

The Impact of Financial Support on the Cultural Industry: The Mediating Role of Technological Innovation

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ABSTRACT

This study explores the impact of financial support on cultural industry development and the mediating role of technological innovation using panel data from 31 Chinese provinces between 2012 and 2022. The analysis shows that financial support significantly promotes cultural industry development, while technological innovation partially mediates this relationship. Additionally, industrial structure optimization has a positive impact on the cultural industry, whereas economic level, government support, and the number of cultural institutions show no significant effects. Based on these findings, the study suggests enhancing financial product innovation, such as intangible-asset mortgage loans, promoting the deep integration of culture and technology, and improving the multi-level financial support system to boost the efficiency and quality of cultural industry development.

KEYWORDS

Financial support; Cultural industry; Technological innovation; Mediation effect

1 Introduction

In today's economic landscape, the cultural industry, a strategic pillar of the nation, has become a key driver of high - quality economic and social development in China. It encompasses various fields such as broadcasting, film, news publishing, literary arts, online culture, creative design, and animation. Its rapid development not only enriches people's spiritual life but also actively promotes employment, boosts consumption, and optimizes the industrial structure. However, with its high risk, high investment, and long - cycle characteristics, the cultural industry cannot rely solely on corporate accumulation and investment to meet its development needs. Thus, financial support plays a crucial role in the development of the cultural industry.

In recent years, financial support for the cultural industry in China has achieved remarkable results. The banking industry has been innovative and has become the backbone of financial services for the cultural industry, with a significant increase in cultural industry loan balances. In 2022, a total of 64 bonds were issued in the cultural industry sector in China, with a total issuance amount of 57.914 billion yuan, marking a notable recovery in overall financing scale compared to the previous year. In 2023, the Shenzhen Stock Exchange issued five company bonds throughout the year in the culture, sports, and entertainment industry, with a financing amount of 6.35 billion yuan. In the first half of 2024, the number of short - and long - term bond financing events in the cultural industry grew by 66.7% and 150.0% year - on - year respectively. In January 2025, the General Office of the State Council issued the "Several Economic Policies for Promoting High - quality Cultural Development." It deepens cultural system and mechanism reform in aspects such as financial support, tax incentives, financial services, and technological innovation. The document also explicitly proposes improving the system for the confirmation, registration, custody, investment, transfer, and disposal of intangible cultural enterprise assets, strengthening models for intangible cultural asset mortgages and pledges to expand intellectual property financing channels, and supporting the development of creative cultural enterprises.

Simultaneously, technological innovation is playing an increasingly important role in the financial support of cultural industry development. With the acceleration of the information technology revolution, the driving role of technological progress in cultural innovation has become increasingly evident, and the link between culture and technology has grown stronger. The development of digital financial technologies has provided new financing avenues for the cultural industry. For instance, crowdfunding and other digital financial technologies enhance financing efficiency and promote cultural diversity by reducing allocation inefficiencies, thereby offering more effective financing methods for creative cultural projects. The integration of financial innovation and technological innovation not only broadens financing channels for cultural enterprises, reduces financing costs, and improves financing efficiency but also brings new development models and growth points to the cultural industry, driving its transformation and upgrading.

Nevertheless, despite extensive research on financial support for the cultural industry, relatively few studies have focused on the mediating role of technological innovation in financial support for the cultural industry. Most existing literature concentrates on the direct impact of financial support on the cultural industry or the independent role of technological innovation in the cultural industry. Few studies have systematically examined technological innovation as a

mediating variable between financial support and cultural industry development. Therefore, using China as a sample, this paper aims to deeply explore the mechanism by which financial support influences cultural industry development through technological innovation. It seeks to provide theoretical and practical references for the rapid and high - quality development of the cultural industry.

