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The Dual Effects of Digital Rhetoric on Firm Performance in the Electronic Equipment Manufacturing Industry: Evidence from ROA and Sales Growth Models

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Abstract. Digital transformation has expanded from actual investment to the way firms describe their digital plans in annual reports. This study examines whether digital rhetoric affects firm performance and whether its effects change over time. The sample contains 50 A-share firms and 150 firm-year observations from China's C39 industry between 2023 and 2025. Digital rhetoric is measured through selected keywords in the Management Discussion and Analysis section. Ordinary least squares models with standard errors clustered at the firm level are used to examine ROA and sales growth. The results show that digital rhetoric is positively and significantly related to ROA. Its relation with sales growth is positive but not statistically significant, and the effect becomes weaker in later years. The findings suggest that digital rhetoric may support current profitability without producing immediate sales expansion. This study adds a disclosure-based perspective to research on digital transformation and distinguishes substantive digital change from symbolic expression.

Keywords: digital rhetoric, digital transformation, firm performance, ROA, sales growth

1. Introduction

In recent years, digital transformation has become a major trend in business. Firms increasingly discuss digital plans in their annual reports and use digital terms when they describe future development. These statements can affect how investors judge a firm's ability to compete and create value. They may also shape market expectations before the results of digital investment become visible.

Existing studies mainly examine what firms do during digital transformation. They focus on digital investment, technology use, innovation, and the effect of these activities on firm performance. This research shows that digital transformation can improve financing conditions and affect business results. However, relatively little attention has been paid to how firms talk about digitalization in their annual reports.

Digital rhetoric does not always represent substantive digital transformation. A firm may use digital language to describe a real management priority. It may also use similar language to meet market expectations or improve its public image. The relation between digital rhetoric and firm

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performance therefore remains unclear. Its effect may also differ between profitability and sales growth.

This study examines whether digital rhetoric is related to firm performance and whether its effect changes over time. The sample contains 50 firms and 150 firm-year observations from the C39 industry between 2023 and 2025. Digital rhetoric is identified through selected keywords in the MD&A section. OLS models with firm-clustered standard errors are used to examine ROA and sales growth. The results show a positive and significant relation between Digital and ROA. The relation with sales growth is positive but not significant. The effect on sales growth becomes weaker in later years.

The study adds a disclosure perspective to research on digital transformation and firm performance. It separates the message firms present from the results they later achieve. It also shows that digital rhetoric may support current profitability without creating immediate sales growth. The findings provide new evidence from Chinese listed firms and offer a clearer view of how digital signals work over time.

2. Literature review

2.1. Digital transformation and firm performance

Information asymmetry makes it hard for investors to judge whether a firm can turn its digital strategy into future cash flows. Annual reports allow managers to explain their plans and expected benefits. Under signaling theory, such disclosure conveys management confidence and helps investors assess the firm's prospects.

Recent studies show how this process works. A more positive tone in digital transformation disclosure is associated with a lower cost of equity, partly because it reduces information asymmetry and attracts investor attention [1]. Positive language can therefore lower perceived risk and investors' required returns. Digital transformation also improves the accuracy of management earnings forecasts by improving disclosure quality [2]. More accurate forecasts help investors assess future earnings and verify management's digital claims.

This signaling effect can extend to firm performance and market value. Firms with higher digital asset intensity and more frequent digital transformation terms in annual reports show better ROA, ROE, and Tobin's Q. These gains become stronger under supportive digital economy policies [3]. Thus, investors consider both actual digital investment and the way management explains its strategy.

Taken together, these studies show that digital disclosure can reduce uncertainty, improve financing conditions, and support firm value. Existing research, however, says less about whether the simple presence of digital language in MD&A is related to short-term operating performance. It remains unclear whether digital rhetoric affects profitability and sales growth in the same way or whether its effect changes over time. This study therefore treats digital rhetoric in MD&A as a firm-level signal and examines its relationship with ROA and sales growth.

2.2. Annual report disclosure and its economic effects

Annual reports provide information that financial statements may not fully cover. Managers use the Management Discussion and Analysis section to add information about daily operations, future plans, and changes in strategy. Investors can refer to these comments when the financial numbers leave some questions unanswered. The tone of the discussion also matters. A more positive MD&A

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tone is linked to higher subsequent stock returns after financial information is controlled for. This link is stronger when institutional ownership is low or the firm's information is less transparent. Investors appear to read the firm's own narrative more carefully in these situations. MD&A discussion can therefore make the information gap between firms and investors smaller [4].

