Proceedings of ICFTBA 2026 Symposium: Digital Government, Finance, Accountability, and Sustainable Economic Development
DOI: 10.54254/2754-1169/2026.AB38338

The National Information-for-Citizens-Benefit Pilot Policy and Corporate Digital Transformation

Mingze Gao

School of Business, Sun Yat-sen University, Shenzhen, China
3294409112@qq.com

Abstract. Using the implementation of the national Information-for-Citizens-Benefit pilot, this paper matches the registered location of enterprises with the annual reports and financial data of A-share listed companies on the Shanghai and Shenzhen markets from 2008 to 2024, and uses the difference-in-differences method to examine whether government information integration changes corporate digital behavior. The estimation results show that after entering the pilot, the digital word frequency in corporate annual reports increases significantly. Further analysis finds that bank loan balances rise, the internal control index improves, and the incidence of internal control failure declines. The policy effect is stronger in enterprises with higher ex-ante financing constraints; the within-group effect is significant in cities with better digital foundations, but the between-group difference across cities is not yet significant. The above evidence indicates that government information integration and government process adjustment can influence corporate digital choices, and can be explained from two aspects: external financing and internal governance.

Keywords: Information-for-Citizens-Benefit pilot, digital government, corporate digital transformation, financing availability, internal control

1. Introduction

Corporate digitalization is not simply adding information equipment, but putting digital technology into decision-making, production, and organizational collaboration [1-3]. Existing studies have recorded the economic effects of this transformation from different sides: the performance of main business operations improves [4], total factor productivity rises [5], and the liquidity of stock trading also increases [6]. At the same time, digital projects often require concentrated investment and slow recovery, and place demands on enterprise resources, organizational adjustment ability, and the industrial and talent conditions of the location [7, 8]. Therefore, apart from internal factors of enterprises, whether the government can reduce the cost of transformation through smoother information supply and government services remains a question that needs empirical testing.

The national Information-for-Citizens-Benefit pilot was launched in 2014, jointly promoted by the National Development and Reform Commission and eleven other departments. The pilot does not directly subsidize enterprises, but uses public service platforms as a carrier to promote data sharing across departments, matter coordination, and the connection of handling processes. For enterprises, this means changes in the ways of querying policy information, submitting business

© 2026 The Authors. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).

DOI: 10.54254/2754-1169/2026.AB38338

materials, and handling government matters. Existing evidence shows that the pilot is related to the expansion of corporate loans and the improvement of productivity, and its effect may come from the decline of non-productive expenditures and the weakening of the perception of policy uncertainty [9]; studies on government data openness have also found positive changes in productivity, innovation, and data utilization [10-12]. Accordingly, government-side information integration may affect corporate digital arrangements through the financing environment, data interaction, and institutional transaction costs.

This paper identifies policy exposure by the city where the enterprise is registered year by year, and uses A-share listed companies on the Shanghai and Shenzhen markets from 2008 to 2024 as the sample for difference-in-differences estimation. The baseline results show that the digital transformation index of pilot enterprises increases relatively. In the channel analysis, bank loan balances, the internal control index, and the internal control failure indicator provide directionally consistent supporting evidence. After adding concurrent digital policies, the core estimate remains positive. The grouped estimates also show that the response of enterprises with higher ex-ante financing constraints is more obvious; there is a significant within-group effect in cities with higher digital foundations, but the between-group difference has not reached the commonly used significance level.

Compared with existing studies, the marginal contribution of this paper mainly lies in three aspects. First, the Information-for-Citizens-Benefit pilot takes the integration of data and processes across government departments as its main content, and this paper thereby supplements micro-level evidence on how digital government affects corporate digital choices. Second, the study extends the external conditions of corporate digital transformation from fiscal support, industrial policies, and other factors to the government information environment. Third, the tests of bank loans and internal control link external financing conditions with internal corporate governance, which helps to understand how government-side digitalization transmits to corporate decisions.

