

Research Article

Analysis and Optimization of Internal Factors of Cultural Industry Management Based on Structural Equation Model

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In recent years, my country's cultural industry has developed vigorously and has become a new growth point of the national economy. With the introduction of a series of cultural reforms and policies to promote the development of the cultural industry, cultural enterprises have grown rapidly and are on the list. As the main carrier of a specific business format and cultural industry, cultural enterprises have made great contributions to optimizing the allocation of cultural resources, promoting employment, prospering culture, and meeting cultural and cultural needs by virtue of their unique cultural resources and talent virtues. Based on the structural equation model, this paper analyzes and optimizes the internal factors of cultural industry management. By establishing the internal factor index system that conforms to cultural industry management, the important internal factor index system is obtained, and then, it is optimized. From the reliability test results, it can be seen that the overall coefficients of the outcome variables industrial resources (A), industrial management growth (C), and industrial development level (D) are all greater than 0.5. Except for the observation variable protection personnel (B4), the rest of the observations the coefficients of the deleted items of the variables are all smaller than the overall coefficients, and the coefficients of each structural variable and the overall scale are all greater than 0.7, indicating that there is a strong correlation between the observed variables in each group, and the measurement results are very consistent and stable, which satisfies the structural comparison. The data requirements are reliable, scientific, and effective in theory; the weight calculation of the indicators shows that the weight of capacity growth is the largest, followed by resource development capacity, cultural resources, economic performance, social performance, and human resources; use all the data of the sample to conduct an overall analysis. In model fitting and verification, the results show that the chi-square value is 932.731, the degree of freedom is 307, and the chi-square degree of freedom ratio is 2.896, which is less than the critical value of 5, and the adaptation indicators meet the requirements. Sexuality (C) has the greatest impact on cultural industry management, followed by industrial resources (A) and resource allocation capability (B). From the parameter estimation of structural variables and various index variables, it is found that cultural industry management needs to improve the richness of material cultural resources. To start with, especially pay attention to the use of intangible cultural resources. In terms of resource allocation, development and protection must be carried out at the same time. In addition, the most important thing is to introduce talents. Financial support and preferential policy support also need to be paid attention to. In business operation, it is necessary to improve the innovation ability and operation ability, and at the same time, it is necessary to focus on the development of operation ability and industrial operation. In the operation of cultural enterprises, it is necessary to improve brand awareness and build a good reputation, so as to attract more people and go a long way.

1. Introduction

Trinidad's Carnival is one of the most famous festivals in the United States, alongside Brazil's famous Rio Carnival and New Orleans Carnival. The value of Trinidad Carnival in

terms of artistic excellence and cultural identity is well documented. However, the economic contribution of the festival has not received the attention it deserves. The article analyzes the impact of Trinidad's Carnival on tourism, cultural industries, and the wider economy. It assesses the direct

contribution to the economy of the festival's currency exchange earnings and exports of goods and services from industries such as hotels, airlines, and cultural industries. The analysis will pay particular attention to visitor numbers, visitor spending, and hotel occupancy rates. It uses the results of a 5-year tourism outbound survey to estimate the contribution of tourism spending, and the economic impact analysis includes cost-benefit analysis and cost-surplus analysis [1]. Based on China's input-output table in 2007, the enhanced industry correlation coefficient matrix is used to analyze the characteristics and industry chain of China's cultural industry; the empirical results show that the cultural industry is an end-demand industry; it includes the production of paper and paper products, the printing industry, and the data carrier. Replication and production of specialty chemicals [2]. Marketing mix and its elements in cultural industries, especially product, price, positioning and promotion. Review the concept of the marketing mix and discuss its elements, followed by a brief analysis of the impact of each element on cultural industry success. In the process of globalization, the development of cultural and artistic activities is regarded as a priority, and cultural marketing managers must conduct in-depth research on the understanding, preferences, and perceptions of target audiences on culture. This is understandable because marketing strategies can identify the right strategy in the cultural realm to serve both companies in the most beneficial way. Considering the importance of its elements in attracting and satisfying cultural buyers, it should be the center of attention for all marketing managers in the cultural marketplace [3]. The development of the world economy has experienced the process of continuous integration, integration, and even partial overlap of culture and industry. The emergence of the cultural industry means the birth of a new type of economy and a new model for the development of "cultural economy." The cultural economy should be a "humanized knowledge economy," that is, a knowledge economy in which the world and the gods win together. As a member of the World Trade Organization, the Chinese government's development and management of the cultural industry should be based on a fully open platform and in accordance with the principles of the World Trade Organization, China's dissemination concepts, institutional forms, and legal culture, to strengthen the core competitiveness of Chinese culture. From the perspective of promoting development through competition, the government should use the cultural ecological thinking paradigm, make full use of the benefits brought by economic globalization, and vigorously promote the healthy development of my country's cultural construction and cultural industry [4]. In a globalized world, the cultural industry has become a new and promising field. Countries are accelerating their competition for the title of cultural power. Since China joined the World Trade Organization (WTO), China has begun to vigorously develop its cultural industry. Since 2001, China began to implement the cultural industry policy. In 2009, after the "Cultural Industry Revitalization Plan" was announced, China vigorously promoted the cultural industry revitalization policy. In 2011, the Chinese government announced to cultivate

the cultural industry as a national strategic industry. In China, the cultural industry has always been regarded as a part of the soft power strategy, and culture has become a means of spreading ideology and a new engine of industrial growth [5]. The purpose is to use the regional input-output model to analyze the influence of the economic multiplier of the cultural industry complex on the regional economy. By developing Paju Book City as an industrial complex, the output value will increase by about 1,673.7 billion won, the income will increase by about 600.4 billion won, and the number of employees will increase by 16,123 won. Cultural activities amounted to 42.2 billion won, revenue increased by 6.9 billion won, and employment increased by 81. Therefore, it can be said that Paju Book City, as a cultural industry area, has had a positive impact on the regional economy [6]. As far as traditional culture is concerned, the identification and evaluation of values cannot be regarded as the selection and transformation of traditional culture, in which contemporary values undoubtedly dominate. The value consciousness of modernizing traditional culture has long been formed, but cultural consciousness is still a conscious interference. The inheritance and transformation of traditional culture must include the pursuit of value, that is, the pursuit of value, in the creation and delivery of modern social groups, in the needs of modern people, and the need to meet this relationship. Our study provides a new perspective on related issues, which will be important and necessary [7]. The aim is to identify the cultural structure of the UK construction industry and how the different cultures within the industry respond to the required leadership styles. The method used was to review the existing literature to identify culture and leadership theories. Once understood, the theory will be used to conduct surveys to determine the cultural dimensions and appropriate leadership styles of the UK construction industry. The data collected revealed the cultural orientation of the industry and the preferred leadership styles of the countries that make up the industry. These results suggest that British citizens prefer democratic leadership styles to authoritarian and laissez-faire styles. Research shows that when a project manages a multicultural team, you need to be able to handle different leadership styles. This research questionnaire will broaden knowledge on the topic and facilitate construction managers dealing with multicultural team management [8]. To develop the ceramic culture industry, it is necessary to optimize the investment and financial system structure of the ceramic culture industry and effectively increase the financial support for the ceramic culture industry market. The financing main body of the ceramic culture industry can be optimized in terms of enterprise group management, cluster management, contract alliance management, reducing financial risks, and improving financial opportunities. Most of the investment in the ceramic culture industry can be optimized for commercial banks, ceramic culture investment companies, ceramic culture industry fund companies, ceramic culture industry equity funds, and venture capital funds. Commercial banks should pay attention to the development of mortgage loans, especially optimizing the valuation of intangible assets in the ceramic culture industry, the valuation of semi-finished