2 Literature review

Many early studies on financial support for cultural industry development were theoretical, with few empirical analyses. Michael Keane (2005) compared China and Latin American countries' cultural industry investment and financing issues. He found that while government policies can boost industrial economic growth and exports, the synergistic effect of financial and creative inputs in production and marketing is the key to industrial development. Chang (2009) emphasized the significance of financial support for the cultural industry, including meeting people's spiritual needs, expanding domestic demand, stimulating consumption, adjusting the industrial structure, and optimizing economic growth patterns. Liu (2011) proposed the necessity of coordinating cultural and financial policies, adapting investment and financing systems to financial market rules, and integrating the cultural and financial markets. Wang (2011) explored the mechanism of financial support for the cultural industry, suggesting that combining indirect and direct financial support is essential for promoting the cultural industry.

Recent research has become more in-depth. Xia (2024) pointed out several bottlenecks in China's cultural industry development regarding financial support, such as the lack of effective collateral, insufficient connection, inadequate integration, and rigid management systems. He suggested that the government enhance financial support by developing credit products tailored to cultural products and establishing a multi-level financial support system. Ye et al. (2016) believed that various factors, including policy and legal frameworks, social trust systems, intermediary services, financial institutions' innovation mechanisms and service systems, and enterprises' resource endowments, can influence financial support for creative cultural enterprises. Breznitz & Noonan (2018) demonstrated through empirical analysis that policy and legal frameworks and social trust systems significantly impact financial support for creative cultural enterprises, verifying the relationship between social environmental factors and financial support performance. Regarding financial support efficiency, Cong (2011) analyzed the current situation and trends of China's cultural industry development. He noted that improving risk investment mechanisms and encouraging cultural enterprises to go public are necessary to enhance financial support efficiency and ensure sufficient funding for cultural industry development. Li & Tang (2011, 2012) emphasized that financial institutions' project management capabilities, creative cultural enterprises' creative and technical abilities, and the collaborative capabilities between financial institutions and enterprises are crucial for financial support of creative cultural enterprises. Enhancing these capabilities can improve financial support efficiency and better meet the cultural industry's development needs.

In addition, technological innovation plays a significant mediating role in financial support for cultural industry development. Higson (2007) proposed that financial innovation is a key way to overcome financing difficulties for creative cultural enterprises. Measures such as providing intangible asset mortgage loans and lowering the thresholds for copyright and patent financing can improve the allocation efficiency of financial resources and strongly support cultural industry development. Ye et al. (2016) also stressed the positive impact of financial innovation mechanisms on financial support for creative cultural enterprises, arguing that financial innovation can broaden financing channels, reduce financing costs, improve financing efficiency, and thus promote cultural industry development.

In summary, financial support is of great significance for cultural industry development. It not only provides financial security but also drives industrial upgrading and optimization through technological innovation and other mediating roles. Based on previous studies, this paper further explores the impact of financial support on the cultural industry and the mediating role of technological innovation, aiming to offer theoretical and practical references for the rapid and high-quality development of the cultural industry.

3 Theories and hypotheses

3.1 The impact of financial support on the development of the cultural industry

Based on financial development theory, a robust financial system can boost economic growth by mobilizing savings, allocating resources, and managing risks. In the context of the cultural industry, financial support offers several benefits. It addresses the high - investment needs of the cultural industry by channeling social funds to cultural enterprises through credits, equity investments, and bond issuances. This allows cultural enterprises to expand production, enhance product quality, and strengthen market competitiveness.

Financial support also optimizes resource allocation within the cultural industry. Financial institutions assess and screen projects to direct funds towards those with growth potential and market prospects, improving fund - utilization

efficiency and promoting the internal structural adjustment and upgrading of the cultural industry. Moreover, financial support encourages cultural enterprises to increase R & D inputs, driving technological, product, and model innovations. This elevates the cultural industry's competitiveness and facilitates its integration with other industries, extending the industrial chain.

Hence, the following hypothesis is proposed: H1: Financial support has a positive impact on the development of the cultural industry.

3.2 The mediating role of technological innovation

Financial support drives cultural - industrial development by promoting technological innovation. According to innovation theory, technological innovation is a key driver of economic growth. It can enhance industrial productivity and market competitiveness. Financial support provides cultural enterprises with the funds needed for technological innovation, enabling them to invest more resources in R & D, equipment acquisition, and talent cultivation, and to improve their technological - innovation capabilities.