2. Literature review

2.1. Digital government construction and corporate behavior

What digital government cares about is not the application of a single technology, but the adjustment of public-sector information allocation, service processes, and governance relations as digital technology changes. Mergel et al. summarize this change as the systematic transformation of public-sector processes, services, and relations [13]. Bertot et al. and Meijer emphasize that information and communication technology can be turned into transparency and governance benefits only when public information is easy to obtain, verify, and reuse [14, 15]. Jetzek et al. point out from the perspective of innovation that open government data can lower the cost of data acquisition and create conditions for subsequent analysis and application [16]. These studies show that the environment in which enterprises access public information, handle matters, and use public data changes with the construction of digital government.

Domestic empirical studies have begun to examine the corporate consequences of the above changes. There are links between government data openness and enterprise productivity, innovation, data factor utilization, sustainable development, and regional coordination [10-12, 17-19], and higher government transparency may also improve enterprise innovation [19]. The Information-for-Citizens-Benefit pilot is different from general open data policies, and its institutional content also includes inter-departmental sharing and matter coordination. Yang and Ji find that the pilot expands corporate loans and improves productivity by compressing non-productive costs and weakening the

DOI: 10.54254/2754-1169/2026.AB38338

perception of economic policy uncertainty [9]. However, whether enterprises' own digital behavior will change because of this pilot still lacks sufficient evidence.

2.2. Research on corporate digital transformation

Corporate digital transformation requires that technology application enter the business model and organizational system, rather than staying only at the functional support level. Bharadwaj et al. incorporate digital technology into the overall strategic framework of the enterprise [1]; Vial further emphasizes that only when the value creation method or organizational attributes change substantially can it be called transformation [2]. Verhoef et al. as well as Warner and Wager further point out that enterprises need to continuously revise strategies and business processes in light of their own resources and organizational structure [3, 20]. Related reviews also regard organizational change capability and the external digital ecosystem as important conditions for whether the transformation can advance [21, 22].

Around corporate digitalization, empirical literature discusses its results on the one hand and identifies its driving factors on the other. Wu et al. use the annual report text of listed companies to construct an indicator, and find that the degree of digitalization is related to the improvement of stock liquidity [6]; subsequent studies also involve main business performance, productivity, enterprise boundaries, growth, and green innovation [4, 5, 23-25]. In terms of driving factors, fiscal science and technology expenditure, big data comprehensive pilot zones, digital infrastructure policies, and the marketization of data factors have all been included in the tests [7,26-28]. It can be seen that internal resources of enterprises are important, but the digital environment and institutional arrangements of the location may also change the benefits and costs of transformation.

2.3. Literature commentary

Existing digital government studies mainly identify the impact of public data and urban digital policies on production, innovation, and financing [9-12, 17-19, 29]; corporate digitalization studies pay more attention to transformation consequences, as well as external driving factors such as finance, infrastructure, and data markets [4-8, 23-28, 30]. There is still room for connection between the two types of literature: the Information-for-Citizens-Benefit pilot relies on inter-departmental sharing and matter coordination to improve the handling environment, and does not directly allocate funds or technology to enterprises. This paper examines whether such indirect institutional change can cause corporate digital responses, and combines bank loans, internal control, and the enterprise and city conditions before the policy to analyze its channels and applicable boundaries.

3. Theoretical mechanism and research hypotheses

3.1. The digital transformation effect of the Information-for-Citizens-Benefit pilot

Digital projects usually require continuous investment in funds, talent, and technology, and also require the external information and handling rules to be relatively stable. If policy information is scattered and different departments repeatedly require materials, enterprises will bear extra costs of querying, submitting, and coordinating, and the project expectation will be more uncertain. The Information-for-Citizens-Benefit pilot connects scattered services and information to a unified platform, and may therefore compress these non-productive expenditures and improve the certainty of enterprises in judging the return on digital investment [9, 11, 31].

DOI: 10.54254/2754-1169/2026.AB38338

The pilot also changes the data exchange mode between government and enterprises. Unified calibers, online handling, and process tracing improve the actual returns of enterprises in sorting internal data and connecting information systems, and also reduce the information fragmentation between departments. After the decline in information search and handling costs, enterprises can identify changes in the business environment more timely, and use more management resources for business adjustment. Studies on digital infrastructure and big data comprehensive pilot zones show that good urban digital conditions increase the possibility of enterprises adopting digital technology [7, 27]. Therefore, the Information-for-Citizens-Benefit pilot both improves external handling conditions and may increase the returns of enterprises in improving data governance. Hence the following hypothesis is proposed:

Hypothesis H1: The implementation of the national Information-for-Citizens-Benefit pilot increases the degree of corporate digital transformation.

