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Analyzes the Impact of China's Digitalization Degree on Industrial Structure from the Perspective of Employment Rate

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Abstract: Focusing on the theme of "The impact of China's digitalization on industrial structure from the perspective of employment rate", this paper collects a large amount of data and uses statistical and econometric methods to deeply discuss the actual impact of the digitalization process on the employment rate of different industries in China's economy. The study aims to reveal the digitized degree and the size of the different industry employment-specific quantitative relations, thus the analysis of the effect of the digitized degree of industrial structure in China, provides the empirical basis for policymakers and stakeholders. By constructing an econometric model, using the time series data, the Internet penetration, computer, software, and auxiliary equipment wholesale (one hundred million yuan) in total assets, as the main explanatory variables, respectively, to analyze its primary industry, secondary industry, and tertiary industry employment, and reveals the mechanism of action, the results are summarized. Results show that the degree of China's digital increase significantly improved China's third industry employment, employment and the second industry also has a certain positive correlation, but negative correlation with the primary industry employment, promoting the development of the industrial structure of high-grade obviously. In addition, this article also puts forward the corresponding policy recommendations to further improve the digital level and the relationship between the industrial structure optimization, to promote the more reasonable allocation of resources.

Keywords: Digital; Industrial Structure; Employment; Empirical Analysis; Mechanism of Policy Recommendations

1. Introduction

With the rapid development of information technology and the wide popularity of the Internet, digital has become an important force in driving global economic change. In China, the digitized process is advancing at an unprecedented speed, deeply affecting every aspect of the social economy, the job market as the core component of economic activity, and the change is striking. The improvement of digitalization not only gives rise to new forms of business and employment models but also brings opportunities for the transformation and upgrading of traditional industries. At the same time, it also triggers extensive discussions on the changes in employment structure, the transformation of skill demand, and employment stability. In this background, based on the different industry employment situations, discussing the influences of the digitized degree of industrial structure in China has important practical significance and theoretical value. On the one hand, revealing the internal relationship between digitalization and employment rates in different industries through empirical analysis is helpful for us to more accurately grasp the changing trend of industrial structure in the era of the digital economy and provide a scientific basis for policy-making. In-depth study, on the other hand, the digital effects on different industries' employment mechanisms, also helps us to better understand the relationship between technological progress and employment, to cope with the possible future employment challenge.

2. Literature Review

This paper reviews the relevant research on the impact of China's digitalization level on industrial structure at home and finds that most scholars believe that there is a clear correlation between the two, and that digitalization level will have a multifaceted impact on China's industrial structure. For example, Ge Zhizhuan and Wu Xibo (2023)[1] pointed out that digitalization is an important direction for China's industrial structure upgrading, and plays an important role in promoting new industrial value creation, factor allocation reorganization,

and the opening up of new markets. Li Xiaoyu and Deng Peiqi (2024)[2] believe that traditional industries can create new business models and forms by improving their design, R&D, and production through digital technology, and achieve industrial structure adjustment and innovative upgrading, thus bringing profound impacts on the industrial structure transformation and upgrading. Mao Yanbing and Zhao Lu (2024)[3] found that industrial digitalization can effectively promote employment, and mainly promote employment through industrial structure upgrading and enhancing entrepreneurial vitality. Yang Guoliang and Chai Jiwen (2023)[4] found that digital technology can penetrate all aspects of production and life, not only improve production and operation efficiency but also promote resource optimization and drive the optimization and upgrading of industrial structure. Su Liqun and Cai Wuwei (2023)[5] pointed out that to establish an independent brand of ceramic enterprises, a composite talent cultivation system must be established, and the industrial digitalization transformation must be promoted. Yang Liu (2023)[6] believes that the digital transformation of the circulation industry is conducive to promoting industrial upgrading and that digital circulation can improve resource allocation efficiency and influence industrial upgrading.

