

# Research on the Mechanism and Path of Digital Economy Promoting High-Quality Development of Old Revolutionary Areas in Sanming City

Zhelin Li

School of Economics and Management, Sanming College, Sanming, China

Email: lzl966111@163.com

**How to cite this paper:** Li, Z. L. (2023). Research on the Mechanism and Path of Digital Economy Promoting High-Quality Development of Old Revolutionary Areas in Sanming City. *Theoretical Economics Letters*, 13, 1529-1547.

<https://doi.org/10.4236/tel.2023.136086>

**Received:** October 17, 2023

**Accepted:** December 18, 2023

**Published:** December 21, 2023

Copyright © 2023 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

## Abstract

Carrying out digital economy promotion actions is an important measure to achieve high-quality development in the old revolutionary areas of Sanming City. Apply the DEA method to empirically evaluate the effectiveness of the digital economy in promoting the high-quality development of the old revolutionary areas in Sanming City, and explore the mechanisms and paths through which the digital economy promotes the high-quality development of the old revolutionary areas in Sanming City. Research shows that from 2017 to 2021, the digital economy has continued to have a positive effect in promoting the high-quality development of the old revolutionary areas of Sanming City. However, there are still problems such as policy mechanisms that need to be improved and digital economic innovation is not enough. We should follow the development trend of “Internet + Government Services” and continue to Strengthen the core industries of the digital economy in the old revolutionary areas, accelerate the construction of new infrastructure, promote the comprehensive development of the digital economy, and empower the construction of high-quality development demonstration zones in the old revolutionary areas in western Fujian.

## Keywords

Digital Economy, Old Revolutionary Areas in Sanming City, DEA Analysis Method

## 1. Introduction

Developing the digital economy is conducive to the construction of a modern economic system and is an important means to create a model for the revitaliza-

tion and development of revolutionary old areas in the new era. In 2022, the National Development and Reform Commission issued the “Construction Plan for the High-Quality Development Demonstration Zone in the Old Revolutionary Areas of Western Fujian”. The plan combined with the actual conditions of Sanming proposed to support the implementation of digital economy improvement actions to help the development of the old revolutionary areas. In 2022, the Fujian Provincial Digital Fujian Construction Leading Group issued relevant plans, requiring all provincial departments to jointly create a good atmosphere for the development of the digital economy and vigorously promote the construction of Digital Fujian. The report of the 20<sup>th</sup> National Congress of the Communist Party of China proposed the task of “promoting the deep integration of the digital economy and the real economy and creating an internationally competitive digital industry cluster”.

Vigorously developing the digital economy is conducive to promoting industrial prosperity, people’s well-being and common prosperity in old revolutionary base areas. Currently, domestic and foreign scholars study the positive role of the digital economy in promoting the development of revolutionary base areas and economic and social development from different perspectives, forming most of the current academic opinions. For example, [Hou \(2022\)](#) proposed a strategy for digital economy to support the construction of old revolutionary areas based on the specific practice of Huang gang. He believed that the development of digital economy is an effective way to achieve “overtaking on corners” and leapfrog development. [Wang \(2022\)](#) pointed out that old revolutionary areas can take advantage of the general trend of digital economic development to “overtake” in corners, and explored the practical path for the development of Jiangxi’s digital economy. [Chen et al. \(2022\)](#) found that the digital economy promotes industrial optimization and upgrading and helps people in old areas increase their income. [Chen \(2022\)](#) pointed out that the digital economy can greatly reduce the cost of information acquisition and market transactions, providing opportunities for rural revitalization in old revolutionary areas.

In addition, [Zhang \(2023\)](#) took Chongqing as an example and found that the digital economy has an important boosting and pulling relationship with economic and social development, coordinated regional economic development, and urban-rural integrated development. [Zong et al. \(2023\)](#) conducted a typical case analysis based on the practice in Jiangxi, and by sorting out the research status of digital economy and rural revitalization, they concluded that the digital economy can directly promote the five dimensions of rural revitalization.

At the same time, [Ding \(2020\)](#) believes that the digital economy can help improve allocation efficiency, realize industrial structure adjustment, transformation and upgrading, increase total factor productivity, and promote high-quality economic development. [Chao et al. \(2023\)](#) found that the digital economy is an important focus in promoting the high-quality development of my country’s economy, and studied its impact on high-quality economic development from

three levels: power change, efficiency change, and quality change. [Chen and Luo \(2022\)](#) believe that building a digital ecological platform and actively practicing digital transformation can create scale effects and serve major national strategies. [Zhou and Wu \(2023\)](#) proposed that the digital economy can significantly promote common prosperity, and based on this, they proposed countermeasures and suggestions to accelerate the development of the digital economy and further accelerate the realization of common prosperity. [Liu \(2023\)](#) proposed that the digital economy can promote the upgrading of the industrial structure by promoting the optimization of the consumption structure. [Ge and Wu \(2021\)](#) proposed suggestions such as promoting the construction of new infrastructure, promoting economic efficiency improvement and economic structure optimization, promoting the transformation of government governance models, and promoting the high-quality development of our country's economy. But generally speaking, the current literature shows that research on the mechanisms and paths to promote high-quality development of revolutionary old areas focuses more on financial support, agricultural modernization, red culture, etc., and on the digital economy promoting high-quality development of revolutionary old areas. There is a lack of research on its mechanisms and paths, which is the theoretical value and practical significance of this study.

