

# Organization Capital, Digital Transformation and Executives' Excess compensation

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## Abstract

**This study explores the relationship between organizational capital and executive excess compensation, alongside the moderating role of digital transformation on this relationship. Using a dataset from China covering the period from 2011 to 2023, the research finds a robust positive correlation between organizational capital and executive excess compensation, suggesting that higher organizational capital leads to greater executive rewards. Furthermore, the study identifies a significant negative moderating effect of digital transformation, indicating that as digital transformation intensifies, the positive relationship between organizational capital and excess compensation weakens. This research contributes to existing literature by offering new empirical insights and re-examining organizational capital through the frameworks of agency theory and the resource-based view.**

## Keywords

**Organization capital, digital transformation, executives' excess compensation.**

## 1. Introduction

In recent years, scholars have increasingly focused on the impact of organizational capital on enterprises. Several studies have demonstrated that organizational capital is challenging to replicate, providing unique and sustainable competitive advantages to enterprises (Hasan and Cheung, 2018; Danielova et al., 2022). Organizational capital can enhance enterprise efficiency, including production and operational efficiency (Li, Qui, and Shen, 2018; Gao, Leung, and Qiu, 2021). Organizational capital is positively associated with firms' innovation (Francis et al., 2021). However, studies have shown that higher organizational capital of firms may increase risk (Eisfeld and Papanikolaou, 2013). Additionally, organizational capital may exacerbate the agency problem of firms (Eisfeld and Papanikolaou, 2014; Venieris et al., 2015) as executives may prioritize their claim on the cash flows generated by organizational capital over the interests of shareholders.

The wide application of digital technology optimizes the efficiency of resource allocation and use, changes people's production, life, and consumption patterns, and increases total factor productivity. Digital transformation plays a driving role in cost control and factor allocation, which helps to break the problem of resource constraints (Sadeghi et al., 2021). The development of digital synchronization capabilities helps firms to deploy resources for efficiency and innovation, which can lead to better performance, such as the integration and coordination of actions to manage firm resources to support and implement leveraged strategies (Carnes et al., 2021). However, digital transformation may also have negative impacts. Digital transformation may increase management difficulties and information overload within the firm (Karhade and Dong, 2021), and the number of stakeholders may increase, inadvertently increasing coordination costs for the firm (Wang et al., 2022). Therefore, we examine the impact of organizational capital on executives' excess compensation in the context

of digital transformation. This gives rise to the research gap in the organization capital literature, which we are attempting to address in this paper.

We use sample of Chinese listed firms from 2011 to 2024 to investigate the relation between organization capital and executives' excess compensation and the moderation role of digital transformation. Our results suggest three points. First, there is a significantly positive relation between organization capital and executives' excess compensation. Second, digital transformation can negatively moderate the positive relation. In addition, we perform heterogeneity tests to explore the reason for the negative moderate effect. We also conduct robustness tests on our results.

This study contributes to the literature in three ways. First, we provide empirical evidence on the significant positive relation between organization capital and executives' excess perquisites. Second, we shed light on the deconstruction of organizational capital. Based on the mobility of organizational capital, we decompose it into organizational capital acting on the firm and organizational capital acting on employees, and test their effects on executive excess perquisites from the agency theory and resource base view. Third, we examined the moderate effects of digital transformation on the relation between organization capital and executives' excess perquisites.

The structure of the rest of the sections in this study is as follows: In Section 2, we summarize the literature and develop hypothesis. In Section 3, we represent the data and methods used in this study. In Section 4, we present the empirical results of this study. In Section 5, we conclude.

## **2. Literature Review and Hypothesis Development**

### **2.1. Organization Capital and Executives' Compensation**

There are two key perspectives on executive compensation. One view considers executives' private gains as part of agency costs (Gul et al., 2011; Andrews et al., 2017). According to Jensen and Meckling (1976), executives may prioritize personal interests over firm value, leading to perquisites that harm organizational goals. Firms with weak governance or low managerial ownership are more likely to reward executives with excessive perks (Andrews et al., 2017).

The alternative view argues that executive perks serve as incentives that support their performance. Chen et al. (2015) suggest that these rewards aid executives in fulfilling their duties (Rajan and Wulf, 2006), enhance productivity, and reflect higher status, which reinforces organizational hierarchy. Xu et al. (2014) further argue that excessive compensation could lead executives to withhold bad news, increasing the risk of stock crashes.

Organizational capital, a key intangible asset, is central to firm performance. It is an important resource base and factor of production (Hasan & Uddin, 2022) and can positively influence a firm's value (Corrado, Hulten, & Sichel, 2009). Firms with higher organizational capital are better positioned to leverage these intangible assets for sustained competitive advantage.