To sum up, the current domestic scholars about the impact of the digitized degree of industrial structure research conclusion, although the research direction is different, that the degree of digital can optimize the industrial structure, and promote industrial upgrading. However, there is still a lack of research on the correlation between the degree of digitalization and the optimization of industrial structure, the explanation of the mechanism of digitalization affecting industrial structure, and the policy of further improving the relationship between digitalization and the optimization of industrial structure can be further supplemented. This paper will take the China digital level and China's first industry, secondary industry, and tertiary industry employment as the research object, get the corresponding quantitative relationship, based on this it is concluded that the digitized degree of the influence of industrial structure, and gives the corresponding mechanism, then puts forward the corresponding policy recommendations.

3. The Empirical Analysis

3.1 Variable Selection

This paper selects the time series data of each variable from 2006 to 2015 for analysis and research. All the data are from the national database, Wind database, China Statistical Information Network, etc. To reduce the problems of heteroscedasticity and multicollinearity in the established econometric model, all variables except the employment rate of each industry are log-transformed.

Be explained variable: a total of three: the first industry of the national employment rate (FER), the second industry of the national employment rate (SER), and the third industry of the national employment rate (TER), in which each industry has total employment/measured by the national labor force.

Important explanatory variables: digitized using the logarithm of Internet penetration (lnIP) and computer, software, and auxiliary equipment wholesale assets (one hundred million yuan) in total logarithmic (lnCSA) to measure. The degree of digitalization can be improved by increasing the Internet penetration rate and the wholesale assets of computers, software, and auxiliary equipment. These two variables are closely related to the degree of digitalization.

Control variables: The logarithm of the average number of students in higher education per 100,000 population (lnHLI) is selected as the control variable. The reason mainly is that the key employment from the graduates of institutions of higher learning, and considering the change of the total population, only with average institutions of higher learning in the school number is not the most direct contact with employment, and the average number of students of institutions of higher learning performance per thousand population density of students, and the employment rate is highly correlated, included in the control variable.

The descriptive statistics of each variable are shown in the figure below.

```
sum FER SER TER lnIP lnCSA lnHLI
```

Variable	Obs	Mean	Std. dev.	Min	Max
FER	10	.3446823	.0516655	.2674208	.4185416
SER	10	.2773827	.0148185	.2475791	.294395
TER	10	.3485318	.029398	.3163598	.4027669
lnIP	10	-1.19139	.5201258	-2.253795	-.6871651
lnCSA	10	6.906577	.6430245	5.84667	7.567981
lnHLI	10	7.696169	.1097988	7.504392	7.8336

Figure 1. Descriptive Statistics of Each Variable

3.2 Establish Econometric Model and Conduct Autocorrelation Analysis and Regression Analysis

$$FER_t = \beta 0 + \beta 1IP_t + \beta 2lnCSA_t + \beta 3lnHLI_t + u_t \#(1)$$
$$SER_t = \beta 0 + \beta 1IP_t + \beta 2lnCSA_t + \beta 3lnHLI_t + u_t \#(2)$$
$$TER_t = \beta 0 + \beta 1IP_t + \beta 2lnCSA_t + \beta 3lnHLI_t + u_t \#(3)$$

Three formulas were expressed in the first, second, and third industries of the national employment rate measurement model was established by the dependent variable. In three models, beta$_0$ is a constant term, beta$_1$, beta$_2$, and beta$_3$ represent the main explanatory variables and the marginal effect of the control variables to be explained variables, namely under the condition of the other variables constant, a single regressor is an additional unit or control, explain the increase of the magnitude of the variable. The random error term u_t represents the combined effect of all other unlisted small factors on the explained variable. Below will be sent to you by stata software this time series model since the correlation analysis and regression analysis.

3.2.1 Autocorrelation test (BG test)

```
. estat bgodfrey

Breusch-Godfrey LM test for autocorrelation
```

lags(p)	chi2	df	Prob > chi2
1	2.288	1	0.1304

H0: no serial correlation

Figure 2. BG Inspection (Primary Industry)

```
. estat bgodfrey

Breusch-Godfrey LM test for autocorrelation
```

lags(p)	chi2	df	Prob > chi2
1	1.691	1	0.1935

H0: no serial correlation

Figure 3. BG Inspection (Secondary Industry)

```
. estat bgodfrey

Breusch-Godfrey LM test for autocorrelation
```

lags(p)	chi2	df	Prob > chi2
1	0.545	1	0.4602

H0: no serial correlation

Figure 4. BG Inspection (Tertiary Industry)

Thus, the three models' p values were greater than 0.1, according to the significance level of 10% of significance tests—three times the econometric model is not related to the industry.