## **2. The Main Content of Digital Economy Promoting High-Quality Development of Old Revolutionary Areas in Sanming City**

### **2.1. The Main Advantages of Digital Economy in Promoting the Development of Old Revolutionary Areas in Sanming City**

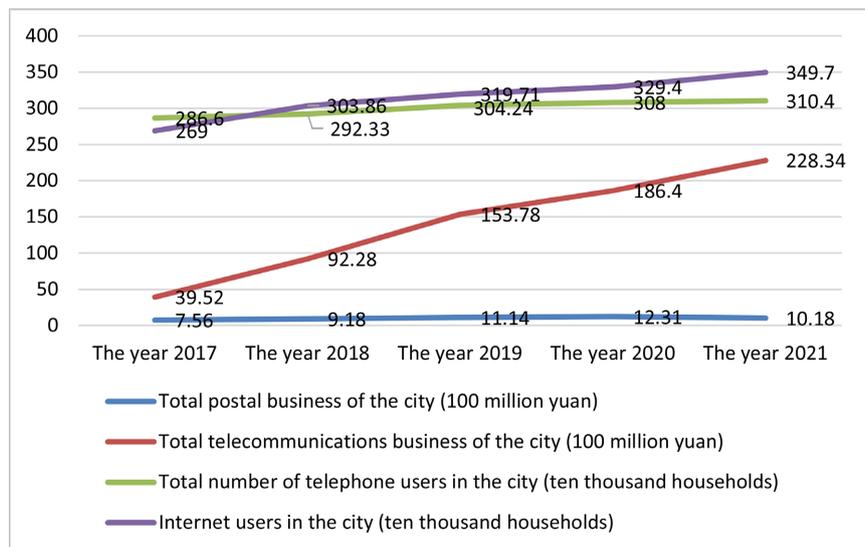
#### **2.1.1. Policies for the Digital Economy to Support the Development of Old Revolutionary Areas Have Been Continuously Improved**

The issuance of the “Construction Plan for the High-Quality Development Demonstration Zone in the Old Revolutionary Areas of Western Fujian” fully reflects the great importance attached by the Party Central Committee and the State Council to the high-quality development of the Old Revolutionary Areas in Western Fujian. The “Plan” focuses on six aspects, including consolidating green advantages and adhering to innovation-driven development. Expand to better promote the implementation of the high-quality development strategy in old revolutionary base areas. In terms of digital economy, the “Plan” proposes to create distinctive digital industries and effectively promote the development of the digital economy. At the same time, Sanming City issued the “Sanming City’s “Special Plan for Digital Sanming Construction during the 14<sup>th</sup> Five-Year Plan”, which proposed Sanming City’s goals and plans for developing the digital economy in terms of deepening the construction of digital government and building a digital social smart governance system. In addition, the Sanming Municipal People’s Government Office issued a series of policies such as the “Sanming City Digital Economy Development Implementation Plan” and the

“New Era “Digital Sanming Broadband Project” and Accelerated 5G Development Action Plan” to ensure the implementation of “Internet+” from a policy perspective. Provide strong support and institutional guarantee for the development of Sanming City’s digital economy.

### 2.1.2. The Coverage Rate of Digital Economy Services in Revolutionary Old Areas Continues to Increase

In July 2022, e-Sanming, as a government service platform for Sanming’s digital economy, has been operating for three years. In the past three years, eSanming has had 1.566 million registered users, accounting for about 63% of the city’s permanent population, 1.39 million real-name authenticated users, and a total of 185 million visits. At the end of 2021, the actual number of cable TV users in Sanming City was 525,600, and the city’s total telecommunications business volume was 2.62 billion yuan, an increase of 22.5%; the telecommunications industry business revenue was 2.17 billion yuan, an increase of 7.7%; the total number of telephone users in the city was 3.104 million, and the city’s Internet There are 3.497 million users, the Internet user penetration rate is 140%, and the mobile phone penetration rate is 109%. Relevant data are from Sanming Statistical Yearbook. Relevant development data are shown in **Figure 1**.



Data source: Sanming Statistical Yearbook (2017-2021).

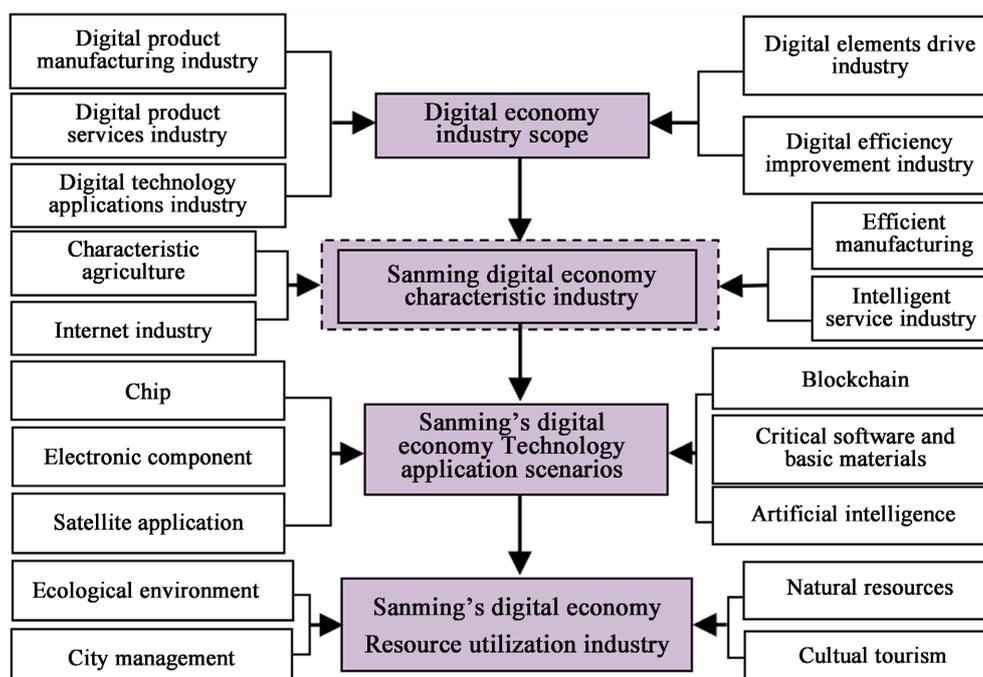
**Figure 1.** Digital economy coverage in the old revolutionary areas of Sanming City.

As can be seen from **Figure 1**, the total number of postal business, telecommunications business, telephone users and Internet users in the city all show an upward trend (except the total number of postal business in the city from 2020 to 2021). From 2017 to 2021, the average growth rate of the total postal business in the city was 8.99%, showing an upward trend, but the total growth rate was not high, it is because from 2020 to 2021, its growth rate was  $-17.30\%$  with the decrease of 213 million yuan. During this period, the city’s total telecommunications

business showed an excellent development trend, with an average growth rate of 60.96%, of which the highest growth rate (133.50%, the increase of 5.276 billion yuan) between 2017 and 2018. In terms of citizens' use of digital products, the total number of telephone users and Internet users in the city showed an upward trend, with an average growth rate of 2.02% and 6.84% respectively. Overall, from the data in **Figure 1**, it can be seen that the coverage rate of digital economy service in Sanming old revolutionary base area is continuously improving, and the development of digital economy in Sanming City is relatively good.

