Frontiers in Business, Economics and Management
ISSN: 2766-824X | Vol. 25, No. 1, 2026

Institutional Investor Ownership, Digital Transformation, and Abnormal Management Tone

Fan He [1], Qingqing Tan [2, *]

[1] Center for China Fiscal Development, Central University of Finance and Economics, 100098, China

[2] School of Accounting, Chongqing Technology and Business University, 400067, China

[*] **Corresponding author**: (Email: tanqingqing@ctbu.edu.cn)

Abstract: Using a sample of Shanghai and Shenzhen A-share listed firms from 2010 to 2024, this study examines the relationship between institutional investor ownership (Inst) and abnormal management tone (ABTONE), with a focus on the moderating role of digital transformation. The results show that management tone is abnormally positive on average, while higher institutional investor ownership significantly reduces such positive tone bias. This finding remains robust after addressing endogeneity and conducting robustness checks. Digital transformation further strengthens this negative relationship. The effect is more pronounced in firms with greater digital breadth and production depth, but lower management depth. Heterogeneity analyses show that the relationship is significant among non-state-owned enterprises, firms with low analyst coverage, and the pressure-insensitive institutional investor subsample. This study extends the literature on the governance role of institutional investors by providing evidence from textual disclosures in annual reports and highlights the importance of digital transformation in improving corporate disclosure governance.

Keywords: Institutional Investor Holdings; Digital Transformation; Abnormal Management Tone; Heterogeneity.

1. Introduction

As digital transformation continues to advance, the ways in which corporate information is generated, transmitted, and analyzed are constantly evolving, and the role of annual report text in information transmission within capital markets is receiving increasing attention. The tone in management's discussion and analysis can convey additional information beyond financial data; however, compared to structured financial data, textual expression offers greater flexibility, and management may use word choice and emotional nuances to make the actual tone deviate from the company's fundamentals. Existing research indicates that management's tone manipulation can trigger reactions in the bond market [1], and upward tone manipulation can also influence the risk of stock price crashes [2]. Therefore, how to identify and curb abnormally positive textual expressions by management is an issue worthy of attention in the governance of information disclosure by listed companies.

Institutional investors wield significant influence in capital markets due to their professional capabilities in information acquisition and analysis. Existing research has extensively discussed the information advantages and investment decision-making capabilities of institutional investors [3], and some studies have examined the capital market's ability to identify management's textual information from perspectives such as the tone of annual reports and insider trading [4]. However, compared to institutional investors' investment decisions and traditional corporate governance behaviors, there remains a lack of sufficient empirical evidence regarding their ability to constrain management's abnormally positive tone. At the same time, digital transformation is altering corporate operations and information disclosure practices, while also reshaping the conditions under which institutional investors obtain, analyze, and verify corporate information. Consequently, it is worth further examining whether digital transformation affects the governance effectiveness of institutional investors regarding management's abnormally positive tone.

This paper uses A-share listed companies on the Shanghai and Shenzhen stock exchanges from 2010 to 2024 as its research sample to empirically examine the impact of institutional investor shareholdings on management's abnormally positive tone and further introduces digital transformation as a moderating variable. Building on this, this paper expands existing research on institutional investor governance from the perspective of textual disclosures in annual reports. It distinguishes among three dimensions of digital transformation—breadth, production depth, and management depth—to explore in depth the differences in institutional investor governance effectiveness under various digital characteristics, with the aim of providing empirical evidence for text-based information disclosure governance in a digital context.

2. Theoretical Analysis and Research Hypotheses

2.1. Institutional Investor Holdings and Abnormal Management Tone

According to the principal-agent theory, there is information asymmetry between management and external investors. Management may exploit its informational advantage to downplay adverse business information through relatively positive language in financial reports. When the actual tone is significantly more positive than the tone expected based on the company's fundamentals, this unusually positive language may serve as a means for management to engage in strategic disclosure.

Institutional investor ownership can, to a certain extent, constrain the aforementioned behavior. On the one hand, institutional investors possess strong information-gathering and professional analytical capabilities and can obtain

information on a company's operations through methods such as on-site research, thereby enhancing their ability to assess the alignment between the annual report's text and the company's actual operating conditions [5]. On the other hand, as their ownership stake increases, institutional investors' interests become more closely tied to the company's value, and their incentive to participate in monitoring and constraining management's opportunistic behavior also strengthens. Institutional investors can also impose external constraints on management through voting and reducing their holdings [6]. Therefore, the higher the proportion of shares held by institutional investors, the less room management has to engage in strategic disclosure using an unusually positive tone. Based on the above analysis, we propose Hypothesis 1.