Firms with higher organizational capital can generate greater product value and gain a competitive advantage that is difficult to imitate, driving growth (Lev & Radhakrishnan, 2005). This advantage, according to the resource-based view, is proprietary and hard for competitors to replicate, ensuring sustainability (Danielova et al., 2022). Organizational capital is often accumulated early to enhance growth (Atkeson & Kehoe, 2005). It can also boost productivity (Gao et al., 2021) and improve management (Attig & El Ghoul, 2017). However, it can negatively impact firms by limiting debt capacity and increasing financing costs (Hasan & Uddin, 2022). Moreover, it may exacerbate agency problems and incentivize overinvestment in organizational capital (Eisfeldt & Papanikolaou, 2014; Venieris et al., 2015). As a result, an increase in a firm's organizational capital exacerbates the agency problem, allowing executives to derive greater private benefits from it.

Therefore, we propose Hypothesis1: The increase of organizational capital leads to the increase of executive excess compensation.

## 2.2. Organization Capital, Digital Transformation and Executives' Compensation

Digital transformation is widely recognized as a driver of change in all environments, especially business environments. It has been described as "digitization" in several studies (Hagberg, Sundstrom and Egels-Zand'en, 2016; Parviainen, Tihinen, Kääriäinen and Teppola, 2017). Singh and Hess (2017) conclude that 'transformation' involves the ability to understand the actions that organizations need to take in the face of new technologies.

Digital transformation of firms refers to the transformation of generic digital technologies into specific technologies to change and innovate their economic activities for more efficient resource allocation (Brynjolfsson, Rock and Syverson, 2021). In this process, firms must transform data and information into concrete knowledge that generates business value and is applied to all aspects of production, operations and management (Dou et al., 2023). Organizational changes brought about by digital technologies have also reduced the cost of managing a highly skilled workforce, and R&D innovations driven by new technologies have significantly improved human capital performance (Becker, Murphy and Tamura, 1990; Schultz, 1993).

And according to Karhade and Dong (2021), digital transformation also leads to high integration costs of technological systems, disrupts the original operational system, increases management difficulties, and the accumulated data causes information overload within the firm, which leads to weakened monitoring capabilities and aggravated agency problems.

Therefore, we propose Hypothesis2: Digital transformation negatively moderates the positive relationship between organizational capital and executive private earnings.

## 3. Research Design and Data

### 3.1. Data and Sample Selection

This paper takes Shanghai and Shenzhen Stock Exchanges 's listed firms from 2011 to 2023 as the research sample. We further process the sample: (1) exclude special treatment listed companies; (2) consider the specificity of the financial industry, excluding samples of financial and insurance companies; (3) exclude samples with missing data during the observation period; and (4) winsorize tails at the 1% level of the main continuous variables to eliminate the effects of extreme values. The financial data and corporate governance data of listed companies in this paper come from CSMAR database.

### 3.2. Measure

#### 3.2.1. Executives 'Excess Compensation

According to Luo et al. (2011), we employ model (1) to measure executives 'excess compensation (Unpay). Excess compensation is the difference between the monetary compensation that an executive actually receives and the monetary benefit to which they are entitled.

$$\begin{aligned} \ln pay_{i,t} = & \alpha_0 + \beta_1 Size_{i,t} + \beta_2 ROA_{i,t} + \beta_3 ROA_{i,t-1} + \beta_4 Areawage_{i,t} \\ & + \beta_5 Central_{i,t} + \beta_6 West_{i,t} + \sum Industry + \sum Year + \varepsilon_{i,t} \end{aligned} \quad (1)$$

$Size_{i,t}$  represents the size of the company,  $ROA_{i,t}$  represents the performance of company.  $Areawage_{i,t}$  is the natural logarithm representing the average wage of employees in the town where company is located.  $Central_{i,t}$  and  $West_{i,t}$  are dummy variables of whether the company is located in the central or western regions in the year, respectively. The residuals derived from the regression are used as proxy variables for the monetary private income of executives, i.e., the excess compensation of executives (Unpay).