3.2.2 autocorrelation regression analysis and correction

There is no autocorrelation in the three industry models, so the regression analysis of each model is conducted directly. In this paper, the ridge regression method will be used for regression analysis. By adding the regularization term of the L2 norm to the loss function, the regression coefficient will be penalized while minimizing the sum of squared residuals, to stabilize the estimation of regression coefficients and further reduce the negative effects such as insignificant coefficients caused by the collinearity of independent variables. The specific operation is shown in the figure below.

```
. rxridge FER lnIP CSA lnHLI,q(0)

RXridge:  Shrinkage Path has Qshape = 0.00
RXridge:  Adjusted response sum-of-squares =          9
RXridge:  OLS Residual Variance = .00382217
RXridge:  Variance of Principal Correlations = .00042469
MCAL =  0.000 ... True  OLS Summed SMSE = 7.0159563
MCAL =  0.250 ... Estimated Summed SMSE = 24.470669
MCAL =  0.500 ... Estimated Summed SMSE = 75.569467
MCAL =  0.750 ... Estimated Summed SMSE = 148.59947
MCAL =  1.000 ... Estimated Summed SMSE = 230.09228
MCAL =  1.250 ... Estimated Summed SMSE = 307.96992
MCAL =  1.500 ... Estimated Summed SMSE = 374.51548
MCAL =  1.750 ... Estimated Summed SMSE = 426.27985
MCAL =  2.000 ... Estimated Summed SMSE = 461.76849
MCAL =  2.250 ... Estimated Summed SMSE = 483.83725
MCAL =  2.500 ... Estimated Summed SMSE = 502.51298
MCAL =  2.750 ... Estimated Summed SMSE = 522.17189
MCAL =  3.000 ... Estimated Summed SMSE = 548.67046

RXridge:  Shrinkage Coefficients...
Number of observations (_N) was 0, now 13.
file rxridge1.dta saved

RXridge:  Scaled MSE Risk Estimates...
Number of observations (_N) was 0, now 13.
file rxridge2.dta saved

RXridge:  Excess Eigenvalue Estimates...
Number of observations (_N) was 0, now 13.
file rxridge3.dta saved

RXridge:  Inferior Direction Cosine Estimates...
Number of observations (_N) was 0, now 13.
file rxridge4.dta saved

RXridge:  Shrinkage DELTA Factors...
Number of observations (_N) was 0, now 13.
file rxridge5.dta saved

RXridge:  Estimated Sigma = .06182372

RXridge:  Uncorrelated Components...                    Number of obs =        9
```

FER	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
c1	-.5708446	.0121358	-47.04	0.000	-.60054	-.5411493
c2	-.2091549	.0660278	-3.17	0.019	-.3707191	-.0475907
c3	1.677154	.1493628	11.23	0.000	1.311676	2.042631

Figure 5. regression Analysis (First Industry)

```
. rxridge SER lnIP lnCSA lnHLI,q(0)

RXridge:  Shrinkage Path has Qshape = 0.00
RXridge:  Adjusted response sum-of-squares =          9
RXridge:  OLS Residual Variance = .13902722
RXridge:  Variance of Principal Correlations = .01544747
MCAL =  0.000 ... True  OLS Summed SMSE = 7.7269242
MCAL =  0.250 ... Estimated Summed SMSE = 5.8811215
MCAL =  0.500 ... Estimated Summed SMSE = 4.3891598
MCAL =  0.750 ... Estimated Summed SMSE =  3.223902
MCAL =  1.000 ... Estimated Summed SMSE = 2.3602988
MCAL =  1.250 ... Estimated Summed SMSE = 1.7756573
MCAL =  1.500 ... Estimated Summed SMSE =  1.448806
MCAL =  1.750 ... Estimated Summed SMSE = 1.3546852
MCAL =  2.000 ... Estimated Summed SMSE =  1.439486
MCAL =  2.250 ... Estimated Summed SMSE = 1.6126471
MCAL =  2.500 ... Estimated Summed SMSE = 2.1131748
MCAL =  2.750 ... Estimated Summed SMSE = 2.8705747
MCAL =  3.000 ... Estimated Summed SMSE = 3.8021386

RXridge:  Shrinkage Coefficients...
Number of observations (_N) was 0, now 13.
file rxridge1.dta saved

RXridge:  Scaled MSE Risk Estimates...
Number of observations (_N) was 0, now 13.
file rxridge2.dta saved

RXridge:  Excess Eigenvalue Estimates...
Number of observations (_N) was 0, now 13.
file rxridge3.dta saved

RXridge:  Inferior Direction Cosine Estimates...
Number of observations (_N) was 0, now 13.
file rxridge4.dta saved

RXridge:  Shrinkage DELTA Factors...
Number of observations (_N) was 0, now 13.
file rxridge5.dta saved

RXridge:  Estimated Sigma = .37286355

RXridge:  Uncorrelated Components...                    Number of obs =        9
```

