

On the Economic Implications of Human Capital Disclosures: Evidence from the
SEC's Mandatory Disclosure Requirements

by

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DEDICATION

This thesis is lovingly dedicated to my parents, whose unwavering support, sacrifices, and encouragement have been my greatest source of strength and inspiration. To my mother, for her boundless love and belief in my potential, and to my father, for his wisdom and guidance that have shaped my journey.

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ABSTRACT

This study examines the economic implications of human capital disclosure (HCD) on corporate value. Utilizing a lexicon developed through advanced machine learning techniques, specifically word embedding models, we quantify firm-level HCD by measuring the proportion of discussions dedicated to human capital topics in quarterly earnings conference calls. Our analysis explores how these disclosures influence corporate value, as measured by Tobin's Q.

We leverage the introduction of the Securities and Exchange Commission's (SEC) 2020 amendment to Regulation S-K, which mandates firms to discuss their human capital management practices, as a natural experiment to investigate whether the relationship between HCD and corporate value differs before and after this regulatory change. Additionally, we assess whether the presence of a Chief Human Resources Officer (CHRO) moderates the impact of HCD on firm valuation. We also examine the moderating effects of other governance mechanisms, such as the presence of female directors and female CEOs, on the HCD–corporate value relationship.

Our findings reveal a robust positive association between human capital disclosures and corporate value, indicating that investors value transparency in human capital management. The presence of a CHRO and other governance mechanisms do not significantly alter this relationship. Moreover, the SEC's regulation did not significantly change the impact of HCD on corporate value, suggesting that investors may have already incorporated human capital considerations into their evaluations prior to the mandate.

These insights contribute to the broader discourse on corporate transparency and accountability, highlighting the strategic importance of human capital disclosures in enhancing corporate value and informing stakeholder engagement.

LIST OF ABBREVIATIONS USED

HC	Human Capital
DEI	Diversity, Equity, and Inclusion
ESG	Environmental, Social, and Governance
SEC	Securities and Exchange Commission
HCD	Human Capital Disclosures
S-K	Regulation S-K
SASB	Sustainability Accounting Standards Board
ECs	Earnings Conference Calls
ROA	Return on Assets
TF	Term Frequency
TF-IDF	Term Frequency-Inverse Document Frequency
R&D	Research and Development
CAPEX	Capital Expenditures
CHRO	Chief Human Resources Officer
CPO	Chief People Officer
ISIN	International Securities Identification Number
GVKEY	Global Company Key
NER	Named Entity Recognition
MWE	Multi-Word Expression
NLP	Natural Language Processing
FE	Fixed Effects
EDGAR	Electronic Data Gathering, Analysis, and Retrieval
ISSB	International Sustainability Standards Board

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CHAPTER 1 INTRODUCTION

Human capital (HC) has emerged as a cornerstone of corporate success in today's knowledge-based economy, frequently heralded as a company's most valuable asset (Becker, 2002; Edmans, 2011). It encompasses critical dimensions such as recruitment, employee development, diversity, equity, and inclusion (DEI), compensation, health and safety, and labor relations. These facets of human capital not only represent strategic resources but also potential risks for organizations. Despite its acknowledged importance, corporate disclosures related to HC have historically been fragmented, inconsistent, and limited in scope. Operational costs associated with HC are typically aggregated within financial statements, while voluntary disclosures are dispersed across regulatory filings, sustainability reports, and corporate communications. This lack of cohesion poses significant challenges for investors seeking to evaluate firms' HC management strategies and assess associated risks effectively (Lev & Schwartz, 1971; Sodali, 2019).

Investor demand for greater transparency in HC management has grown considerably in recent years. A 2019 survey conducted by Morrow Sodali found that 83% of institutional investors regarded human capital as the most pressing ESG-related disclosure gap needing improvement (Sodali, 2019). In response, regulatory bodies have sought to address this need. The U.S. Securities and Exchange Commission (SEC) implemented a principles-based disclosure mandate in 2020 under Item 101(c) of Regulation S-K, requiring firms to disclose material HC resources in their 10-K filings (SEC, 2020). This regulation marked a pivotal step toward greater transparency in corporate reporting. However, its principles-based nature grants firms considerable discretion over the content of their disclosures, raising concerns about comparability and consistency across industries (Bourveau et al., 2022).

Following the enactment of Regulation S-K, the inclusion of a dedicated "human capital" section in 10-K filings surged from less than 1% to over 85% (Bourveau et al., 2022). Despite this apparent progress, significant concerns persist regarding the authenticity and value of these disclosures. Some firms have been accused of engaging in "human capital washing"—providing superficial or misleading reports that project a favorable image without substantive commitments to HC improvement. Such practices

undermine the credibility of corporate reporting and complicate investors' ability to evaluate HC management effectively.

While the literature on HC disclosure has expanded, important gaps remain. Research on the economic implications of human capital disclosure (HCD) is limited, with much of the evidence focused on the initial years following the implementation of the SEC's S-K rule 2020. For example, Demers et al. (2024a) have enhanced our understanding of the value relevance of HCD; however, their findings are constrained to the first two years after the regulation. This leaves a significant gap in understanding the broader scope of HCD disclosures and their economic implications before the regulation's enactment. Moreover, concentrating exclusively on the post-regulation period limits a comprehensive evaluation of the rule's effectiveness in enhancing HCD practices and its subsequent impact.

Additionally, most prior research on HCD relies on 10-K filings, as these documents are mandated by the SEC for discussing HC management practices. However, such disclosures may suffer from "staged preparation" bias, reflecting deliberate, phased approaches aligned with regulatory expectations, market perceptions, and strategic objectives (Li & Tang, 2010). Descriptive analyses in prior studies have often focused on selected industries or large-cap firms (Batish et al., 2021; Pandit, 2021), documenting challenges such as inconsistent metrics, limited quantitative detail, and substantial heterogeneity in disclosure practices across firms. For instance, only 27% of firms disclose HC metrics deemed financially material by the Sustainability Accounting Standards Board (SASB), and significant variation exists even within the same industries (Bourveau et al., 2022). Furthermore, traditional methods relying on manual coding or simplistic keyword lists fail to capture the multidimensional nature of HC management practices (Demers et al., 2024a; Zhang, 2022) .

This study addresses these limitations by exploring the relationship between HCD and corporate value over the period 2015–2023. To mitigate "staged preparation" bias, we employ textual analysis of quarterly earnings conference calls (ECs), focusing on the Q&A sessions, which provide spontaneous and interactive disclosures. Unlike 10-K filings, ECs involve unaudited, real-time communications, enabling managers to respond directly to analyst inquiries with timely and candid insights into their human capital priorities (Bowen et al., 2002; Hassan et al., 2019; Li & Tang, 2010).

Additionally, the quarterly nature of ECs ensures consistent and immediate managerial narratives (Donovan et al., 2021; Frankel et al., 2022). By leveraging a comprehensive lexicon developed by Demers et al. (2024b) using advanced machine learning techniques such as Word2Vec, this study develops a score to measure the proportion of human capital discussions in EC narratives, thereby capturing the nuanced dimensions of HCD.

The key research questions explored in this study address critical gaps in the literature. Its primary objectives are twofold: first, to determine whether increased transparency in human capital management (HCD) enhances corporate value, as measured by Tobin's Q; and second, to assess whether the SEC's 2020 human capital disclosure rule, introduced as an exogenous shock, significantly influences the HCD–corporate value relationship. In addition to these primary aims, the study also investigates several secondary questions. These include exploring the potential moderating role of a Chief Human Resources Officer (CHRO) in strengthening the link between HCD and firm performance; examining how governance mechanisms, such as female directors and female CEOs, shape the relationship between HCD and corporate value; and evaluating whether the observed effects of HCD on Tobin's Q remain consistent when alternative performance metrics, including Peter/Taylor Q and Return on Assets (ROA), are taken into account.