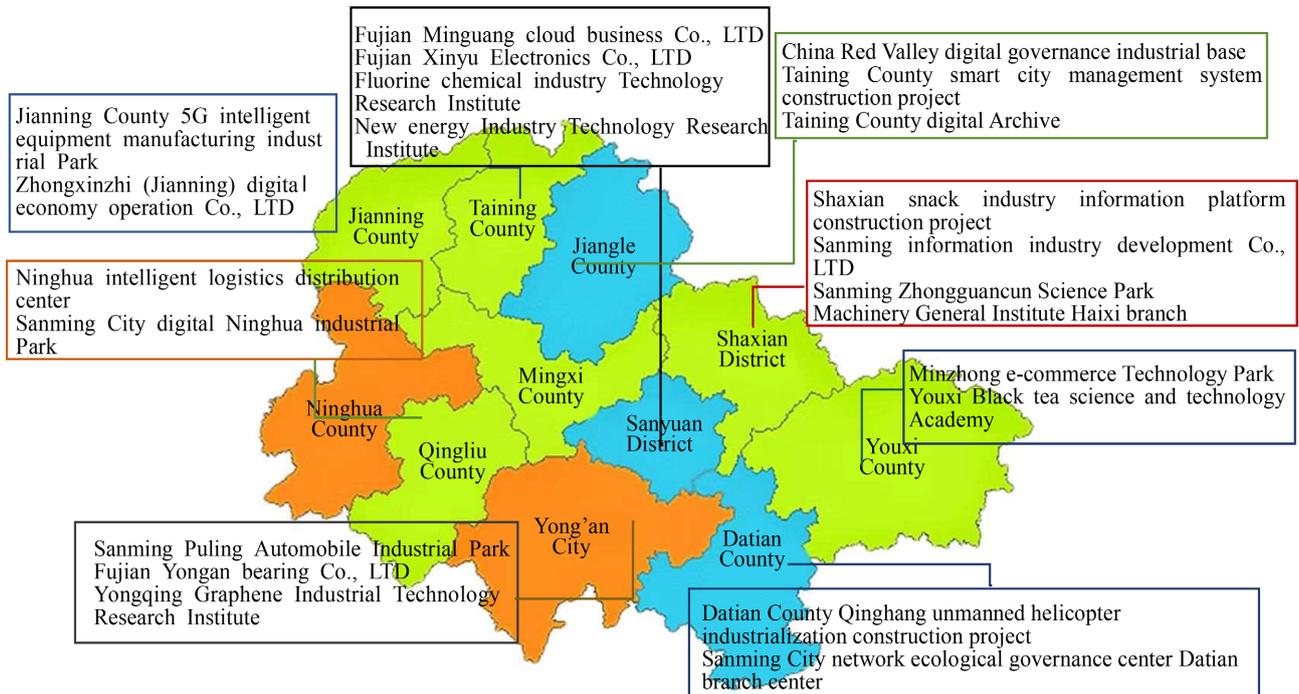
### 2.1.3. Digital Economy Promotes the Continuous Development of Related Industries in Old Revolutionary Areas

Sanming City actively undertakes the transformation and upgrading of the real economy, builds Sanming City's digital economic industry innovation ecosystem, and effectively promotes the development of the digital economy. At present, Sanming City's digital economy has made major breakthroughs in promoting related industries in old revolutionary areas, forming a digital economy emerging industry cluster centered on Zhongguancun Science and Technology Park, the Haixi Branch of the General Machinery Research Institute, and the Fluorine Chemical Industry Technology Research Institute. Specific industries and platforms see **Figure 2** and **Figure 3**.



Content source: Statistical Classification of Digital Economy and Its Core Industries (2021) by National Bureau of Statistics ([https://www.gov.cn/gongbao/content/2021/content\\_5625996.htm](https://www.gov.cn/gongbao/content/2021/content_5625996.htm)), Related articles from the National Development and Reform Commission (<https://my.mbd.baidu.com/r/1aDCJu8UIRW?f=cp&u=785bc5c63f11db4b>), Sanming City People's Government Office on the issuance of Sanming City digital economy development implementation plan notice ([https://www.sm.gov.cn/smsrmzfbgs/smsrmzfi/zfxgkml/fggzghgfwj/202109/t20210926\\_1709157.htm](https://www.sm.gov.cn/smsrmzfbgs/smsrmzfi/zfxgkml/fggzghgfwj/202109/t20210926_1709157.htm))

**Figure 2.** Digital economy application scenarios and utilization industries in Sanming City.



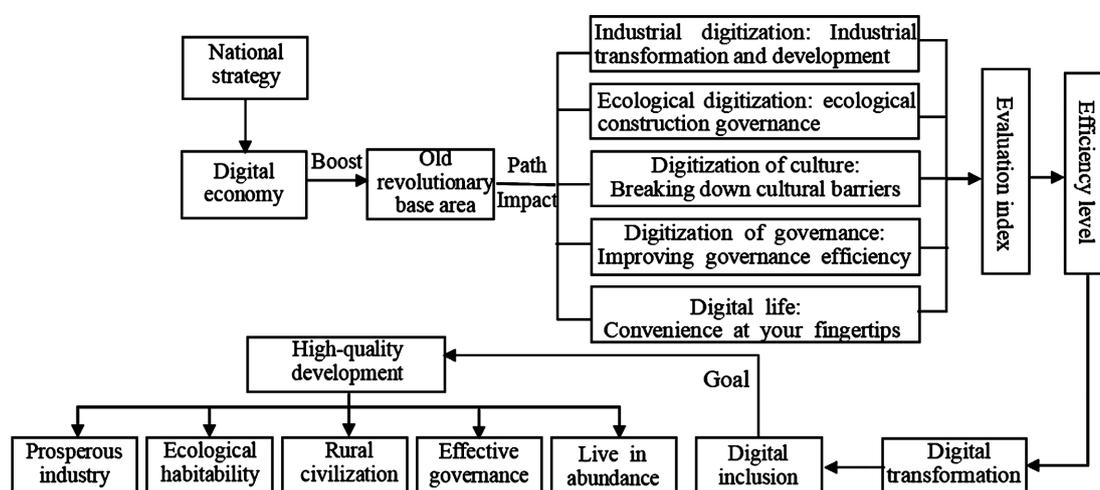
Content source: Search for related industries and companies on the Sanming City People's Government website (<https://www.sm.gov.cn/>).

