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Do Firm's Characteristics Influence Its IT Strategies? A Study of the Driving Force of a Firm's Decision to Appoint IT Expertise

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Abstract: The demand for information technology expertise has grown rapidly in the last few decades, signaling a firm's commitment to integrating IT into its core business strategy. Understanding the conditions under which firms appoint a chief information officer (CIO) can provide valuable insights into the evolving role of IT in corporate governance. This study addresses a crucial gap in the literature by exploring the determinants of a firm's decision to hire a CIO at the top management level. The study identifies several factors that influence a firm's decision to appoint a CIO, including the firm's size, its level of innovation, and its prior performance. The study examines these assertions by comparing the characteristics of firms that appoint a CIO at the top management level with those of similar firms in their industries that do not have a CIO position prior to the appointment. A logistic regression model that considers CIO firms and their matched firms indicates that firms are more likely to hire a new CIO after they experience loss, have larger capital expenditures and higher market value. Our study provides empirical evidence on why certain firms prioritize IT leadership at the executive level.

Keywords: chief information officer; IT governance; Intellectual capital; R&D investments; IT leadership; firm characteristics

1. Introduction

The increasing pace of change in business enterprise driven by innovation, deregulation, and competition has required a large investment in intangible assets, such as information technology (IT) and research and development (R&D). These investments, associated with changes in product and service offerings, have called for higher-skilled workers who have greater levels of cognitive skills and flexibility. In this "new economy," the demand is growing for workers with outstanding talent, training, and management ability (Krishnan et al. 2022; Evans et al. 2021; Autor et al. 1998). Accordingly, business enterprises today require not only the traditional factors such as the necessary capital and labor, but also new managerial skills such as "know-how information." Bresnahan et al. (2002) argue that a firm's ability to compete in the market depends not only on its technological capability, but also on its managers' abilities to respond rapidly to customer needs and market demands. CIO Dive notes a spike in technology leadership change to adjust for evolving economic and business changes. Executive Neal Sample became the CIO at Walgreens in November 2023. This leadership change followed broader shifts within the company, his role implies redirecting the company's attention to a new technology driven transformation in the retail pharmacy sector, emphasizing the strategic importance of technology leadership (Roberto Torress 2023).

To effectively manage IT assets, modern organizations hire chief information officers (CIOs) at the top-management level with the assumption that a CIO's personal skills add value to the business organization. This view of the CIO's role is reflected in the following comment by economist W. Brian Arthur, Citibank professor at the Santa Fe Institute:

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Technology will jump-start the economy by connecting systems, processes and functions within and among companies. But it is up to the CIOs to channel these connections into new functionality that will transform their industries…U.S economic driver for the next several decades rests solely in the hands of CIOs. (IT reloaded, *CIO magazine*, July 2003, p. 62)

A study by Zhang et al. (2023) highlights how rapid digital transformation across various industries has significantly shifted the responsibilities of CIOs. They are now expected to lead innovation and digital strategy, not just manage IT resources. This supports the assertion that firms need advanced managerial skills to navigate the complexities of the modern economy. Integrating a CIO position in the top management team enables a CIO to provide economic justification for IT projects to the rest of the top management team, convince them to allocate attention and resources to strategic IT projects, and make them aware of the potential of information systems that can enhance the firm's competitive advantage (Enns et al. 2003; Earl and Feeny 1994). If a CIO is not part of the top management team, IS projects would be less likely to have top management support and commitment (Applegate and Elam 1992; Fenny et al. 1992). Strengthening the CIO's leadership position throughout the organization is crucial for developing IT capabilities and strategic alignment in the digital era (Wunderlich & Beck, 2017). Therefore, when firms take the advantage and make the first move, ahead of competitors, by setting up a CIO position in the top executive team, they convey to the market their ability to adapt rapidly to the ever-changing business environment.