Digital transformation disclosure deals with a more specific topic. Firms use MD&A to describe the digital technologies they have adopted and their plans for further development. Evidence from Chinese A-share firms shows that more digital transformation information in MD&A reduces stock price synchronicity. Analysts and the media help spread this information [5]. These studies confirm that annual report narratives have capital market consequences. Their findings mainly explain how disclosure affects the information available to investors and the way stock prices respond. Its relationship with actual business results remains less clear. Firms may discuss a digital strategy before its financial benefits appear. This leaves an important question: whether digital rhetoric in annual reports is associated with firms' subsequent operating performance. The present study examines this issue by shifting the focus from investor responses to operating outcomes.

2.3. Digital rhetoric and firm performance

Digital rhetoric does not always reflect the same level of strategic commitment. Some firms use annual reports to show that digital transformation is a real management priority. Others use similar language mainly to respond to market expectations. This distinction matters because words can support performance only when they guide real decisions and resource use. Corporate Digital Transformation Attention measures how much attention a firm gives to digital transformation in public disclosures. It is positively associated with breakthrough innovation. At the same time, the results for R&D spending and incremental innovation are not statistically significant. The innovation linked to this attention also supports sustained financial performance. Digital rhetoric can therefore serve as a credible signal when it reflects genuine managerial focus [6].

The effect is different when firms make digital claims without changing their operations. Digital washing refers to narratives that exaggerate a firm's digital capabilities or progress. It is negatively associated with corporate sustainable growth. Symbolic language may attract attention in the short term. It can weaken long-term value creation when firms fail to build matching capabilities [7]. These findings reveal a clear tension. Digital rhetoric may support performance when words and actions remain aligned. It may produce limited or negative outcomes when this alignment breaks down. Its effect may also differ across performance measures and change over time. The present study therefore examines whether digital rhetoric is followed by consistent improvements in firm performance.

2.4. Digitalization, efficiency, and market performance

Digitalization can influence firm performance through internal operations and market expectations. Firms may need time to adjust their processes and learn how to use new digital tools. Evidence from Chinese firms shows that digital transformation is linked to higher ROA and ROE. These firms spend less, run their operations more smoothly, and achieve better innovation outcomes [8]. The timing of these gains also depends on the form of digital transformation. Normal digital transformation tends to support performance over a longer period. Excess digital transformation can produce an earlier improvement, with benefits appearing during the first two years [8].

The timing of these effects becomes clearer when accounting results and market valuation are considered together. During the early years, digital transformation lowers ROA, ROE, EPS, and

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operating cash flows. Firms face high investment costs and need to reorganize their resources. Tobin's Q still rises because investors expect digital capabilities to create future value. Profitability starts to recover about five years after adoption [9].

This timing difference provides a basis for the present study. ROA and sales growth are examined separately to assess whether digital rhetoric affects these outcomes in the same way over time.

2.5. Research gap

Existing studies show that digital transformation can affect financing conditions, market value, and operating performance. They pay less attention to digital rhetoric as a simple signal in the MD&A section. The timing and direction of its effects across performance measures also remain unclear. Prior work does not explain why digital rhetoric may relate to ROA while failing to produce immediate sales growth, or why its effects may weaken over time. The role of selling expenses as a possible channel has received limited attention. These gaps motivate an analysis of A-share firms in the C39 industry from 2023 to 2025. Digital rhetoric is identified from selected MD&A keywords. Its association with ROA and sales growth is tested with firm-level controls, time interactions, and a mediation analysis of selling expenses.

3. Theoretical foundation and hypothesis

3.1. Theoretical foundation

This study is built on three theoretical pillars: Signaling Theory, Institutional Theory, and Legitimacy Theory. Together, they provide a framework for explaining how digital rhetoric affects firm performance. Signaling Theory explains how firms send signals to stakeholders through their digital communication. Institutional Theory places these signals within the wider rules and norms that shape how organizations behave. Legitimacy Theory then links these communication practices to how stakeholders judge whether a firm is appropriate and socially accepted.