SER	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
c1	.5463633	.0725064	7.54	0.000	.3689465	.7237801
c2	.0725304	.6332983	0.11	0.913	-1.477095	1.622156
c3	-1.138459	.8172692	-1.39	0.213	-3.138245	.8613265

Figure 6. Regression Analysis (Secondary Industry)

```
. rxridge TER lnIP CSA lnHLI,q(0.5)

RXridge:  Shrinkage Path has Qshape = 0.50
RXridge:  Adjusted response sum-of-squares =          9
RXridge:  OLS Residual Variance = .03940967
RXridge:  Variance of Principal Correlations = .00437885
MCAL =  0.000 ... True  OLS Summed SMSE = 7.0159563
MCAL =  0.250 ... Estimated Summed SMSE = 8.4780738
MCAL =  0.500 ... Estimated Summed SMSE = 15.973871
MCAL =  0.750 ... Estimated Summed SMSE = 27.896593
MCAL =  1.000 ... Estimated Summed SMSE =  42.67103
MCAL =  1.250 ... Estimated Summed SMSE = 58.831021
MCAL =  1.500 ... Estimated Summed SMSE = 75.086491
MCAL =  1.750 ... Estimated Summed SMSE = 90.535419
MCAL =  2.000 ... Estimated Summed SMSE = 104.37865
MCAL =  2.250 ... Estimated Summed SMSE = 116.15855
MCAL =  2.500 ... Estimated Summed SMSE = 125.85062
MCAL =  2.750 ... Estimated Summed SMSE = 133.79024
MCAL =  3.000 ... Estimated Summed SMSE = 140.41461

RXridge:  Shrinkage Coefficients...
Number of observations (_N) was 0, now 13.
file rxridge1.dta saved

RXridge:  Scaled MSE Risk Estimates...
Number of observations (_N) was 0, now 13.
file rxridge2.dta saved

RXridge:  Excess Eigenvalue Estimates...
Number of observations (_N) was 0, now 13.
file rxridge3.dta saved

RXridge:  Inferior Direction Cosine Estimates...
Number of observations (_N) was 0, now 13.
file rxridge4.dta saved

RXridge:  Shrinkage DELTA Factors...
Number of observations (_N) was 0, now 13.
file rxridge5.dta saved

RXridge:  Estimated Sigma = .19851869

RXridge:  Uncorrelated Components...                    Number of obs =        9
```

TER	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
c1	.5257443	.0389687	13.49	0.000	.4303912	.6210973
c2	.4649108	.2120182	2.19	0.071	-.053879	.9837006
c3	-2.859345	.4796105	-5.96	0.001	-4.03291	-1.68578

Figure 7. Regression Analysis (The Tertiary Industry)