To answer these questions, the study employs Tobin's Q as the primary measure of corporate value, following established methodologies (Chen & Srinivasan, 2024; McLean et al., 2012). Using a sample of the largest 3,000 U.S. firms (Russell 3000 Index) from 2015 to 2023, the study analyzes 12,084 firm-year observations. Data sources include earnings call transcripts from Capital IQ, institutional ownership data from CDA/Spectrum (Thomson 13-F data), firm scope data from the Hoberg and Phillips Data Library, and other financial variables from Compustat.

Our findings reveal a robust positive association between human capital disclosures and corporate value. Firms providing more extensive human capital information in Q&A sessions tend to exhibit higher market valuations. However, the presence of a CHRO does not significantly moderate this relationship. Similarly, governance mechanisms such as female leadership do not significantly enhance the positive effect of HCD on firm value. Finally, leveraging the SEC's 2020 rule as an exogenous shock, we find that

the mandate did not significantly alter the relationship between HCD and corporate value, suggesting that investors may have already incorporated human capital considerations into their evaluations before the regulation.

The findings offer critical insights into the intersection of human capital management, disclosure practices, and firm performance. They contribute to the broader discourse on corporate transparency and accountability, emphasizing the strategic importance of human capital disclosures in enhancing corporate value and informing stakeholder engagement. By addressing key gaps in the literature and employing a rigorous methodological approach, this study provides actionable insights for regulators, investors, and corporate practitioners, offering a comprehensive understanding of the economic implications of human capital disclosures.

The rest of the thesis is structured as follows: Chapter 2 provides a comprehensive overview of Item 101(c) of Regulation S-K, focusing on the regulatory requirements for human capital disclosures. Chapter 3 critically reviews the existing literature, encompassing human capital disclosures, governance mechanisms, corporate value, and the role of the Chief Human Resources Officer in corporate value, and identifies research gaps along with the study's contributions. Chapter 4 details the methodology, including data collection and analytical techniques employed. Chapter 5 presents the empirical findings, addressing the research questions posed. Finally, Chapter 6 concludes the thesis by summarizing the key findings, discussing implications for regulators, investors, and corporate practitioners, and offering directions for future research.

CHAPTER 2 ITEM 101(c) OF REGULATION S-K

The 2020 amendments to Regulation S-K, issued by the Securities and Exchange Commission (SEC), represent a significant modernization of corporate disclosure requirements, particularly concerning the disclosure of human capital (HC) management practices. Effective from November 2020, these amendments require firms to provide a description of their human capital resources in their 10-K filings, reflecting the growing recognition of human capital as a critical driver of long-term value in modern businesses.

Prior to these amendments, Regulation S-K had minimal requirements regarding human capital disclosures. Firms were mainly required to disclose the number of employees, with additional optional details such as full-time or part-time status, divisional employment, and union representation (Bourveau et al., 2022). Since 2017, companies were also required to disclose the ratio of CEO pay to that of the median employee. However, this limited disclosure framework was increasingly viewed as inadequate by investors, particularly as human capital began to be recognized as a critical intangible asset that drives business success (Arif et al., 2022).

As the economy evolved and intangible assets like human capital became crucial drivers of corporate success, the limitations of outdated disclosure requirements became more apparent. In 2017, a coalition of institutional investors managing approximately \$2.8 trillion in assets formally petitioned the SEC to enforce more rigorous and comprehensive reporting standards regarding firms' human capital management policies, practices, and performance (Arif et al., 2022). The amendments were part of the SEC's broader effort to modernize disclosure requirements, which had not undergone significant revisions in over three decades (SEC, 2020).

Led by the Disclosure Effectiveness Initiative, the SEC aimed to improve the disclosure regime for both investors and registrants by making disclosures more informative and reducing unnecessary repetition (SEC, 2020). The principles-based approach adopted in the amendments allows firms considerable discretion in determining what aspects of their human capital management are material and how to disclose them. This flexibility was designed to accommodate the varying nature of human capital across different industries and companies (Demers et al., 2024a).

The amendments introduced a principles-based approach to human capital disclosures under Item 101(c) of Regulation S-K, requiring firms to include a description of their human capital resources to the extent that such disclosures would be material to an understanding of their business. Former SEC Chairman Jay Clayton emphasized that the modernized rules are designed to elicit more informative disclosures, enabling investors to make better-informed decisions, particularly regarding human capital, which can be an important driver of long-term value in various industries (SEC, 2020).

Despite broad support for enhanced human capital disclosures, there was significant debate over the principles-based approach. Proponents argued that it allowed firms to tailor disclosures to their specific circumstances, thus providing more relevant and meaningful information (Bourveau et al., 2022). However, critics contended that without standardized metrics, the disclosures would lack comparability across firms and over time, potentially leading to investor confusion (Bourveau et al., 2022).

Initial empirical studies and reports on the first wave of disclosures following the 2020 amendments reveal that while firms have started to disclose more about their human capital, the quality and depth of these disclosures vary widely. Many firms have focused on qualitative descriptions rather than providing quantitative data, leading to concerns about the usefulness of the disclosures for investors seeking to assess human capital management (Demers et al., 2024b). This heterogeneity in disclosure practices highlights the challenges inherent in a principles-based approach, where firms have significant leeway in what they report (Demers et al., 2024b).

Although the SEC's principles-based approach allows for tailored disclosures, ongoing debates persist about whether more prescriptive requirements are necessary to ensure consistency and comparability across firms. SEC Chairman Gary Gensler has indicated that the disclosure requirements may further evolve, with potential future mandates for more detailed human capital metrics such as workforce turnover, diversity, and compensation (Arif et al., 2022).

The 2020 amendments to Regulation S-K represent a significant step forward in modernizing corporate disclosures, particularly in the realm of human capital. By adopting a principles-based approach, the SEC has allowed firms to tailor their disclosures to reflect their unique circumstances while responding to investor demands

for more meaningful information about human capital management. However, the ongoing debate about the balance between flexibility and standardization in these disclosures suggests that further refinements to the SEC's approach may be forthcoming.

CHAPTER 3 LITERATURE REVIEW

Human capital (HC) has long been recognized as a fundamental driver of firm value and long-term competitiveness. Seminal works by (Becker, 2002) and (Zingales, 2000) underscore the strategic importance of HC in fostering innovation, enhancing productivity, and sustaining competitive advantages. As the global business environment becomes increasingly complex, the effective management and disclosure of HC have emerged as critical factors influencing investor decisions and corporate valuation.

Despite its acknowledged significance, HC-related information has historically been underreported in corporate disclosures, leading to gaps in transparency and hindering investors' ability to fully assess a firm's value and future prospects. This underreporting has sparked growing investor demand for greater insights into how firms manage their HC. A 2019 survey by Morrow Sodali revealed that 83% of institutional investors identified human capital as the Environmental, Social, and Governance (ESG) topic most in need of improved disclosures (Sodali, 2019). Investors increasingly recognize that effective HC management is not only a driver of operational performance but also a key indicator of a firm's commitment to sustainable practices and long-term value creation.