3.1.1. Signaling theory

Spence's job market model describes how people with better information can communicate with people who have less information [10]. A similar situation exists between managers and outside investors. Managers know more about the firm's digital plans and future prospects. MD&A gives them a public place to disclose part of this information. Investors may view a digital statement as a sign of management confidence in the firm's direction. A positive tone can make the statement more noticeable. It may reduce uncertainty and lower the cost of equity [1]. The value of the signal depends on what happens after the disclosure. If later decisions and results support the earlier statement, investors may continue to trust it. If the firm makes little progress, the same statement may receive a different reading. This reasoning connects digital rhetoric with current ROA and later sales growth.

3.1.2. Institutional theory

Firms face expectations from the environment in which they operate. Institutional Theory explains how these expectations can lead firms to adopt similar practices. DiMaggio and Powell describe this process as institutional isomorphism [11]. Firms may follow rules or respond to organizations on which they depend. They may copy other firms when the right choice is uncertain. Professional

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training and industry networks can also encourage similar behavior. Digitalization has gained a widely accepted position in many industries. A firm may mention digitalization in its MD&A to show that it is moving in the same direction as the industry. Bennich shows that institutional pressure can encourage firms to digitalise even when competitive pressure is weak [12]. Similar wording can therefore appear in firms with very different levels of actual investment. The meaning of the disclosure becomes clearer when later business decisions are considered.

3.1.3. Legitimacy theory

Firms need approval from the people and groups around them. Legitimacy Theory focuses on this need. Suchman defines legitimacy as the belief that an organization's actions fit the values and rules of its social environment [13]. Stakeholders may accept an action when it provides useful benefits, meets accepted standards, or becomes familiar over time. These ideas correspond to pragmatic, moral, and cognitive legitimacy. Digitalization has become a visible expectation in business. Managers may mention AI or other digital projects to show that the firm is responding to this expectation. Such wording can help the firm appear appropriate to its stakeholders. Research on UK FTSE100 annual reports finds that AI narratives help firms manage stakeholder perceptions and respond to legitimacy pressures [14]. The effect can weaken when the firm makes little progress after the disclosure. The words then provide less support for the firm's legitimacy.

3.2. Research hypotheses

Based on the theories discussed above, three core hypotheses are developed.

In the A-share market, many investors rely on public information because they cannot observe all internal decisions. A digital strategy in the annual report can give them information about management's confidence and plans. The message may improve expectations and make it easier for the firm to obtain resources. Better use of these resources may appear in current ROA. Firms that use digital rhetoric may differ from other firms in size, age, and other characteristics. A direct comparison may therefore hide the relation. The expected positive relation should be clearer after these differences are taken into account. ROA captures the current financial result. Sales growth may take more time to respond.

H1: Digital rhetoric has a significant positive effect on firm financial performance.

The market may react when a firm first presents its digital strategy. That reaction reflects investor expectations at the time of disclosure. Sales growth depends on actual orders and customer demand. These changes may take time to appear in the financial data. When the promised progress does not arrive, the earlier statement may lose some of its force. Investors may then revise their assessment. Sales growth could weaken in later years and may eventually turn negative. A negative Digital × Year coefficient would fit this pattern. A larger negative coefficient in a later year would suggest a stronger reversal.

H2: Digital rhetoric has a dynamic effect on sales growth, and the effect may reverse over time.

Digital language can help a firm show that it follows a direction that has become important in the industry. The firm may receive an early legitimacy benefit from this message. That benefit is less stable when the firm does not support its words with resources or changes in how it operates. Stakeholders can compare the disclosure with later actions. Repeated claims without visible progress may make the original message less convincing. Long-term performance may suffer when sales growth does not follow. This hypothesis does not treat every digital statement as symbolic. It points

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to the possibility that language and action may separate over time. A negative Digital × Year relation for sales growth would be consistent with this possibility.

H3: The symbolic nature of digital rhetoric makes its long-term economic consequences uncertain.

4. Method

4.1. Sample selection and data sources

This study examines A-share firms in the Computer, Communications, and Other Electronic Equipment Manufacturing industry (CSRC industry code C39) from 2023 to 2025. This industry is a core part of the digital economy. Among A-share industries, its annual reports show the highest frequency of digital-related terms. This provides variation in the core variable and avoids the lack of variation that can arise when an industry has no digital rhetoric. The industry also experienced strong growth during the sample period, supported by domestic substitution and demand for AI computing power. Focusing on one industry helps control for industry-level differences. It makes the marginal effect of digital rhetoric easier to identify.

