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The Impact of Government Policies and Corporate Collaboration on the Performance of Digital Economy Innovation Platforms in Fujian Province

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ABSTRACT

This study aimed to assess the effects of demographics on the performance of digital economy innovation platforms in Fujian province, analyze how government policies and corporate collaboration influence their performance, and identify the barriers and challenges involved in establishing and developing effective platforms. The research framework was developed based on the Balanced Scorecard (BSC) model, integrating efficiency and innovation capacity as key performance indicators. The convenience sampling method was employed to collect data from 400 respondents across various sectors of the company, who are actively engaged in the digital economy ecosystem. Data were analyzed using descriptive statistical methods, including frequency, percentage, mean, and standard deviation. The inferential statistical methods used were the independent sample t-test, one-way ANOVA, and multiple linear regression, all at a statistical significance level of 0.05. The analysis results indicate that the differences in age and work experience have a significant effect on performance in digital economy innovation platforms. Government policies, including financial incentives, regulatory frameworks, and strategic guidance, all contribute to platform performance. The regulatory framework has the most decisive influence, followed by strategic guidance and financial incentives. Corporate collaboration, encompassing joint research and development as well as partnership alliances, has a significant influence on the performance of digital economy innovation platforms. Notably, partnerships and alliances exert a more substantial influence compared to joint research and development.

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The research recommends a comprehensive approach to enhance platform performance, including strengthening the regular framework and promoting partnership and alliance efforts. Additionally, the study highlights the need for institutional reforms, resource integration, and the establishment of strategic alliances to build a robust digital economy ecosystem in Fujian Province.

Keywords: digital economy, innovation platforms, government policies, corporate collaboration, performance metrics

INTRODUCTION

The digital economy, characterized by the integration of digital technologies into traditional economic activities, has become a pivotal force in the global economic landscape. It is defined by its rapid growth, broad impact, and deep influence, leading to new business models, enhanced productivity, and innovative consumer experiences (Bao & Yu, 2022). The digital economy is steadily expanding throughout China, accompanied by an increasing disparity. China's digital economy has experienced rapid growth, driven by market demand, technological innovation, and government support. The development level of the digital economy in the eastern region is significantly higher than that in other non-eastern regions, and the development of the digital economy in the eastern region has a higher marginal contribution rate to the improvement of total factor productivity.

Fujian Province, situated on the southeast coast of China, is strategically positioned to capitalize on the opportunities presented by the digital economy. The province boasts a robust industrial base, a highly educated workforce, and a supportive policy environment, making it an ideal laboratory for studying the dynamics of digital innovation. Li and Lv (2025) noted that the digital economy is driving a systematic transformation of the manufacturing industry, which also presents new opportunities for the development of the digital economy in Fujian Province. Despite these advantages, Fujian Province faces significant challenges in fully realizing the potential of the digital economy. According to Wu (2024), the digital economy has a significant impact on innovation in enterprises in Fujian Province, driving technological upgrades and enhancing innovation capabilities. The development and operation of collaborative innovation platforms within the digital economy sector are critical for fostering economic growth and technological advancement. These platforms are designed to facilitate the exchange of ideas, resources, and expertise among various stakeholders, including businesses, academic institutions, and government agencies.

Given the varying development levels of digital economy innovation among regions in China, this study aims to investigate the impact of

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government policies and corporate collaboration on the performance of digital economy innovation platforms in Fujian Province.

METHOD

This study examines the effects of demographics on the performance of digital economy innovation platforms in Fujian province and analyzes how government policies and corporate collaboration influence their performance. The research framework was developed using the Balanced Scorecard (BSC) model, integrating efficiency and innovation capacity as key performance indicators. The target population comprises 400 respondents across various sectors of the digital economy ecosystem. The sample size was determined using Cochran's formula, a widely utilized method for determining sample size for an unknown population. Data were collected via an online platform using a quota sampling method. The content validity was ensured through Item-Object Consistency (IOC) with input from three experts in the related study, with acceptable values to determine valid questions. Reliability, measured with Cronbach's alpha, was greater than 0.7 for all variables used in this study. The statistics used to analyze the data included the independent sample t-test, one-way ANOVA, LSD, and multiple linear regression, all of which were statistically significant at $p < 0.05$.