The three models are in a good fitting degree, explaining variables affect basic is significant. Analysis shows that the first industry of the national employment and describes the digitized interpretation of the two variables are negatively correlated and explanatory variables are larger, the influence of the sample regression model can be written as:

$$FER_t = 0.57IP_t - 0.21lnCSA_t + 1.68lnHLI_t + e_t\#(4)$$

The national employment rate of the secondary industry is positively correlated with the two explanatory variables describing the degree of digitalization, and the explanatory variables have a great influence on them. The sample regression model can be written as follows:

$$SER_t = 0.55IP_t + 0.07lnCSA_t - 1.13lnHLI_t + e_t\#(5)$$

The national employment rate of the tertiary industry is positively correlated with the two explanatory variables describing the degree of digitalization, and the explanatory variables have a greater impact on it than the national employment rate of the secondary industry. The sample regression model can be written as follows:

$$TER_t = 0.52IP_t + 0.46lnCSA_t - 2.86lnHLI_t + e_t\#(6)$$

Digital deepening comprehensive available, will reduce the primary industry of the national employment, and increase the second industry and the tertiary industry of the national employment, which is especially obvious to the promotion of the third industry of the national employment. The results show that from the perspective of employment rate, the degree of digitalization optimizes the industrial structure and promotes industrial upgrading.

3.3 Robustness Test

3.3.1 The main explanatory variables are lagged by one period

FER	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
c1	-.5621189	.0249202	-22.56	0.000	-.6261783	-.4980595
c2	.477889	.2054383	2.33	0.068	-.050207	1.005985
c3	-1.460546	.2660182	-5.49	0.003	-2.144367	-.7767243

Figure 8. Robustness Test 1 (First Industry)

SER	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
c1	.5281382	.0805975	6.55	0.001	.3209558	.7353207
c2	1.143019	.6644336	1.72	0.146	-.5649619	2.851
c3	-1.095374	.8603625	-1.27	0.259	-3.307006	1.116258

Figure 9. Robustness Test 1 (Secondary Industry)

TER	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
c1	.5155494	.0426822	12.08	0.000	.4058314	.6252674
c2	-1.06285	.3518655	-3.02	0.029	-1.967349	-.1583509
c3	2.378382	.455624	5.22	0.003	1.207163	3.5496

Figure 10. Robustness Test 1 (Tertiary Industry)

As shown in the above, the main explanation variable lag issue, the basic variables significantly, according to test the model by robustness test.

(2) Replace main explanatory variables

This article will be the main explanation of three times industry model variables, Internet penetration of logarithmic (lnIP) with the computer, software, and auxiliary equipment wholesale (one hundred million yuan) in total assets logarithmic (lnCSA) respectively with the same representative variables can be digitized degree - telecom business logarithm of the total (lnTS) and digital television subscribers logarithmic (lnDT S), ridge regression again, the results are as follows.

FER	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
c1	-.6847698	.0239672	-28.57	0.000	-.7434154	-.6261242
c2	.0486109	.0337831	1.44	0.200	-.0340533	.1312752
c3	2.120522	.2945868	7.20	0.000	1.399694	2.84135

Figure 11. Robustness Test 2 (First Industry)

SER	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
c1	.6628151	.0401297	16.52	0.000	.5646213	.7610089
c2	-.190365	.056565	-3.37	0.015	-.3287747	-.0519554
c3	2.334824	.4932443	4.73	0.003	1.127898	3.541749

Figure 12. Robustness Test 2 (Secondary Industry)

TER	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
c1	.6275316	.0393281	15.96	0.000	.5312993	.7237639
c2	.0240076	.0554351	0.43	0.680	-.1116372	.1596525
c3	-3.885737	.4833913	-8.04	0.000	-5.068553	-2.702921

Figure 13. Robustness Test 2 (Tertiary Industry)

According to the result, the replacement is still the basic variables significantly, and the show of digitized degree and three industry employment relationship and replace former basic consistent, so that the model can through the robustness test.

4. Policy Recommendations

From the perspective of employment rate, the development of digitalization optimizes the industrial structure and promotes the high-level development of the industrial structure. This section is mainly from the digital level optimization of industrial structure-function mechanism and put forward the perfect digital development and optimize the structure of industry of China of the relationship between two aspects of policy recommendations for analysis.

4.1 Mechanism of Action

4.1.1 Digital development leads to a decline in the employment rate of the primary industry

With the popularization and application of

digital technology, the mode of agricultural production has undergone profound changes. The introduction of automation and intelligent equipment has greatly improved the efficiency of agricultural production, thus reducing the demand for human resources. As a result, the employment rate of the primary industry (agriculture) shows a downward trend. This change is not only happening in developing countries but is also common in developed countries.