Furthermore, recent research underscores the significance of CIOs in promoting organizational agility. A study by Wunderlich and Beck (2017) find that organizations where CIOs are actively involved in strategic decision-making are more likely to adapt successfully to rapid market changes. This finding supports the importance of integrating CIOs into the top management team.

Richard and Zmud (2002) have shown that investors are likely to reward firms that have good governance structures with higher market value. Chatterjee et al. (2001) examine the shareholder-wealth effects of announcements of newly created CIO positions during the 1987-1998 time period. They find that the market reaction to CIO announcements is more pronounced in firms that are newly integrating IT into their business strategy, the so-called "IT transformation firms." Khallaf and Skantz (2007) examine whether investors value the CIO position or the characteristics of the person who holds that position. Their findings reveal that the market reactions to CIO announcements are more pronounced when the new CIO is hired from an IT leader company or when the CIO obtains a higher level of education. In examining whether CIOs add long-term value to business enterprises, Khallaf and Skantz (2010) find that CIO firms outperform their industry average over two years following CIO appointments.

When appointed at the top management level, CIOs are pivotal in shaping IT governance, which involves aligning technology investments with the organization's strategic goals, managing IT-related risks, and developing policies that ensure accountability and transparency in the use of technology. CIOs help establish a framework that integrates IT governance with corporate governance, ensuring that technology decisions support overall business objectives and create value for the firm (Wu et al., 2020). Effective IT governance, driven by CIO leadership, enhances decision-making processes, optimizes resource allocation, mitigates IT risks, and protects intellectual assets, ultimately leading to better organizational performance and competitive advantage (Jones et al. 2020).

The above research represents an *ex post* analysis of a firm's decision to create a CIO position in the top management team, the act of hiring a new CIO. That is, the prior research examines either the immediate market reaction to the announcements of hiring a new CIO or the long-term impact of a firm decision to appoint a new CIO at the top management level. However, these analyses do not examine the question of which factors drive a firm to create specialized managerial position, the chief information officer, which is responsible for implementing and coordinating IT projects. Therefore, results obtained from these analyses do not explain the intuition or the rationale behind a firm's decision to have a new CIO position. In other words, which factors cause the demand for the CIO position *ex ante*? Determine the conditions under which firms appoint CIOs will help managers form realistic expectations about the benefits of having the CIO at the top management level.

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In order to shed light on this question, this study analyzes ex ante the decision to hire a new CIO. The purpose of the current study, therefore, is to explain the rationale behind a firm's decision to hire a new CIO. Key drivers of appointing a CIO include financial reason such as firm prior performance and firm size. Technical reasons for CIO appointment include key drivers such as improving the quality of IS, gaining access to new expertise. External factors for appointing a new CIO include the desire to a trend that has received wide coverage in the press. The study explores the difference in firm characteristics before the CIO event between a sample of firms that have announced the appointment of a CIO, and closely matched firms that did not appoint a CIO during the entire sample period. Using a peer-design technique, firms in the CIO sample are compared to a matched group with similar SIC code and size. Matching on size and industry reduces the cross-sectional variation in firm performance between the two groups.

Unlike previous studies that have primarily focused on the ex-post consequences of appointing a CIO, our study examines the ex-ante decision-making processes and driving forces behind a firm's strategic choice to create a CIO position at the top management level. This novel approach provides valuable insights into the motivations and conditions that lead organizations to integrate IT leadership into their executive teams. By shedding light on these critical factors, our study offers a fresh perspective on the strategic integration of the CIO role within the firm's top management structure. This focus on the antecedents of CIO appointments, rather than solely on their outcomes, represents a significant departure from the existing body of literature and contributes to it. Our examination of the ex-ante decision-making processes also allows us to better understand the specific drivers and considerations that shape a firm's decision to elevate the CIO to the top management level. The motivation behind this research stems from the significant impact that IT can have on firm performance, innovation, and long-term sustainability.