FINDINGS AND DISCUSSION

Descriptive statistics

Among the 400 respondents, 58.8% were male, slightly more than the percentage of females. The majority of respondents were aged between 36 and 45 years, making up 44.0% of the total. In terms of education, the largest group had a junior college degree, accounting for 35.5%. Job positions were relatively evenly distributed, with business executives forming the largest group at 36.8%. There were noticeable differences in work experience, with the highest proportion (50.2%) having 6 to 10 years of experience. The most common work location was Zhangzhou, where 33.5% of respondents were based.

The respondents' opinions on government policies, corporate collaboration, and the performance of digital economy innovation platforms were analyzed using frequency and percentage, as shown in Table 2.

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Table 2 The Descriptive Statistics of Government Policies

Government Policies	Level of Opinion (Frequency and Percentage)								
	1	2	3	4	5	Mean	SD	Meaning	Rank
Financial Incentives	30 7.5	78 19.5	53 13.3	81 20.3	158 39.5	3.65	1.365	Agree	3
Regulatory Frameworks	23 5.8	33 8.3	36 9.0	82 20.5	226 56.5	4.14	1.220	Agree	1
Strategic Guidance	17 4.3	55 13.8	71 17.8	57 14.2	200 50.0	3.92	1.268	Agree	2
Corporate Collaboration	**Level of Opinion (Frequency and Percentage)**								
	1	2	3	4	5	Mean	SD	Meaning	Rank
Joint R&D	19 4.8	54 13.5	56 14.0	80 20.0	191 47.8	3.93	1.258	Agree	2
Resource Sharing	28 7.0	31 7.8	85 21.3	70 17.5	186 46.5	3.89	1.268	Agree	1
Partnerships and Alliances	44 11.0	53 13.3	60 15.0	68 17.0	175 43.8	3.69	1.421	Agree	3
Performance of Digital Economy Innovation Platforms	**Level of Opinion (Frequency and Percentage)**								
	1	2	3	4	5	Mean	SD	Meaning	Rank
Efficiency	34 8.5	35 8.8	65 16.3	142 35.5	124 31.0	3.72	1.229	Agree	1
Innovation Capacity	7 1.8	26 6.5	77 19.3	125 31.3	165 41.3	4.04	1.12	Agree	2

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Respondents generally held positive views toward government policies supporting digital economy innovation platforms. The regulatory framework received the highest level of agreement, with a mean value of 4.14, reflecting strong and consistent recognition of its supportive role. Strategic guidance also received favorable responses, with a mean value of 3.92, indicating general agreement among respondents. In contrast, fiscal incentives had a lower mean score of 3.65, suggesting more varied opinions and less consensus regarding their effectiveness.

Respondents generally viewed all three forms of corporate collaboration positively, with Joint R&D receiving the highest agreement (mean = 3.93), followed by Resource Sharing (mean = 3.89) and Partnerships and Alliances (mean = 3.69). While all scored within the "agree" range, Joint R&D was the most strongly endorsed, and Partnerships and Alliances showed slightly more varied opinions.

4.2 Inferential Statistics

H1: The difference in demographic factors affects the performance of the digital economy innovation platform differently.

Independent Sample t-tests and one-way ANOVA were conducted to test Hypothesis 1. The testing results, as shown in Table 3, demonstrate that demographic factors, including gender, educational level, work position, and work location, have no significant effect on the performance of the digital economy innovation platform. However, the differences in age and work experience significantly affect the performance of the digital economy innovation platform in this study, which is statistically significant at 0.05.

Table 3 Analysis results on the effects of demographic factors

Demographic factors	Performance Digital Economy Innovation Platform	Analysis Results
Gender	-	t(398) = -.248, p = 0.804
Age	✓	F(3, 396) = 13.32, p = 0.000*
Educational Level	-	F(3, 396) = 1.592, p = 0.191
Work Position	-	F(2, 397) = 1.044, p = 0.353
Work Experience	✓	F(2, 397) = 12.86, p = 0. 000*
Work Location	-	F(3, 396) = 0.166, p = 0.919

- *No different effects at the statistical significance of 0.05*
- ✓ *having different effects at the statistically significant level of 0.05*

H2: The government policies influence the performance of digital economy innovation platforms.