3.2. Financing channel

Digital investment is mostly concentrated in software, data, and professionals, the assets formed are not easy to use for traditional mortgages, and the project returns are also difficult to evaluate ex ante. When banks cannot fully observe project quality, they may tighten credit to control risks, and enterprises lacking funds therefore delay digital expenditure [32]. In addition, digital transformation spans multiple business cycles, and a one-time short-term fund is not enough to cover continuous investment. Long-term tight financing conditions will weaken both the ability of technology upgrading and the willingness of management transformation.

The pilot gradually collects registration, credit, and business information, and forms traceable records through online business. These changes help banks verify enterprise conditions and conduct post-loan management at lower cost, thereby relaxing the available credit line. The study by Yang and Ji shows that the Information-for-Citizens-Benefit pilot reduces the communication cost between banks and enterprises and the information gap in loan evaluation, and banks' willingness to lend then increases [9]. If external funds are easier to obtain, the probability that enterprises delay digital projects due to cash gaps will decline. Hence the following hypothesis is proposed:

Hypothesis H2a: The national Information-for-Citizens-Benefit pilot can promote corporate digital transformation by improving financing availability.

3.3. Internal governance channel

After digital technology enters the procurement, production, sales, and decision-making links, the original data transmission, approval authority, and departmental collaboration of the enterprise will all be affected. If the caliber is inconsistent, the authority is vague, or the responsibility cannot be traced, systematic processing will instead spread errors faster. Therefore, digital transformation needs corresponding data standards, authorization arrangements, and risk control as organizational guarantees.

The Information-for-Citizens-Benefit pilot does not directly stipulate how enterprises set up internal control, but unified reporting, online handling, and business tracing improve the standardization of external handling processes. To avoid reporting errors and approval delays, enterprises may accordingly sort out internal data, responsibility chains, and process records. Existing studies have found that the development of the digital economy and the 'Two-Integration' pilot are related to the improvement of internal control quality [33, 34]. Thus, changes in

DOI: 10.54254/2754-1169/2026.AB38338

government processes may push enterprises to adjust internal governance and provide a more stable operating basis for digital projects. Hence the following hypothesis is proposed:

Hypothesis H2b: The national Information-for-Citizens-Benefit pilot can promote corporate digital transformation by improving internal control.

4. Research design

4.1. Data and sample

The research period is set from 2008 to 2024, and the initial object is A-share listed companies on the Shanghai and Shenzhen markets. The annual report text, financial indicators, securities abbreviations, and the SA index are taken from CSMAR (GTA); the internal control indicators are from the DIB database; urban economic and communication variables are sorted out according to urban statistical materials. The Information-for-Citizens-Benefit pilot cities and their launch times are determined according to the documents issued by the National Development and Reform Commission and other departments.

Sample processing includes four steps: delete financial companies; delete the annual observations of companies marked as ST, *ST, or PT in the current year; exclude records with non-positive annual report word counts or those unable to form core variables; and winsorize continuous variables at the 1% and 99% quantiles. After processing, 52,814 firm-year observations are obtained, covering 5,337 enterprises. The available intervals of urban control items, financing variables, and internal control data are not completely consistent, so the effective number of observations of different regressions varies with the required variables.

4.2. Variable construction

The corporate digital transformation index is recorded as DT. Following the keyword dictionary of Wu et al. [6], we first calculate the total occurrence of digital words in the annual report, then divide it by the total number of Chinese and English words in the annual report, and multiply the ratio by 10,000. A rise in the index means that the relative frequency of discussing digital strategy and digital operation in the annual report increases. It measures the degree of transformation reflected by the disclosed text, and cannot be directly regarded as the actual digital capital expenditure of the enterprise.