Technological innovation boosts the value - added and market competitiveness of cultural products. This leads to the development of more attractive and innovative cultural products and services, meeting the diverse and personalized needs of consumers and promoting cultural - industrial development. It also improves the production efficiency and management level of cultural enterprises, reduces production costs, and strengthens profitability and growth potential. In addition, technological innovation fosters the integration of the cultural industry with other industries, giving rise to new cultural business forms and models, and creating new growth opportunities for the cultural industry.

Consequently, the following hypothesis is proposed: H2: Technological innovation plays a mediating role in the impact of financial support on the development of the cultural industry.

4 Model specification

4.1 Data sources and processing

This study selects panel data from 31 provinces and municipalities across the country for the period 2012 - 2022 (due to the fact that the "China Cultural and Related Industries Statistical Yearbook" began to be published in 2013, and during the empirical research period, there was no version of the statistical yearbook with data for 2023, hence the study period for this paper is 2012 - 2022.). The data are sourced from the National Bureau of Statistics, the "China Cultural and Related Industries Statistical Yearbook", and the statistical yearbooks of various provinces and municipalities. For missing data in certain years, the moving average method is employed to fill in the gaps. The software utilized for the empirical analysis in this study is Stata17.0.

4.2 Model specification

Based on the theoretical model above, this paper sets up the benchmark model (1) to test the effect of financial support on cultural industry development. Let $CULTURE_{it}$ denote the level of cultural industry development for region i in year t ; FIN_{it} represents the level of financial support for region i in year t ; and $CONTROLS_{it}$ is a vector of control variables. The specific form of the benchmark regression model is as follows:

$$CULTURE_{it} = \beta_0 + \beta_1 FIN_{it} + CONTROLS_{it} + \varepsilon_0 \quad (1)$$

This paper sets up mediating models (2) and (3) to test the mediating role of technological innovation. Let $INNOVATION_{it}$ denote the innovation level of region i in year t . If the coefficients of FIN_{it} in both equations are significant, it indicates a mediating effect of technological innovation. Further, if the coefficient of FIN_{it} in model (3) remains significant, it suggests a partial mediating effect; otherwise, it's a full mediating effect.

$$INNOVATION_{it} = \alpha_0 + \alpha_1 FIN_{it} + CONTROLS_{it} + \varepsilon_0 \quad (2)$$

$$CULTURE_{it} = \varphi_0 + \varphi_1 FIN_{it} + \varphi_2 INNOVATION_{it} + CONTROLS_{it} + \varepsilon_0 \quad (3)$$

4.3 Variable description

(1) Dependent Variable: Cultural Industry Development Level.

This study uses the operating income of cultural market institutions to measure the development level of the cultural industry, as it provides an intuitive economic perspective.

(2) Core Explanatory Variable: Financial Support.

The core explanatory variable is financial support, measured by the added value of the financial industry. This reflects the scale and economic contribution of financial development, shows the concentration of financial resources and the

activity of financial activities, and indicates the financial system's ability to support the cultural industry and other real economy sectors (Wan, 2022).

(3) Control Variables:

Regional Economic Development Level (GDP): Regions with higher economic development have more funds for technological innovation, thus enhancing the cultural industry. This is measured by the natural logarithm of per capita GDP.

Industrial Structure (IND): The cultural industry is a key part of the tertiary sector. Upgrading the industrial structure can boost the cultural industry's productivity and economic efficiency. It is measured by the share of the tertiary industry in GDP.

Government Support (CULGOV): Government fiscal support is an important financing channel for the cultural industry. This study quantifies it by the proportion of fiscal expenditure on cultural programs.

Number of Cultural Industry Organizations (CULF): Previous research (e.g., Wang, 2011) indicates that the number of business-like cultural organizations affects cultural industry development, and this variable is included in the model accordingly.