H1: The higher the proportion of shares held by institutional investors, the weaker the unusually positive tone used by management.

2.2. The Moderating Role of Digital Transformation

Digital transformation has improved the way companies generate and disseminate information, and it has also provided institutional investors with a stronger information foundation for overseeing management. According to the theory of information asymmetry, increased information transparency helps reduce the costs external investors incur in obtaining and identifying information. Ma and Chen (2024) [7] point out that digital transformation can enhance corporate information transparency and the quality of internal controls; however, the pressure to transform may also prompt management to engage in "tone management" in annual reports. In such cases, the supervisory role of institutional investors becomes even more critical. Shi et al. (2024) [8] further found that digital transformation promotes the timely dissemination of information, alleviates information asymmetry, and enhances the governance influence of institutional investors. Therefore, the higher a firm's level of digitalization, the easier it is for institutional investors to compare and verify the tone of annual reports against actual operational information, thereby more effectively identifying abnormally positive statements and strengthening constraints on management's upward tone manipulation. Based on the above analysis, Hypothesis 2 is proposed.

H2: The higher a firm's level of digital transformation, the stronger the negative impact of institutional investor ownership on management's abnormally positive tone.

3. Research Design

3.1. Sample Selection and Data Sources

This study uses A-share listed companies on the Shanghai and Shenzhen stock exchanges from 2010 to 2024 as the research sample. Given that the operational characteristics and accounting structures of financial companies differ significantly from those of other industries, financial listed companies were excluded from the sample, along with ST and *ST companies and observations with missing key financial data. To reduce the impact of outliers on the estimation results, continuous variables were winsorized at the 1% and 99% quantiles. After data matching, a total of 14,630 firm-year observations were obtained; the research data were primarily sourced from the CSMAR database.

3.2. Definition of Main Variables

(1) Dependent variable. Management Abnormal Tone (ABTONE): Drawing on the research by Wang and Wang (2018) [9], we measure Management Abnormal Tone (ABTONE) using the residual term from the expected tone model. A positive residual indicates that the actual tone is higher than the expected tone, while a negative residual indicates that the actual tone is lower than the expected tone.

(2) Explanatory variable. Institutional investor ownership (Inst) is measured as the ratio of the number of shares held by institutional investors to the company's total number of shares at year-end, following the methodology in Liang (2018) [10].

(3) Moderating variable. Digital transformation (DigA) is calculated based on the frequency of occurrence of underlying technology terms and application-derived terms in annual reports; the natural logarithm is taken of the term frequency plus one [11].

(4) Control variables. This study selects firm size (Size), financial leverage (Lev), return on equity (ROE), firm age (FirmAge), firm growth (Growth), proportion of independent directors (Indep), CEO duality (Dual), equity concentration (Top1), Big Four accounting firms (Big4), and ownership nature (SOE) as control variables. Among these, firm age is measured by taking the natural logarithm of the number of years since the company's establishment [12].

3.3. Model Setting

To examine the relationship between institutional investor ownership and abnormal management rhetoric, and to further investigate the moderating role of digital transformation, this study conducts a benchmark analysis using a multiple linear regression model, controlling for year and firm fixed effects, with standard errors clustered at the firm level. In addition, the analysis of moderating effects includes interaction terms, as detailed below.

4. Empirical Analysis

4.1. Descriptive Statistical Analysis

Table 1. Descriptive Statistics

Variable	N	Mean	SD	Min	Max
ABTONE	14630	0.030	0.100	-0.240	0.240
Inst	14630	0.360	0.240	0.000	0.870
Size	14630	22.010	1.050	19.970	25.300
Lev	14630	0.410	0.190	0.060	0.860
ROE	14630	0.040	0.130	-0.700	0.280
FirmAge	14630	3.020	0.270	2.300	3.610
Growth	14630	0.110	0.290	-0.510	1.390
Indep	14630	0.380	0.050	0.330	0.570
Dual	14630	0.310	0.460	0.000	1.000
Top1	14630	0.310	0.130	0.080	0.680
Big4	14630	0.030	0.170	0.000	1.000
SOE	14630	0.270	0.440	0.000	1.000

Table 1 presents the descriptive statistics for the key variables. The mean value of management abnormal tone (ABTONE) is 0.030, indicating that management tone is abnormally positive on average. That is, the actual tone tends to be more positive than the tone predicted by firm fundamentals. The mean value of institutional investor ownership (Inst) is 0.360, indicating that the average

ownership ratio of institutional investors in the sample firms is approximately 36%. The remaining variables also exhibit substantial cross-sectional variation.