**Figure 3.** Sanming digital economy emerging industry cluster area.

### 2.2. The Inner Mechanism of Digital Economy Promoting the Development of Old Revolutionary Areas

The digital economy has promoted the development of the old revolutionary areas in Sanming City and has formed an innovative mechanism, which has given development wings to the old revolutionary areas in terms of industry, ecology, culture, governance, life, etc. The development of the digital economy will help the high-quality development of the old revolutionary areas in Sanming City to reach a new level. It will form powerful effects such as promoting industrial transformation and development, strengthening ecological construction and governance, breaking cultural barriers, improving governance efficiency, and promoting convenience at your fingertips, and then comprehensively implement new development concepts and promote the realization of the development strategic goals of revolutionary old areas. The internal mechanism is shown in **Figure 4**.

The development of the digital economy not only highly reflects the five development concepts of China, but also deepens the supply-side structural reforms and promotes the implementation of innovation-driven development strategies, thereby improving China's Competitive new advantages (Wei, 2020). The digital economy leads to industrial prosperity, can innovate industrial models, optimize industrial formats, upgrade industrial forms, cultivate new industries with digital technology, and spawn innovative industries, which is conducive to promoting the revitalization and development of old revolutionary areas in Sanming City.



The content refers to the overall requirements of the national strategy for rural revitalization.

**Figure 4.** The internal mechanism of digital economy promoting the development of old revolutionary areas in Sanming City.

Since the 18<sup>th</sup> National Congress of the Communist Party of China, the new development concept of “lucid waters and lush mountains are invaluable assets” has been put forward. Promoting ecological environment construction plays a vital role in the development of old revolutionary areas. The digital economy can effectively empower ecological environment governance, build an intelligent ecological environment management system, and improve the level of intelligent ecological governance, thereby promoting the high-quality development of the old revolutionary areas of Sanming City with new environmental business formats.

The digital economy can promote culture to benefit the people and empower the cultural industry to enhance innovation capabilities. The digital economy continues to enhance cultural influence by nurturing new cultural thinking, new industries and new models, and provides cultural guarantee for the cultural industry in the old revolutionary areas of Sanming City.

The digital economy promotes the improvement of governance efficiency, mainly through the modernization of data governance in the digital era, the adoption of urban refined management systems, improving the efficiency of government operations, and optimizing the digital governance system to continuously improve the modernization level of governance in the old revolutionary areas of Sanming City.

The digital economy has inspired people’s enthusiasm for innovation, promoted mass entrepreneurship and innovation; changed the employment pattern from fixed employment to flexible employment, from fixed employment to flexible employment, from individual employment to multiple employment, and from technical employment to integrated employment (Zhu et al., 2023); affected the economy and society in the digital era; made convenience within reach, realized the digitization of life, digital visualization, and smart touch, allowing people

in the old revolutionary areas of Sanming City to live a better life.

### 3. Empirical Analysis of Digital Economy Promoting the Development of Old Revolutionary Areas in Sanming City

#### 3.1. Research Methods

##### 3.1.1. Data Envelopment Analysis Principles

Data envelopment analysis, referred to as DEA, is a new intersection field of mathematics, operations research, mathematical economics and management science. DEA uses mathematical programming (including linear programming, multi-objective programming, generalized optimization with cone structure, semi-infinite programming, stochastic programming, etc.) models to evaluate “departments” or departments with multiple inputs, especially multiple outputs. The relative effectiveness between “units” (called decision making units, abbreviated as DMU) (called DEA effectiveness) (Ma, 2007). The DEA method was proposed by operations researchers A. Charnes, W. W. Cooper and E. R. hodes. It is a statistical method suitable for evaluating the relative efficiency of a unit with multiple inputs and multiple outputs, and is suitable for the effectiveness synthesis of multiple outputs and multiple inputs. Evaluation problem, at the same time, DEA analysis method can effectively avoid the influence of subjective factors, so this article uses DEA analysis method.

##### 3.1.2. BCC Model

Currently, the CCR and BCC models are the two most widely used models in DEA. The CCR model is suitable for situations where returns to scale are constant and can only explain technical efficiency, while the BCC model is suitable for situations where returns to scale are variable and can explain technical efficiency, pure technical efficiency and scale efficiency. Since the CCR model is closely related to the actual development process of the digital economy In order to improve the accuracy and scientificity of the empirical results, this article selects the BCC model to conduct an empirical analysis on the development of the digital economy in the old revolutionary areas of Sanming City. The CCR and BCC models are shown in the following formulas.

CCR model formula:

$$\left\{ \begin{array}{l} \max \frac{\sum_{k=1}^s u_k y_{kj0}}{\sum_{i=1}^m v_i x_{ij0}} = V_{\bar{p}} \\ \text{s.t.} \frac{\sum_{k=1}^s u_k y_{kj}}{\sum_{i=1}^m v_i x_{ij}} \leq 1, j = 1, \dots, n \\ u_k \geq 0, k = 1, \dots, s \\ v_i \geq 0, i = 1, \dots, m \end{array} \right.$$

The input-based BCC model and the output-based BCC model are respectively:

$$\left\{ \begin{array}{l} \min \theta \\ \text{s.t. } \sum_{j=1}^n \lambda_j x_j \leq \theta x_0 \\ \sum_{j=1}^n \lambda_j y_j \geq y_0 \\ \sum_{j=1}^n \lambda_j = 1 \\ \lambda_j \geq 0, \theta \text{ unconstraint} \end{array} \right.$$

$$\left\{ \begin{array}{l} \max \alpha \\ \text{s.t. } \sum_{j=1}^n \lambda_j y_j \geq \alpha y_0 \\ \sum_{j=1}^n \lambda_j x_j \leq x_0 \\ \sum_{j=1}^n \lambda_j = 1 \\ \lambda_j \geq 0, \alpha \text{ unconstraint} \end{array} \right.$$