Table 1 Variable Definitions

Type	Name	Symbol	Measurement
Dependent Variable	Level of Cultural Industry Development	CULTURE	Operating income of cultural market institutions
Core Explanatory Variable	Financial Support	FIN	Value-added of the financial industry
Mediating Variable	Technological Innovation	INNOVATION	Number of patents granted
Control Variables	Industrial Structure	IND	Proportion of tertiary industry in GDP
	Economic Development Level	GDP	Per capita GDP
	Government Support	CULGOV	Proportion of fiscal expenditure on cultural programs
	Number of cultural industry institutions	CULF	Number of cultural industry institutions

5 Empirical analysis

5.1 Descriptive statistics

As shown in Table 1, the operating income of the cultural industry (CULTURE) has a mean of 15.3986 and a standard deviation of 1.5502, indicating significant regional differences in cultural industry revenue, with a maximum of 20.1823 and a minimum of 7.6459. The financial industry value-added (FIN) has a mean of 7.0820 and a standard deviation of 1.0749, reflecting varying levels of financial support across regions, ranging from 3.4308 to 9.3551. This reveals an uneven geographical distribution of financial support for the cultural industry. The patent authorization count (INNOVATION) has a mean of 8.2072 and a standard deviation of 1.6187, with a maximum of 11.6534 and a minimum of 3.2958, showing substantial regional disparities in technological innovation capacity. The tertiary industry's share of GDP (IND) has a mean of 0.4994 and a standard deviation of 0.0889, indicating a generally stable industrial structure with minor regional fluctuations. Per capita GDP (GDP) has a mean of 10.8561 and a standard deviation of 0.4622, suggesting regional variations in economic development despite an overall established economic scale. The number of cultural industry organizations (CULF) has a mean of 8.9915 and a standard deviation of 1.1573, revealing a large but unevenly distributed number of cultural industry market entities across regions. The proportion of government expenditure on cultural programs (CULGOV) has a mean of 0.0185 and a standard deviation of 0.0048, showing stable government support for the cultural industry with some regional differences.

Table2 Descriptive Statistics

VarName	Obs	Mean	SD	Min	Median	Max
CULTURE	372	15.399	1.550	7.646	15.203	20.182
FIN	372	7.082	1.075	3.431	7.098	9.355
INNOVATION	372	8.207	1.619	3.296	8.312	11.653
IND	372	0.499	0.089	0.327	0.494	0.838
GDP	372	10.856	0.462	9.682	10.826	12.155
CULF	372	8.991	1.157	5.147	9.086	11.624
CULGOV	372	0.019	0.005	0.010	0.018	0.038

5.2 Benchmark regression results

From the benchmark regression analysis in Table 3, financial support (FIN) significantly and positively impacts cultural industry development (CULTURE). Across models (1) - (5), FIN's coefficients range from 1.043 to 1.120, all significant at the 5% level ($p < 0.05$). This confirms H1, indicating that a 1 - unit increase in financial support boosts cultural industry

operating income by approximately 1.043 - 1.120 units, showing a stable and significant driving effect.

Regarding control variables, industrial structure (IND) positively affects cultural industry development, with coefficients of 2.798, 3.174, 3.171, and 2.826 in models (2) - (5), all significant at the 5% level ($p < 0.05$). This suggests industrial structure optimization promotes cultural industry growth. However, GDP, CULF, and CULGOV show no significant impact on the cultural industry, likely due to short-term GDP changes having a minor effect and the limited influence of the other two factors.

In summary, the benchmark regression results indicate that financial support and industrial structure have significant positive effects on cultural industry development, while GDP, CULF, and CULGOV show no significant impact.