4.2. Regression Analysis

Table 2 reports the results of the baseline regression. Column (1) examines only the relationship between institutional investor ownership and management's abnormal tone (ABTONE); column (2) includes control variables; and column (3) further controls for firm and year fixed effects. Across the three columns, the coefficients for Inst are -0.062, -0.073, and -0.038, respectively, all of which are significant at the 1% level. Since ABTONE measures the deviation of actual tone from expected tone, the negative coefficient for Inst indicates that as the proportion of institutional investor holdings increases, the positive deviation of actual tone from expected tone weakens—that is, management's abnormally positive tone is suppressed. This result holds even after controlling for the covariates and fixed effects, thus supporting Hypothesis 1.

Table 2. Baseline Regression Results

	(1)	(2)	(3)
	ABTONE	ABTONE	ABTONE
Inst	-0.062***	-0.073***	-0.038***
	(-17.774)	(-16.090)	(-3.050)
Size		0.006***	-0.014***
		(6.104)	(-3.565)
Lev		0.005	0.067***
		(0.876)	(5.816)
ROE		-0.089***	-0.049***
		(-12.939)	(-6.370)
FirmAge		0.049***	0.073**
		(15.953)	(2.509)
Growth		0.036***	0.040***
		(12.000)	(15.390)
Indep		0.072***	-0.019
		(4.547)	(-0.756)
Dual		0.010***	0.008***
		(5.461)	(2.984)
Top1		0.015**	0.009
		(2.188)	(0.407)
Big4		0.007	0.031***
		(1.472)	(3.423)
SOE		0.007***	0.022***
		(3.438)	(3.500)
_cons	0.050***	-0.264***	0.106
	(33.328)	(-12.270)	(0.864)
N	14630	14630	14630
ar2	0.021	0.064	0.593
Year/Firm	No	No	Yes

Note: *, ** and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. The values in parentheses are t-statistics based on standard errors clustered at the firm level. The same convention applies to subsequent tables.

4.3. Endogeneity Test

Given the possibility of reverse causality between institutional investor holdings and abnormal management tone, this paper first includes institutional investor holdings lagged by one period in the regression. The coefficient of L_Inst in column (1) of Table 3 is -0.035 and is significant at the 5% level, indicating that, even after partially controlling for reverse causality, the negative relationship between institutional investor holdings and abnormally positive management tone persists. We further conduct a two-stage regression using the natural logarithm of turnover as an instrumental variable for institutional ownership. In the first stage, the coefficient of the instrumental variable is significantly negative; in the second stage, the coefficient of Inst is -0.078 and is significant at the 10% level. These results are consistent with those of the baseline regression, indicating that the main conclusions of this paper remain substantively unchanged after addressing endogeneity.

Table 3. Endogeneity Test Results

	(1)	(2)	(3)
	Lagged Explanatory Variable	Instrumental Variables Stage 1	Instrumental Variables Stage 2
	ABTONE	Inst	ABTONE
Inst			-0.078*
			(-1.838)
L_Inst	-0.035**		
	(-2.572)		
ln_turnover		-0.032***	
		(-18.979)	
Size	-0.019***	0.039***	-0.013***
	(-4.029)	(7.983)	(-2.832)
Lev	0.069***	-0.056***	0.065***
	(5.218)	(-4.180)	(5.440)
ROE	-0.044***	0.012	-0.048***
	(-5.114)	(1.374)	(-6.313)
FirmAge	0.091**	-0.038	0.071**
	(2.517)	(-1.000)	(2.420)
Growth	0.040***	0.026***	0.041***
	(12.917)	(9.855)	(14.728)
Indep	-0.023	-0.071**	-0.022
	(-0.806)	(-2.186)	(-0.884)
Dual	0.010***	-0.004	0.008***
	(2.959)	(-0.976)	(2.940)
Top1	-0.002	0.417***	0.027
	(-0.090)	(11.267)	(0.972)
Big4	0.020*	-0.006	0.030***
	(1.841)	(-0.595)	(3.344)
SOE	0.025***	0.066***	0.025***
	(3.283)	(6.011)	(3.576)
_cons	0.161	-0.440***	-
	(1.182)	(-2.643)	-
N	14630	14630	14630
ar2	0.236	0.915	0.045
Year/Firm	Yes	Yes	Yes