## 3.2. Indicator Construction and Data Sources

### 3.2.1. Efficiency Evaluation Index System

The impact of the digital economy on the effectiveness of the old revolutionary areas in Sanming City can be measured by the ratio of digital economic input to the output of various indicators in the old revolutionary areas in a certain period. Taking into account the availability of data and the scientificity, accuracy, and feasibility of the research, this article selects 2 first-level indicators, 5 second-level indicators, and 6 third-level indicators to construct a digital economy to promote high quality in the old revolutionary areas of Sanming City. Evaluation indicator system for development effectiveness (see **Table 1**).

#### 1) Investment

Capital investment is one of the indicators for measuring the efficiency of digital economic development. R&D expenditure is an important part of capital investment. R&D activities can provide strong support for enhancing the country's core competitiveness. R&D expenditure has a great promotion effect on economic growth. R&D Funding expenditure is a reflection of the development level of the digital economy. This article selects R&D (research and development, R&D) expenditure as an evaluation indicator of capital investment in the development effectiveness of digital economy in promoting the development of revolutionary old areas in Sanming City.

#### 2) Material factor input

Measuring material factor input is one of the methods to evaluate the overall development efficiency of the digital economy, and its contribution as an indicator of digital economic growth. This article selects the city's total postal business

**Table 1.** Efficiency evaluation index system.

First-level indicator	Second-level indicator	Third-level indicator	Evaluation indicator unit
Input	Investment Capital	investment Research and experimental development (R&D) expenditure (X1)	Billion yuan
	Material factor investment	Total postal business volume of the city (X2)	Billion yuan
		Total telecommunications business volume in the city (X3)	Billion yuan
	Industry investment	Industry investment: Internet users in the city (X4)	Ten thousand households
Output	Social Benefit	Output Social Benefit Average salary of employees (Y1)	Yuan
	Economic benefits	Economic benefits Gross regional product (Y2)	Ten thousand yuan

volume and the city's total telecommunications business volume as material factor inputs. The above two major business volume are important indicators that reflect the efficiency of digital economic development and are an important manifestation of the development results of the digital economy.

### 3) Industry investment

As a component of the investment in the Internet industry, the city's Internet users are a key element that indicates the development of the digital economy. This article selects the city's Internet users as the industry investment factor for the evaluation index of Sanming City's digital economy development efficiency.

### 4) Social benefits

Social benefit refers to maximizing the use of limited resources to meet the growing material and cultural needs of people in society. There is a high correlation between social benefits and the development level of the old revolutionary areas in Sanming City, and the average salary of employees is an important manifestation of social benefits. This article selects the average salary of employees as the social benefit index of output.

### 5) Economic benefits

As one of the three major benefits, economic benefit is an important level evaluation factor for regional development. This article uses regional GDP as an evaluation indicator of economic benefits.

## 3.2.2. Sample Selection and Data Sources

The specific sample selection data in this article are as follows (see **Table 2**). In order to ensure the accuracy and feasibility of the data, the data samples in this article are all from the "Sanming City Statistical Yearbook", and the time range is 2017-2021.

**Table 2.** Data related to the development of digital economy and old revolutionary areas in Sanming City.

year indicator	input			output		
	Research and experimental development (R&D) expenditure (100 million yuan)	The city's total postal business (100 million yuan)	The city's total telecommunications business (100 million yuan)	The city's Internet users (ten thousand households)	Average employee salary (yuan)	Regional GDP (ten thousand yuan)
2017	17.49	7.56	39.52	269	71,555	21,438,252
2018	20.68	9.18	92.28	303.86	79,202	23,544,019
2019	24.74	11.14	153.78	319.71	86,559	26,015,584
2020	28.16	12.31	186.4	329.4	90,508	26,891,880
2021	33.54	10.18	228.34	349.7	99,287	29,534,685

Data source: Sanming Statistical Yearbook (2017-2021).

### 3.3. Analysis of Empirical Results

This study selects the BCC model and uses DEAP2.1 software to measure the comprehensive technical efficiency, pure technical efficiency and scale efficiency of Sanming City's digital economic development. It selects (R&D) expenditures, the city's total postal business volume, the city's total telecommunications business volume, The four major indicators of the city's Internet users are used as investment variables to measure Sanming City's digital economy investment from three perspectives: capital investment, material factor investment, and industry investment. Two indicators, average employee salary and regional GDP, are selected to determine the social impact of the city. In terms of benefits and economic benefits, the input-output efficiency of Sanming's digital economy in serving the old revolutionary areas was calculated, providing an effective reference for Sanming's future mechanisms and paths to use the digital economy to promote the development of the old revolutionary areas. The calculation results are as follows.

#### 3.3.1. Comprehensive Efficiency Analysis

From the data in **Table 3**, it can be seen that the average comprehensive technical efficiency of the digital economy in promoting high-quality development in Sanming City from 2017 to 2021 is 0.992, which is less than 1, indicating that the development of the digital economy in Sanming City from 2017 to 2021 has not been fully effective. From the perspective of development trends, the overall development trend of Sanming City's digital economy is generally relatively flat with little volatility, but it has reached a relatively high level of development overall. It can be seen from the comprehensive efficiency index equal to 1 in 2017 and 2021 that the comprehensive efficiency reached the highest value in these two years, indicating that the comprehensive efficiency is effective in 2017 and 2021, and the best match between investment and production is achieved.

However, it did not reach the level of 1 in 2018-2020, which also shows that DEA was ineffective in 2018-2020.

**Table 3.** Change trends in input-output efficiency of Sanming City's digital economy from 2017 to 2021.

NO.	Year	Comprehensive efficiency	Pure technical efficiency	Scale efficiency	Return to scale
1	2017	1.000	1.000	1.000	-
2	2018	0.973	1.000	0.973	drs
3	2019	0.997	1.000	0.997	drs
4	2020	0.989	0.993	0.996	drs
5	2021	1.000	1.000	1.000	-
	Mean	0.992	0.999	0.993	

Note: drs represents decreasing returns to scale, and - represents constant returns to scale.