ST firms without publicly available annual reports were excluded. B-share listings that duplicated A-share firms were removed. This left 684 firms. Stratified systematic sampling was used to cover firms of different sizes while keeping manual data collection manageable. Firms were ranked by total assets. The 30 largest firms formed the first stratum, and 10 firms were selected at equal intervals. The remaining 654 firms formed the second stratum, and 40 firms were selected at equal intervals. The final sample contains 50 firms and 150 firm-year observations, forming a short panel dataset.

All data were collected from CNINFO. Each firm's annual report was downloaded in PDF format. The Management Discussion and Analysis (MD&A) section was searched for the terms "digitalization," "intelligent manufacturing," and "industrial internet." The core variable was constructed from these keyword searches.

4.2. Variable definitions

The core explanatory variable is Digital. Digital shows whether a firm uses digital rhetoric in its annual report. It is a dummy variable. Digital equals 1 when at least one of the selected keywords appears in the MD&A section. It equals 0 when none of these keywords appears.

For the dependent variables, firm performance is measured by ROA and sales growth. ROA is net profit divided by total assets and multiplied by 100%. Sales growth is the change in operating revenue from the previous year divided by the previous year's operating revenue and multiplied by 100%.

The model includes control variables. The control variables are size, lev, age, Year2024, and Year2025. Size is the natural logarithm of total assets. Lev is total liabilities divided by total assets. Age is the observation minus the firm's founding year. Year2024 and2025 are year dummy variables.

4.3. Econometric model specification

To estimate the effect of digital rhetoric on firm performance, this study uses ordinary least squares (OLS). Standard errors are clustered at the firm level to account for possible serial correlation and heteroskedasticity. The model is written as follows:

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$$ROA_{i,t} = \alpha + \beta \cdot Digital_{i,t} + \gamma \cdot Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

In the formula, i refers to the firm and t refers to the year. The model specification remains unchanged when sales growth replaces ROA as the dependent variable.

5. Results

5.1. Descriptive statistics and distributional characteristics

Table 1 shows the descriptive statistics for the variables used in the empirical analysis. The sample includes 150 firm-year observations. ROA has a mean of 1.07 and a standard deviation of 6.29. These values suggest large differences in profitability across the sample firms. Sales growth has a mean of 9.82 and a standard deviation of 20.98. Its greater dispersion points to large differences in firms' growth performance. The control variables are relatively stable. Size averages 22.65, lev averages 0.39, and age averages 20.23 years. These characteristics are broadly in line with those of listed manufacturing firms in China. Performance measures and firm characteristics vary widely across the sample.

Table 1. Descriptive statistics of variables

Variable	N	Mean	S.D.	Min	Max
ROA	150	1.07	6.29	-16.76	12.21
sales growth	150	9.82	20.98	-36.41	74.64
size	150	22.65	1.57	20.20	26.59
lev	150	0.39	0.18	0.05	0.75
age	150	20.23	5.66	8.00	38.00

Table 2 reports the distribution of Digital and Status. Digital equals 1 in 110 observations, accounting for 73.3% of the sample. Digital equals 0 in 27 observations, accounting for 18.0%. The remaining 13 observations have no recorded Digital value. The high share of Digital = 1 shows that digital rhetoric is common among firms in the C39 industry. Status is an ordered measure of annual report disclosure. Status equals 0 represents observations without an annual report, Status equals 1 represents observations with an annual report but no selected digital keywords, and Status equals 2 represents observations with an annual report that contains at least one selected keyword. This coding distinguishes observations without annual reports from those with annual reports but no digital rhetoric.

Table 2. Distribution of digital and status

Variable	Category	N	%
	0	27	18.0
Digital	1	110	73.3
	None	13	8.7
Status	0	13	8.7
Status	1	27	18.0
	2	110	73.3

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5.2. Univariate analysis and main regression results

Table 3 presents the t-test results for ROA and sales growth across the Digital = 1 and Digital = 0 groups. The Digital = 1 group has a mean ROA of 1.03, compared with -0.52 for the Digital = 0 group. The difference is 1.55 and is not statistically significant (t = 1.13). Sales growth shows a similar result, with a difference of 2.83 and a t-statistic of 0.65. The univariate analysis does not show that firms with digital rhetoric perform significantly better.