The policy variable is recorded as DID. Treat is determined by the city where the enterprise is registered in the current year: it takes 1 when the city has entered the pilot, and 0 otherwise; Post takes 1 in 2014 and later, and 0 in earlier years, and the product of the two constitutes DID. If an enterprise moves its registration location within the sample period, it is re-assigned according to the actual registered city of each year, rather than fixed to the address of a certain year.

Control variables are divided into enterprise and city groups. Enterprise characteristics include Size, Lev, ROA, Cashflow, Fixed, Cash, Growth, and Age. Specifically, Size takes the logarithm of total assets; Lev is total liabilities divided by total assets; ROA is net profit divided by total assets; Cashflow is net cash flow from operating activities divided by total assets; Fixed is the ratio of net fixed assets to total assets; Cash is the ratio of monetary funds to total assets; Growth is calculated by the year-on-year change of total operating revenue; Age is the logarithm of the sample year minus the first listing year plus one. City variables include the logarithm of per capita GDP (ln_pgdp), GDP growth rate (gdpgr), the share of tertiary industry added value (ind3), and the number of mobile phone users per 100 people (mobile).

DOI: 10.54254/2754-1169/2026.AB38338

Among the channel variables, the scale of bank loans uses ln(1 + short-term borrowings + long-term borrowings), and the quality of internal control uses ln(1 + DIB internal control index). When the internal control index is 0 and the rating is D, the firm-year is recorded as internal control failure. The financing constraint grouping is based on the mean of the enterprise's SA index from 2008 to 2013; the urban digital foundation grouping is based on the number of internet broadband access users per 100 people in 2013. Both groupings use the median of the sample cities or enterprises as the boundary.

4.3. Econometric model

To estimate the relative change in the corporate digital index before and after the implementation of the Information-for-Citizens-Benefit pilot, this paper adopts the difference-in-differences model of Equation (1) [35]:

$$DT_{it} = \alpha + \beta DID_{it} + \gamma X_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

Equation (1) takes enterprise i and year t as the observation dimensions. DT is the corporate digital transformation index, DID indicates policy exposure, X includes the aforementioned enterprise and city controls; enterprise fixed effects and year fixed effects absorb the enterprise differences that do not change over time and the common annual shocks, respectively, and the random disturbance is recorded as ε. β is the policy coefficient of interest in this paper, used to compare the DT change of pilot enterprises after the policy with the simultaneous change of non-pilot enterprises. Given the sample unit and error correlation structure, standard errors are clustered by enterprise [6, 36].

5. Empirical results

5.1. Baseline results

Table 1 gives the three specifications in turn. Column (1) only adds enterprise and year fixed effects; column (2) adds enterprise characteristics; column (3) further adds city variables. DID is positive in all three columns and reaches at least the 5% significance level. After adding controls, the estimated value gradually shrinks, indicating that enterprise and city characteristics can explain part of the difference, but the positive result is not entirely driven by these observable factors.

In column (3) with the most complete controls, the DID estimate is 0.1785, equivalent to about 15.8% of the mean of DT in that estimation sample. That is, after the pilot implementation, the relative share of digital words in the annual reports of related enterprises rises, and the baseline evidence is consistent with H1.

Table 1. Baseline DID estimates (outcome: DT)

Variable	(1)	(2)	(3)
DID	0.3570***(0.0648)	0.2739***(0.0628)	0.1785**(0.0722)
Size		0.2765***(0.0331)	0.2883***(0.0410)

DOI: 10.54254/2754-1169/2026.AB38338

Table 1. (continued)

Lev		-0.4142***(0.1278)	-0.4397***(0.1460)
ROA		-0.7210*** (0.1842)	-0.7124*** (0.2238)
Cashflow		-0.0366 (0.1209)	0.0056 (0.1416)
Fixed		-0.9205*** (0.1593)	-0.9793*** (0.1870)
Cash		-0.6707*** (0.1406)	-0.6833*** (0.1605)
Growth		0.0406** (0.0162)	0.0468*** (0.0181)
Age		0.3246*** (0.0444)	0.3194*** (0.0527)
ln_pgdp			-0.2496* (0.1314)
gdpgr			0.0089 (0.0074)
ind3			0.0004 (0.0042)
mobile			0.0009* (0.0005)
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Observations	52,698	48,770	34,022
Firms	5,221	5,000	4,534
Adjusted R^2	0.7595	0.7745	0.7766