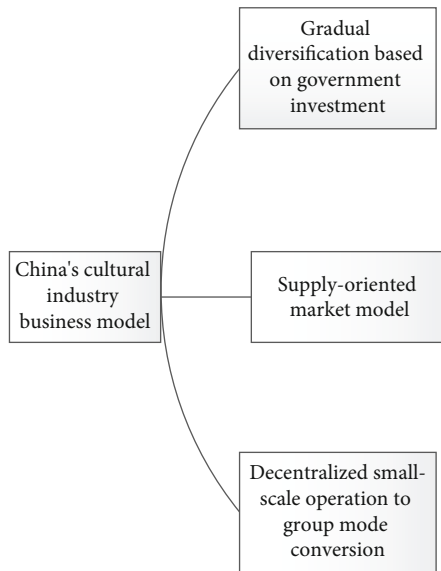


FIGURE 1: China's cultural industry business model.

products in the ceramic culture industry, and the selection of liens [9]. Cultural and creative industries are characterized by less hard assets, less soft assets, and high investment and financial risks. Based on the above characteristics, all risk factors affecting investment and financial risk are analyzed, including technical risk, management risk, and credit risk. The SEM method was used to understand the mechanism of the interaction between risk factors and investment and financial risks. The results show that technical risk and management risk are the main factors affecting investment and financial risk, which provide countermeasures for promoting the development of cultural and creative industries [10]. It is assumed that the positive effects of cultural distance outweigh the negative effects. In this study, structural equation modeling was used to test the impact of hypotheses on a sample of 246 international manufacturing alliances. The resulting analysis mostly supports the hypothetical model and shows how perceived cultural distance has a positive effect. Alliance managers should be aware that cultural distance can have both positive and negative effects, and thus is not itself a barrier to alliances. If companies can take advantage of cultural-specific complementarities through task-based discussions between alliance partners, they can take advantage of cultural distance [11]. The rise of digital music piracy has brought huge challenges and threats to the digital music industry, caused huge losses to digital music copyright owners, and hindered the development of digital music. Studying the causes of music piracy is conducive to preventing and combating pirated music. This paper discusses the factors that affect Chinese consumers' use of illegal music from various perspectives, such as personal factors, social factors, and factors on the characteristics of music itself. The data are from Chinese university students, and structural equation modeling (SEM) is used to test the model. The results show that personal attitudes towards music piracy, new personality, cultural environment, and network environment have significant positive effects on

piracy intentions. However, the quality of the music has a negative impact on the intent of music piracy. The results also suggest that the intent of music piracy leads to true piracy. Based on the findings, appropriate recommendations and remedies to combat music piracy are proposed [12]. The Internet cultural industry refers to an industrial aggregate that takes Internet technology and digitization as the core and is engaged in cultural and creative content, production, dissemination, and service and is an important part of the new economy. The study believes that the development of the network culture industry has created a new entrepreneurial ecosystem, which is a dynamic and open ecosystem affected by many factors, using the Structural Comparison Model (SEM) method to empirically test the factors affecting the entrepreneurial ecology of the Internet cultural industry. Whether it is external ecosystem factors such as politics, economy, society, cultural activities, and technological environment, or internal ecosystem factors such as Internet users, governments, enterprises, media, and industry associations, it has been proven that they have a significant impact on the Internet. The performance of the Internet entrepreneurial ecosystem in the environment is the main factor affecting the operation of the Internet cultural industry entrepreneurial ecosystem. Therefore, the Internet cultural industry should give priority to improving the level of government management. Overall, the study deepens the study of the Internet entrepreneur ecosystem by identifying internal and external determinants in the context of emerging economies [13]. The mediating role of information exchange in the relationship between the dimension of social capital and firm competitiveness is explored, providing possible explanations for the different empirical results on the relationship between social capital and performance in the existing literature. The sample is 108 Chinese family enterprises in Hong Kong manufacturing industry. The results of multiple regression tests and structural comparison models largely support theoretical predictions, showing the relationship between information sharing among the three dimensions of social capital (trust, network connectivity, and recurring transactions) and its role in enhancing firm competition. It plays a mediating role between the roles in the force [14]. It is rare in academia in terms of cultural identity and attachment to places where tourist loyalty is tested. The article teases out the relationship between related concepts and builds a model of the relationship between cultural identity and tourist loyalty based on attachment to a place. Using the structural equation model, an empirical study on Huizhou cultural tourism area is carried out. The results show that cultural identity plays an important role in shaping attachment to place and in shaping tourist loyalty and attachment to place affects both dimensions of tourist loyalty, and it also puts forward specific measures to develop cultural tourism industry in Huizhou [15].

2. Analysis and Optimization of Internal Factors of Cultural Industry Management

2.1. *The Basic Definition of Cultural Enterprise.* In recent years, the cultural consumption of Chinese residents has

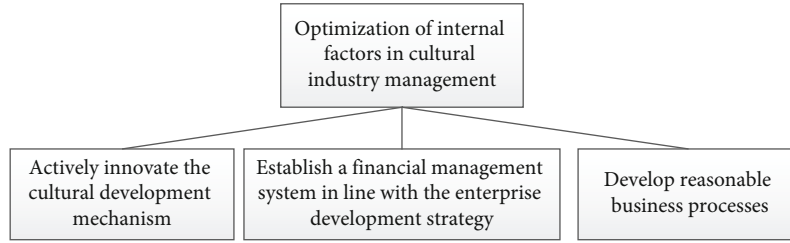


FIGURE 2: Optimization of internal factors of cultural industry management.

TABLE 1: Construction of the index system.

Structure variable	Dimension	Observed variable
Industrial resources (A)	Cultural resources	Abundance of noncultural resources (A1)
		Material cultural richness (A2)
	Human resources	Number of employees in cultural industries (A3)
		Number of years of cultural industry practitioners (A4)
Resource allocation ability (B)	Resource development capability	Financial support (B1)
		Talent introduction (B2)
		Preferential policy support (B3)
		Protector (B4)
Industrial management growth (C)	Ability to grow	Management ability growth (C1)
		Innovation capability growth (C2)
		Operational capability growth (C3)
		Solvency growth (C4)
Industrial development level (D)	Social performance	Popularity (D1)
		Development prospects (D2)
	Economic performance	Enterprise annual output value (D3)
		Income satisfaction (D4)

been developing rapidly. At the same time, the supply of cultural commodities in the market cannot well adapt to and effectively meet people’s multilevel, multifaceted, and diversified cultural needs and the personalized consumption of culture in people’s lives. This contradiction between supply and demand has become a powerful driving force for the development of the cultural industry, and it also provides new opportunities and new space for the better development of the cultural industry in terms of market value laws. Therefore, it can be foreseen that the potential opportunities and value of the cultural market are huge, and the cultural enterprises generated in this environment will also flourish. Cultural enterprises refer to enterprises that mainly engage in economic activities such as cultural production, circulation, and services and meet social needs and obtain profits with their products or services. The fundamental nature of business makes cultural business inseparable from the nature of business categories. An organization or institution that provides cultural products and services (quasiritual products) and obtains commercial benefits by using intangible resources such as culture, creativity, and human capital as inputs for the purpose of maximizing benefits. There are many companies that serve society through cultural packaging and construction. Cultural enterprises have a diversified,

diverse, multilevel, and multiframe compatible model. Most of them focus on the cluster effect, take the industrial park as the office area, radiate the entire industrial chain, and drive the overall development of the region.