Table 3. Comparison of means between disclosed and undisclosed groups

Variable	Mean (Digital = 1)	Mean (Digital=0)	Difference	t-statistic
ROA	1.03	-0.52	1.55	1.13
sales growth	9.47	6.64	2.83	0.65

After the control variables are included, the main regression results in Table 4 show a different pattern from the univariate analysis. Digital has a coefficient of 3.52 in the ROA model and is significant at the 5% level. This result suggests that digital rhetoric can significantly improve firms' ROA and produce a positive signaling effect. In the sales growth model, Digital has a coefficient of 3.08 and is not statistically significant. The lack of statistical significance suggests that digital rhetoric has not directly translated into market expansion.

In addition, size has significant positive coefficients in both models. Lev has a coefficient of -16.83 and is significant in the ROA model. Age has a coefficient of -0.59 and is significant in the sales growth model. Year2024 and Year2025 are positive and significant in the sales growth model. These year effects may reflect changes in the economy or the industry during the sample period.

Table 4. Regression results of the main model

Variable	ROA (Coef.)	ROA (S.E.)	sales growth (Coef.)	sales growth (S.E.)
Digital	3.52**	1.48	3.08	4.32
size	1.63***	0.34	2.99***	1.01
lev	-16.83***	2.81	9.03	11.43
age	0.11	0.09	-0.59*	0.35
Year2024	0.13	1.27	13.81***	4.02
Year2025	-0.22	1.21	11.21***	4.24
Constant	-34.65***	7.42	-61.12***	22.60
R-squared	0.23		0.16	
N	137		137	

Note: * represents p<0.10; ** represents p<0.05; *** represents p<0.01.

5.3. Dynamic trends and robustness tests

Table 5 adds the interaction terms to examine how the effect of digital rhetoric changes over time. In the ROA model, the coefficient of Digital rises to 5.36 and remains significant at the 5% level. This result supports the positive ROA finding in Table 4. In the sales growth model, Digital × Year2024 has a coefficient of -19.60 and is significant at the 5% level. Digital × Year2025 has a coefficient of -28.45 and is significant at the 1% level. The larger negative coefficient in 2025 shows that the effect on sales growth becomes weaker over time.

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Figure 1 shows that the trends in the estimated effect of digital on ROA and sales growth.The results show a dual effect. In the current period, digital rhetoric may improve ROA. Its effect on sales growth becomes negative in later years. This pattern may reflect commitment fatigue or unmet expectations. Figure 1 shows this dynamic reversal more clearly.

Table 5. Regression results of the trend model

Variable	ROA (Coef.)	ROA (S.E.)	sales growth (Coef.)	sales growth (S.E.)
Digital	5.36**	2.73	18.88***	5.61
Year2024	1.98	3.42	29.39***	8.10
Year2025	2.41	3.26	34.21***	7.73
Digital×Year2024	-2.33	3.63	-19.60**	9.11
Digital×Year2025	-3.25	3.49	-28.45***	8.92
size	1.60***	0.34	2.79***	0.96
lev	-16.98***	2.83	7.87	11.26
age	0.12	0.09	-0.52	0.33
Constant	-35.71***	7.83	-70.17***	21.87
R-squared	0.24		0.21	
N	137		137	

Note: * represents p<0.10; ** represents p<0.05; *** represents p<0.01.

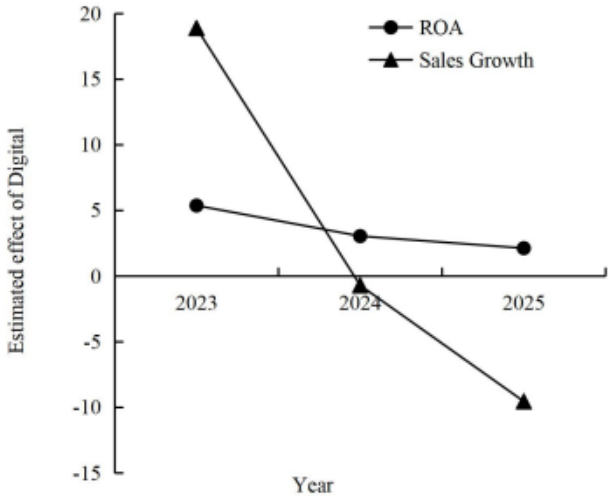


Figure 1. Trends in the estimated effect of digital on ROA and sales growth

Table 6 reports the ordered probit regression with Status as the dependent variable. The Wald chi^2 value is 0.70, Prob > chi^2 is 0.71, and Pseudo R^2 is 0.00. The year variables do not explain movement to higher Status levels. Firms' digital rhetoric levels do not automatically rise over time. The test reduces concerns that the main findings reflect a general time trend and provides further support for the main regression results.