4.4. Robustness Tests

Table 4 reports the results of the robustness tests. First, this study adjusts the measurement of the core variables. In Column (1), the proportion of shares held by institutional investors is replaced with the number of shares held by institutional investors (INST_NUM), and the coefficient remains significantly negative. Column (2) re-measures the

dependent variable using the abnormal tone indicator (ABTONE_FE), which is estimated based on performance in the next period. The coefficient of Inst remains significantly negative. Second, considering that the pandemic may have caused abnormal shocks to corporate operations and information disclosure, Column (3) adjusts the sample period to 2010–2019, and the coefficient of Inst remains significant at the 1% level. Finally, after converting ABTONE to a dummy variable based on the annual median and re-estimating the model using both Logit and Probit models, the coefficient of Inst is significantly negative in both Column (4) and Column (5). Overall, after adjusting for variable measures, the sample period, and estimation methods, the negative relationship between institutional investor holdings and abnormally positive management tone remains stable.

Table 4. Robustness Test Results

	(1)	(2)	(3)	(4)	(5)
	Replace the explanatory variable	Replace the dependent variable	Pre-COVID Sample	Logit Model	Probit Model
	ABTONE	ABTONE	ABTONE	ABTONE	ABTONE
INST_NUM	-0.003***				
	(-2.876)				
Inst		-0.039***	-0.050***	-0.934***	-0.572***
		(-2.903)	(-4.253)	(-5.589)	(-5.649)
Size	-0.015***	-0.015***	0.005	0.080**	0.050**
	(-3.644)	(-3.193)	(1.639)	(2.107)	(2.164)
Lev	0.068***	0.077***	0.017	-0.189	-0.118
	(5.674)	(6.175)	(1.108)	(-0.962)	(-0.985)
ROE	-0.050***	-0.053***	-0.015	-1.303***	-0.794***
	(-6.079)	(-6.151)	(-0.895)	(-6.455)	(-6.569)
FirmAge	0.072**	0.072**	0.019**	0.205	0.121
	(2.438)	(2.262)	(1.991)	(1.495)	(1.448)
Growth	0.039***	0.038***	0.042***	0.831***	0.493***
	(14.494)	(13.503)	(9.035)	(10.848)	(10.981)
Indep	-0.010	-0.007	-0.004	1.244**	0.769**
	(-0.388)	(-0.250)	(-0.092)	(2.223)	(2.276)
Dual	0.009***	0.009***	0.003	0.093	0.057
	(2.921)	(2.730)	(0.591)	(1.505)	(1.507)
Top1	-0.001	0.003	0.052***	0.228	0.134
	(-0.071)	(0.152)	(2.672)	(0.860)	(0.835)
Big4	0.030***	0.038***	0.015	0.169	0.097
	(3.426)	(3.725)	(1.204)	(0.973)	(0.942)
SOE	0.020***	0.023***	0.019***	0.238***	0.143***
	(3.190)	(3.192)	(2.983)	(2.730)	(2.701)
_cons	0.166	0.103	-0.182***	-2.312***	-1.407***
	(1.326)	(0.763)	(-2.586)	(-2.739)	(-2.777)
N	13812	12201	5989	14630	14630
ar2/Pseudo R2	0.594	0.591	0.118	0.068	0.068
Year/Firm	Yes	Yes	Yes	Yes	Yes

4.5. Analysis of the Moderating Effects of Digital Transformation

Digital transformation can improve the efficiency of corporate information generation, transmission, and processing, providing institutional investors with a more robust information foundation for identifying abnormal tones in annual reports [8]. Table 5 reports the moderating effect of digital transformation. The coefficient of the interaction term between Inst and DigA is −0.016 and is significant at the 1% level, indicating that as a firm's level of digital transformation increases, the negative relationship between institutional investor ownership and abnormal management tone further strengthens. Thus, digital transformation strengthens institutional investors' constraints on management's abnormally positive tone. The findings are consistent with theoretical expectations, and Hypothesis 2 is supported.