2.2. *China’s Cultural Industry Business Model.* In China, the proposal, practice, planning, and promotion of the cultural industry are led by the government, so the investment in the cultural industry is mainly borne by the government. Government appropriations or special funds support the development of cultural industries and lend to banks only when funds are insufficient. Private investment channels are gradually opening up, foreign investment in cultural projects is too tightly controlled, and cultural enterprises essentially rely on their own incremental development, which limits the development of the cultural industry to a certain extent. With the establishment of the basic economic system in which the state insists on public ownership as the main body and the common development of various property rights economies, social forces are becoming more and more motivated to participate in and invest in the cultural industry, and their role is also growing. More obviously, the proportion of private capital in the cultural industry is gradually increasing. Due to the ideological nature of Chinese culture,

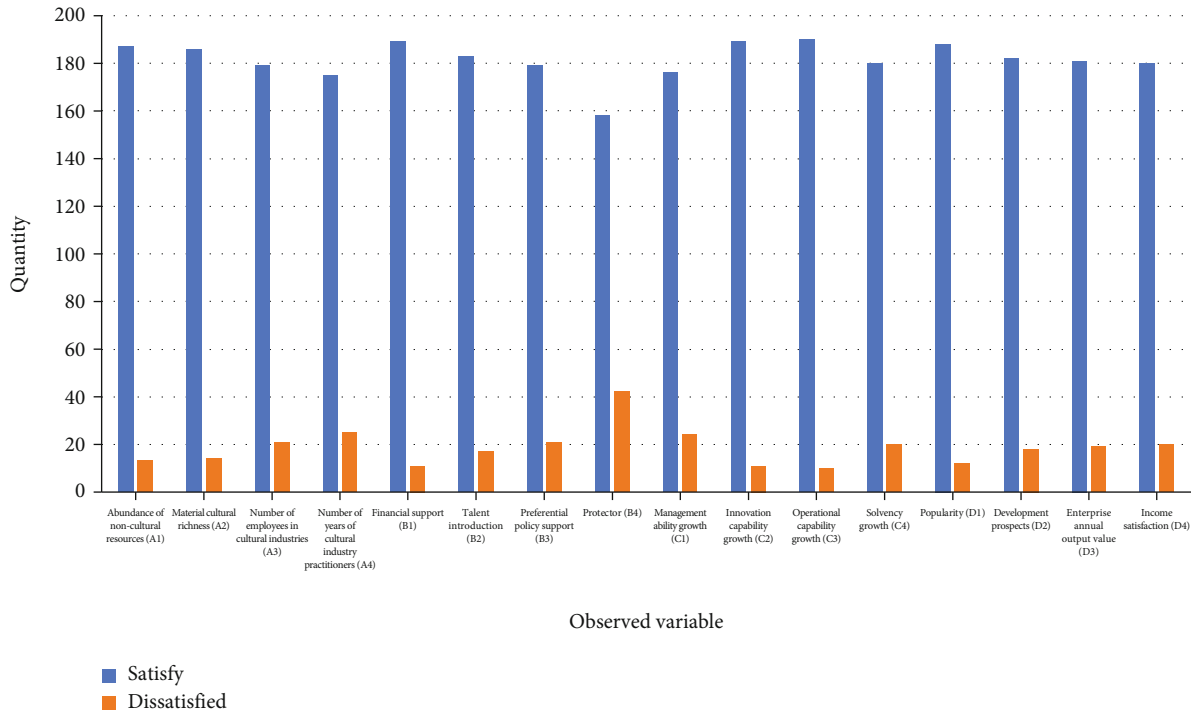


FIGURE 3: Satisfaction analysis.

TABLE 2: Reliability test results.

Structure variable	Observed variable	CITC	A coefficient with terms removed	Overall a coefficient
Industrial resources (A)	Abundance of noncultural resources (A1)	0.74	0.82	0.87
	Material cultural richness (A2)	0.68	0.84	
	Number of employees in cultural industries (A3)	0.76	0.81	
	Number of years of cultural industry practitioners (A4)	0.68	0.84	
Resource allocation ability (B)	Financial support (B1)	0.84	0.78	0.84
	Talent introduction (B2)	0.74	0.8	
	Preferential policy support (B3)	0.73	0.79	
	Protector (B4)	0.03	0.90	
Industrial management growth (C)	Management ability growth (C1)	0.68	0.83	0.90
	Innovation capability growth (C2)	0.61	0.82	
	Operational capability growth (C3)	0.62	0.82	
	Solvency growth (C4)	0.77	0.81	
Industrial development level (D)	Popularity (D1)	0.69	0.83	0.84
	Development prospects (D2)	0.72	0.82	
	Enterprise annual output value (D3)	0.67	0.80	
	Income satisfaction (D4)	0.78	0.79	

cultural products are often marked by politics in the process of production, production, and sales. This characteristic makes it difficult for cultural products to break away from the supply model. There is already an oversupply of film production in China. At the same time, the relationship between supply and demand under my country’s long-term planned economic system is determined by production plan-

ning. In the context of the current transition to a market economy, this path dependence is particularly evident in emerging cultural industries. Therefore, there is a certain dislocation between production and demand, some cultural products are not recognized and accepted by the market, and the supply of cultural products in market demand is insufficient. Private enterprises are not only small in scale

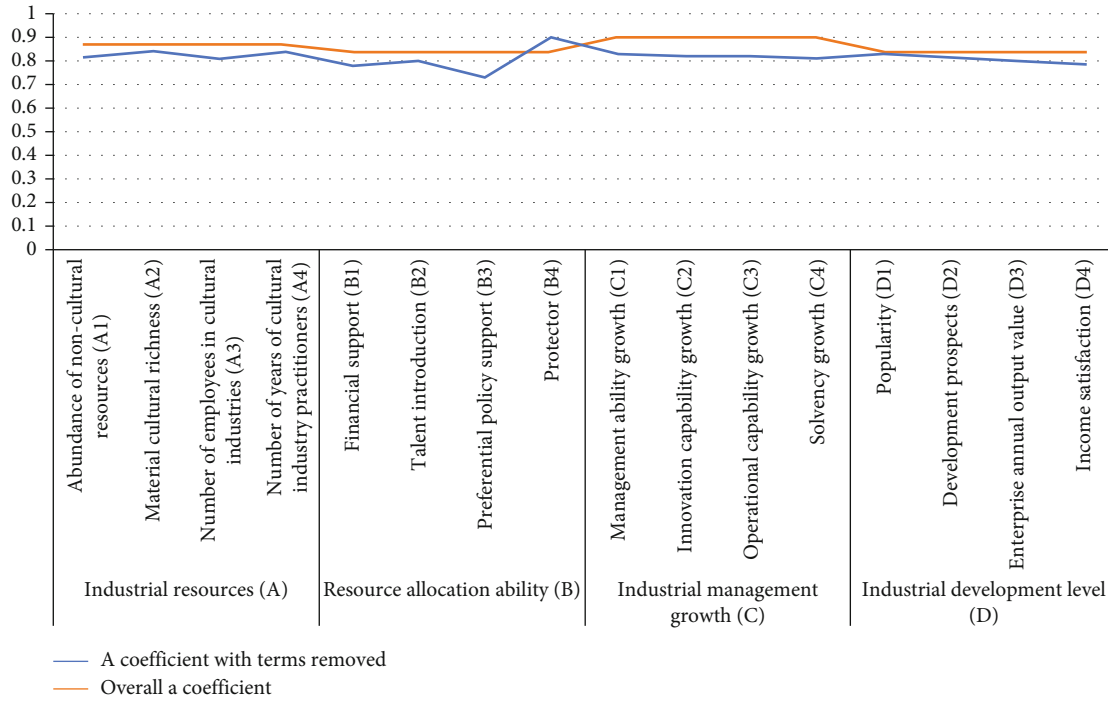


FIGURE 4: Comparison of the deleted a-coefficient with the overall a-coefficient.