Notes: Heteroskedasticity-robust standard errors clustered by firm are shown in parentheses. Significance levels are denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

5.2. Dynamic effects and parallel trends

The event study takes the year before the policy (2013) as the omitted period. The joint test of the coefficients in each period before the policy gives $p = 0.2088$, and cannot reject that these coefficients are jointly zero; each single-period estimate also does not form a persistent rising or falling trajectory. Therefore, before the policy occurs, the treatment group and the control group do not show significantly different systematic trends.

The estimates in the policy year and the following year do not reach significance, the second year after is significant at the 10% level, and from the third year after most coefficients are significantly positive; the joint test of all post-policy coefficients gives $p = 0.0217$. Corporate digitalization involves budget, procurement, training, and process adjustment, so the delayed appearance of effects has some reasonableness. Since the later point estimates do not increase monotonically, this paper only interprets it as the medium- and long-term average change after the policy.

DOI: 10.54254/2754-1169/2026.AB38338

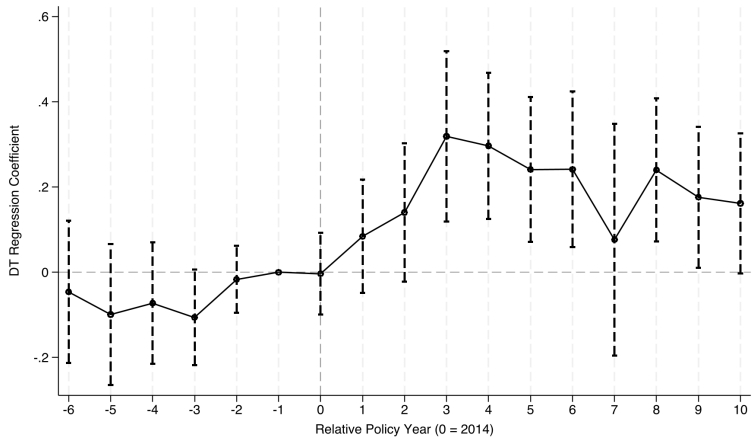

Figure 1. Dynamic effects of the Information-for-Citizens-Benefit pilot policy (base period: 2013)

5.3. Control for concurrent digital policies

Some Information-for-Citizens-Benefit pilot cities also entered the 'Broadband China,' National Smart City, or National Information Consumption pilots one after another. To avoid the common changes of these concurrent policies affecting the core estimate, Table 2 includes the three policy indicators into the baseline specification together.

After adding the above variables, DID is 0.1312, p = 0.067, significant at the 10% level. Because several digital policies overlap in region, time, and content, controlling them simultaneously compresses the effective variation available to distinguish a single policy. The core coefficient remains positive, but its precision is lower than the baseline regression, so this result supports robustness in direction, and the independent effect of the Information-for-Citizens-Benefit pilot should still be stated with caution.

Table 2. Robustness to concurrent digital policies

Variable	Baseline	Concurrent policies
DID	0.1785**(0.0722)	0.1312*(0.0717)
Broadband China		0.0737(0.0608)
Smart City		-0.0545(0.0777)
Information Consumption Pilot		0.0788(0.0717)
Firm and year fixed effects	Yes	Yes
Observations	34,022	34,022
Firms	4,534	4,534
Adjusted R^2	0.7766	0.7767

Notes: Both specifications include firm- and city-level covariates; standard errors are clustered by firm.

DOI: 10.54254/2754-1169/2026.AB38338

5.4. Mechanism tests

5.4.1. Bank loans

The financing channel uses the sum of short-term and long-term borrowings, and takes the logarithm after adding 1 to the amount. The DID in column (1) of Table 3 is positive and significant at the 1% level. This estimate indicates that after the city where the enterprise is located enters the pilot, its bank loan balance increases relatively.

After the business and credit records are collected, they are easier to verify, and the cost for banks to identify risks and conduct post-loan management may decline accordingly. The increase in loan balances echoes the stronger policy effect in enterprises with high financing constraints. The two together form supporting evidence for the financing channel, but do not equate to causal identification of the complete mediation process.