In response to these calls for enhanced reporting, regulatory bodies have taken significant steps to improve transparency in HC disclosures. The International Sustainability Standards Board (ISSB) announced plans for a human capital research project to address these concerns (ISSB, 2024). Similarly, the U.S. Securities and Exchange Commission (SEC) introduced modernized disclosure requirements under Regulation S-K in 2020, mandating companies to disclose "human capital resources, including any human capital measures or objectives" material to understanding their business (SEC, 2020). This regulatory focus was further reinforced in 2021 when SEC Chairman Gary Gensler called for more detailed recommendations on HC disclosure requirements (Gensler, 2021).

These developments align with broader societal trends emphasizing social justice, workplace equity, and inclusion. Heightened awareness of these issues has intensified the spotlight on comprehensive HC management practices. According to Sodali (2021)

survey findings, HC management became the second most important issue for investor engagement, underscoring the critical role that HC plays in contemporary corporate strategy and stakeholder relations.

This literature review explores the evolving landscape of HC disclosures, with particular attention to the effects of the SEC's mandatory requirements. It highlights key findings from recent studies, discusses implications for stakeholders, and identifies gaps in the current literature that this study aims to address.

3.1 IMPACT OF SEC'S MANDATORY HUMAN CAPITAL DISCLOSURES

The SEC's 2020 amendments to Regulation S-K marked a pivotal moment in the evolution of HC disclosures, encouraging firms to provide meaningful information to investors. However, research indicates that the outcomes of these regulatory changes have been mixed. Demers et al. (2024a) analyzed firms' disclosures in the initial years following the SEC mandate. Their findings reveal a regression toward the mean in disclosure quality: firms with initially robust disclosures reduced their specificity, length, and readability to align with industry norms, while those with poorer disclosures showed modest improvements. Despite these trends, certain attributes of HC disclosures—such as clarity and alignment with best practices—remained positively correlated with employee ratings on platforms like Glassdoor and with increased firm value. This underscores the relevance of high-quality HC disclosures for stakeholders and suggests that they can enhance corporate value.

Bourveau et al. (2022) examined the quantitative aspects of HC disclosures in U.S. firms' 10-K filings from 2018 to 2023. Their study highlighted a significant increase in disclosure activity following the SEC's amendment, though substantial variability remained in the metrics disclosed across firms. Economic factors, data collection challenges, and firm-specific performance were identified as key drivers of this heterogeneity. Moreover, a lack of comparability within industries continued to undermine the utility of these disclosures for investors, who rely on consistent and standardized information to make cross-company evaluations.

Arif et al. (2022) investigated the informational value of mandatory HC disclosures, revealing divergent market responses. Equity investors reacted positively to disclosures

emphasizing diversity, equity, and employee development, associating these areas with potential productivity gains. This positive reaction suggests that comprehensive HC disclosures can enhance investor perceptions of a firm's value, potentially leading to higher market valuations. Bond investors, however, exhibited greater caution, particularly when disclosures signaled increased labor leverage or uncertain future payoffs. These findings illustrate the nuanced impact of HC disclosures on different types of investors and their perceptions of firm value.

Furthermore, they found that the stock market responded favorably to the SEC's mandated HC disclosures, signaling strong investor interest in this information. Similarly, Regier and Rouen (2023) documented positive, though incomplete, market reactions to mandatory personnel expense disclosures from European Union firms. These studies collectively suggest that enhanced HC disclosures can positively influence corporate value as measured by market-based metrics like Tobin's Q.

The positive market reactions documented in the aforementioned studies imply that human capital disclosures can enhance investor perceptions of a firm's future prospects, thereby increasing its market value and Tobin's Q. By providing detailed information on HC management practices, firms reduce information asymmetry, allowing investors to better assess the firm's intangible assets and potential for sustainable competitive advantage.

3.2 GOVERNANCE MECHANISMS, HUMAN CAPITAL DISCLOSURES, AND CORPORATE VALUE

The quality and impact of human capital disclosures (HCD) on corporate value can be significantly influenced by corporate governance mechanisms, such as the presence of female directors and female CEOs. While previous research has highlighted concerns about "human capital washing," where firms may provide superficial disclosures without substantive action (Bourveau et al., 2022), it is essential to explore how governance structures affect the authenticity and effectiveness of HCD in enhancing firm value.

Research suggests that gender diversity in leadership roles positively influences corporate transparency and disclosure practices. Boulouta (2013) finds that firms with

a higher proportion of female board members achieve stronger performance on certain social metrics, which supports the notion that female directors and CEOs may prioritize comprehensive human capital disclosures, including aspects of employee well-being, diversity, equity, and inclusion (DEI). This emphasis not only fosters more ethical and socially responsible policies, but also enhances how these commitments are communicated to stakeholders. Moreover, Goldman and Zhang (2024) provide further evidence that DEI disclosures in 10-K filings are positively associated with DEI ratings, underscoring the significance of transparent diversity practices in bolstering corporate reputation and investor confidence.

The presence of female directors on corporate boards has been associated with improved oversight and more effective monitoring of management, which can lead to better disclosure quality. Female board members may bring diverse perspectives and values that promote ethical practices and stakeholder engagement, including a focus on human capital management. This can enhance the credibility of HCD and reduce information asymmetry between firms and investors, potentially leading to higher market valuations as measured by Tobin's Q.

Similarly, female CEOs may influence corporate culture and strategic priorities, placing greater emphasis on human capital initiatives. Their leadership can foster an environment that values employee development, equitable practices, and transparent communication. This alignment between leadership values and disclosure practices can enhance the perceived authenticity of HCD, positively impacting investor perceptions and corporate value.

Research by Eagly and Carli (2003) suggests that female leaders often adopt transformational leadership styles, which can inspire and motivate employees, leading to improved organizational performance. Such leadership may also influence the substance of HCD, ensuring that disclosures reflect a genuine commitment to human capital development rather than mere image management.

However, the influence of female directors and CEOs on the relationship between HCD and corporate value is nuanced. While gender diversity can enhance disclosure practices, it may also interact with other organizational factors. For instance, the effectiveness of female leadership in improving HCD may depend on the firm's overall

commitment to diversity and inclusion, the proportion of women in leadership roles, and the support from other board members and executives.

Furthermore, studies have shown that firms with diverse boards may experience increased scrutiny and expectations from investors and stakeholders. This can pressure firms to provide higher-quality disclosures, including in areas related to human capital. Enhanced transparency can strengthen the positive relationship between HCD and corporate value by building investor trust and demonstrating accountability.

In summary, other governance mechanisms, such as the presence of female directors and female CEOs, can influence the relationship between human capital disclosures and corporate value. Their leadership may enhance the quality and authenticity of HCD, leading to increased investor confidence and higher firm valuation. Understanding this relationship is crucial for comprehending how corporate governance structures impact the effectiveness of human capital disclosures in enhancing firm value.

3.3 CHIEF HUMAN RESOURCES OFFICER, HUMAN CAPITAL DISCLOSURE, AND CORPORATE VALUE

The presence of a Chief Human Resources Officer (CHRO) plays a significant role in shaping the quality of human capital (HC) disclosures and may influence the relationship between these disclosures and corporate value. Michaelides and Vafeas (2023) underscore that CHROs exert a substantial influence on the depth and clarity of HC disclosures, particularly when they hold considerable power within the organization. Their research suggests that a strong CHRO presence can enhance the effectiveness of HC disclosures by ensuring they are comprehensive, transparent, and aligned with best practices.

This finding aligns with Abt and Knyphausen-Aufseß (2017), who discusses how the creation of new C-suite roles like CHROs or Chief People Officers (CPOs) signals a firm's strategic priorities. Charan et al. (2015) emphasize that CPOs focus strategically on human capital management activities such as hiring, training, and professional development. By elevating human resources to a strategic level, firms demonstrate a commitment to investing in their workforce, which can lead to improved organizational performance and increased corporate value.