TABLE 3: Alpha coefficient test summary table.

Structure variable	Number of items	A coefficient
Industrial resources (A)	4	0.87
Resource allocation ability (B)	3	0.84
Industrial management growth (C)	4	0.90
Industrial development level (D)	4	0.84
Total table	15	0.94

and weak in competitiveness but also not conducive to the effective use and optimal allocation of market resources. In addition, the management model is backward, most small and medium-sized enterprises adopt “family” management, lack of professional talents, low sensitivity to market information, low management level, weak investment and wealth management channels, and slow growth and development. With the interweaving of culture and economy, capital begins to intervene in culture, and the economic unity of cultural industry is rapidly enhanced. In particular, the audio-visual, books, newspapers, entertainment, film, and television industries took the lead in rising through industrialization and gradually formed large-scale industrial groups, as shown in Figure 1.

- (1) The investment of cultural industry funds is mostly the government. The government either allocates financial allocations, or allocates from special funds to support the development of cultural industries, and lends to banks only when there is insufficient

- (2) My country’s cultural ideological attributes and cultural products are usually branded with political stigma in the process of production, production, and sales. This characteristic makes it difficult for cultural products to break away from the supply-based mode of operation
- (3) With the mutual penetration of culture and economy, capital began to intervene in the cultural field, and the economic entity of the cultural industry grew rapidly. Especially the audio-visual industry, book industry, newspaper industry, high-end entertainment industry, film and television industry, etc. took the lead on the road of industrialization and gradually established large-scale industrial groups

2.3. *Analysis of the Internal Factors of Cultural Industry Management.* In the past research, people often conduct regression analysis on business and company performance, taking business as the independent variable and company performance as the dependent variable. With the in-depth research, people also realize that the relationship between the two is not a simple one-way causal relationship, and the company’s performance is often the reason for diversification. Generally speaking, in a relatively slow-growing industry or market segment, companies with poor performance often have strong incentives to diversify to improve the company’s operating conditions. The growth and development of the company can be summarized in two ways. One is to complete the growth of the company’s business scale based on the internal spontaneous growth of the existing business, and the other is to complete the growth of the

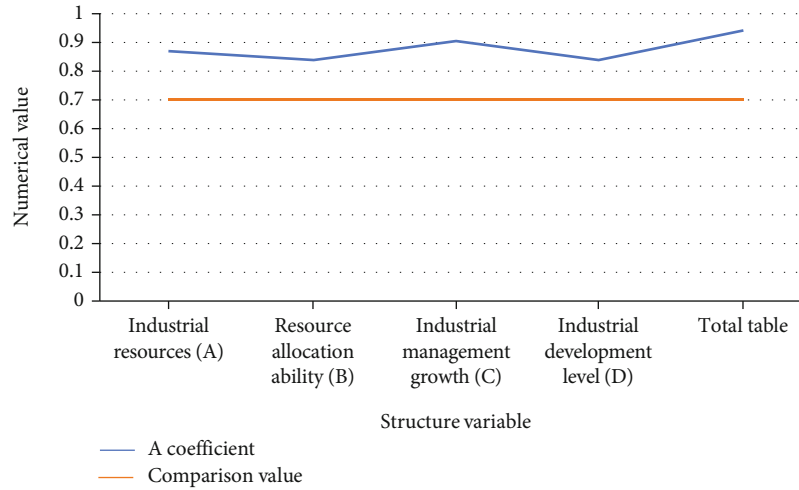


FIGURE 5: A coefficient and comparison value.

TABLE 4: Indicator weights.

Dimension	Weights	Observed variable	Weights
Cultural resources	0.18	Abundance of noncultural resources (A1)	0.076
		Material cultural richness (A2)	0.07
Human resources	0.1	Number of employees in cultural industries (A3)	0.021
		Number of years of cultural industry practitioners (A4)	0.042
Resource development capability	0.21	Financial support (B1)	0.062
		Talent introduction (B2)	0.063
		Preferential policy support (B3)	0.07
		Protector (B4)	0.012
Ability to grow	0.24	Management ability growth (C1)	0.065
		Innovation capability growth (C2)	0.067
		Operational capability growth (C3)	0.068
		Solvency growth (C4)	0.061
Social performance	0.13	Popularity (D1)	0.071
		Development prospects (D2)	0.052
Economic performance	0.14	Enterprise annual output value (D3)	0.041
		Income satisfaction (D4)	0.033

company through external financing, acquisitions, mergers, and other behaviors. In the process of the company’s growth and development, expanding the existing market share and realizing new business growth points have always been the development priorities considered by the company’s management. The operation of a company is often related to the company’s growth cycle. When the company is too small, it usually does not have the resources and capabilities to implement diversified operations. After the company develops to a certain stage and scale, the degree of diversification of the company will also be then deepened.

- (1) Based on the internal spontaneous growth of the existing business, complete the growth of the company’s business scale

- (2) Complete the company’s growth through external financing, acquisitions, mergers, and other acts. In the process of the company’s growth and development, expanding the existing market share and realizing new business growth points have always been the development priorities considered by the company’s management

2.4. Optimization of Internal Factors of Cultural Industry Management. Although foreign cultural products have been flooding our country’s cultural product market, the development of China’s cultural industry has its unique competitive advantages. The huge market, rich cultural resources, and excellent creative team have laid a solid foundation for the