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Multiple linear regression was used to analyze the data and develop the forecasting equation at a 95% confidence level. The analysis results, as shown in Table 4, indicate that strategic guidance and regulatory frameworks have a significant positive predictive influence on the performance of digital economy innovation platforms. The multiple correlation coefficient (R) is 0.455, and the determination coefficient (R^2) is 0.207. The adjusted R^2 is 0.201, indicating that the model can explain 20.1% of the variation in the performance of digital economy innovation platforms. The tolerance values for all predictors were above 0.6, suggesting no multicollinearity among the independent variables.

Table 4 Multiple linear regression coefficients for the government policy influence on the performance of the digital economy

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	1.020	.301		3.394	.000		
Strategic Guidance (X_3)	.217	.052	.216	4.197	.000	.754	1.327
Regulatory Framework (X_2)	.296	.055	.248	5.389	.000	.949	1.054
Financial Incentives (X_1)	.153	.047	.166	3.214	.001	.749	1.336
R = 0.455, R^2 = 0.207, Adjusted R^2 = 0.201, Standard Error = 0.925							

Dependent Variable: Performance of Digital Economy Innovation Platform

The prediction equation for the *performance of the digital economy innovation platform* was developed as follows:

$$Y_T = 1.020 + 0\ .153X_1 + 0.296X_2 + 0.217X_3$$

$$(0.001)\ \ (0.001)\quad (0.000)\ \ (0.000)$$

The analysis results show that *strategic guidance*, *regulatory framework,* and *financial incentives* have a meaningful and positive influence on *the performance outcomes of digital economy innovation platforms, with significant values of 0.000, 0.000, and 0.001, respectively,* in the context of this study. Among the three predictors, *the regulatory framework was the most influential variable, followed by strategic guidance* and *financial incentives*.

H3: The corporate collaboration influences the performance of digital economy innovation platforms.

Multiple linear regression was used to analyze the data and develop the forecasting equation at a 95% confidence level. The analysis results, as

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shown in Table 5, indicate that partnerships, alliances, and Joint R&D have a significant positive predictive influence on the performance of digital economy innovation platforms. The multiple correlation coefficient (R) is 0.483, and the determination coefficient (R^2) is 0.233. The adjusted R^2 is 0.230, indicating that the model can explain 23.0% of the variation in the performance of digital economy innovation platforms. The tolerance values for all predictors were above 0.6, suggesting no multicollinearity among the independent variables.

Table 5 Multiple linear regression coefficients for the government policy influence on the performance of the digital economy

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	.982	.283		3.463	.001		
Partnerships and alliances (X_3)	.336	.055	.300	6.096	.000	.797	1.255
Joint R&D (X_1)	.350	.065	.267	5.419	.000	.797	1.255
R = 0.483, R^2 = 0.233, Adjusted R^2 = 0.230, Standard Error = 0.908							

Dependent Variable: Performance of Digital Economy Innovation Platform

The prediction equation for the *performance of the digital economy innovation platform* was developed as follows:

$$Y_T = 0.982 + 0.350X_1 + 0.336X_3$$

$$(0.001)\ (0.000^*)\ \ (0.000^*)$$

The analysis results show that *joint R&D* and *partnership alliances have a meaningful and positive influence on the performance outcomes of digital economy innovation platforms, with significant values of 0.000 and 0.000, respectively,* in the context of this study. Among the two predictors, *partnership alliance* was the most influential variable, followed by *joint R&D*.

5. Discussion

Q1: How do demographic factors affect the performance of digital innovation platforms?

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The findings of this study reveal that demographic factors, specifically age and work experience, have a significant impact on the performance of digital economy innovation platforms. The results indicate that respondents' age and working experience affect how effectively they engage with and contribute to these platforms. Notably, the majority of participants were male, within the middle-age bracket of 36 to 45 years, and possessed 6 to 10 years of work experience. This demographic profile suggests that mid-career professionals, with a moderate level of experience, are likely to be the most active and effective contributors within digital innovation environments.

This observation aligns with prior research suggesting that individuals in this age group often hold managerial or decision-making roles, making them more involved in digital transformation strategies (Zhou, Meng, Wu & Cheng, 2023). Their accumulated experience enables them to understand organizational processes more effectively while maintaining the adaptability to adopt new digital tools and approaches. Moreover, individuals with 6–10 years of experience are typically past the early learning curve but not yet at a stage where resistance to change is heightened, thereby placing them in a sweet spot for digital innovation engagement (Li, Liu & Shao, 2021).