The evolution of strategic human resource management reflects a broader understanding of human capital's critical role in driving organizational success. Since the 1980s, the importance of HR in strategic planning has grown significantly. CEOs consistently cite human capital as both a top challenge and an opportunity (McKinsey and Company, 2012). Deloitte's 2016 Global Human Capital Trends report found that 92% of respondents believed their organizational structures required a redesign to enhance employee engagement and retention, with 82% identifying corporate culture as a key competitive advantage (Bersin et al., 2015). These developments have driven the emergence of the CHRO role, designed to strategically manage human resources and shape corporate culture.

Abt and Knyphausen-Aufseß (2017) examine the antecedents of CHRO appointments, finding that their inclusion in the top management team is associated with prior firm underperformance, as measured by Return on Assets (ROA). This suggests that firms recognize the need for strategic HR leadership to improve performance. The effectiveness of a CHRO in enhancing corporate value depends on their strategic focus and legitimacy within the organization. Legitimacy theory, as articulated by Suchman (1995) and Tyler (2006), posits that leaders who establish credibility through stakeholder trust and alignment with corporate values are more effective in influencing organizational outcomes. A legitimate and strategically focused CHRO can drive improvements in human capital management practices, leading to enhanced employee engagement, productivity, and, ultimately, corporate value.

Guadalupe et al. (2014) note that the size and composition of executive teams have evolved in response to organizational needs, with firms increasingly creating innovative C-suite roles to address specific challenges. The introduction of roles such as CHROs aims to enhance organizational effectiveness by focusing on critical areas like talent management and cultural transformation.

Firms signaling a commitment to human capital management through the appointment of a CHRO may benefit from improvements in firm value. Khallaf and Skantz (2011) demonstrate that early adopters of strategic roles can achieve incremental enhancements in corporate performance. The strategic appointment of CHROs reflects the growing importance of human capital management in modern corporations. By integrating HC considerations into top-level decision-making, CHROs can influence

policies and practices that enhance employee satisfaction, reduce turnover, and foster innovation—all of which contribute to corporate value.

These insights form a critical foundation for understanding how the presence of a CHRO may moderate the relationship between human capital disclosures (HCD) and corporate value. A CHRO's strategic influence can enhance the quality and authenticity of HC disclosures, ensuring they accurately reflect the firm's human capital management practices. This can strengthen the positive impact of HC disclosures on corporate value by increasing investor confidence and demonstrating effective resource management.

Therefore, the literature suggests that the presence of a CHRO could potentially amplify the positive relationship between human capital disclosures and corporate value. By providing strategic leadership in human capital management and improving the quality of HC disclosures, a CHRO may enhance how these disclosures contribute to corporate valuation.

3.4 RESEARCH GAPS AND CONTRIBUTION OF THE STUDY

Despite the growing interest in human capital disclosure (HCD), research on its economic implications remains limited. Existing studies primarily focus on the initial years following the implementation of the SEC's Regulation S-K amendment in 2020. For instance, Demers et al. (2022), Demers et al. (2024a), and Demers et al. (2024b) have advanced our understanding of the value relevance of HCD; however, their findings are constrained to the first two years post-implementation. This leaves a significant gap in comprehending the scope of HCD disclosures and their economic implications before the regulation's enactment. Moreover, focusing exclusively on the post-SEC S-K rule period does not allow for a comprehensive evaluation of the rule's effectiveness in enhancing HCD and its impact on corporate value.

Equally important, prior research has predominantly examined HCD within 10-K filings, largely due to the SEC S-K rule's mandate for firms to discuss their human capital management practices in these reports. However, 10-K disclosures may be subject to "staged preparation" bias, reflecting a deliberate, phased approach to crafting disclosures in alignment with regulatory requirements, market expectations, and strategic objectives. This can result in disclosures that are more carefully curated and

potentially less reflective of real-time managerial priorities and challenges (Li & Tang, 2010).

Our study addresses these gaps by employing textual analysis of earnings conference calls (ECs) to gauge the proportion of human capital-related discussions, thereby mitigating staged preparation bias. Earnings conference calls provide a more spontaneous and less constrained medium for disclosure. Unlike 10-K filings, ECs involve real-time, unaudited communications that include interactive discussions during the Q&A sessions (Bowen et al., 2002; Bushee et al., 2003; Li & Tang, 2010). Managers' direct responses to analyst inquiries in ECs offer timely and candid insights into firms' human capital priorities (Hassan et al., 2023; Hassan et al., 2019). Additionally, ECs are held quarterly, making them a consistent and immediate source of managerial narratives (Donovan et al., 2021; Frankel et al., 2022). Campbell et al. (2024) highlight that ECs command significant investor attention, as they are among the earliest disclosures following financial results announcements.

By leveraging textual analysis, our study captures the multidimensional nature of HCD, adding nuance to its measurement. Specifically, we utilized a lexicon developed using advanced machine learning techniques, such as word embedding models, to quantify firm-level HCD. This approach enables us to measure the proportion of human capital discussions in quarterly EC narratives, offering a robust and innovative perspective on the economic implications of HCD.

To examine the relationship between HCD and corporate value, we employ Tobin's Q as the primary measure of financial performance. Tobin's Q, calculated by following methodologies from McLean et al. (2012), Rauh (2006), and Baker et al. (2003), is a market-based, forward-looking indicator that accounts for risk and minimizes susceptibility to changes in accounting practices (Chen & Srinivasan, 2024; Fauver et al., 2017). By focusing on a market-based metric, we aim to capture investor perceptions and expectations regarding a firm's future profitability and growth potential in relation to its human capital disclosures.

Furthermore, our study investigates whether the positive association between human capital disclosures (HCD) and corporate value is consistent across alternative performance metrics, such as Peter/Taylor Q and Return on Assets (ROA). By incorporating these additional performance measures, we provide a comprehensive

evaluation of HCD's impact on both market-based and accounting-based indicators of firm performance. This approach enhances the robustness of our findings and contributes valuable insights to the literature by demonstrating that the economic implications of HCD extend across different dimensions of corporate performance.

CHAPTER 4 METHODOLOGY AND RESEARCH DESIGN

This chapter outlines the methodological framework and research design employed to examine how human capital disclosures (HCD) influence corporate value. Our approach integrates multiple data sources, advanced natural language processing (NLP) techniques, and robust econometric analyses to provide a comprehensive and nuanced understanding of the HCD–corporate valuation relationship.

4.1 SAMPLE SELECTION AND DATA COLLECTION

We began with firms listed on the Russell 3000 Index as of December 31, 2023. Firms were included if they had available market and accounting data for the fiscal years 2015 to 2023. We obtained 10-K filings for these firms from the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) database to extract variables related to Chief Human Resources Officers (CHROs). Utilizing Central Index Key (CIK) numbers, we identified the corresponding International Securities Identification Numbers (ISINs) and Global Company Keys (GVKEYs). To ensure consistency, all 10-K filings were renamed using their GVKEY and relevant fiscal year.

Earnings call transcripts were sourced from Capital IQ. These transcripts were matched to firms using their ISINs and renamed with their GVKEY and call date. Additional data sources included institutional ownership data from CDA/Spectrum (Thomson Reuters 13-F data), firm scope data from the Hoberg and Phillips Data Library, and financial variables from Compustat. After applying the necessary filters and ensuring data completeness, the final dataset comprised 12,084 firm-year observations.