The paper is structured as follows. The second section develops the research hypotheses. The third section outlines the sample selection procedure and the research methodology. The fourth section indicates the imperial results of the study. The final section includes a summary with conclusions.

2. Hypotheses Development

The driving forces behind the management decision to appoint a new CIO can be attributed to a combination of external and internal factors. The major external influences that drive firms to appoint a new CIO can arise from factors such as globalization and competition or the desire to follow a trend that have gained wide coverage in the popular press. Internal factors can include firm size, IT investment, level of innovation and firm prior performance. Due to the difficulty of measuring the impact of external factors on the management decision to hire a new CIO, the current study assumes that the demand for the CIO position is a function of firm-specific characteristics that reflect greater resources, innovation activities, and firm performance. The following section will discuss these potential internal driving forces to hire a new CIO.

2.1. Firm Size

Kinney and Wempe (2002) argue that firms with greater resources are more likely to adopt new IT strategies. The authors use total sales as a proxy for firm resources and conclude that firms with greater sales levels adopt a just-in-time strategy. This is consistent with Gowen and Tallon (2003) who find that IT executives of "market-focused" organizations perceive higher levels of IT value throughout the value chain. The potential of scale and scope economies of large firms motivate these firms to take the initiative of creating new management positions. Furthermore, recent studies find that larger firms not only have more resources but also face greater scrutiny from stakeholders, which increases their likelihood of appointing a CIO to ensure effective governance and strategic alignment (Chau et al. 2020; Eric 2023). This indicates that larger firms are more likely to appoint a new CIO due to their capacity to leverage IT for competitive advantage.

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Prior studies examined the association between firm size and IT investment intensity. Findings support the hypothesis that large firms experience a higher opportunity to improve their financial performance than small firms (Gremillion 1984; Harris and Katz 1991).

Therefore, it is expected that firms with larger size will value the integration of the CIO position in the organization hierarchy more than small firms and are thus more likely to appoint a new CIO. Therefore, the following hypothesis is presented:

H1: *Large firms are more likely to appoint a new CIO than small firms.*

2.2. High-Tech Firms

The level of innovative activities can also drive the demand for a CIO position. That is, innovative firms characterized by a greater level of R&D usually demand specific resources and skills to achieve a competitive advantage. Given the increasing pace of change in business enterprises driven by innovation, there is a call for a skilled senior executive who enables a firm to rapidly adjust to the continuous change in business environment (Rajgopal et al. 2002). Prior studies argue that the dynamic nature of technology markets necessitates a strong IT leadership presence (Chau et al. 2020; Kettinger et al. (2021). Their findings suggest that innovative firms with robust R&D investments are more likely to see a positive correlation between CIO appointments and improved market performance, thereby reinforcing the demand for CIOs in high-tech environments.

Kettinger et al. (1994) argue that the CIO's role in influencing a firm's future opportunities is more pronounced in a more dynamic environment. The hype around many high-tech firms and the publicity given to their Web applications propose that executives who do not act fast, relative to industry competitors, put their firms at risk (Ross and Fenny 2000). Advances in IT may require firms to better manage IT assets and model complex risks (Liebenberg and Hoyt 2003). Having a new CIO in a senior management team is crucial for high-tech firms due to the fact that most high-tech firms are building business strategies that have not previously existed in the market industries. Accordingly, the following hypothesis is developed:

H2: *Innovative firms are more likely to appoint a new CIO than other firms.*

2.3. Prior Performance

Firm prior performance is another factor that may affect the demand for a CIO position. While the CIO role becomes increasingly common in both profitable and non-profitable firms, there may be a greater demand for such positions in firms that have experienced loss. Since CIOs are touted by their ability to derive IT services at a lower cost level and higher quality (CRZ 2001), firms that experience loss are expected to have greater incentives to be among the first movers to create such a position in the top management team. Khallaf and Skantz (2010) find that the market reacts more favorably to the strategic change implied by the CIO appointment for firms performing poorly in the year prior to the announcement. A recent study (Chawla et al. 2023) supports the argument that firm performance impacts the demand for a CIO and highlights that the structural power of the CIO can enhance firm performance, particularly in firms that need strategic improvement or reorientation. The study indicates that the appointment of a CIO is seen more favorably by the market in firms that have underperformed, reinforcing the idea that unprofitable firms appoint CIOs to signal positive change to shareholders. Additionally, Chawla and Goyal (2021) indicate that digital transformation, often led by a CIO, is critical for firms seeking to improve efficiency and performance. These findings support the notion that unprofitable firms are more likely to appoint a CIO to leverage IT for competitive advantage and signal a strategic shift.

Accordingly, an inverse relation is expected between the demand for the CIO position and firm performance. Therefore firms that experience loss are more likely to appoint a new CIO to signal a positive message to their shareholders. Hence, the following hypothesis is presented:

H3: *Unprofitable firms are more likely to appoint a new CIO than profitable firms.*

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These hypotheses are not intended to be comprehensive and are limited by those driven factors that can be tested through publicly available financial data.

3. Sample Selection and Regression Model

CIO announcements were obtained from the *Lexis-Nexis Wire Service* for the period 1987 to 2006[1]. In order to search for CIO announcements, several key words that reflect alternative titles of the CIO position and the action of hiring a CIO were used.[2] The research initially produced a total of 1,306 CIO announcements (Table 1, Panel A). The first review of these announcements excluded 319 announcements that either represent a duplication of a CIO announcement or point to unrelated CIO hiring announcements.[3] The remaining 987 announcements were checked carefully to assure the existence of the CIO position at the top management level. To identify a firm as a non-CIO firm, this study used the following method: (1) initially, a firm was considered a non-CIO firm if it does not announce a CIO position during the study period (1987-2006); (2) the proxy statements of non-CIO firms were reviewed to ensure that these firms do not have a CIO position in the top management team.

Table 1. Sample Selection.

Panel A: Sample Selection Screening Results	Number of observations
Total CIO announcements	1306
Less: Duplicated and unrelated announcements	(319)
Less: Confounded announcements [a]	(21)
Less: Privately held companies	(397)
Number of firms qualified analysis (Compustat data available)	569

a. Confounding factors include events such as mergers and acquisitions, dividend declarations, and earnings announcements that CIO firms announced during the designated window.

Two different sets of benchmarks were utilized in this study. In the first set, each CIO firm was matched to a non-CIO firm with the same four-digit SIC code and similar size. In particular, a CIO firm was matched to a non-CIO firm with the same four-digit SIC code, and with year-end market values within 70%-130% of the CIO's firm in the year prior to the CIO announcement (Table 2).[4] If there no matched found within the specified limits of size in the same four-digit SIC code, a three-digit and then a two-digit SIC code were used to search for a matching firm. If a matched firm could not be specified, the third step was to use a firm with market value closest to the CIO firm.

CIO firms are matched to non-CIO firms in terms of size and industry. Year-end market value is proxied for size. Panel A compares the market value and performance of CIO firms to non-CIO firms. Year-end market value is the stock close price multiplied by the number of common shares outstanding. Panel B show the number of firms with available matching based on the defined criteria.

1 Refer to the limitations section for an explanation of the chosen study's time period.

2 Search for CIO announcements use key words representing both the CIO's position title (e.g. Chief Information Officer, Chief Technology Officer, CIO, CTO, Vice President of Information Technology...) and the hiring event (e.g.., hire, promote, recruit, name, appoint...). The focus was on the newly created CIO positions.

3 Unrelated CIO announcements include those announcements that declared actions that have been taken by the current CIOs to implement their IT strategies.

4 Barber and Lyons chose this size range as it yields test statistics that are well specified.

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Table 2. CIO and Matched Firms - Matching Criteria. Panel A: Descriptive Statistics for Variables Used to Find the Matched Pairs [a]. Panel B: Number of Firms with Available Matching based on the Defined Criteria.