### 3.2.2. Organization Capital

Following Peters and Taylor (2017), we use model (2) and (3) to calculate organizational capital using SG&A expenses, a constant rate of depreciation of organizational capital. In addition, we consider the impact of the capitalization rate of organizational capital, and consider the proportion of selling and administrative expenses (SG&A) invested by enterprises to capitalize into organizational capital, and incorporate them into the model to measure the organizational capital of enterprises more reliably.

$$OC_{i,t} = (1 - \delta_o) O_{i,t-1} + \frac{SGA_{i,t}}{cpi_t} \quad (2)$$

$$O_0 = \frac{SGA_1}{g + \delta_o} \quad (3)$$

### 3.2.3. Digital Transformation

The Digital Transformation Index (DT) comes from the CSMAR database, which is calculated by standardizing the scores of listed companies on strategic drives, technology empowerment, organizational empowerment, environmental empowerment, digital achievements and digital applications.

### 3.2.4. Control Variables

This paper adopts the following control variables: company size(Size), fixed assets (Asset\_tang), company debt ratio (Blev), company growth(Growth), return on assets (ROA), company cash flow (FCF), company's largest shareholders shareholding ratio (Top1) whether the company is state-owned (SOE), the chairman of the board of directors of the general manager of the two positions in one (Dual). And the proportion of independent directors (Indep), the company's listing year (age), the degree of asymmetry of information (Ana\_err), and the company's senior executives the average age (ave\_age).

## 4. Empirical Results

### 4.1. Descriptive Statistics

The mean value of PAY\_RES is 0.118, with a minimum of -0.965 and a maximum of 1.714, suggesting considerable variation in the excess compensation of executives across different enterprises. The mean organizational capital (OC) value is 0.144, with a standard deviation of 0.105, indicating that the data is relatively concentrated. The minimum value is 0.011, while the maximum is 0.686. The mean value for Digitalization (Digital) is 0.365, accompanied by a standard deviation of 0.102, reflecting minimal variation in the level of digitalization among the enterprises. The minimum value is 0.217, and the maximum value is 0.678. The mean value of SIZE is 22.680, with a minimum of 19.967 and a maximum of 26.943, showing variation in firm size. The minimum value of BLEV is 0.044, and the maximum is 0.861. Board size (BOARD) has a mean of 10.346, with a standard deviation of 2.637, indicating significant variation in board sizes across the sample. The board size ranges from a minimum of 5 to a maximum of 20,

suggesting substantial differences among firms. The mean value of Growth is 0.162, with a standard deviation of 0.316. The minimum value is -0.607, and the maximum is 2.607, reflecting notable volatility in the growth rate.

**Table 1.** Descriptive statistics

|            | MEAN   | STD    | MIN    | Q1     | MEDIAN | Q3     | MAX    |
|------------|--------|--------|--------|--------|--------|--------|--------|
| PAY_RES    | 0.118  | 0.537  | -0.965 | -0.266 | 0.093  | 0.467  | 1.714  |
| OK         | 0.144  | 0.105  | 0.011  | 0.070  | 0.119  | 0.188  | 0.686  |
| DIGITAL    | 0.365  | 0.102  | 0.217  | 0.276  | 0.343  | 0.431  | 0.678  |
| SIZE       | 22.680 | 1.305  | 19.967 | 21.742 | 22.498 | 23.449 | 26.943 |
| BLEV       | 0.438  | 0.189  | 0.044  | 0.293  | 0.437  | 0.582  | 0.861  |
| FCF        | 0.001  | 0.094  | -0.405 | -0.033 | 0.013  | 0.052  | 0.305  |
| DUAL       | 0.262  | 0.440  | 0.000  | 0.000  | 0.000  | 1.000  | 1.000  |
| BOARD      | 10.346 | 2.637  | 5.000  | 9.000  | 10.000 | 12.000 | 20.000 |
| INDEP      | 0.382  | 0.073  | 0.231  | 0.333  | 0.364  | 0.429  | 0.625  |
| AGE        | 13.564 | 6.373  | 2.000  | 8.000  | 13.000 | 18.000 | 32.000 |
| ASSET_TANG | 0.225  | 0.160  | 0.002  | 0.100  | 0.192  | 0.318  | 0.730  |
| TOP1       | 36.190 | 15.414 | 1.844  | 24.176 | 34.600 | 46.484 | 89.409 |
| GROWTH     | 0.162  | 0.316  | -0.607 | 0.001  | 0.114  | 0.250  | 2.607  |

Table 1 summarizes the statistical results (the mean, standard deviation, minimum, 25th percentile, median, 75th percentile, and maximum values) of our main variables for our sample period ranging from 2011 to 2023. The variables share the same definitions as those in Table 1 and are winsorized at 1% and 99% percentiles.