4.2 SCORING HUMAN CAPITAL DISCLOSURE

4.2.1 Preprocessing and Parsing the Q&A Section

We construct a Human Capital (HC) score for each firm by analyzing earnings call transcripts, with a particular emphasis on the Question and Answer (Q&A) section. This section is prioritized because it captures unscripted and in-depth interactions between management and analysts, providing rich and nuanced insights into topics related to human capital.

4.2.2 Text Parsing Using Stanford CoreNLP

We employ the Stanford CoreNLP package, an open-source NLP toolkit designed for a variety of linguistic tasks (Manning et al., 2014). Several modules within CoreNLP are particularly relevant to our study.

Initially, we preprocess the text by performing sentence segmentation and tokenization. The Q&A sections of earnings call transcripts are segmented into individual sentences, with each sentence positioned on a separate line. Subsequently, we tokenize the text by breaking sentences into individual words, separated by whitespace, to facilitate detailed analysis.

Next, we apply lemmatization to convert words into their lowercase base or dictionary forms. For example, "walked" becomes "walk," and "am" becomes "be." Lemmatization is preferred over stemming because it is less aggressive and preserves the semantic integrity of words; for instance, "creatively" remains "creatively" rather than being reduced to "creative."

We employ Named Entity Recognition (NER) to substitute named entities—including locations, dates, individuals, and organizations—with standardized tags. This generalization focuses the analysis on linguistic patterns rather than specific entities. For example, the sentence "We acquired 45.6 million Microsoft shares" becomes "we acquire [NER:NUMBER] [NER:ORGANIZATION] share." This substitution allows the model to capture semantic relationships without being influenced by particular names or numbers. Furthermore, multi-word names like "Bank of America" are identified and assigned the appropriate tags.

Dependency parsing is employed to identify grammatical relationships between words in a sentence, providing a syntactic structure that aids in understanding context and meaning. For example, in the sentence "The company launched a new marketing campaign and subsequently saw increased customer engagement," dependency parsing identifies how words like "launched" and "customer engagement" are interconnected.

Through dependency parsing, we identify collocations, which are groups of words that convey specific meanings when used together. We focus on two types of collocations as defined by the Universal Dependencies project (Nivre et al., 2016): Multi-Word Expressions (MWEs) and compounds. MWEs are fixed expressions that function

similarly to single words and often behave like function words, such as "in spite of," "on behalf of," "due to," "in lieu of," and "in case of." Compounds are combinations of nouns or verbs that have a specific, unified meaning, such as "data analysis," "user experience," "solar energy," "customer service," and "machine learning."

We concatenate MWEs and compounds using underscores, for example, "as well as" becomes "as_well_as," and treat them as single tokens. This process helps preserve the semantic integrity of these expressions during analysis.

While the CoreNLP package offers high accuracy and is continually improving, it is not without imperfections. We opt to use these standardized parsing modules for two primary reasons. First, they leverage models trained by linguistic experts on extensive datasets, enhancing the robustness of our analysis. Second, they utilize standardized annotations, such as those from Universal Dependencies, which facilitates replication and validation by other researchers. The trade-offs include potential imprecision and increased computational demands.

4.2.3 Cleaning Parsed Text and Identifying Phrases

Following parsing, we remove punctuation marks, stop words, and single-letter words to streamline the text for analysis. We use a generic stop word list comprising 121 common words, such as "and," "the," and "of." It is crucial to perform stop word removal after parsing because some stop words may be integral parts of MWEs and compounds—for example, "in spite of." Removing them prematurely could disrupt these meaningful expressions.

4.2.4 Human Capital Disclosure Dictionary

We utilize the Human Capital (HC) lexicon developed by Demers et al. (2024b), who used the Word2Vec machine learning algorithm trained on a validated dataset of HC disclosures to develop a comprehensive list of HC-related keywords. These keywords are categorized into five subcategories, capturing the multifaceted nature of human capital management (HCM): Diversity, Equity, and Inclusion (DEI); Health and Safety; Labor Relations and Culture; Compensation and Benefits; and Demographics and Other. The HC lexicon consists of seed words and similar terms identified by the algorithm, totaling 1,285 entries. Each subcategory represents a critical aspect of a

firm's HCM practices, allowing for the construction of measures that reflect a firm's overall HC disclosure. While some keywords are acronyms, collectively, they encompass the diverse elements of HCM.

For the "Health and Safety" category, Demers et al. (2024) distinguish between COVID-19-related terms (70) and more general health and safety terms (157). Since our research does not focus on the pandemic, we have excluded the COVID-19-related keywords to maintain relevance, resulting in a final set of 1,215 keywords.

4.2.5 Scoring Human Capital Disclosure

Using the refined HC dictionary, we measured each of the five HC dimensions at the firm-fiscal-year level. When multiple earnings call transcripts existed within the same fiscal year, we aggregated the scores by computing their average. To enhance the discriminatory power of less common but informative words, we adopted the term frequency-inverse document frequency (tf-idf) weighting method, as recommended by Loughran and McDonald (2011). The tf-idf approach reduces the influence of terms that frequently appear across documents, accounting for the significance of terms within individual documents relative to their prevalence in the broader corpus.

All scores are adjusted for document length to ensure comparability across transcripts of varying sizes. By employing the tf-idf weighting scheme, we account for the significance of terms within individual documents relative to their prevalence in the broader corpus, thereby enhancing the sensitivity and specificity of our HC disclosure measures.

4.3 CHIEF HUMAN RESOURCES OFFICER (CHRO) DATA EXTRACTION

To evaluate whether the presence of a CHRO moderates the relationship between HCD and corporate value, we developed a semi-supervised model using Python to systematically extract relevant data from 10-K filings. Specifically, we extracted paragraphs containing CHRO-specific keywords from the 10-K reports. Following the extraction, each section was manually reviewed to isolate pertinent CHRO information. We also collected unique firm identifiers, including Global Company Key (GVKEY) and the conformed year of the 10-K reports, to ensure precise firm-level analysis. In

instances where firms referred to their Chief People Officer (CPO) as equivalent to the CHRO role, these cases were included in the dataset for consistency.

The final dataset comprised a comprehensive array of variables, including firm GVKEY, CHRO name, appointment year, date of appointment, age, gender, and details of prior experience, covering the period from 2015 to 2023. This rigorous approach facilitated an in-depth exploration of CHRO appointments and their potential implications for stock market reactions.

Due to limitations in the information available from 10-K filings, additional data were sourced from LinkedIn, company websites, and other reliable platforms to fill in missing fields as comprehensively as possible. When only partial information—for example, a CHRO name without further details—was available, we consulted records from other years to complete these data points.

This comprehensive methodology allowed us to systematically analyze the potential strategic role of CHROs in amplifying the impact of human capital disclosures on firm value. By integrating advanced natural language processing techniques with meticulous data collection and variable construction, we ensured the robustness and reliability of our findings. The combination of textual analysis from earnings call transcripts and detailed CHRO data provided a multifaceted perspective on how firms communicate and manage their human capital resources. This approach contributes to the existing literature and offers valuable insights for stakeholders interested in corporate transparency and human capital management practices.

4.4 RESEARCH DESIGN

This study investigates the relationship between human capital disclosures (HCD) and firm valuation, focusing on how HCD influences Tobin's Q, a measure of corporate value. To test our research questions, we employ regression analyses using a comprehensive dataset of firm-year observations from 2015 to 2023. The primary model examines the association between HCD and Tobin's Q, controlling for various firm characteristics. The key independent variables are the measures of human capital disclosures, specifically HCD-TF (term frequency) and HCD-TFIDF (term frequency-inverse document frequency), derived from firms' earning calls.