A						
Variable	Firms	N	Mean	Median	Min	Max
Market value	CIO	447	4621.57	564.66	-0.08900	162789.88
	Non-CIO		2885.00	493.97	-0.42600	85149.64

B	
	Total
Four-digit SIC code	218
Three-digit SIC code	69
Two-digit SIC code	204
Total	491
Dropped from the sample	78
Total CIO firms	569

A CIO firm is matched to non-CIO firms in the same SIC code, between 70% -130% of CIO firm's size in year t. In cases where firm's market value is missing in Compustat files, total assets are used to find the closest match.

In order to explore the factors that drive a firm's decision to create the CIO position in the top management level, a logistic regression model was estimated. The dependent variable (CIO firm) is stated as a dummy variable that equals 1 for CIO firms, and 0 for non-CIO firms. The independent variables include a firm's market value, R&D expenditures, advertising expenditures, capital expenditures and prior performance. Hence the empirical model of interest that examines the variables that drive the demand for the CIO position (H6) is as follows:

$$\text{Ln [prob. (CIO)/ 1 – prob. (CIO)]} = \alpha + \beta_1 \text{LOSS}_{it-1} + \beta_2 \text{MV}_{it-1} + \beta_3 \text{H-TEK} + \beta_4 \text{R\&D}_{it-1} + \beta_5 \text{CAPEX}_{it} + + \varepsilon_{it} \quad (12)$$

where:

CIO (the dependent variable) = a dummy variable that takes a value of 1 if the firm hires a CIO, and 0 otherwise;

LOSS_{it-1} = a dummy variable that takes a value of 1 if the net income before extraordinary items (Compustat item #18) is negative, and 0 otherwise;

Log MV = the natural log of the firm's market value at the end of the year. Market value is measured as a stock closing price multiplied by the number of common shares outstanding;

H-TEC[5] = a dummy variable that takes a value of one 1 if the firm reports Compustat SIC codes 2833-2836, 8731-8734, 7371-7379, 3570-3577, 3600-3674, or 3810-3845 namely drugs, R&D services, programming, computers, electronics, and precise measurement instruments, respectively, and 0 otherwise;

$\text{R\&D}_{it-1}$ = research and development over sales (Compustat item # 46) to sales; and

CAPEX = capital expenditures (Compustat item # 30) scaled by total assets.

The dependent variable refers to the likelihood ratio in favor of creating a new CIO position. Since IT investments are not disclosed publicly, the model includes R&D and capital expenditures to proxy for IT investments. The results obtaining from the logistic regression model will shed light on whether CIO firms have unique characteristics as compared to non-CIO firms that drive the demand for the CIO position.

4. Empirical Results

Reviewing CIO announcements over the period of time (1987-2006) reveals an increasing tendency among U.S. firms to appoint a new CIO at the top management level. The knowledge gathered from estimating the above model provides the foundation to better understand this recent trend. Panel A of Table 3 presents summary statistics for variables used in the regression analysis for

[5] Consistent with Chen et al. (2001), the current study sets high-tech firms to these SIC codes.

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the CIO sample and the control sample. As predicted by the study hypotheses, Panel A shows that the median values for LOGMV, R&D and CEXP are higher for the CIO sample than the control sample. A median HTEK variable of 0 for the CIO sample shows that there are more less high-tech firms that announce the CIO position than high-tech firms.

Sample consists of 475 firm observations. CIO is a dummy variable that takes the value of 1 if a firms hires a CIO for the first time , and 0 otherwise, log MV is log of market value, a proxy for firm size, R&D is research and development expenditures deflated by the total sales, CEXP is the capital expenditures deflated by total assets, HTEK is a dummy variable which takes the value of 1 if a CIO firm is a high tech firm and 0 otherwise, PERF is a dummy variable that takes a value of 1 if the net income before extraordinary items is negative, and 0 otherwise.