### 3.3.2. Pure Technical Efficiency Analysis

Pure technical efficiency indicators reflect the level of digital economy management efficiency and are production efficiency affected by factors such as management and science. From 2017 to 2021, the overall pure technical efficiency of Sanming City's digital economy development was greater than 0.9, with an average value equal to 0.999, indicating that the overall investment in Sanming City's digital economy maintains a good level. The pure technical efficiency in 2017, 2018, 2019, and 2021 is all 1, indicating that the investment has reached the optimal and effective state, but there is a downward trend in 2020, falling to 0.993, indicating that there is a certain space for improvement in the investment management of digital economy development in Sanming this year, but the pure technical efficiency index this year is between 0.9 - 1, which also shows that after a period of optimization and improvement, the pure technical efficiency level can reach the best state.

### 3.3.3. Scale Efficiency Analysis

Scale efficiency reflects the impact of development scale on the overall output effect, and is the production efficiency affected by the scale of the enterprise. As can be seen from **Table 3**, the average scale efficiency of Sanming City's digital economy from 2017 to 2021 is 0.993, which is greater than 0.9, indicating that the scale of Sanming City's digital economy investment is relatively reasonable. The scale efficiency of Sanming City's digital economy showed the optimal scale in 2017 and 2021, but was less than 1 in 2018, 2019, and 2020, indicating that the scale was invalid.

### 3.3.4. Returns to Scale Analysis

As can be seen from **Table 4**, returns to scale are balanced in 2017 and 2021, which also shows that there is no need to increase input volume and output value.

Diminishing returns to scale from 2018 to 2020 indicate that the relevant inputs and outputs are not optimally allocated and the need to increase resource investment, improve efficiency and expand scale to achieve optimal returns to scale.

**Table 4.** Analysis of returns to scale of Sanming's digital economy from 2017 to 2021.

Year	Return to scale coefficient	Type
2017	1.000	Fixed returns to scale
2018	0.973	Diminishing returns to scale
2019	0.997	Diminishing returns to scale
2020	0.996	Diminishing returns to scale
2021	1.000	Fixed returns to scale

### 3.3.5. Overall Analysis

Comprehensive technical efficiency = pure technical efficiency. The joint impact is that none of the three indicators reached an effective status this year, which also shows that the development of Sanming's digital economy in 2020 has problems such as insufficient resource investment, lack of management talents, and insufficient reform and innovation; in 2018, the pure technical efficiency was 1, and the comprehensive efficiency It is affected by the level of scale efficiency, and the comprehensive efficiency value is equal to 0.973; the pure technical efficiency in 2019 is equal to 1, and the failure of comprehensive efficiency to reach the effective level is affected by the scale efficiency, and the comprehensive efficiency value is equal to 0.997; thus, calculated according to the impact proportion It can be seen that pure technical efficiency accounts for 20% of the factors affecting comprehensive technical efficiency, and scale efficiency accounts for 60% of the factors affecting comprehensive efficiency. Scale efficiency is the main influencing factor when comprehensive efficiency does not reach the optimal state.

Using the DEA-BCC model to measure and study the development of the digital economy in Sanming City, it can be found that the overall efficiency of the development of the digital economy in Sanming City is relatively good and is showing a good trend. However, there are still problems such as unreasonable input and output structures and uncoordinated service matching, it is also necessary to strengthen management levels and increase management talents; reform and innovate the digital economy and increase investment in science and technology; increase investment in factors to promote the transformation and upgrading of traditional industries.

## 4. Problems in Digital Economy Promoting the Development of Old Revolutionary Areas in Sanming City

### 4.1. The Policy Mechanism Needs to Be Improved, and the Top-Level Design Still Needs to Be Improved

Further accelerating the pace of industrial digital transformation, improving da-

ta openness mechanisms, improving laws and regulations, and vigorously removing fundamental and institutional obstacles that restrict the development of the digital economy are of great significance to promoting the long-term development of the digital economy (Gao & Ma, 2020). Currently, the development of Sanming City's digital economy still faces problems such as slow system construction, insufficient policy innovation, and relevant laws and regulations that need to be improved. Policies in digital security, digital governance and other aspects still need to be accelerated and standardized. The construction of the digital government governance system not only responds to the inherent needs of social development under the information revolution, but is also closely related and isomorphic with the transformation of the global governance system (Dai & Bao, 2017). Sanming City should build a digital governance system, improve digital policy systems, strengthen the construction of digital systems, and leverage policy advantages to grasp policy directions. On the one hand, Sanming City urgently needs to effectively supervise various data, improve policy deficiencies, and make up for loopholes in the mechanism. On the other hand, Sanming City still needs to adopt diversified regulatory systems for platforms of different sizes and types, accelerate the construction of anti-monopoly systems, and vigorously strengthen digital policy supervision. The digital economy policy mechanism still needs to continue to innovate and explore on the basis of improvement and optimization, give full play to the advantages of coexistence of development and supervision, and make policy contributions to the development of the old revolutionary areas in Sanming City. At the same time, Sanming City should accelerate the improvement of the top-level design of the digital economy and seize the commanding heights of digital economic development.

#### **4.2. There Is Insufficient Innovation in the Digital Economy and Insufficient Supply of Innovative Talent Elements**

Sanming City's digital economy still has the following shortcomings in promoting the development of revolutionary old areas. Insufficient innovation capabilities in featured industries; insufficient digital business innovation; weak independent innovation and research and development capabilities, etc. Sanming City should build a high-quality digital economy innovation platform, form a digital economy talent team with good innovation capabilities, comprehensively promote the development of new industries, new technologies, new applications, new models, new business formats and other fields in the digital economy, and constantly establish a foothold in the new development stage, continue to implement new development concepts.