Our baseline regression model assesses the impact of HCD on firm valuation:

$$\text{Tobin's } Q_{it} = \alpha + \beta_1 \text{HCD}_{it} + \gamma X_{it} + \lambda_s + \delta_t + \varepsilon_{it}$$

where X_{it} represents a vector of control variables including firm size, leverage, research and development intensity, capital expenditures, advertising expenses, sales growth, firm age, institutional ownership, negative earnings indicator, firm scope, dividend payer status, and board independence. Industry (λ_s) and year (δ_t) fixed effects are included to control for unobserved heterogeneity across industries and time periods.

In our baseline model, we exclude firm fixed effects because the cross-sectional variation in HCD is expected to highlight the heterogeneity in HCD among the firms in our sample (Attig & Brockman, 2017). Indeed, as suggested by Zhou (2001) and Lemmon et al. (2008), firm fixed effects would eliminate all cross-sectional variation from the dataset.

To explore the moderating effect of CHRO presence, we extend the baseline model by including an interaction term between HCD and a binary variable indicating CHRO presence:

$$\begin{aligned} \text{Tobin's } Q_{it} = & \alpha + \beta_1 \text{HCD}_{it} + \beta_2 \text{CHRO}_{it} + \beta_3 (\text{HCD}_{it} \times \text{CHRO}_{it}) + \gamma X_{it} + \lambda_s + \delta_t \\ & + \varepsilon_{it} \end{aligned}$$

This model allows us to assess whether firms with a CHRO experience a different impact of human capital disclosures on their valuation compared to firms without a CHRO.

Similarly, to examine the influence of other governance mechanisms, we include interaction terms between HCD and indicators for female directors and female CEOs. By doing so, we can determine whether gender diversity in leadership positions moderates the effect of human capital disclosures on firm valuation.

$$\begin{aligned} \text{Tobin's } Q_{it} = & \alpha + \beta_1 \text{HCD}_{it} + \beta_2 \text{FemaleDirectors}_{it} \\ & + \beta_3 (\text{HCD}_{it} \times \text{FemaleDirectors}_{it}) + \gamma X_{it} + \lambda_s + \delta_t + \varepsilon_{it} \end{aligned}$$

$$\begin{aligned} \text{Tobin's } Q_{it} = & \alpha + \beta_1 \text{HCD}_{it} + \beta_2 \text{FemaleCEO}_{it} + \beta_3 (\text{HCD}_{it} \times \text{FemaleCEO}_{it}) \\ & + \gamma X_{it} + \lambda_s + \delta_t + \varepsilon_{it} \end{aligned}$$

To address potential endogeneity concerns and strengthen causal inference, we utilize the SEC's 2020 human capital disclosure rule as an exogenous shock. This regulatory change mandated firms to disclose material human capital resources, providing a natural experiment to assess changes in the relationship between HCD and firm valuation before and after the rule's implementation. We introduce an interaction term between HCD and a post-regulation indicator to evaluate whether the regulatory environment amplifies the effect of human capital disclosures on firm valuation:

$$\text{Tobin's } Q_{it} = \alpha + \beta_1 \text{HCD}_{it} + \beta_2 \text{SEC2020}_t + \beta_3 (\text{HCD}_{it} \times \text{SEC2020}_t) + \gamma X_{it} + \lambda_s + \delta_t + \varepsilon_{it}$$

Our empirical strategy involves estimating multiple regression models with appropriate fixed effects to control for unobserved heterogeneity. In some specifications, we include firm fixed effects and industry-year fixed effects to account for time-invariant firm characteristics and industry-specific shocks in particular years. Standard errors are clustered at the firm level to correct for potential autocorrelation within firms over time.

We conduct robustness checks to ensure the validity of our findings. These include using alternative measures of firm performance, such as Peter/Taylor Q and Return on Assets (ROA), to verify that the observed relationships hold across different valuation metrics. We also test different model specifications and perform subsample analyses to examine whether the results are consistent across various contexts, such as firms with different levels of intangible assets or varying degrees of analyst coverage.

In summary, our research design leverages advanced econometric techniques to investigate the influence of human capital disclosures on firm valuation. By considering the moderating roles of CHRO presence and other governance mechanisms, and by exploiting the SEC's regulatory change as an exogenous shock, we aim to provide comprehensive insights into how human capital disclosures affect corporate value and the conditions under which this effect is enhanced or diminished. This approach allows us to contribute to the understanding of the strategic importance of human capital management and its communication with stakeholders.

CHAPTER 5 EMPIRICAL RESULTS

5.1 DESCRIPTIVE STATISTICS

Table 1 presents descriptive statistics for the key variables used in our analysis, providing insights into the characteristics of the firms in our sample and the relationships between human capital disclosures and various firm attributes. The sample comprises 12,084 firm-year observations from 2015 to 2023.

In Panel A, the mean value of the human capital disclosure measured by term frequency (HCD-TF) is 0.130, indicating that, on average, human capital-related terms constitute 13% of the total word count in corporate disclosures. The standard deviation of 0.069 suggests moderate variability across firms in their disclosure practices. The term frequency-inverse document frequency measure (HCD-TFIDF) has a higher mean of 0.324 and a standard deviation of 0.210, reflecting adjustments for the commonality of terms across documents and indicating wider dispersion in the uniqueness of terms used by firms.

The average Tobin's Q is 2.589, with a median of 1.831, suggesting that firms generally have a market value exceeding their asset replacement cost. The higher mean compared to the median indicates a right-skewed distribution, where some firms have significantly higher valuations. Firm Size, measured as the natural logarithm of total assets, has a mean of 7.665 and a standard deviation of 1.648, reflecting a diverse range of firm sizes within the sample.

Regarding financial structure, the mean Leverage ratio is 0.246, indicating that debt constitutes about 24.6% of total assets on average. The standard deviation of 0.182 shows considerable variation in firms' capital structures. Investment in innovation, captured by Research & Development Intensity (R&D), has a mean of 5% of total assets but a median of 0.7%, suggesting that while some firms invest heavily in R&D, many report minimal or no such expenses. Capital Expenditures (CAPEX) average 20.7% of total assets, with a median of 16.6%, highlighting significant investment in long-term assets across firms.

Advertising expenses have a low mean of 1.7% of total assets, indicating modest spending on marketing activities. Sales Growth shows an average of 15.6%, but the high standard deviation of 63.7% implies substantial variability, with some firms

experiencing rapid growth while others may be contracting. The mean Firm Age is 2.96, calculated as the natural logarithm of the number of years since the firm's inception, indicating a mix of both established and newer firms.

Institutional Ownership (Inst. Own) averages 76.1%, reflecting significant institutional presence in the ownership structure. The mean value of 0.300 for Negative Earnings suggests that 30% of the sample firms report negative earnings, pointing to varying levels of profitability. The variable Scope, with a mean of 1.524, and Dividend Payout (Divid), with a mean of 0.481, provide additional insights into firms' operational scale and dividend policies, respectively.

Panel B presents the yearly distribution of the sample. The number of observations rises steadily over time, from 1,056 in 2015 to 1,628 in 2023, likely reflecting more firms meeting the inclusion criteria and both improved data availability.

In Panel C, the correlation matrix reveals important relationships among the variables. The two human capital disclosure measures, HCD-TF and HCD-TFIDF, are highly correlated (0.948), indicating consistency between them. Both measures show positive correlations with Tobin's Q (0.165 and 0.160), suggesting that higher human capital disclosures are associated with higher market valuations. There is a negative correlation between the disclosure measures and Firm Size (-0.078 and -0.105), implying that smaller firms tend to disclose more about human capital relative to their size.