## 4.2. Baseline Regression

Table 2 presents the results of an ordinary least squares (OLS) regression, exploring the impact of organization capital (OK) on executives' excess returns, and the moderating effect of digital transformation on this relationship. In column (1), The coefficient of OK is 1.237 and significant at 1% level. In column (2), we test the moderating effect of digital transformation on the relationship between OK and executives' excess compensation, The coefficient of OK\*DIGITAL is -0.840 and significant at 5% level. This table suggest that organization capital is positively related to executives' excess returns. and digital transformation negatively moderates the relationship between organization capital and executives' returns, reducing the effect of organization capital, prove our hypotheses 1 and 2.

**Table 2.** Results to OLS regressions of executives' excess compensation on organization capital and the moderate effect of digital transformation.

|                    | (1)       | (2)       |
|--------------------|-----------|-----------|
| Intercept          | -0.868*** | -0.525*** |
|                    | (-7.28)   | (-4.42)   |
| OK                 | 1.237***  | 1.458***  |
|                    | (22.86)   | (8.55)    |
| OK*DIGITAL         |           | -0.840**  |
|                    |           | (-2.02)   |
| DIGITAL            |           | 0.251***  |
|                    |           | (2.96)    |
| SIZE               | 0.035***  | 0.031***  |
|                    | (6.36)    | (5.64)    |
| BLEV               | -0.153*** | -0.147*** |
|                    | (-5.07)   | (-4.94)   |
| FCF                | 0.378***  | 0.396***  |
|                    | (7.50)    | (7.91)    |
| DUAL               | -0.026**  | -0.027**  |
|                    | (-2.34)   | (-2.36)   |
| BOARD              | 0.014***  | 0.013***  |
|                    | (7.21)    | (6.77)    |
| INDEP              | -0.082    | -0.053    |
|                    | (-1.26)   | (-0.82)   |
| AGE                | -0.012*** | -0.011*** |
|                    | (-12.02)  | (-11.40)  |
| ASSET_TANG         | -0.188*** | -0.152*** |
|                    | (-5.61)   | (-4.78)   |
| TOP1               | -0.006*** | -0.005*** |
|                    | (-16.69)  | (-16.48)  |
| GROWTH             | 0.119***  | 0.107***  |
|                    | (7.25)    | (6.66)    |
| YEAR.F.E.          | YES       | YES       |
| IND.F.E.           | YES       | YES       |
| Adj R <sup>2</sup> | 8.78%     | 8.12%     |
| N                  | 11976     | 11976     |
| F-value            | 46.533*** | 47.452*** |

Table 2 displays our main results, the ordinary least squares (OLS) regression of executives' excess compensation on organization capital and the moderate effect of digital transformation on the relation. The variables are winsorized at 1% and 99% percentiles. \*, \*\* and \*\*\* mean that the correlation coefficients are significant at 10%, 5%, and 1% levels, respectively.

#### 4.3. Robustness Test

Table 3 presents the results of a robustness test, where the measure of organization capital (OK) is replaced by a measure, OK\_NEW, based on the approach outlined in Eisfeldt and Papanikolaou (2013). This test evaluates the robustness of the relationships observed in Table 2. Both columns (1) and (2) show insignificant intercepts, as indicated by the lack of statistical significance (coefficients of -0.111 and -0.154, with t-statistics of -0.96 and -1.40). This suggests



the baseline effect remains neutral without other variables' influence. Both the first and second columns show similar results to Table 2, further supporting our hypotheses 1 and 2.