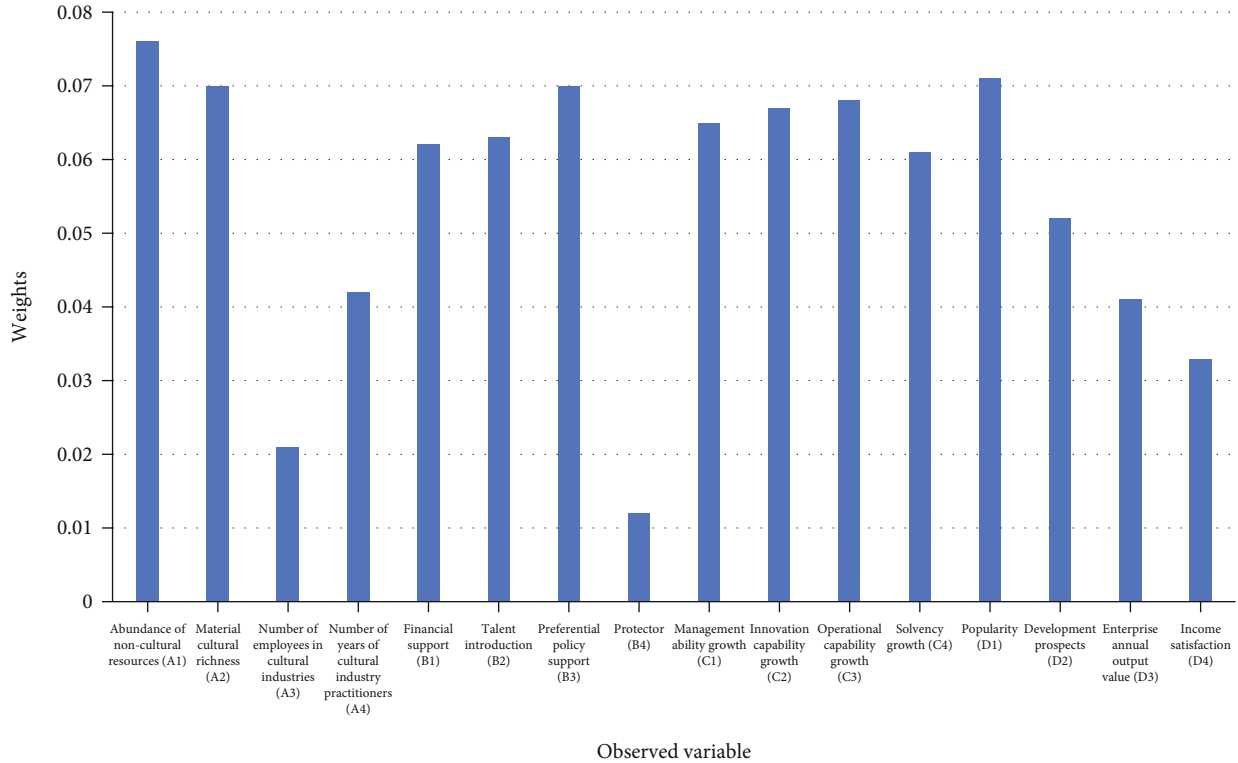


FIGURE 6: Observed variable weights.

TABLE 5: Overall model fitting results.

Adaptation indicator	CMIN/DF	GFI	AGFI	RFI	PNFI	RMSEA
Critical value	<5	>0.9	>0.9	>0.9	>0.5	<0.08
Fitted value	3	0.93	0.91	0.92	0.82	0.06
Judgment result	Meets	Meets	Meets	Meets	Meets	Meets

development of my country’s cultural industry. In addition, in order to better understand the current situation of the local cultural industry and the weaknesses of Chinese culture, we can conduct more in-depth research on brand strategy. The reform and innovation of cultural system and mechanism are the basis for developing cultural industry and improving cultural competitiveness. The first is to modernize the governance mechanism, transform the government from cultural management to cultural management, from direct management to indirect management, and gradually introduce cultural market management along the road of standardization and legalization. Starting from the organizational structure, financial system, accounting method, and management method, realize the grouping and preservation of financial management. Make full use of modern computer and network technology, fully and flexibly use rules and regulations to create business benefits, and formulate reasonable financing strategies. Strengthen capital management, improve capital use efficiency, centralize property insurance, save insurance costs, and strictly control external guarantees. Currently, there is no external guarantee in the holding company and its subsidiaries. Make full and reasonable use of domestic capital cost

differences and miscellaneous tools, and take advantage of brand and scale to compete with domestic and foreign companies. The largest commercial bank cooperates to obtain low-cost financing, implement centralized management, and unified fund management. Make full use of preferential tax policies, reduce tax costs, actively improve tax planning, and adjust tax planning in a timely manner to adapt to project changes. It is quite difficult to formulate sound financial operating procedures and internal control procedures to enable all companies in the company to operate under specific risks; it is quite difficult to provide timely and accurate information to individual companies through financial management. Governments can use their close ties with most countries in the world and their cost advantage in collecting information to gather information needed for international business operations, including relevant laws and policies, market openings and trade barriers, market demands and even cultural practices in the world countries, and around the world, as shown in Figure 2.

- (1) Actively innovating the cultural development mechanism
- (2) Establish a strategic financial management system in line with development
- (3) Systematic and reasonable business process

3. Structural Equation Modeling

3.1. LISREL Algorithm. The LISREL algorithm can also be called the covariance fitting method. The idea is to fit the

TABLE 6: Summary of the calculation results of the parameters of the influence of structural variables on cultural industry management.

Project path		Standardized estimates	Standard deviation	Critical ratio	p value
Internal factors of industrial management	\Leftarrow Industrial resources (A)	0.34	0.1	2.28	0.022
Internal factors of industrial management	\Leftarrow Resource allocation ability (B)	0.34	0.08	2.32	0.02
Internal factors of industrial management	\Leftarrow Industrial management growth (C)	0.37	0.09	2.35	0.019
Internal factors of industrial management	\Leftarrow Industrial development level (D)	0.21	0.11	1.34	0.018

TABLE 7: Parameter estimation of structural variables and index variables.

Project path		Standardized estimated value	Standard deviation	Critical ratio	p value
Industrial resources (A)	\Leftarrow Observed variable	0.822	0.11	17.88	0.02
Industrial resources (A)	\Leftarrow Abundance of noncultural resources (A1)	0.743	0.1	27.63	0.039
Industrial resources (A)	\Leftarrow Material cultural richness (A2)	0.846	0.12	29.56	0.023
Industrial resources (A)	\Leftarrow Number of employees in cultural industries (A3)	0.834	0.18	23.58	0.043
Resource allocation ability (B)	\Leftarrow Number of years of cultural industry practitioners (A4)	0.813	0.15	22.18	0.0132
Resource allocation ability (B)	\Leftarrow Financial support (B1)	0.966	0.02	18.87	0.0321
Resource allocation ability (B)	\Leftarrow Talent introduction (B2)	0.731	0.04	15.72	0.023
Industrial management growth (C)	\Leftarrow Preferential policy support (B3)	0.834	0.06	29.17	0.001
Industrial management growth (C)	\Leftarrow Protector (B4)	0.929	0.02	26.66	0.003
Industrial management growth (C)	\Leftarrow Management ability growth (C1)	0.916	0.09	21.18	0.023
Industrial management growth (C)	\Leftarrow Innovation capability growth (C2)	0.873	0.08	25.34	0.043
Industrial development level (D)	\Leftarrow Operational capability growth (C3)	0.897	0.03	27.69	0.0231
Industrial development level (D)	\Leftarrow Solvency growth (C4)	0.818	0.07	17.24	0.0321
Industrial development level (D)	\Leftarrow Popularity (D1)	0.834	0.06	16.43	0.0234
Industrial development level (D)	\Leftarrow Development prospects (D2)	0.856	0.03	18.34	0.034

sample covariance matrix to the model covariance matrix. To simply express the model covariance matrix, we have mean assumptions for the variables and residuals:

$$E(\eta) = E(\xi), \quad (1)$$

$$E(\varepsilon_X) = E(\varepsilon_Y) = 0. \quad (2)$$

There is also a related assumption that 0 of the formula is a zero vector or zero matrix:

$$E(\eta\varepsilon'_X) = E(\eta\varepsilon'_Y) = 0. \quad (3)$$

For variance and covariance shorthand: $\text{Var}(\varepsilon_X) = \Theta_X$, $\text{Var}(\varepsilon_Y) = \Theta_Y$, $\text{Var}(\xi) = \Phi$, and $\text{Var}(\varepsilon_\eta) = \psi$. Then, the

model covariance matrix is

$$\begin{aligned} \text{Cov}(X, Y) &= \begin{pmatrix} \sum XX & \sum XY \\ \sum YX & \sum Y \end{pmatrix} = \begin{pmatrix} E(XX') & E(XY') \\ E(YX') & E(XY') \end{pmatrix} \\ &= \begin{pmatrix} \Lambda_X \Phi_\xi \Lambda'_X + \Theta_X & \Lambda_X \text{Cov}(\eta, \xi) \Lambda'_X \\ \Lambda_X \text{Cov}(\eta, \xi) \Lambda'_X & \Lambda_Y \Phi_\xi \Lambda'_Y + \Theta_Y \end{pmatrix}. \end{aligned} \quad (4)$$