Table 5. The Moderating Effect of Digital Transformation

	(1)
	ABTONE
Inst	-0.038***
	(-3.127)
DigA	0.013***
	(10.188)
Inst_DigA	-0.016***
	(-3.598)
Size	-0.018***
	(-4.444)
Lev	0.068***
	(5.938)
ROE	-0.051***
	(-6.626)
FirmAge	0.071**
	(2.490)
Growth	0.041***
	(15.727)
Indep	-0.011
	(-0.427)
Dual	0.008***
	(2.859)
Top1	0.010
	(0.483)
Big4	0.032***
	(3.580)
SOE	0.022***
	(3.431)
_cons	0.158
	(1.316)
N	14564
ar2	0.600
Year/Firm	Yes

4.6. Testing for Heterogeneity Across Dimensions of Digital Transformation

Drawing on the studies by Yang et al. (2024) [13] and Cai et al. (2024) [14], this paper further examines differences in the governance effects of institutional investors from three dimensions: digital breadth, production depth, and management depth. Table 6, which presents results grouped by the median, shows that in the high digital breadth group, the coefficient for Inst is -0.050 and is significant at the 5% level, whereas in the low digital breadth group, the result is not statistically significant. In the high production depth group, the coefficient for Inst is -0.046 and is significant at the 1% level, while it is again not significant in the low production depth group. This suggests that the negative relationship between institutional investor holdings and abnormally positive tone is more pronounced in firms with higher levels of digital breadth and production depth. The results for the management depth group differed. In the low management depth group, the coefficient for Inst was -0.037 and was significant at the 5% level, whereas the high management depth group did not reach statistical significance. This result may indicate that as the degree of digitization in management processes increases, internal corporate management and information constraints strengthen, and the incremental role of external oversight by institutional investors becomes relatively limited.

Table 6. Heterogeneity Tests across Dimensions of Digital Transformation

	(1)	(2)	(3)	(4)	(5)	(6)
	Digitalization Breadth		Production Digitalization Depth		Management Digitalization Depth	
	High	Low	High	Low	High	Low
	ABTONE	ABTONE	ABTONE	ABTONE	ABTONE	ABTONE
Inst	-0.050**	-0.018	-0.046***	-0.026	-0.022	-0.037**
	(-2.545)	(-1.204)	(-2.711)	(-1.514)	(-1.056)	(-2.420)
Size	-0.017**	-0.017***	-0.007	-0.020***	-0.015***	-0.019***
	(-2.408)	(-3.296)	(-1.094)	(-3.624)	(-2.772)	(-3.450)
Lev	0.051**	0.076***	0.064***	0.071***	0.056***	0.078***
	(2.431)	(5.262)	(3.526)	(4.648)	(3.187)	(5.169)
ROE	-0.053***	-0.046***	-0.048***	-0.045***	-0.062***	-0.030***
	(-4.189)	(-4.418)	(-4.253)	(-4.065)	(-6.225)	(-2.613)
FirmAge	0.158***	0.065*	0.098**	0.063*	0.074*	0.076**
	(2.686)	(1.724)	(1.986)	(1.685)	(1.723)	(1.962)
Growth	0.035***	0.041***	0.035***	0.041***	0.035***	0.043***
	(7.614)	(12.664)	(9.304)	(11.701)	(8.759)	(12.800)
Indep	-0.033	-0.008	-0.064	0.040	-0.002	-0.022
	(-0.808)	(-0.230)	(-1.640)	(1.079)	(-0.039)	(-0.677)
Dual	0.004	0.009**	0.007*	0.008**	0.004	0.009**
	(0.796)	(2.559)	(1.687)	(2.033)	(0.928)	(2.501)
Top1	0.041	-0.008	0.061	0.009	0.034	0.013
	(0.977)	(-0.314)	(1.604)	(0.314)	(0.965)	(0.466)
Big4	0.035**	0.031**	0.029***	0.027**	0.025*	0.034***
	(2.532)	(2.378)	(3.018)	(2.205)	(1.851)	(3.295)
SOE	0.005	0.033***	0.012	0.027***	0.009	0.029***
	(0.431)	(3.993)	(1.461)	(2.802)	(0.740)	(3.991)
_cons	-0.046	0.147	-0.103	0.209	0.133	0.176
	(-0.200)	(0.951)	(-0.503)	(1.245)	(0.783)	(1.067)
N	4831	9154	6150	8130	6228	8051
ar2	0.639	0.567	0.613	0.581	0.630	0.568
Year/Firm	Yes	Yes	Yes	Yes	Yes	Yes