Table 3 Benchmark Regression Results

	(1)	(2)	(3)	(4)	(5)
	CULTURE	CULTURE	CULTURE	CULTURE	CULTURE
FIN	1.120*** (19.015)	1.043*** (19.015)	1.085*** (11.625)	1.092*** (7.250)	1.120*** (7.245)
IND		2.798*** (3.755)	3.174*** (3.784)	3.171*** (3.741)	2.826*** (3.447)
GDP			-0.167 (-0.779)	-0.168 (-0.782)	-0.215 (-0.930)
CULF				-0.007 (-0.058)	-0.004 (-0.038)
CULGOV					18.001 (1.368)
_cons	8.095*** (4.841)	6.617*** (15.888)	7.945*** (4.920)	7.964*** (4.866)	8.095*** (4.840)
N	372	372	372	372	372

5.3 Robustness test

To ensure the robustness of the benchmark regression results, this study re-examined the issue using a financial support variable lagged by one period (FINLAG). The results indicated that FINLAG had a significantly positive impact on cultural industry development across all models, with coefficients ranging from 0.874 to 1.130. The control variable IND remained significant, whereas GDP, CULF, and CULGOV continued to show no significant impact. This confirmed the robustness of the research conclusions.

Table 4 Robustness Test

	(1)	(2)	(3)	(4)	(5)
	CULTURE	CULTURE	CULTURE	CULTURE	CULTURE
FINLAG	1.130*** (18.009)	1.036*** (17.310)	1.061*** (10.668)	0.874*** (5.198)	0.918*** (5.243)
IND		3.503*** (4.660)	3.724*** (4.463)	3.847*** (4.526)	3.479*** (4.166)
GDP			-0.101 (-0.441)	-0.066 (-0.285)	-0.122 (-0.487)
CULF				0.181 (1.292)	0.169 (1.220)
CULGOV					17.758 (1.275)
_cons	7.501*** (16.869)	6.390*** (14.870)	7.208*** (4.081)	6.433*** (3.517)	6.688*** (3.538)
N	341	341	341	341	341

5.4 Mediation effect

Next, this paper tests the mediating role of technological innovation (INNOVATION) in financial support's impact on the cultural industry. The regression results show that financial support (FIN) significantly and positively affects the cultural industry (CULTURE), with a coefficient of 1.120 ($p < 0.05$) in model (1). FIN also positively impacts INNOVATION, with a coefficient of 1.373 ($p < 0.05$) in model (2), indicating that financial support promotes technological innovation. In model (3), when both FIN and INNOVATION are included, FIN's coefficient decreases to 0.716 (still significant at $p < 0.05$), while INNOVATION's coefficient is 0.294 ($p < 0.05$). This confirms that technological innovation partially mediates the relationship between financial support and the cultural industry, supporting hypothesis H2.

Table 5 Mediation Effect

	(1)	(2)	(3)
	CULTURE	INNOVATION	CULTURE
FIN	1.120*** (7.245)	1.373*** (26.408)	0.716*** (3.261)
IND	2.826*** (3.447)	-0.337 (-0.905)	2.925*** (3.497)
GDP	-0.215 (-0.930)	-0.123 (-1.409)	-0.178 (-0.786)
CULF	-0.004 (-0.038)	0.124*** (3.067)	-0.041 (-0.357)
CULGOV	18.001 (1.368)	7.843 (1.389)	15.693 (1.176)
INNOVATION			0.294** (2.520)
_cons	8.095*** (4.840)	-1.268* (-1.790)	8.468*** (5.052)
N	372	372	372

6 Conclusion

This study examines the impact of financial support on China's cultural industry and the mediating role of technological innovation, using panel data from 31 Chinese provinces (2012 – 2022). The results show that financial support significantly boosts cultural industry development and that technological innovation partially mediates this relationship. Financial support affects the cultural industry both directly and indirectly through technological innovation. Based on these findings, the study recommends:

(1) Enhancing financial support for the cultural industry. Governments and financial institutions should increase funding for the cultural industry. Financial institutions should innovate products and services, develop specialized financial instruments (e.g., intangible - asset mortgage loans, intellectual - property - backed financing), and broaden financing channels to ensure adequate funding for cultural enterprises.

(2) Fostering the integration of technological innovation with the cultural industry. Governments should boost policy support and investment in cultural - technological integration. Cultural enterprises should strengthen R&D and innovation capacity. Establishing cultural industry innovation platforms and hosting innovation competitions can stimulate innovation and enhance the cultural industry's technological competitiveness.

In summary, the study underscores the importance of financial support and technological innovation for cultural industry development, offering theoretical and empirical support for relevant policy - making.

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