Then calculate:

$$\begin{aligned} \text{Cov}(\xi, \eta) &= \text{Cov}(\xi, \eta) = E(\eta \xi') = E[(B_I^{-1} \Gamma \xi + B_I^{-1} \varepsilon_\eta) \xi'] \\ &= B_I^{-1} \Gamma \Phi, \end{aligned} \quad (5)$$

$$\begin{aligned} \text{Var}(\eta) &= E(\eta \eta') = E(((B_I^{-1} \Gamma \xi + B_I^{-1} \varepsilon_\eta) (B_I^{-1} \Gamma \xi + B_I^{-1} \varepsilon_\eta)')) \\ &= B_I^{-1} (\Gamma \Phi \Gamma' + \Psi) B_I^{-1}. \end{aligned} \quad (6)$$

Substituting into the above formula can get the expression $\text{Cov}(X, Y)$ of the model covariance matrix, in which all except B and Γ are unknown to be estimated. The sample covariance matrix S can be calculated from the observed sample matrix $(X : Y)$, and then a fitting function is used, for example:

$$F = 0.5 \{ \text{tr}[V(S - \text{Cov}(X, Y))] \}^2. \quad (7)$$

V is an appropriate matrix to minimize the fitted function, thereby computing estimates of the various parameters. The algorithm is relatively rich in theory, with different matrices V , different fitting functions, and different testing methods; the content is already very complicated, but this algorithm is rarely used in practical work due to its strict requirements on sample size and distribution.

3.2. The Basic Theory of PLS Algorithm. There are many methods to extract latent variables from explanatory variables and response variables, such as principal component method, iterative method, and SVD method. Among them, the more efficient algorithm is the iterative method, which includes two basic algorithms, nonlinear iterative partial least squares method and simple partial least squares method, while NIPALS has many variants. The following two commonly used algorithms are introduced.

The nonlinear iterative partial least squares method can be divided into the following steps.

First, standardize the explanatory variable observation matrix and the response variable observation matrix, and denote the transformed matrices as V and U , respectively, as the initial matrix of the iteration, denoted as $V_{(1)}$ and $U_{(1)}$.

Calculate the weight vector ω_k of the k -th step, where ω_k is the eigenvector corresponding to the largest eigenroot of $V_{(k)}' U_{(k)} U_{(k)}' V_{(k)}$.

The weight vector ω_k and ω_k are the eigenvectors corresponding to the largest eigenroot of $V_{(k)}' U_{(k)} U_{(k)}' V_{(k)}$.

The formula for calculating the k -th explanatory latent variable vector $t_{(k)}$ is

$$t_{(k)} = V_{(k)} \omega_k. \quad (8)$$

Calculate the factor loadings $p_{(k)}$ and $q_{(k)}$ of the explanatory latent variables and response latent variables extracted in step k .

$$p'_{(k)} = (t_{(k)}' t_{(k)})^{-1} t_{(k)}' V_{(k)}, \quad (9)$$

$$q'_{(k)} = (t_{(k)}' t_{(k)})^{-1} t_{(k)}' U_{(k)}. \quad (10)$$

Compute the residuals $V_{(k+1)}$ and $U_{(k+1)}$ in the x and y spaces at step $k+1$.

$$V_{(k+1)} = V_{(k)} - t_{(k)} p_{(k)}, \quad (11)$$

$$U_{(k+1)} = U_{(k)} - t_{(k)} q_{(k)}. \quad (12)$$

Calculate the prediction residual sum of squares PRESS. If $\text{PRESS}_{(k)} - \text{PRESS}_{(k-1)}$ is less than the predetermined precision, then go to the next step; otherwise, go back to step 2 to continue the iteration.

If the iteration stops at step $m+1$, the linear regression equation of U with respect to V is established:

$$U = t_{(1)} q'_{(1)} + t_{(2)} q'_{(2)} + \dots + t_{(m)} q'_{(m)} = V \beta, \quad (13)$$

$$\beta = \sum_{i=1}^m \left\{ \prod_{j=1}^i (I - \omega_{(j)} p'_{(j)}) \omega_{(i)} q'_{(i)} \right\}. \quad (14)$$

Through the inverse standardization transformation, the regression equation of the response variable Y with respect to the explanatory variable X is obtained.

The simple least squares method is described as follows.

The explanatory variable observation matrix and the response variable observation matrix are center-transformed so that the mean is 0. $A_0 = X'Y$, $M_0 = X'X$, $C_0 = I$, $h = 1, \dots, c$, and c are given values. The calculation is divided into the following steps.

Compute q_h , where q_h is the principal eigenvector of $A_h' A_h$.

To store a column where ω_h is ω , the calculation formula is

$$\omega_h = A_h' q_h, \quad (15)$$

$$C_h = \omega_h' M_h \omega_h, \quad (16)$$

$$\omega_h = \frac{\omega_h}{\sqrt{t}}(C_h). \quad (17)$$

To store a column where p_h is P , the formula for p_h is

$$p_h = M_h \omega_h. \quad (18)$$

To store a column where q_h is Q , the formula for q_h is

$$q_h = A'_h \omega_h. \quad (19)$$

The formula for calculating V_h is

$$V_h = C_h p_h, \quad (20)$$

$$v_h = \frac{v_h}{\|v_h\|}. \quad (21)$$

The formulas for calculating P and S are

$$C_{h+1} = C_h - v_h v'_h, \quad (22)$$

$$M_{h+1} = M_h - p_h p'_h. \quad (23)$$

The formula for calculating A_{h+1} is

$$A_{h+1} = C_h A_h. \quad (24)$$

- (1) Regression modeling of multidependent variables to multi-independent variables can be realized
- (2) Able to perform regression modeling under the condition that the independent variables have serious multiple correlations
- (3) Screening of independent variables can be performed more concisely than least squares regression
- (4) Through principal component analysis and extraction of comprehensive variables, regression modeling is allowed under the condition that the number of samples is less than the number of independent variables
- (5) It is more effective to allow all the original independent variables to be included in the final model
- (6) Simultaneous simplification of the data structure is achieved while modeling, and the features of multidimensional data can be observed on a two-dimensional plane with powerful graphics

4. Analysis and Optimization of Internal Factors of Cultural Industry Management Based on Structural Equation Model

4.1. Construction of the Indicator System. In order to study the internal factors of cultural industry management, four structural variables are established: industrial resources (A), resource allocation capability (B), industrial manage-

ment growth (C), and industrial development level (D). The six dimensions are cultural resources, human resources, resource development capability, capability growth, social performance, and economic performance; 16 observation variables are the richness of noncultural resources (A1), the richness of material culture (A2), the number of employees in the cultural industry (A3), number of years of cultural industry employees (A4), financial support (B1), talent introduction (B2), preferential policy support (B3), protection of personnel (B4), management capability growth (C1), innovation capability growth (C2), operational capability growth (C3), solvency growth (C4), popularity (D1), development prospects (D2), enterprise annual output value (D3), and income satisfaction (D4), as shown in Table 1.

By selecting 200 people to conduct satisfaction analysis on the observed variables, it can be seen from the figure below that the protection personnel (B4) have the least number of satisfied choices, with 158; the number of people who are satisfied with the selection of other observed variables is not much different, fluctuating around 180. The selection of indicators requires further analysis to determine, as shown in Figure 3.