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Table 6. Ordered probit regression results for Status

Variable	Coef.	S.E.
Year2024	0.18	0.26
Year2025	0.20	0.26
/Cut1	-1.24	0.21
/Cut2	-0.50	0.19
N	150	
Wald $chi^2(2)$	0.70	
Prob > chi^2	0.71	
Pseudo R^2	0.00	

5.4. Mediation analysis

As an additional analysis, this research examine whether selling expenses is a possible channel between Digital and sales growth. Table 7 reports the results of the traditional three-step mediation analysis.

Step 1 shows that the total effect of Digital on sales growth is not statistically significant $p = 0.48$. Step 2 shows that Digital significantly increases selling expenses, with a coefficient of 1.69 ($p < 0.05$). This result suggests that digital transformation is accompanied by higher marketing costs. Step 3 adds selling expenses to the sales growth model. The effect of selling expenses on sales growth is not significant ($p > 0.10$). The direct effect of Digital on sales growth also remains insignificant. The three-step results provide no evidence of a significant mediating effect of selling expenses. Higher selling expenses do not appear to be an effective path through which Digital improves firm performance.

This result may reflect the nature of these expenses. Firms undergoing digital transformation often need to maintain online channels and promote new business models. The related selling expenses may mainly represent fixed costs. They may not generate enough marginal returns to produce significant sales growth in the short term. The insignificant total effect also shows that Digital has not yet created a clear growth benefit in the current sample. Its benefits may appear in cost reduction and improved operating efficiency. They may not take the form of sales expansion driven by higher selling expenses. A lagged effect is also possible. Current spending may need more time before its impact becomes visible in sales data.

Table 7. Mediation analysis of selling expenses

Variable	Step 1 sales growth (Coef.)	Step 1 sales growth (S.E.)	Step 2 selling expenses (Coef.)	Step 2 selling expenses (S.E.)	Step 3 sales growth (Coef.)	Step 3 sales growth (S.E.)
Digital	3.08	4.32	1.69**	0.72	3.34	4.39
selling expenses					-0.16	0.24
size	2.99***	1.01	-0.40	0.28	2.92***	1.01
lev	9.03	11.43	-4.97**	1.93	8.25	11.53
age	-0.59*	0.35	-0.00	0.07	-0.59*	0.35
Year2024	13.81***	4.02	0.48	0.99	13.89***	4.03

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Table 7. (continued)

Year2025	11.21***	4.24	0.48	0.98	11.28***	4.27
Constant	-61.12***	22.60	13.28**	5.81	-59.04**	22.77
R-squared	0.16		0.08		0.16	
N	137		137		137	

Note: * represents p<0.10; ** represents p<0.05; *** represents p<0.01.

6. Discussion

6.1. Summary of core findings and theoretical dialogue

The empirical analysis examines whether digital rhetoric is linked to firm performance and whether this link varies across outcomes and over time. A simple comparison shows no significant difference in ROA or sales growth between firms with and without digital rhetoric. After firm characteristics and year effects are taken into account, Digital is positively and significantly related to ROA. Its relationship with sales growth remains statistically insignificant. Digital rhetoric is therefore more closely related to current profitability than to immediate sales growth. This difference is consistent with research showing that digital transformation can affect performance measures at different speeds [8, 9].

The positive relation with ROA is consistent with the signaling argument. Managers can use MD&A language to communicate digital plans that investors cannot directly observe. Such statements may shape expectations and help firms obtain resources, though this study does not test those steps directly. Prior research finds that a positive digital transformation tone is associated with a lower cost of equity through reduced information asymmetry and greater investor attention [1]. Earlier MD&A studies mainly examine stock returns and stock price synchronicity [4, 5]. The present findings add evidence about the relation between disclosure and operating performance.