Research and Development Intensity exhibits a positive correlation with HCD-TFIDF (0.063) and a strong positive correlation with Tobin's Q (0.337), indicating that firms investing more in innovation not only have higher market valuations but also tend to emphasize human capital in their disclosures. CAPEX is positively correlated with both human capital disclosure measures and Tobin's Q, suggesting that firms investing in long-term assets also focus on human capital and are valued higher by the market.

The positive correlations between Advertising expenses and the human capital disclosure measures (0.135 and 0.124) imply that firms investing in marketing may also invest in their workforce, potentially enhancing their brand and market presence. Firm Age shows negative correlations with the human capital disclosure measures (-0.130 and -0.138) and Tobin's Q (-0.174), suggesting that younger firms may disclose more about human capital and have higher market valuations, possibly as a strategy to attract investors and differentiate themselves.

Table 1 Descriptive Statistics

Panel A: Descriptive Statistics															
	HCD- TF	HCD- TFIDF	Tobin's Q	Size	Lev.	R&D	CAPEX	Advertising	Sales Growth	Firm Age	Inst. Own	Neg. Earn	Scope	Divid	
N	12084	12084	12084	12084	12084	12084	12084	12084	12084	12084	12084	12084	12084	12084	
Mean	0.130	0.324	2.589	7.665	0.246	0.050	0.207	0.017	0.156	2.960	0.761	0.300	1.524	0.481	
p25	0.083	0.182	1.297	6.516	0.085	0.000	0.106	0.000	-0.016	2.303	0.672	0.000	0.000	0.000	
p50	0.116	0.274	1.831	7.617	0.241	0.007	0.166	0.000	0.075	3.135	0.840	0.000	1.946	0.000	
p75	0.159	0.406	2.978	8.795	0.370	0.060	0.261	0.014	0.203	3.611	0.933	1.000	2.565	1.000	
SD	0.069	0.210	2.193	1.648	0.182	0.099	0.153	0.045	0.637	0.863	0.257	0.458	1.182	0.500	
Panel B: Yearly Sample Distribution															
YEAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total					
N	1,056	1,100	1,183	1,258	1,316	1,390	1,554	1,599	1,628	12,084					
%	8.7%	9.1%	9.8%	10.4%	10.9%	11.5%	12.9%	13.2%	13.5%	100.0%					
Panel C: Correlation Matrix															
	HCD- TF	HCD- TFIDF	Tobin's Q	Size	Lev.	R&D	CAPEX	Advertising	Sales Growth	Firm Age	Inst. Own	Neg. Earn	Scope	Divid	
HCD- TF	1														
HCD- TFIDF	0.948	1													
Tobin's Q	0.165	0.16	1												
Size	-0.078	-0.105	-0.186	1											
Lev.	-0.069	-0.084	-0.206	0.363	1										
R&D	0.04	0.063	0.337	-0.356	-0.229	1									
CAPEX	0.084	0.084	0.206	-0.195	-0.192	0.136	1								
Advertising	0.135	0.124	0.119	-0.043	-0.044	0.041	0.087	1							
Sale Growth	0.031	0.035	0.129	-0.082	-0.048	0.122	0.088	0.062	1						
Firm Age	-0.13	-0.138	-0.174	0.393	0.08	-0.262	-0.238	-0.149	-0.127	1					

Inst. Own	0.022	0.02	-0.017	0.214	0.11	-0.103	-0.045	-0.031	-0.01	0.149	1			
Neg. Earn	0.054	0.075	0.071	-0.32	-0.041	0.391	0.082	0.097	0.051	-0.37	-0.149	1		
Scope	-0.059	-0.049	0.069	-0.026	-0.012	0.054	0.069	-0.018	0.038	-0.039	0.026	0.017	1	
Divid	-0.101	-0.116	-0.181	0.39	0.132	-0.33	-0.193	-0.089	-0.114	0.479	0.034	-0.354	-0.034	1

Overall, the descriptive statistics and correlations provide initial insights into the relationships between human capital disclosures and firm characteristics. The findings suggest that firms with higher human capital disclosures tend to have higher market valuations, are more likely to invest in innovation and capital expenditures, and may be smaller and younger. These observations align with the notion that emphasizing human capital can be a strategic tool for firms to enhance their value and appeal to investors. The analysis sets the foundation for further exploration into the impact of human capital disclosures on firm performance.

5.2 HUMAN CAPITAL DISCLOSURES (HCD) AND CORPORATE VALUE

Our regression analysis explores the relationship between human capital disclosures (HCD) and firm valuation, measured by Tobin's Q. We employ two metrics for HCD: term frequency (HCD-TF) and term frequency-inverse document frequency (HCD-TFIDF) of human capital-related keywords in firms' earnings calls. The models include industry and year-fixed effects, with standard errors clustered at the firm level.

The results, summarized in Table 2, show a significant positive association between HCD and firm valuation. Using HCD-TF, the coefficient is positive and significant both without control variables (3.716, t-statistic = 5.978) and with controls (2.385, t-statistic = 4.183). Similarly, with HCD-TFIDF, the coefficients remain positive and significant without controls (1.198, t-statistic = 5.643) and with controls (0.684, t-statistic = 3.540). These findings suggest that firms emphasizing human capital in their disclosures tend to have higher market valuations.

Among the control variables, leverage is negatively associated with Tobin's Q, indicating that higher debt levels correspond to lower firm valuations. Conversely, research and development intensity (R&D), capital expenditures (CAPEX), advertising expenses, and sales growth show positive and significant relationships with firm valuation. This implies that investments in innovation, long-term assets, marketing efforts, and growth prospects enhance firm value. Firm age is negatively related to Tobin's Q, suggesting that younger firms may be valued higher due to growth opportunities. Negative earnings are significantly associated with lower firm valuation, reflecting investor concerns over profitability.

Table 2 Impact of HCD Disclosure on Corporate Value (Tobin's Q)

	(1)	(2)	(3)	(4)
	HCD TF		HCD TF-IDF	
	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
HCD	3.716*** (5.978)	2.385*** (4.183)	1.198*** (5.643)	0.684*** (3.540)
Firm Size		-0.032 (-1.056)		-0.031 (-1.020)
Leverage		-1.074*** (-5.223)		-1.074*** (-5.214)
R&D		6.063*** (9.810)		6.053*** (9.782)
CAPEX		1.796*** (6.994)		1.797*** (7.002)
Advertising		3.368*** (3.146)		3.436*** (3.202)
Sale Growth		0.224*** (4.898)		0.224*** (4.905)
Firm Age		-0.092** (-1.998)		-0.092** (-2.006)
Institutional Ownership		0.145 (1.097)		0.144 (1.082)
Negative Earnings		-0.567*** (-7.490)		-0.571*** (-7.534)
firm scope		-0.017 (-0.381)		-0.018 (-0.421)
Dividend Payer		-0.058 (-0.722)		-0.058 (-0.725)
Constant	2.107*** (25.570)	2.402*** (9.236)	2.201*** (30.175)	2.487*** (9.630)
<i>Industry Fixed Effects</i>	YES	YES	YES	YES
<i>Year Fixed Effects</i>	YES	YES	YES	YES
<i>Clustered Errors at the firm Level</i>	YES	YES	YES	YES
Observations	12,084	12,084	12,084	12,084
R-squared	0.163	0.269	0.163	0.268

Including control variables increases the models' explanatory power, as indicated by the rise in R-squared values from approximately 0.163 to around 0.269.