The shortage of digital skills talents will greatly restrict the digital transformation of enterprises, thereby affecting the digital transformation process of the entire economy (Chen & Ma, 2018). In the process of developing the digital economy in Sanming City, there are obstacles such as a shortage of digital talents, low digital literacy of citizens, and an imbalance between supply and de-

mand of human resources. Sanming City still needs to increase the number of special training courses such as the Sanming City Digital Economy and Blockchain Industry Talent Special Training Course, transform and improve the digital concept literacy of citizens, introduce and train innovative talents, cultivate digital talent teams, and increase the supply of innovative talent elements.

### **4.3. Infrastructure Construction in Old Revolutionary Areas Is Backward, and the Digital Development of Traditional Industries Is Slow**

Some infrastructure in Sanming City was built relatively early and the supporting infrastructure is weak, which has become a bottleneck for the further advancement of the digital economy. A small number of villages in Sanming City are affected by mountainous environmental conditions, and still have shortcomings such as scarce network resources, backward information circulation, and low network coverage. This has also slowed down the overall development of the digital economy in the old revolutionary areas of Sanming City. Digital infrastructure will unleash the innovative effects of information technology and empower smart city applications (Shi, 2020). Sanming City still needs to continue to improve new infrastructure to provide a solid foundation for the development of the digital economy and steadily promote the development of digital Sanming.

In addition, the current policies related to the digital economy in Sanming City have a relatively obvious effect on leading enterprises, but have little effect on promoting the digital development of some small and medium-sized enterprises. The digital transformation of small and medium-sized enterprises is slow. Due to factors such as talent, capital, technology, and environment, they are unable to better promote reality through numbers. Sanming City's traditional industries still need to continuously build a solid foundation for the real economy, significantly promote the deep and organic integration of digital technology with the real economy, and actively seize opportunities in the digital economy era.

## **5. Suggestions on the Mechanisms and Paths for the Digital Economy to Promote High-Quality Development in the Old Revolutionary Areas of Sanming City**

### **5.1. Comply with the Development Trend of "Internet + Government Services" and Strengthen the Modernization of Digital Government**

"Internet + Government Services" is not simply accessing the Internet in a physical government service center, but using Internet thinking to conduct new business integration and process innovation for government services to construct an integrated, full-process, and seamless government service system (Chen et al., 2016). To carry out government services, Sanming City should improve the data disclosure system, improve the government data website, create an in-

tegrated government service system, and build a modern digital government. Sanming City should actively explore innovative development paths for “Internet + Government Services” platforms such as the Sanming Government Cloud Platform, Sanming Government Service Center, Sanming Online Public Service Platform eSanming, and Sanming City Comprehensive Urban Management Service Platform to improve platform service efficiency. Effectively support the efficient use of government data. In addition, Sanming City must improve the level of government digital governance, reshape the government’s public service concept, and improve the quality of government advertising services, so as to vigorously strengthen the modernization of digital government and help build the digital economy in old revolutionary areas.

### **5.2. Continuously Strengthen the Core Industries of the Digital Economy in Old Revolutionary Areas and Implement the Innovation of the Digital Economy**

Sanming City can form an innovative digital economic ecosystem, strengthen the core industrial clusters of the digital economy, vigorously implement digital economic innovation and development projects, and help the new momentum of digital economic development continue to grow. Sanming City should implement digital economy innovation development projects, promote the digital transformation of traditional industries, and cultivate a number of new digital economy enterprises. At the same time, we can also actively expand the core industries of the digital economy in old revolutionary areas. Leading the future with the digital economy and empowering the innovative development of strategic emerging industries will inject continuous power into the cultivation and expansion of emerging industries (Pan, 2022). For example, in terms of agriculture, Sanming City should steadily develop characteristic digital agriculture, increase investment in rural digital construction, meet rural digital personalized needs, and form competitive agricultural products; it can efficiently utilize rural e-commerce systems and data visualization Management procedures and intelligent crop planting equipment form a strong promoter for the construction of agricultural smart parks in old revolutionary areas; in addition, we reasonably grasp the opportunity of the “China Green City Tesco Sanming” live broadcast festival and promote Sanming’s specialty agricultural products brands through live broadcasts. Carry out promotion and publicity to help people in the old revolutionary base areas increase their income and promote high-quality development in the old revolutionary base areas.

As the only university in Sanming City, Sanming University should strengthen students’ comprehensive abilities to understand data, analyze data, and apply data; encourage students to respond to the call of the digital era and enhance their own innovation awareness and capabilities; and provide courses on digital economic knowledge, digital application, and data processing, etc., to cultivate diversified and compound digital talents and provide a talent foundation for rea-

---

lizing the innovation of the digital economy.

### **5.3. Promote the Accelerated Construction of New Infrastructure and Realize a Smart Digital Society**

Sanming City can build hardware infrastructure, software infrastructure, cloud infrastructure, information infrastructure and other infrastructure on a large scale, and digitally transform existing infrastructure on the basis of the original infrastructure to empower smart services and smart services. Cities and smart societies are safeguarded. In order to realize a smart digital society, Sanming City should focus on health care, education, elderly care, culture, tourism, social welfare and other aspects. Developing the red tourism industry is an effective way to achieve high-quality development in old revolutionary areas. The old revolutionary areas of Sanming City are rich in red tourism resources and have geographical and resource advantages. To develop the red tourism industry, digital technology can be used to combine virtual reality with red tourism; create an AR route for red cultural tourism in Sanming City to restore the immersive red cultural experience; allow tourists to remember the original mission and accept the influence of red culture during the AR red journey. To promote the in-depth development of smart society, in terms of smart education, technical support and financial guarantee should be provided for smart education projects, and the deep integration of education and technology should be comprehensively promoted; teaching concepts should be deeply innovated to cultivate the information literacy of teachers and students; teaching models should be innovated and upgraded to create a comprehensive An immersive smart classroom with participation, full interaction and full experience. Sanming City should focus on the smart development of the digital society, build the digital economy into a catalyst for high-quality development in the city, create a good atmosphere for the development of the digital economy, and contribute key forces to the high-quality development of old revolutionary areas.