It should be noted that in the strict sample that excludes the financial industry and ST and PT enterprises in the current year, the coefficient of the new bank loan rate is not significant. Therefore, the main evidence relied on by this paper is the loan balance, and it cannot be concluded from this that the pilot continuously raises the current new loan rate of enterprises.

5.4.2. Internal control

The quality of internal control is expressed as ln(1 + DIB internal control index), and a larger value means higher quality. A dummy variable for internal control failure is also constructed: it takes 1 when the index is 0 and the rating is D, and 0 for the rest of the firm-years.

The DID in column (2) of Table 3 is positive, and the DID in column (3) is negative; both estimates are significant at the 5% level. They correspond to the improvement of the internal control index and the decline of the internal control failure probability, respectively, and the directions are consistent with each other.

Unified reporting requirements, online handling, and process records may prompt enterprises to re-sort data calibers, approval responsibilities, and tracing rules. Both internal control indicators give improvement signals, thus supporting the internal governance channel; but this regression cannot rule out other simultaneously occurring transmission mechanisms.

Table 3. Mechanism evidence: financing and internal control

Variable	Ln(1 + Bank Loans)	Ln(1 + Internal Control Index)	Internal Control Failure
DID	0.4815***(0.1743)	0.0860**(0.0395)	-0.0137**(0.0061)
Firm and year fixed effects	Yes	Yes	Yes
Concurrent policy controls	Yes	Yes	Yes
Observations	23,446	33,536	33,536
Firms	3,239	4,486	4,486
Adjusted R^2	0.6834	0.1635	0.1242

DOI: 10.54254/2754-1169/2026.AB38338

Notes: Each regression includes firm- and city-level covariates, the three concurrent-policy indicators, firm fixed effects, and year fixed effects. Standard errors are clustered by firm.

5.5. Heterogeneity analysis

5.5.1. Financing constraint grouping

Financing constraint is measured by the SA index. This paper first calculates the SA mean of each enterprise from 2008 to 2013, and then uses its median to distinguish the low-constraint group and the high-constraint group before the policy [37]. Because the grouping information is earlier than the policy, this treatment avoids the post-implementation enterprise status from determining the group in turn.

In the first two columns of Table 4, the DID of the low financing constraint group is close to zero and not significant; the estimate of the high financing constraint group is positive and significant at the 1% level. The within-group estimates show that the overall positive result mainly comes from enterprises with stronger capital constraints before the policy.

The p-value of the coefficient difference test between the two groups is 0.0862, reaching the 10% significance level. Therefore, the policy response of high-constraint enterprises is stronger, and this between-group evidence also matches the mechanism result of bank loan balances.

5.5.2. Urban digital foundation grouping

The urban digital foundation is expressed by the number of internet broadband access users per 100 people in 2013, and grouped by the urban median. This indicator is taken from the year before the policy, which avoids the Information-for-Citizens-Benefit pilot itself changing the grouping basis.

The last two columns of Table 4 show that the DID of the low digital foundation group is not significant, and the DID of the high digital foundation group is positive and significant at the 1% level. However, the coefficient difference test between the two groups gives $p = 0.1177$, which does not reach the commonly used significance standard.

The operation of information platforms requires communication networks and data processing conditions, and enterprises also need the ability to absorb digital technology; the within-group policy effect is easier to appear when the urban foundation is better. But given that the between-group test is not significant, the existing results can only show that there is a positive effect within the high digital foundation group, and are not yet sufficient to confirm that the urban digital foundation has a stable moderating effect.

Table 4. Heterogeneous effects

Variable	Low Financing Constraints	High Financing Constraints	Low Digital Infrastructure	High Digital Infrastructure
DID	-0.0225(0.1041)	0.3790***(0.1010)	-0.1830(0.2260)	0.2321*** (0.0749)
Firm and year fixed effects	Yes	Yes	Yes	Yes
Observations	12,504	11,938	2,715	31,060
Firms	1,116	1,110	338	4,156

DOI: 10.54254/2754-1169/2026.AB38338

Table 4. (continued)

Adjusted R^2	0.6652	0.7410	0.5875	0.7821

Notes: Firms are split at the median of their mean SA index over 2008-2013. Cities are split at the median of broadband subscribers per 100 people in 2013. All regressions include firm- and city-level covariates, with firm-clustered standard errors.