#### 4.4. Heterogeneity Test

**Table 3.** Robustness and Heterogeneity test

|                    | Robustness Test |           | Heterogeneity Test |            |
|--------------------|-----------------|-----------|--------------------|------------|
|                    | (1)             | (2)       | (3)                | (4)        |
| INTERCEPT          | -0.111          | -0.154    | -0.929***          | 0.277      |
|                    | (-0.96)         | (-1.40)   | (-4.17)            | (1.54)     |
| OK                 |                 |           | 1.287***           | 1.508***   |
|                    |                 |           | (5.17)             | (6.04)     |
| OK *DIGITAL        |                 |           | -0.167             | -1.466**   |
|                    |                 |           | (-0.30)            | (-2.38)    |
| OK_NEW             | 0.003**         | -0.008*   |                    |            |
|                    | (2.01)          | (-1.85)   |                    |            |
| OK_NEW *DIGITAL    |                 | -0.032*** |                    |            |
|                    |                 | (-2.59)   |                    |            |
| DIGITAL            |                 | 0.464***  | 0.487***           | 0.326**    |
|                    |                 | (7.04)    | (3.87)             | (2.43)     |
| SIZE               | 0.002           | -0.004    | 0.045***           | -0.028***  |
|                    | (0.43)          | (-0.69)   | (5.64)             | (-3.31)    |
| BLEV               | -0.155***       | -0.145*** | -0.008             | -0.111**   |
|                    | (-5.04)         | (-4.71)   | (-0.17)            | (-2.55)    |
| FCF                | 0.461***        | 0.461***  | 0.390***           | 0.310***   |
|                    | (8.94)          | (8.98)    | (5.51)             | (4.44)     |
| DUAL               | -0.037***       | -0.046*** | -0.008             | -0.048***  |
|                    | (-3.20)         | (-3.96)   | (-0.50)            | (-3.12)    |
| BOARD              | 0.016***        | 0.015***  | 0.015***           | 0.019***   |
|                    | (7.93)          | (7.77)    | (5.19)             | (7.16)     |
| INDEP              | -0.089          | -0.095    | -0.158*            | -0.083     |
|                    | (-1.34)         | (-1.44)   | (-1.73)            | (-0.92)    |
| AGE                | -0.004***       | -0.004*** | -0.009***          | -0.011***  |
|                    | (-4.07)         | (-4.33)   | (-6.08)            | (-7.74)    |
| ASSET_TANG         | -0.178***       | -0.129*** | -0.029             | -0.262***  |
|                    | (-5.19)         | (-3.73)   | (-0.53)            | (-5.39)    |
| TOP1               | -0.005***       | -0.005*** | -0.006***          | -0.003***  |
|                    | (-16.22)        | (-15.50)  | (-12.48)           | (-6.13)    |
| GROWTH             | 0.067***        | 0.070***  | 0.123***           | 0.061***   |
|                    | (4.08)          | (4.27)    | (5.23)             | (2.84)     |
| YEAR.F.E.          | YES             | YES       | YES                | YES        |
| IND.F.E.           | YES             | YES       | YES                | YES        |
| R <sup>2</sup>     | 5.10%           | 5.71%     | 14.55%             | 15.63%     |
| Adj R <sup>2</sup> | 4.84%           | 5.44%     | 13.42%             | 14.29%     |
| N                  | 11976           | 11976     | 6432               | 5482       |
| F-value            | 26.684***       | 33.222*** | 97.552***          | 340.278*** |

Table 3 displays the results of robustness test and heterogeneity test, for robustness test, we replace the measure of ok by OK\_new as mentioned in Eisfeldt and Papanikolaou (2013). For heterogeneity, we group the sample according to the median of the firm opacity index into groups with lower firm opacity and higher firm opacity. The variables are winsorized at 1% and 99% percentiles. \*, \*\* and \*\*\* mean that the correlation coefficients are significant at 10%, 5%, and 1% levels, respectively.

Table 3 presents the results of a heterogeneity test, where firms are divided into two groups based on the median of the firm opacity index, we follow Andersen et al. (2009) and Deb et al. (2016) to calculate the opacity index. This test explores whether the relationships between organization capital (OK), digital transformation, and executives' excess returns vary across firms with different levels of opacity. In column (3), the interaction term is not statistically significant (-0.167, t-statistic of -0.30). In column (4), the interaction term is significant at the 5% level (-1.466\*\*, t-statistic of -2.38), suggesting that digital transformation significantly moderates the effect of organization capital for firms with higher opacity, and this moderation is negative. This table indicating that when firms' degree of opacity is high, digital transformation could reduce the level of information asymmetry and agency problem, thus improve the phenomenon of executive excess compensation.

## 5. Conclusion

This study explores the relationship between organizational capital, digital transformation, and firm performance, shedding light on how digital transformation moderates the effect of organizational capital on executives' excess returns. Our empirical analysis reveals several important findings that contribute to the understanding of organizational capital in the context of technological change.

First, we confirm that organizational capital has a significant and positive effect on executives' excess returns. This supports prior research suggesting that organizational capital will exacerbate agency problem. However, we also observe that the positive impact of organizational capital can be negatively moderated by digital transformation.

Furthermore, our heterogeneity test shows that the moderating effect of digital transformation varies across firms with different levels of opacity. For firms with higher opacity, digital transformation acts as a moderating factor, reducing the positive effects of organizational capital on excess compensation.

Taken together, our findings highlight the critical need for companies to carefully balance the benefits of investing in organizational capital with the potential challenges it brings. To fully leverage organizational capital while mitigating risks such as agency problems and information asymmetry, enterprises should focus on strengthening internal controls, enhancing governance structures, and fostering transparency. For policymakers, these insights underline the importance of creating an environment that supports firms in developing and managing their organizational capital efficiently. From an investor's perspective, understanding the role of digital transformation and organizational capital can inform better investment decisions, particularly when evaluating firms' long-term growth potential and risk management strategies.

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