4.1.2 Digital development has promoted the employment rate of the secondary industry

Although digital development to a certain extent, reduces the primary industry demand for labor, it has also brought the second industry (industrial) new jobs. The application of digital technologies, such as intelligent manufacturing and industrial Internet, makes industrial production more efficient, flexible, and intelligent. The development of these emerging fields has not only improved the efficiency and quality of industrial production but also created a large number of jobs, thus promoting the rise of the employment rate of the secondary industry.

4.1.3 Digital development has greatly improved the employment rate of the tertiary industry

Digital development has the most significant impact on the tertiary industry (service industry). With the vigorous development of the digital economy, e-commerce, cloud computing, big data, and emerging service industry constantly emerging, such as artificial intelligence provide a large number of employment opportunities for the Labour market. These emerging service industries not only created direct jobs but also led to the development of the upstream and downstream industry chain, indirectly promoting the employment of more people.

(1) The rise of the emerging service industries, such as network marketing, online education, remote medical treatment, and so on, these areas for the development of high-quality talent have provided a broad space of employment.

(2) The transformation and upgrading of the traditional service industry, digital technology has also promoted the transformation and upgrading of traditional service industries, such as retail, catering, tourism, and other industries through digital means to improve service efficiency and quality, but also created new jobs.

4.1.4 The comprehensive role of digital development in optimizing industrial structure

Through promoting technology innovation and industry upgrading, digital development makes the industrial structure more reasonable, efficient, and sustainable. This change not only improved the economy's overall competitiveness, and promoted the sustainable development of the economy.

(1) Technological innovation: Digital technology has provided strong technical support and innovation impetus for various industries, and promoted the continuous emergence of new products, new forms of business, and new business models.

(2) Industrial upgrading: digital development has promoted the deep transformation and upgrading of various industries, making the industrial structure more in line with the needs and development direction of The Times.

4.2 Policy Suggestions

4.2.1 Strengthen digital infrastructure construction

4.2.1.1 Improving digital infrastructure:

(1) Invest a lot of money and technology to speed up the renewal of digital infrastructure, such as 5G and data centers, to meet the needs of the people and enterprises.

(2) Rationally lay digital infrastructure to avoid disorderly development and excessive competition, and improve the regional coverage and unit output efficiency of new infrastructure.

4.2.1.2 Promoting coordinated regional development:

(1) In view of the relatively weak digital infrastructure in the central and western regions, we should increase investment to improve the level of digital infrastructure, so as to narrow the gap with the eastern region.

(2) The eastern region and the central and western regions should be encouraged to carry out digital infrastructure cooperation to realize resource sharing and complementary advantages.

4.2.2 Promote the deep integration of digital industrialization and industrial digitalization

4.2.2.1 Develop digital core industries:

(1) Focus on artificial intelligence, big data, cloud computing, and other new-generation information technology fields, and cultivate digital industrial clusters with international competitiveness.

(2) Increase investment in digital core industries, support enterprise R&D and innovation, and promote the autonomy and control of key technologies.