6. Conclusions and implications

Using data of listed companies from 2008 to 2024, this paper examines the relative change in the corporate digital index after the implementation of the national Information-for-Citizens-Benefit pilot. The enterprise- and year-fixed-effects model shows that the DT of pilot enterprises rises significantly; the event study finds no significant pre-policy difference trend, and the positive effect mainly appears several years after implementation. After including the three concurrent digital policies in the model, DID remains positive and significant at the 10% level, but the estimation precision declines, so the independent effect of a single policy should not be over-emphasized.

In the channel results, bank loan balances increase, the internal control index rises, and the internal control failure probability declines. The coefficient difference of the financing constraint grouping is significant at the 10% level, indicating that the ex-ante capital condition affects the enterprise response to the policy. The within-group estimate of cities with high digital foundations is significant, but the difference between high and low groups is not significant. Overall, financing and internal governance provide a relatively consistent explanation, while the moderating effect of the urban digital foundation still needs more evidence.

The policy implications can be summarized into three points. First, within the boundaries of data security and enterprise privacy, we should continue to unify the data calibers and handling rules of departments, reduce repeated submissions, and improve the channels for financial institutions to verify business and credit information according to law. Second, the construction of public platforms needs to be matched with enterprise data governance, process transformation, and personnel training, so that external government processes can connect with internal enterprise management. Third, cities with insufficient communication networks, public data quality, and digital service talents should first supplement the basic conditions to avoid the gap that the platform is already online but enterprises cannot use it effectively.

References

[1] Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital business strategy: Toward a next generation of insights. *MIS Quarterly, 37*(2), 471–482.

[2] Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems, 28*(2), 118–144.

[3] Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research, 122*, 889–901.

[4] Yi, L. X., Wu, F., & Chang, X. (2021). Enterprise digital transformation process and main business performance: Empirical evidence from text recognition of Chinese listed companies' annual reports. *Modern Finance and Economics (Journal of Tianjin University of Finance and Economics), 41*(10), 24–38.

[5] Zhao, C. Y., Wang, W. C., & Li, X. S. (2021). How does digital transformation affect the total factor productivity of enterprises? *Finance & Trade Economics, 42*(7), 114–129.

[6] Wu, F., Hu, H. Z., Lin, H. Y., & Ren, X. Y. (2021). Enterprise digital transformation and capital market performance: Empirical evidence from stock liquidity. *Management World, 37*(7), 130–144+10.

[7] Sun, W. Z., Mao, N., Lan, F., et al. (2023). Policy empowerment, digital ecology and enterprise digital transformation: A quasi-natural experiment based on national big data comprehensive pilot zones. *China Industrial*

