new media era, the original media market structure has changed, and the media industry will face a new round of competition and division. New media is both an opportunity and a challenge. The media industry should actively adopt industrial optimization countermeasures and development strategies to cope with the tide of the new media era. This paper studies the diversified development path of the media industry in the new media era. SBM model shows that from 2010 to 2021, the operating efficiency of listed companies in China's media industry has been around 0.6, with the peak in 2011. The results of grey correlation model analysis show that the degree of marketization of media industry has the highest correlation with the development level of media industry in China, and the degree of marketization has great influence on the development of media industry in China. The media needs to develop the effective allocation of media productivity and production factors, and must establish exclusive ownership system arrangement.

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