4.7. Other Tests for Heterogeneity

(1) Nature of Ownership. Columns (1) and (2) of Table 7 present the regression results for different ownership structures. The coefficient for (Inst) in the non-state-owned enterprise group is -0.050 and is statistically significant at the 1% level, whereas it does not reach statistical significance in the state-owned enterprise group. The results indicate that the negative relationship between institutional investor holdings and abnormally positive management tone is more pronounced in the non-state-owned enterprise sample, which may be related to the greater reliance of non-state-owned enterprises on market-oriented external governance.

(2) Analyst Coverage. After grouping firms based on the annual median number of analysts covering them, the coefficient for (Inst) in the low-analyst-attention group was -0.052 and was significant at the 1% level, whereas it was not significant in the high-analyst-attention group. This result suggests that the supervisory role of institutional investors is more pronounced when external oversight by analysts is relatively insufficient, indicating that institutional investors may play a compensatory role for the lack of analyst oversight.

(3) Types of institutional investors. Institutional investors were classified as "pressure-sensitive" or "pressure-insensitive" based on whether they had potential commercial ties with the investee companies. The results show that in the pressure-insensitive institutional investor group, the coefficient for (Inst) was -0.039 and was statistically significant at the 1% level, whereas the pressure-sensitive group did not reach statistical significance. This result is consistent with the theoretical expectation that pressure-insensitive institutional investors possess greater independence and stronger oversight incentives.

Table 7. Other Heterogeneity Tests Results

	(1)	(2)	(3)	(4)	(5)	(6)
	Nature of Ownership		Analyst Coverage		Types of Institutional Investors	
	State-owned	Non-state-owned	High	Low	Pressure-sensitive	Pressure-insensitive
	ABTONE	ABTONE	ABTONE	ABTONE	ABTONE	ABTONE
Inst	0.015	-0.050***	-0.012	-0.052***	0.072	-0.039***
	(0.483)	(-3.764)	(-0.687)	(-3.127)	(1.157)	(-3.100)
Size	-0.027***	-0.009*	-0.017***	-0.014***	-0.027*	-0.016***
	(-3.314)	(-1.899)	(-2.689)	(-2.585)	(-1.749)	(-3.936)
Lev	0.072***	0.073***	0.059***	0.084***	0.113***	0.067***
	(3.082)	(5.438)	(3.579)	(5.415)	(2.803)	(5.673)
ROE	0.004	-0.062***	-0.059***	-0.046***	-0.017	-0.046***
	(0.240)	(-7.574)	(-4.417)	(-4.815)	(-0.636)	(-5.597)
FirmAge	0.053	0.057	0.038	0.111***	0.333***	0.069**
	(0.987)	(1.530)	(0.799)	(3.160)	(2.919)	(2.400)
Growth	0.043***	0.040***	0.039***	0.044***	0.037***	0.039***
	(8.303)	(13.452)	(9.121)	(12.504)	(2.681)	(14.856)
Indep	0.002	-0.036	-0.059	-0.015	-0.074	-0.015
	(0.048)	(-1.167)	(-1.403)	(-0.429)	(-0.828)	(-0.538)
Dual	0.005	0.009***	0.006	0.009**	0.007	0.007***
	(0.768)	(2.700)	(1.487)	(2.359)	(0.607)	(2.588)
Top1	-0.009	0.013	-0.035	0.038	0.005	0.004
	(-0.205)	(0.504)	(-0.991)	(1.383)	(0.071)	(0.180)
Big4	0.025*	0.031**	0.023**	0.030*	0.041	0.032***
	(1.847)	(2.571)	(2.189)	(1.918)	(1.490)	(3.620)
SOE	0.000	0.000	0.029***	0.022***	0.002	0.022***
	(.)	(.)	(2.713)	(2.759)	(0.094)	(3.537)
_cons	0.410*	0.038	0.295	-0.042	-0.457	0.155
	(1.706)	(0.260)	(1.606)	(-0.258)	(-1.042)	(1.267)
N	3944	10639	6327	7809	745	13513
ar2	0.533	0.625	0.616	0.609	0.621	0.597
Year/Firm	Yes	Yes	Yes	Yes	Yes	Yes