DOI: 10.54254/2754-1169/2026.AB38338

Economics, (9), 117–135.
[8] Shi, Y. P., Wang, Y., & Zhang, W. T. (2021). Digital transformation of Chinese enterprises: Current situation, problems and prospects. *Economist*, (12), 90–97.
[9] Yang, Q., & Ji, Y. (2025). Digital government construction and enterprise total factor productivity: A quasi-natural experiment based on the information benefiting people pilot policy. *Journal of Financial Research*, (6), 96–113.
[10] Li, Z. Y., Wang, X. F., & Chen, X. F. (2024). The impact and mechanism of government data openness on enterprise innovation. *Science Research Management, 45*(7), 11–20.
[11] Peng, Y. H. (2023). The value creation role of open government data: The perspective of firm's total factor productivity. *The Journal of Quantitative & Technical Economics, 40*(9), 50–70.
[12] Zhang, J., Zhang, H. X., & Wang, Y. G. (2026). The impacts of government data openness on the data element utilization level of enterprises. *Science Research Management, 47*(5), 52–63.
[13] Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly, 36*(4), 101385.
[14] Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government Information Quarterly, 27*(3), 264–271.
[15] Meijer, A. J. (2009). Understanding modern transparency. *International Review of Administrative Sciences, 75*(2), 255–269.
[16] Jetzek, T., Avital, M., & Bjørn-Andersen, N. (2014). Data-driven innovation through open government data. *Journal of Theoretical and Applied Electronic Commerce Research, 9*(2), 100–120.
[17] Fang, J. C., Liu, Y., Gao, H. Y., et al. (2023). Can public data openness promote coordinated regional development? A quasi-natural experiment based on the launch of government data platforms. *Management World, 39*(9), 124–142.
[18] Liu, Y., Liang, D., & Zhang, S. (2025). Public data resources and corporate sustainable development: A quasi-natural experiment based on government data openness. *China Journal of Econometrics, 5*(1), 109–128.
[19] Xu, L., & Kong, W. (2023). The impact of government transparency on enterprise innovation in the context of digital government construction. *Journal of Guizhou University of Finance and Economics, 41*(4), 23–30.
[20] Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning, 52*(3), 326–349.
[21] Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies, 58*(5), 1159–1197.
[22] Gong, C., & Ribiere, V. (2021). Developing a unified definition of digital transformation. *Technovation, 102*, 102217.
[23] Yuan, C., Xiao, T. S., Geng, C. X., & Sheng, Y. (2021). Digital transformation and division of labor between enterprises: Vertical specialization or vertical integration. *China Industrial Economics*, (9), 137–155.
[24] Ni, K. J., & Liu, X. Y. (2021). Digital transformation and enterprise growth: Theoretical logic and Chinese practice. *Business and Management Journal, 43*(12), 79–97.
[25] Du, S., & Cao, X. X. (2023). Does digital transformation promote green innovation? Evidence from Chinese listed companies. *Journal of China University of Geosciences (Social Sciences Edition), 23*(4), 56–71.
[26] Wu, F., Chang, X., & Ren, X. Y. (2021). Government-driven innovation: Fiscal technology expenditure and enterprise digital transformation. *Public Finance Research*, (1), 102–115.
[27] Wang, H., Yan, Z. Y., Guo, G. Y., et al. (2023). Digital infrastructure policy and digital transformation of enterprises: "Empowerment" or "negative energy"? *The Journal of Quantitative & Technical Economics, 40*(5), 5–23.
[28] Zheng, G. Q., Zhang, X. Y., & Zhao, X. Y. (2023). How does data element marketization drive enterprise digital transformation? *Industrial Economics Research*, (2), 56–68.
[29] Li, M. S., & Li, H. (2026). Research on the impact of government data openness on the digital transformation of enterprises. *Science Research Management, 47*(5), 64–73.
[30] Huang, L. H., Zhu, H. L., Liu, W. H., et al. (2021). The firm's digital transformation and management: Toward a research framework and future directions. *Journal of Management Sciences in China, 24*(8), 26–35.
[31] Wan, H. L., & Chen, X. Y. (2010). Governance environment, rent-seeking and transaction cost: Evidence from the non-productive expenditures of Chinese firms. *China Economic Quarterly, 9*(2), 553–570.
[32] Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *American Economic Review, 71*(3), 393–410.

DOI: 10.54254/2754-1169/2026.AB38338

[33] Chen, X. H., Zhang, H. W., & Wu, Y. C. (2022). How does the digital economy affect the quality of internal control? *Collected Essays on Finance and Economics, 38*(11), 71–80.
[34] Zhang, Q. C., & Yang, M. Z. (2022). Corporate digital transformation and internal control quality: A quasi-natural experiment from integration of informatization and industrialization. *Auditing Research*, (6), 117–128.
[35] Bertrand, M., Duflo, E., & Mullainathan, S. (2004). How much should we trust differences-in-differences estimates? *Quarterly Journal of Economics, 119*(1), 249–275.
[36] Cameron, A. C., & Miller, D. L. (2015). A practitioner's guide to cluster-robust inference. *Journal of Human Resources, 50*(2), 317–372.
[37] Hadlock, C. J., & Pierce, J. R. (2010). New evidence on measuring financial constraints: Moving beyond the KZ index. *Review of Financial Studies, 23*(5), 1909–1940.