4.2. Reliability Analysis. From the reliability test results in Table 2, it can be seen that the overall a-coefficients of the outcome variables industrial resources (A), industrial management growth (C), and industrial development level (D) are all greater than 0.5, and the deleted a-coefficients are all smaller than their corresponding overall a coefficient. In resource allocation capability (B), the a-coefficient of the deleted item of the observed variable protection personnel (B4) is 0.90, which is greater than the deleted a-coefficient of the item, indicating that the overall a-coefficient of the corresponding structural variable is significant after the item is deleted. The improvement of the observed variable protection personnel (B4) and the total related item (CITC) of the observation variable protection personnel (B4) is 0.03, so the observation variable protection personnel (B4) is deleted. As shown in Figure 3 below, except for the observed variable protection personnel (B4), the deleted a-coefficients of the remaining observational variables are smaller than the overall a-coefficient, indicating that deleting these observational variables will not significantly improve the overall a-coefficient, that is, the observed variables are retained, as shown in Table 2 and Figure 4.

From Table 3 and Figure 5, it can be seen that the number of items in industrial resources (A) is 4, and the coefficient a is 0.87; the number of items in resource allocation capability (B) is 3, and the coefficient a is 0.84; the number of items is 4, and a coefficient is 0.90; the number of items in the industrial development level (D) is 4, and a coefficient is 0.84; the number of items in the total table is 15, and a coefficient is 0.94. The coefficients of each structural variable and the total scale are greater than 0.7, indicating that there is a strong correlation between the observed variables in each group, and the measurement results are highly consistent and stable, meeting the data requirements of the structural equation. It is trustworthy, scientific, and effective and can go to the next step of analysis.

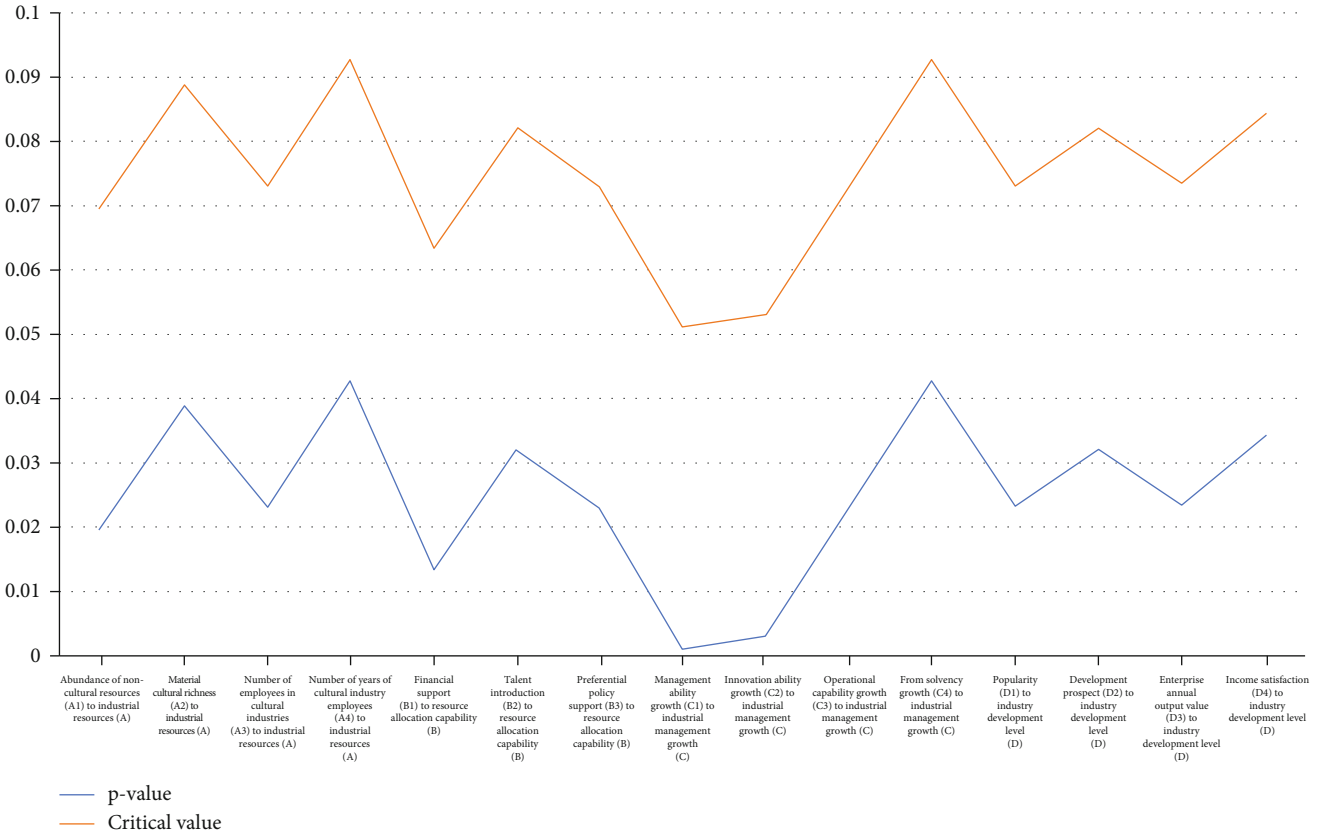


FIGURE 7: Comparison of p values and critical values.

4.3. Analysis and Optimization of Internal Factors of Cultural Industry Management. It can be seen from Table 4 that the weight of ability growth is the largest, with a weight value of 0.24; followed by resource development ability, cultural resources, economic performance, social performance, and human resources, with weights of 0.21, 0.18, 0.14, 0.13, and 0.10, respectively. It can be seen that noncultural resource richness (A1) has the largest weight, followed by popularity (D1), material and cultural richness (A2), preferential policy support (B3), operational capability growth (C3), innovation capability growth (C2), management ability growth (C1), talent introduction (B2), financial support (B1), solvency growth (C4), development prospects (D2), number of years of cultural industry employees (A4), annual output value of the enterprise (D3), income satisfaction (D4), number of employees in the cultural industry (A3), and protection personnel (B4); the weights are 0.076, 0.071, 0.07, 0.07, 0.068, 0.067, 0.065, 0.063, 0.062, 0.061, 0.052, 0.042, 0.041, 0.033, 0.021, and 0.012, as shown in Table 4 and Figure 6.

Using all the data of the sample to verify the overall model fit, the results show that the chi-square value is 932.731, the degree of freedom is 307, and the chi-square degree of freedom ratio is 2.896, which is less than the critical value of 5. The fitting index CMIN/DF has a fitting value of 3, which satisfies the critical value is less than 5, so the index judgment result is consistent; the GFI fitting value is 0.93 and satisfies the critical value is greater than 0.9, so

the index judgment result is consistent; the AGFI fitting value is 0.91, satisfying the critical value is greater than 0.9, so the index judgment result is consistent; RFI fitting value is 0.92, satisfying the critical value is greater than 0.9, so the index judgment result is consistent; PNFI fitting value is 0.82, satisfying the critical value is greater than 0.5, so the index judgment result is consistent; the fitting value of RMSEA is 0.06 and satisfies the critical value is less than 0.08, so the index judgment result is consistent. According to the judgment results, it can be shown that the overall fitting effect of the model is very good, and the model is established, as shown in Table 5.