5. Conclusions and Recommendations

Using a sample of Shanghai and Shenzhen A-share listed firms from 2010 to 2024, this study examines the relationship between institutional investor ownership and abnormally positive management tone in annual report disclosures, as well as the moderating role of digital transformation. The results show that higher institutional investor ownership significantly reduces abnormally positive management tone, and the finding remains robust after endogeneity and robustness tests. Digital transformation further strengthens this negative relationship. The effect is significant in firms with greater digital breadth and production depth, but not in firms with greater management depth. Heterogeneity analysis further shows that the relationship is significant among non-state-owned enterprises, firms with low analyst coverage, and the pressure-insensitive institutional investor subsample.

Based on these findings, firms should strengthen the practical application of digital technologies in production and operations and improve the accessibility and transparency of operational information. Regulators should pay greater attention to abnormally positive tone in annual reports and use textual analysis to identify deviations between disclosed tone and firm fundamentals. Institutional investors should also leverage their information-processing and monitoring capabilities to strengthen oversight of management's textual disclosures, particularly in firms with relatively weak external monitoring.

References

[1] Lin, W. F., Zhao, Z. K., & Song, M. (2022). Tone manipulation in management discussion and analysis and its impact on the bond market. Management World, 38(1), 164–180. (In Chinese)

[2] Yuan, D. L., & Li, Y. (2022). Upward tone manipulation in annual reports and the risk of stock price crashes: Information increment or image management? Research on Economics and Management, 43(12), 101–117. (In Chinese)

[3] Jiang, L., & Lao, L. J. (2022). Do institutional investors actually possess fund selection capabilities?—An empirical study from a "stock" perspective. Shanghai Finance, (5), 50–58. (In Chinese)

[4] Zhang, C., Zeng, Q. S., & Liang, S. Y. (2021). Can the market detect management's "promising one thing, doing another"?—Empirical evidence from annual report tone and insider trading. Journal of Finance and Economics, 47(4), 154–168. (In Chinese)

[5] Fang, H. X., & Lin, T. (2023). How do institutional investors' on-site surveys affect corporate investment inefficiencies?—A mechanism test based on agency conflicts and information asymmetry. Business and Management Journal, 45(2), 117–134. (In Chinese)

[6] Lu, Y., Zhu, Y. J., & Hu, X. Y. (2012). An empirical study on institutional investor shareholdings and non-compliance behavior in listed companies. Nankai Business Review, 15(1), 13–23. (In Chinese)

[7] Ma, Y. Q., & Chen, W. Z. (2024). Corporate digital transformation and management's tone management in annual reports. Accounting Research, (7), 26–40. (In Chinese)

[8] Shi, X., Lin, Y., & Wang, Y. (2024). Institutional investor heterogeneity and green innovation in China: Does digital transformation matter? International Review of Economics & Finance, 93, 994–1014.

[9] Wang, H. J., & Wang, K. M. (2018). A study on accrual manipulation and tone manipulation in annual report textual information. Accounting Research, (4), 45–51. (In Chinese)

[10] Liang, S. K. (2018). Does institutional investor ownership affect corporate cost stickiness? Management World, 34(12), 133–148. (In Chinese)

[11] Wu, F., Hu, H. Z., Lin, H. Y., et al. (2021). Corporate digital transformation and capital market performance: Empirical evidence from stock liquidity. Management World, 37(7), 130–144. (In Chinese)

[12] He, K., & Wan, L. M. (2020). Political connections and management tone manipulation—A reputation constraint perspective or a resource support perspective? Journal of Zhongnan University of Economics and Law, (5), 17–27. (In Chinese)

[13] Yang, P., Yin, Z. F., Zhang, Z. W., et al. (2024). Corporate adoption of digital technologies and improvement in patent quality: Theoretical mechanisms and empirical findings. Statistical Research, 41(5), 98–110. (In Chinese)

[14] Cai, H. B., & Han, J. R. (2024). Adoption of digital technologies and corporate export performance: A case study of enterprises in the Zhongguancun National Independent Innovation Demonstration Zone. Management World, 40(5), 58–75. (In Chinese)