The relation with sales growth also changes over time. Digital rhetoric does not show a significant link with sales growth in the main model, and its estimated relation becomes more negative in later years. A digital statement may raise expectations before changes in orders or customer demand become visible. If business results do not follow, the value of that statement may weaken. This interpretation is consistent with studies showing that the performance associated with digital transformation can vary over time [8, 9].

Taken together, the findings offer a way to consider the three theories alongside the evidence. Signaling Theory is consistent with the positive relation between Digital and ROA. Institutional Theory helps explain why firms may use similar digital language as digitalization becomes widely accepted [12]. Legitimacy Theory suggests that such language may lose force when later actions provide limited support [14]. The additional analyses find no general rise in Status over time and no significant mediating effect through Selling Expenses. Digital rhetoric is linked to current profitability in this sample, but the evidence does not show that higher selling expenses turn it into stronger sales growth.

6.2. Theoretical and practical implications

The findings offer practical guidance for the main users of corporate digital information. The results show that Digital is positively related to ROA, while its relation with sales growth is not significant

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in the main model. The dynamic results also show that this effect weakens over time. These findings give different lessons for investors, regulators, and corporate managers.

For investors, digital language in an annual report should not be treated as proof of future growth. Investors should compare a firm's digital disclosure with its later actions and performance. A positive statement may reflect a real management plan, but it may also reflect the need to meet market expectations. The positive ROA result suggests that digital rhetoric can be related to better current profitability. The insignificant sales growth result shows that the same statement does not guarantee wider market demand. Investors should also pay attention to whether the effect becomes weaker in later years. This approach can help them judge the credibility of digital signals.

Regulators can ask firms to describe the digital projects they have started and report their progress. Investors can check this information more easily than broad claims about digital transformation. Clearer disclosure would reduce the space for unsupported language. Regulators can also compare statements from earlier years with later firm performance. A strong message followed by little business change would then be easier to identify.

Corporate managers should keep their public statements close to their actual decisions. Digital rhetoric may accompany better current profitability when the firm commits real resources to digital work. The statement itself does not create lasting value. Managers should show how digital plans affect business operations. They should also be careful when higher selling expenses do not lead to stronger sales growth. Market attention may fade when the promised progress is not visible.

6.3. Research limitations and future research

Several limits should be considered when reading these findings. First, the sample covers firms in the C39 industry only. The results may differ in other industries. Second, the data cover 2023 to 2025. Three years may be too short to capture effects that appear slowly or change in a nonlinear way. Third, Digital is measured with selected keywords. A keyword shows that digitalization was mentioned. It does not show the firm's actual investment or the extent of organizational change. The measure also cannot fully distinguish substantive digital investment from symbolic language. Fourth, the research design does not fully resolve potential endogeneity. The causal effect of digital rhetoric on firm performance therefore remains uncertain.

Further research can use firms outside C39. This would show whether the same pattern appears in other industries. A longer panel can capture effects that emerge later. It can also show whether the relation changes over time. Text mining may improve the measure of Digital by examining the words around each keyword. The surrounding text can provide more information about the firm's actual digital activities. An appropriate instrumental variable may offer stronger evidence for causal inference.

7. Conclusion

This study examines whether digital rhetoric in the MD&A section affects firm performance. Using selected keywords from the annual reports of A-share firms in the C39 industry, the study applies OLS models with standard errors clustered at the firm level to test the relation between Digital, ROA, and sales growth. The results show that digital rhetoric is positively related to current profitability, while its relationship with sales growth is not significant and becomes weaker over time.

The study adds to research on digital transformation and firm performance by showing that disclosure itself can matter. The effect of digital rhetoric differs across performance measures and

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changes over time. This result extends the signaling view of corporate disclosure. It also adds to research on symbolic management and impression management. Words may reflect a real strategic commitment, but they may lose value when later actions do not support them. The study therefore separates what firms say from what they actually achieve.

The findings also offer practical guidance. Investors can treat digital rhetoric as an early signal, but they should check whether later business results support the message. Managers should connect digital statements with real changes in their operations and avoid creating expectations that the firm cannot meet. Regulators can encourage firms to provide clearer information about digital projects and their progress. These steps can limit unsupported digital claims and make digital disclosure more useful to the market.

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