4.2.2.2 Promote the digital transformation of traditional industries:
(1) Formulate and implement digital transformation plans for traditional industries, and guide enterprises to use digital technologies to improve production efficiency, optimize management processes, and innovate products and services.
(2) Support enterprises to build digital workshops and intelligent factories, build benchmark enterprises in digital transformation, and play a leading role in the demonstration.
4.2.2.3 Strengthen the integration of digital technology and manufacturing industry:
(1) Promote the wide application of digital technology in the manufacturing industry, such as intelligent manufacturing and industrial Internet, to enhance the intelligence level and competitiveness of the manufacturing industry.
(2) Encourage manufacturing enterprises to carry out digital transformation to realize automation, intelligence, and lean production processes.
4.2.3 Optimize the development environment of the digital economy
4.2.3.1 Improve the system of policies and regulations
(1) Formulate and improve laws and regulations related to the digital economy, and clarify the legal status, rights and obligations, and regulatory mechanism of the digital economy.
(2) Strengthen intellectual property protection, crack down on infringement in the digital sector, and maintain market order and fair competition.
4.2.3.2 Strengthen talent training and introduction:
(1) Strengthen the training of talents in the field of the digital economy, support universities, and vocational colleges to set up digital economy-related majors, and cultivate high-quality digital economy talents.
(2) Introduce top talents and innovation teams in the field of digital economy at home and abroad to provide a guarantee for the development of the digital economy for talents.
4.2.3.3 Improve the level of public services:
(1) Strengthen the construction of digital government, promote the digital transformation of government services, and improve the efficiency and quality of government services.
(2) Promote the wide application of digital technology in education, medical care, culture, and other fields to improve public services and social well-being.
4.2.4 Promote innovative development of the digital economy
4.2.4.1 Strengthening digital technology innovation
(1) Encourage enterprises to increase R&D investment, carry out digital technology innovation and R&D activities, and enhance independent innovation capacity.
(2) Support universities, research institutions, and enterprises to carry out industry-university-research cooperation, and promote the transformation and application of digital technology innovation achievements.
4.2.4.2 Fostering new forms and models of digital economy
(1) Encourage enterprises to explore new forms and models of digital economy, such as platform economy and sharing economy, and promote the deep integration of digital economy and real economy.
(2) Support enterprises to carry out cross-border integration and innovation cooperation, and build an industrial ecosystem and industrial chain of the digital economy.
4.2.4.3 Strengthen international cooperation and exchanges:
(1) Actively participate in international digital economy cooperation and exchanges, learn from international advanced experience and practices, and promote the international development of the digital economy.
(2) Strengthen digital economy cooperation with countries and regions along the Belt and Road, and jointly promote the prosperity and development of the digital economy.

5. Conclusion

This paper takes the national employment rate of the primary industry, the national employment rate of the secondary industry, and the national employment rate of the tertiary industry as the explained variables, and the logarithm of the Internet penetration rate and the logarithm of the total wholesale assets of computers, software and auxiliary equipment (100 million yuan) as the explanatory variables. It is found that the increase of digitalization can optimize the industrial structure by reducing the employment rate of the primary industry, increasing the employment rate of the secondary industry, and greatly increasing the employment rate of the tertiary industry. Finally, the mechanism of this conclusion is analyzed and relevant policy suggestions are put forward.

From the perspective of employment rate, the improvement of digitalization degree is of great significance to the optimization of industrial structure. It promotes the transfer of the labor force from the primary industry to the secondary and tertiary industries and realizes the upgrading and transformation of the employment structure. At the same time, the improvement of digitalization has also promoted the development of emerging industries and jobs, providing new impetus for economic growth. This driving force is not only reflected in the growth of quantity but also reflected in the improvement of quality.

To sum up, strengthening the degree of digitalization can optimize the industrial structure by reducing the employment rate of the primary industry, increasing the employment rate of the secondary industry, and greatly increasing the employment rate of the tertiary industry. This conclusion not only conforms to the trend and law of current economic development but also provides useful reference for the adjustment and upgrading of industrial structure in the future. Therefore, we should actively promote the development and application of digital technology, to better play its important role in optimizing industrial structure and promoting economic development.

References

[1] Ge Zizhuan, Wu Xibo. Spatio-temporal pattern and mechanism of digitalization promoting industrial structure upgrading [J]. Science, Technology and Industry, 2023,23(22):183-192.

[2] LI Xiao-yu , Deng Pei-qi.Measurement of digital industrialization and industrial structure upgrading: an empirical analysis based on provincial panel data [J]. Contemporary Economy, 2024,41(10):27-38

[3]Mao Yanbing, Zhao Lu. The Employment Effects of Industrial Digitalization in the Process of China's Modernization[J]. Journal of Beijing Technology and Business University (Social Sciences Edition), 2024,39(1):30-40

[4] Yang Guoliang , Chai Jiwen. Research on the influence of digitalization on industrial structure optimization: an empirical analysis based on the perspective of factor agglomeration [J]. Economic Research Journal, 2023(335):166-174

[5] Su, L. , CAI, W. et al. The path of digitalization helping rural industry upgrading -- Taking Dehua Ceramic Industry as an example [J]. Straits Science and Technology and Industry, 2023(3):20-22.

[6] Yang Liu. The impact of circulation industry digitalization on industrial upgrading and its mechanism [J]. Business Economics Research, 2023(7):158-161.