Table 3. Descriptive Statistics and Pearson Correlations. Panel A: Descriptive Statistics. Panel B: Pearson Correlations.

A

Variable	CIO sample			Non CIO sample		
	Mean	Median	Std.	Mean	Median	Std.
LOGMV	6.304	6.350	2.06	6.118	6.166	2.127
R&D	2.577	0.079	33.845	0.501	0.043	3.394
CEXP	0.079	0.055	0.09	0.065	0.044	0.070
HTEK	0.303	0.0	0.46	0.317	0.0	0.465
PERF	0.602	1.0	0.489	0.802	1.0	0.398

B

	CIO	LOGMV	R&D	CEXP	HTEK
LOGMV	0.044				
	(0.195)				
R&D	0.042	-0.032			
	(0.32)	(0.49)			
CEXP	0.086	-0.005	0.104		
	(0.008)***	(0.872)	(0.01)**		
HTEK	-0.014	-0.0390	0.056	-0.087	
	(0.640)	(0.255)	(0.187)	(0.00)	
PERF	-0.21	0.306	0.086	0.09	-0.171
	(0.000)***	(0.000)***	(0.04)**	(0.00)***	(0.00)***

*, **, and *** represent the significance at levels .10, .05 and .01 respectively.

Panel B of Table 3 reports Pearson correlations between pairs of key variables. The correlations present the unconditional relationship between the dummy variable CIO and the natural logarithm of market value, R&D expenses, capital expenditures, whether a firm is high-tech firm and firm performance prior to CIO appointment. Consistent with prior predications, the simple correlations in Table 3 (Panel B) indicate a significantly positive relation between the demand for the CIO position and firm capital expenditures prior performance. However, one should interpret these correlations with caution because the correlations indicate that firm prior performance is associated with other variables in the study.

In order to explain the underlying characteristics that cause the demand for the CIO position *ex ante*, a logistic regression model is estimated to examine whether CIO firms have unique characteristics as compared to non-CIO firms that drive the demand for the CIO position. The categorical dependent variable CIO assumes a value of one if a firm appointed a CIO and zero for control firms. The regression model estimates the impact of firm size, prior performance, level of innovation and capital expenditures on the likelihood of appointing a CIO at the top management level.

Table 4 reports significantly positive coefficients for firm characteristics that reflect an inferior financial performance, large capital expenditures, and high market value (the coefficients of loss and

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capital expenditures are significant at the 0.01 level, while that of market value is significant at the 0.10 level). Findings reveal that firms that have greater capital expenditure, experience a loss, or have a higher market value a year prior to appointing a new CIO are more likely to hire a new CIO. Finding a positive correlation between CIO firms and greater capital expenditure, or CIO firms and higher market value is consistent with Kinney and Wempe (2002) who find that firms with greater resources are more likely to adopt new IT strategy. These findings are consistent with the hypothesis that firms appoint CIOs to reduce information asymmetry regarding the firm's current and expected IT investment. Finding a negative correlation between a firm's prior performance and its decision to hire a CIO reflects a positive expectation about the ability of the new CIO to improve firm performance. By appointing a CIO, management signals its commitment to take steps needed to improve future performance. Contrary to the study's hypothesis, the level of technology represented by high-tech firms is not driving the demand for the CIO position. The absence of significant correlation between the likelihood of appointing a CIO and HTEK variable may attribute to the explanation that the CIO position is deemed to be important to most business organizations regardless of their level of technology.

Shown below are the coefficient estimates from the OLS regressions specified as following:

$$CIO_{it} = \alpha + \beta_1 \log MV_{it-1} + \beta_2 R\&D_{it-1} + \beta_3 CEXP_{it-1} + \beta_4 HTEK_{it-1} + \beta_5 PERF_{it-1} + e$$

Where CIO is a dummy variable that takes the value of 1 if a firms hires a CIO, and 0 otherwise, log MV is log of market value, a proxy for firm size, R&D is research and development expenditures deflated by the total sales, ADV is the advertising expenditures deflated by total sales, HTEK is a dummy variable which takes the value of 1 if a CIO firm is a high tech firm and 0 otherwise, CEXP is the capital expenditures deflated by total assets. The marginal probability of hiring a CIO is estimated using LOGIT model.