From Table 6 below, we can see that the estimated value of the standardized coefficients between the internal factors of industrial operation and the four structural variables is the degree of direct influence of each factor on the operation of cultural industries. At the 5% significant level, the p values between the paths of industrial resources (A), resource allocation capability (B), industrial management growth (C), and industrial development level (D) to the internal factors of cultural industry management are all less than 0.05; these four internal factors will affect the operation of cultural enterprises. The standardized estimated value of industrial management growth (C) is the largest, which is 0.37, indicating that industrial management growth (C) has the greatest impact on cultural industry management; followed by industrial resources (A) and resource allocation capabilities (B), the standardization of these two estimated values is the

same, which is 0.34, and the standardized estimated value of the industrial development level (D) is 0.21, indicating that the most important thing for the operation of the cultural industry is the improvement of the growth (C) of the industrial operation.

In the industrial resource path, the influence coefficients of A1, A2, A3, and A4 are 0.822, 0.743, 0.846, and 0.834, respectively, indicating that the richness of intangible cultural resources (A1) and the number of employees in the cultural industry (A3) are the factors that affect industrial resources. Therefore, for cultural industry management, it is necessary to start with improving the richness of material cultural resources, especially the use of nonmaterial cultural resources; In resource allocation ability (B), the influence coefficients of B1, B2, B3 and B4 are 0.966, 0.731, 0.834 and 0.929 respectively, indicating that the introduction of talents (B2) has the greatest influence on the resource allocation ability (B). Therefore, in the allocation of resources, development and protection should be carried out at the same time, and the most important thing is to have talents. In the introduction, financial support and preferential policy support also need to be paid attention to; in the industrial operation growth (C), the influence coefficients of C1, C2, C3, and C4 are 0.834, 0.929, 0.916, and 0.873, respectively, indicating that the growth of innovation ability (C2) and growth of operational capabilities (C3) are more important to the growth of industrial operations (C). Therefore, in the management of cultural enterprises, it is necessary to improve innovation and operational capabilities, and at the same time, focus on developing operational capabilities and industrial management. In the development level (D), the influence coefficients of D1, D2, D3, and D4 are 0.897, 0.818, 0.834, and 0.856, respectively, indicating that the most important thing in the improvement of the industrial development level (D) is the improvement of the popularity (D1). Followed by income satisfaction (D4), enterprise annual output value (D3), and development prospects (D2), so in the operation of cultural enterprises, it is necessary to enhance brand awareness and build a good reputation, and in order to attract more talents and achieve long-term development, the evaluation indicators are shown in Table 7 below.

From the parameter estimation of structural variables and various index variables, it is found that cultural industry management needs to start from improving the richness of material cultural resources, especially the use of nonmaterial cultural resources. In the allocation of resources, development and protection should be carried out at the same time. In addition, the most important thing is to introduce talents. We also need to pay attention to financial support and preferential policy support. In the operation of cultural enterprises, we must improve innovation and operation capabilities, and at the same time, we must also pay attention to the development of operational capabilities and industrial management in cultural enterprises. In operation, it is necessary to enhance brand awareness and build a good reputation, so as to attract more people and go on in the long run.

From Figure 7 below, we can see that the estimated value of the standardized coefficient between the structural variable and each index variable is the direct influence of each

factor on the structural variable. At the 5% significant level, the p values between the path of the structural variable and each index variable are all less than 0.05, indicating that the path of the structural variable and each index variable has a significant impact.

5. Conclusion

The cultural industry strengthens its own research and development strength, concentrates limited resources on the most profitable sectors and industries, enhances the technological innovation capability of enterprises, and improves the technological content and market competitiveness of products. Relying on technological innovation and technological progress, we create high value-added and high value-added cultural products to satisfy consumers' minds and use modern and advanced technology and resources to give cultural products aesthetic appeal. It can provide more humanized and high-quality products. In order to achieve rapid scale and specialization at low cost, the cultural industry must create its own unique brand and culture. Cultural brands are the intangible assets of cultural enterprises, the basis for the survival of cultural enterprises, and the market space for their development. It is the strategic goal of the development of the cultural industry to firmly cultivate a "cultural brand" and actively enter the international cultural market. Establish a series of incentives, training, and mobility mechanisms to promote the growth and use of talents, stimulate the enthusiasm and creativity of creative talents, attract a large number of innovative talents to join, and promote the development of high-quality and sustainable cultural enterprises. Improve the innovation culture level and innovation ability of employees, realize the modernization and upgrading of enterprise products, and improve the human capital and competitiveness of enterprise talents.

Data Availability

The experimental data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declared that they have no conflicts of interest regarding this work.

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References

- [1] K. Nurse, "Trinidad carnival: festival tourism and cultural industry," *Event Management*, vol. 8, no. 4, pp. 223–230, 2004.
- [2] W. U. Li-Hua, Z. Y. Zhang, and G. U. Jin-Liang, "A study on characteristics and industrial chain of China's cultural

- industry —from the prospective of input-output model,” *Soft Science*, vol. 26, no. 28, pp. 66–101, 2011.
- [3] S. Ali and T. A. Fateme, “Marketing mix practices in the cultural industry,” *International Journal of Business & Management*, vol. 6, no. 8, pp. 12–17, 2011.
- [4] F. U. Shou-Xiang, “Era of culture industry: development and management of the Chinese cultural industry,” *Shenzhen University Journal (Humanities & Social Sciences)*, vol. 12, no. 6, pp. 341–390, 2007.
- [5] W. B. Lee and K. S. Lim, “China’s cultural industry policy,” *Springer Netherlands*, vol. 12, no. 30, pp. 1–14, 2013.
- [6] C. G. Hee, “An analysis of the regional economic impacts of developing Paju cultural industry complex development,” *Journal of the Korean Urban Management Association*, vol. 22, no. 3, pp. 171–196, 2009.
- [7] Q. Liu, “Research on the modern cultural industry development model under the background of economic globalization,” *International Journal of Technology, Management*, vol. 34, no. 23, pp. 132–139, 2016.
- [8] J. Payne, “A study into cross-cultural management with concern to leadership within the UK construction industry,” *Eprints Port*, vol. 15, no. 2, pp. 453–461, 2014.
- [9] H. Y. Some, *Ideas on the Optimization of the Investment and Financing System in the Ceramic Cultural Industry*, Huilian Publishing House, Singapore City, Singapore, 2014.
- [10] Y. H. Chen and L. Z. Liang, “Research on the risk factors of financing and investment in Cultural-creative industries based on structural equation model,” *Scientific Decision Making*, vol. 13, no. 23, pp. 154–159, 2012.
- [11] R. Pesch and R. B. Bouncken, “The double-edged sword of cultural distance in international alliances,” *Cross Cultural & Strategic Management*, vol. 24, no. 1, pp. 33–54, 2017.
- [12] W. Yuwono, D. U. Daihani, and W. Arafah, “Empirical testing of the mediating effect of absorptive capacity and moderation of cultural intelligence on intellectual capital and innovation analysis on the tourism industry,” in *International Conference on Management, Accounting, and Economy (ICMAE 2020)*, Jakarta, India, 2020.
- [13] X. Xie, X. Xie, and C. Martinez-Climent, “Identifying the factors determining the entrepreneurial ecosystem of internet cultural industries in emerging economies,” *International Entrepreneurship and Management Journal*, vol. 15, no. 2, pp. 503–522, 2019.
- [14] W. P. Wu, “Dimensions of social capital and firm competitiveness improvement: the mediating role of information sharing,” *Journal of Management Studies*, vol. 45, no. 1, pp. 122–146, 2010.
- [15] L. L. Tang, D. X. Zhu, and Q. I. Xian-Wen, “A study on the relationship between cultural identity and tourists’ loyalty—the case of Huizhou cultural tourism area,” *East China Economic Management*, vol. 12, no. 9, pp. 123–128, 2015.