In conclusion, the performance of digital economy innovation platforms is not only shaped by technological and policy factors but also by the human capital involved. Understanding how age and work experience influence platform engagement offers valuable insights for policymakers and organizational leaders seeking to design more inclusive and effective digital innovation strategies.

Q2: What roles do government policies and corporate collaboration play in the performance of digital innovation platforms?

The findings of this study highlight the pivotal role that both government policies and corporate collaboration play in shaping the performance of digital economy innovation platforms. Government policy emerges as a particularly influential factor, underscoring the importance of a well-structured institutional environment in fostering innovation and digital transformation. Among the policy components analyzed, the regulatory framework demonstrated the most substantial impact on platform performance, which aligns with Lyu et al. (2022), who found that the quality and performance of government regulations have a mediating effect on efficiency. This suggests that clear, consistent, and innovation-friendly regulations provide a foundation upon which digital platforms can grow, scale, and operate with greater efficiency and security.

Following the regulatory environment, strategic guidance also plays a critical role. This encompasses long-term planning, coordination across

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governmental agencies, and alignment with national digital development goals. Strategic policies help set direction, reduce market uncertainty, and encourage investment in digital innovation. While perhaps less immediately impactful than regulatory changes, strategic guidance offers a sustained influence that shapes the development trajectory of innovation platforms over time.

Financial incentives, although influential, were found to have a comparatively lesser influence. This could be attributed to the fact that while funding can accelerate development and adoption, it may not address structural or systemic barriers that affect platform sustainability and integration. Therefore, Fujian province will continue to allocate special funds for the development of the digital economy from 2024 to 2026 (Fujian Investment, 2022). Without a strong regulatory and strategic framework in place, financial support alone may result in fragmented or short-lived initiatives.

In conclusion, within the context of government policies, the analysis provides valuable insights for policymakers seeking to enhance the performance of digital economy platforms. Prioritizing a robust regulatory framework, reinforcing strategic direction, and complementing these with targeted financial incentives can create a more dynamic and resilient digital ecosystem.

For corporate collaboration, partnerships, and alliances exert a more significant and positive influence on the performance of digital economy innovation platforms compared to joint R&D. The roles of partnerships and alliances in facilitating digital transformation include enhancing access to advanced technologies, mitigating risks, expanding market reach, and increasing organizational agility.

In response to the rapid pace of technological change, firms must continuously adapt their alliance management capabilities to remain competitive in evolving digital ecosystems (Kohtamäki, Rabetino, & Möller, 2018; He et al., 2020). Technologies such as virtualization, cloud computing, and blockchain enable faster and more flexible collaboration. However, the operational efficiency of the platform was not positively correlated with its technological advancement. The two major elements that play a decisive role are the transparency of the platform's governance rules and the trust mechanism among participants (Nambisan and Sawhney, 2020). Collaboration with partners and alliances enables organizations to share the risks associated with digital transformation initiatives, reducing the potential impact of failures and opening new markets and customer segments, thereby enhancing the reach and impact of digital platforms.

Joint R&D initiatives contribute to the development of digital economy innovation platforms by allowing organizations to accelerate

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innovation through knowledge sharing and direct enhancements to competitiveness.

Q3: What obstacles or challenges are encountered in the establishment and development of digital economy innovation platforms?

Contextual analysis from the respondents can be summarized as follows: the challenges and barriers in the establishment and development of digital economy innovation platforms in Fujian Province.

1. Challenges: A variety of challenges have been identified. First, the rapid pace of technological change poses a significant challenge, requiring continuous upgrades to infrastructure and capabilities. Second, aligning digital innovation with existing business processes and legacy systems often results in operational inefficiencies. Lastly, fostering cross-sector collaboration can be challenging, as stakeholders often have differing priorities and varying levels of digital maturity.

CONCLUSION

The conclusion section presents a summary of the research findings, which align with the research objectives outlined in the introduction. Then state the main points of the discussion. A conclusion generally concludes with a statement about how the research work contributes to the field of study as a whole (shows how progress is made from the latest knowledge). A common mistake in this section is to repeat the results of an experiment, abstract, or be presented with a very long list. The concluding section must provide evident scientific truths. Additionally, the conclusions can also offer suggestions for future experiments.

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