Table 4. Logistic Analysis of the Determinants of Firm's Decision to Appoint a CIO in the Top Management Level.

Variables	*Expected sign*	*LOGIT Model*
Intercept	+/-	*-0.128*
$LOGMV_{it-1}$	+	*0.0893*
P. value		*(0.06)**
$R\&D_{it-1}$	+	*0.001*
P. value		*(0.85)*
$CEXP_{it-1}$	+	*5.86*
P. value		*(0.00)****
$HTEK_{it-1}$	+	*-0.06*
P. value		*(0.73)*
$PERF_{it-1}$	-	*-1.001*
P. value		*(0.00)****
Number of observations=475		

*, **, and *** indicate significance at 0.10, 0.05 and 0.01 levels respectively.

5. Limitation and Contribution

The decision to limit our sample size for CIO announcements to the period from 1987 to 2006 is due to the following reasons: (1) Specificity of the research objective. The focus on first-time CIO appointments necessitates a clear boundary for the data collection period. By limiting the sample to 2006, we ensure that our findings are relevant to the emergence of the CIO role during a pivotal time in the evolution of information technology management. This period saw significant organizational changes and the formalization of the CIO position, making it a critical time for understanding its impact on firms. (2) Technological evolution: The early 2000s marked a significant shift in how organizations approached information technology, particularly with the rise of the internet and digital transformation. Accordingly, we capture the initial impacts of these changes on corporate governance and management structures, particularly the strategic importance of the CIO role as firms

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began to recognize the value of information technology in driving business success. (3) Newly created position. The study focuses exclusively on firms hiring a CIO for the first time, rather than promoting an existing position, ensuring that the data reflects the initial creation of the CIO role. (4) Consistency with prior studies: our sample period coincides with the timeframe used in the studies by Khallaf and Skantz (2006, 2010), Chatterjee et al. (2001) which also focused on the market reaction and firm performance to newly created CIO positions. This alignment not only strengthens the credibility of our research but also allows for comparative analysis with previous findings, enhancing the overall validity of our results.

To our knowledge, this is the first study to investigate the ex-ante decision or driving forces behind a firm's choice to appoint a CIO at the top management level. Prior studies have primarily examined the ex-post impact of hiring a new CIO. Understanding these driving forces is strategically important as it sheds light on the motivations and conditions that lead firms to create a CIO position, providing valuable insights into the strategic integration of IT leadership within the firm's top management team.

6. Summery and Conclusion

Despite the growing recognition of IT as a strategic asset, there is limited understanding of the specific factors that influence a firm's decision to appoint a CIO at the top management level. This study provides an initial attempt to identify factors that drive a firm's decision to appoint a CIO at the top management level. As is suggested by the announcements extracted from the general trade press, firms appoint CIOs to manage IT assets and improve their performance and competitive advantage. Creating a CIO position at the top management level signals the importance of IT investments to an organization and would represent one way through which a firm could capture various benefits associated with managing IT investments. Results reveal that firms are more inclined to appoint CIOs when they experience prior loss, large capital expenditures, and have a higher market value. Future research is necessary in order to better understand the driving force behind a firm's decision to appoint a CIO at the top management level. Important factors not examined here might include IT budget, industry specification, level of competition and the organizational structure of the firm. There are two important limitations to this study that deserve to be noted. The first concerns the lack of available information about IT investments. The second limitation comes from the assumption that non-CIO firms are those firms that never announce the appointment of a CIO. Although an announcement of a new CIO appointment signals that the firm is establishing such a position, firms without a CIO may in fact have a de facto CIO who goes by a different title from the key words used in the current study.

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