## **6. Conclusion**

The development trend of digital economy in Sanming City is good, which can promote the high-quality development of old revolutionary areas in Sanming City through relevant mechanisms and paths. This paper explains the content of digital economy promoting the high-quality development of old revolutionary areas in Sanming City, and carries on the relevant empirical analysis on the development level. At present, the development level of digital economy in Sanming City is relatively high, which plays a positive correlation role in the development of old revolutionary base areas, but there are still some problems. On the basis of this analysis, this paper points out the existing problems in promoting the development of digital economy, and finally puts forward relevant suggestions on the mechanism and path. Sanming City can make the digital economy more effective in promoting high-quality development in the old revolutionary

base areas through complying with the development trend of “Internet + Government Services” and strengthen the modernization of digital government, continuously strengthening the core industries of the digital economy in old revolutionary areas and implement the innovation of the digital economy and promoting the accelerated construction of new infrastructure and realize a smart digital society.

### Funded Project

College Student Innovation Training Project “Research on the mechanism and path of digital economy promoting high-quality development of old revolutionary areas in Sanming City” (Project Number: CD220345).

### Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

### References

- Chao, X. J., Sun, Y. M., & Wang, C. (2023). The Impact of Digital Economy on the High-Quality Development of My Country’s Economy. *Journal of Guangxi Normal University (Philosophy and Social Sciences Edition)*, 1-17. <http://kns.cnki.net/kcms/detail/45.1066.c.20230213.1621.002.html>
- Chen, H., Li, Q. B., Hao, J. X., & Chen, H. D. (2022). Endogenous Development Experience in Old Areas of Fujian Based on the Perspective of Sustainable Revitalization. *Journal of Ningde Normal University (Philosophy and Social Sciences Edition)*, No. 2, 47-54.
- Chen, J. R., & Luo, Y. M. (2022). Actively Implement Digital Transformation to Serve National Strategies Such as the Revitalization of Revolutionary Old Areas and the Construction of the Guangdong-Hong Kong-Macao Greater Bay Area. *China Financial Computer*, No. 9, 24-26.
- Chen, Q. H. (2022). Give Full Play to the “Visible” Advantages of Short Videos and Live Broadcasts to Promote Rural Revitalization in Old Revolutionary Areas. *Theoretical Herald*, No. 6, 33-34.
- Chen, T., Dong, Y. Z., Ma, L., Mei, D. F., Zhang, R. X., Wang, S. H., Yang, D. L., Yu, Y., Zhang, Y., Zheng, L., & Zheng, Y. P. (2016). Promote “Internet + Government Services” to Improve Government Services and Social Governance Capabilities. *Electronics Government Affairs*, No. 8, 2-22. <https://doi.org/10.16582/j.cnki.dzzw.2016.08.001>
- Chen, Y. B., & Ma, Y. F. (2018). Digital Talent-The Core Driving Force of China’s Economic Digital Transformation. *Tsinghua Management Review*, No. Z1, 30-40.
- Dai, C. Z., & Bao, J. (2017). Digital Government Governance—An Investigation Based on the Evolution of Social Forms. *Chinese Administration*, No. 9, 21-27.
- Ding, Z. F. (2020). Research on the Mechanism of Digital Economy Driving High-Quality Economic Development: A Theoretical Analysis Framework. *Modern Economic Discussion*, No. 1, 85-92. <https://doi.org/10.13891/j.cnki.mer.2020.01.011>
- Gao, T. S., & Ma, Y. (2020). The Institutional Support System for the Development of the Digital Economy Needs to Be Improved Urgently. *China Economic Times*, 2020-03-23(004). <https://doi.org/10.28427/n.cnki.njsb.2020.000579>

- Ge, H. P., & Wu, F. X. (2021). Digital Economy Empowers High-Quality Economic Development: Theoretical Mechanism and Empirical Evidence. *Nanjing Social Sciences, No. 1*, 24-33. <https://doi.org/10.15937/j.cnki.issn1001-8263.2021.01.003>
- Hou, L. P. (2022). Research on High-Quality Development Paths in Old Revolutionary Areas—Taking Huanggang City, Hubei Province as an Example. *Journal of Huanggang Vocational and Technical College, 24*, 73-77.
- Liu, Y. (2023). Digital Economy, Consumption Structure Optimization and Industrial Structure Upgrading. *Economics and Management, 37*, 68-75.
- Ma, L. J. (2007). *Research on DEA Theory and Application*. Shandong University.
- Pan, D. (2022). Research on the Innovative Development of Strategic Emerging Industries Empowered by the Digital Economy. *Theoretical Discussion, No. 5*, 168-172. <https://doi.org/10.16354/j.cnki.23-1013/d.2022.05.022>
- Shi, B. (2020). Mechanism and Path of Digital Economy Promoting High-Quality Development of Urban Economy. *Journal of Xi'an University of Finance and Economics, 33*, 10-14. <https://doi.org/10.19331/j.cnki.jxufe.2020.02.002>
- Wang, H. W. (2022). Chinese-Style Modernization of Jiangxi's Digital Economy Development Practice Path—Xinyiji Cooperation Demonstration Zone Promotes High-Quality Leap-Forward Development with the Digital Economy “Project No. 1”. *Old District Construction, No. 19*, 17-18.
- Wei, L. (2020). Research on Quality Evaluation and Promotion Strategy of Digital Economy Development. *Open Journal of Business and Management, 8*, 932-942. <https://doi.org/10.4236/ojbm.2020.82058>
- Zhang, M. (2023). Practical Research on Using Digital Economy to Promote High-Quality Economic Development. *Investment and Entrepreneurship, 34*, 32-34.
- Zhou, Q. S., & Wu, H. H. (2023). Digital Economy Promotes Common Prosperity: Research on Role and Mechanism. *Research World, No. 2*, 1-10. <https://doi.org/10.13778/j.cnki.11-3705/c.2023.02.003>
- Zhu, F. Y., Shi, Y. X., & Luo, W. C. (2023). Analysis of the Relationship between Digital Economy Response to Employment and Inter-Industry Impact Effects. *Open Journal of Business and Management, 11*, 358-375. <https://doi.org/10.4236/ojbm.2023.111020>
- Zong, M. J., Xu, Z. T., Dai, M. L., & Wan, Y. C. (2023). Research Analysis on Digital Economy Promoting Rural Revitalization. *Modern Agricultural Machinery, No. 1*, 17-19.