The findings from our regression analysis underscore the significance of human capital disclosures in enhancing firm valuation. Investors appear to recognize and value transparency in human capital management practices. These results contribute to the understanding of the economic benefits associated with human capital disclosures and support regulatory efforts aimed at improving transparency in this area. They also highlight the potential for firms to strategically leverage human capital disclosures as a means of enhancing their market valuation.

5.3 HUMAN CAPITAL DISCLOSURE, CORPORATE VALUE: ROBUSTNESS CHECKS

To validate the robustness of our findings on the impact of human capital disclosures (HCD) on corporate value, we conducted additional analyses using different performance metrics and model specifications, as detailed in Table 3. We utilized both HCD-TF (term frequency) and HCD-TFIDF (term frequency-inverse document frequency) as measures of HCD. The dependent variables included Peter/Taylor Q, Return on Assets (ROA), and Tobin's Q, allowing us to assess the relationship under varying conditions.

In the models using Peter/Taylor Q as the dependent variable (columns 1 and 4), HCD-TF showed a positive and significant coefficient of 2.604 (t-statistic = 2.764), and HCD-TFIDF had a coefficient of 0.690 (t-statistic = 2.169). These results indicate that higher human capital disclosures are associated with higher market valuations, consistent with our previous findings.

When examining ROA as the dependent variable (columns 2 and 5), the coefficients on both HCD measures were negative but not statistically significant. This suggests that while human capital disclosures may not have an immediate effect on operational profitability, they do influence investor perceptions and market valuation.

In models focusing on Tobin's Q with stricter controls—including firm fixed effects and industry-year fixed effects (columns 3 and 6)—the positive relationship between HCD and firm valuation persisted. The coefficient for HCD-TF was 0.723 (t-statistic = 2.104), and for HCD-TFIDF, it was 0.234 (t-statistic = 1.871), though with somewhat reduced magnitude and significance due to the stringent controls.

Control variables displayed consistent patterns across models. Leverage remained negatively associated with corporate value, indicating that higher debt levels are linked to lower valuations. Conversely, CAPEX and sales growth showed positive and significant relationships with corporate value, reinforcing their role in enhancing firm valuation. Firm age had a negative association with valuation metrics, suggesting that younger firms might be valued higher due to growth potential. Negative earnings consistently impacted corporate value negatively, as expected.

Table 3 Impact of Human Capital Disclosure on Corporate Value (Tobin's Q):

Robustness Checks

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	HCD TF			HCD TF-IDF		
	Peter/Taylor Q	ROA	Tobin's Q	Peter/Taylor Q	ROA	Tobin's Q
HCD	2.604*** (2.764)	-0.009 (-0.393)	0.723** (2.104)	0.690** (2.169)	-0.009 (-1.195)	0.234* (1.871)
Firm Size	0.121** (2.488)	0.007*** (4.934)	-0.554*** (-6.929)	0.122** (2.511)	0.007*** (4.910)	-0.554*** (-6.922)
Leverage	-2.331*** (-6.786)	-0.100*** (-9.857)	-0.515* (-1.895)	-2.335*** (-6.793)	-0.101*** (-9.896)	-0.513* (-1.885)
R&D	0.150 (0.251)	-0.860*** (-17.360)	0.297 (0.431)	0.147 (0.244)	-0.859*** (-17.349)	0.291 (0.422)
CAPEX	2.917*** (6.458)	0.023* (1.755)	0.825*** (4.277)	2.922*** (6.455)	0.024* (1.787)	0.823*** (4.269)
Advertising	1.440 (0.958)	-0.108* (-1.923)	1.221 (0.566)	1.526 (1.013)	-0.107* (-1.905)	1.239 (0.573)
Sale Growth	0.420*** (6.001)	0.010*** (2.789)	0.109*** (3.120)	0.421*** (6.005)	0.010*** (2.795)	0.109*** (3.122)
Firm Age	-0.610*** (-8.311)	0.011*** (4.809)	-0.385** (-2.354)	-0.611*** (-8.315)	0.011*** (4.813)	-0.381** (-2.330)
Institutional Ownership	-0.192 (-1.006)	0.036*** (5.248)	0.312** (2.393)	-0.192 (-1.008)	0.036*** (5.270)	0.312** (2.397)
Negative Earnings	-0.464*** (-4.069)	-0.164*** (-38.186)	-0.324*** (-6.465)	-0.469*** (-4.106)	-0.163*** (-38.202)	-0.325*** (-6.475)
Firm Scope	0.049 (0.692)	0.002 (1.286)	0.042 (1.251)	0.046 (0.653)	0.002 (1.241)	0.042 (1.251)
Dividend Payer	-0.182 (-1.466)	-0.009** (-2.516)	0.160*** (2.788)	-0.183 (-1.467)	-0.009** (-2.510)	0.160*** (2.786)
Constant	2.779*** (6.846)	0.005 (0.382)	7.512*** (9.388)	2.892*** (7.187)	0.007 (0.536)	7.517*** (9.383)
Industry FE	YES	YES	NO	YES	YES	NO
Year FE	YES	YES	NO	YES	YES	NO
Firm FE	NO	NO	YES	NO	NO	YES
Industry x Year FE	NO	NO	YES	NO	NO	YES
Clustered Errors	YES	YES	YES	YES	YES	YES
Observations	12,084	12,084	11,966	12,084	12,084	11,966
R-squared	0.198	0.629	0.770	0.198	0.629	0.770

The robustness of our results across different valuation metrics and model specifications strengthens the evidence that human capital disclosures contribute positively to corporate value. While the impact on immediate profitability (ROA) is not significant, the consistent positive association with market-based valuation measures suggests that investors value transparency in human capital management practices.

5.4 CHRO, HUMAN CAPITAL DISCLOSURE AND CORPORATE VALUE

Our analysis examines whether the presence of a Chief Human Resources Officer (CHRO) moderates the relationship between human capital disclosures (HCD) and firm valuation, as measured by Tobin's Q. Using two measures of HCD—term frequency

(HCD-TF) and term frequency-inverse document frequency (HCD-TFIDF)—we conduct regression analyses across four models with varying fixed effects to control for unobserved heterogeneity and industry-specific factors.

In all models, HCD remains positively and significantly associated with Tobin's Q, reinforcing that greater emphasis on human capital in disclosures correlates with higher firm valuation. For instance, in Model 1, which uses HCD-TF with industry and year fixed effects, the coefficient for HCD is 2.765 with a t-statistic of 4.557, significant at the 1% level. This indicates that firms with higher human capital disclosures tend to have higher market valuations. In Model 2, incorporating firm and industry-year fixed effects, the HCD coefficient is 0.845 (t-statistic = 2.219), significant at the 5% level, suggesting the positive relationship persists even after controlling for firm-specific factors. Similarly, using HCD-TFIDF, Model 3 reports an HCD coefficient of 0.815 (t-statistic = 3.990), significant at the 1% level, and Model 4 shows an HCD coefficient of 0.276 (t-statistic = 2.017), significant at the 5% level.

In contrast, the coefficients for the CHRO indicator and the interaction term ($\text{CHRO} \times \text{HCD}$) are not statistically significant in any model, indicating that the presence of a CHRO does not significantly influence the relationship between HCD and firm valuation. For example, in Model 1, the interaction term has a coefficient of -1.736 (t-statistic = -1.330), which is not statistically significant. Similar patterns are observed in the other models, with interaction term coefficients of -0.712 (Model 2), -0.587 (Model 3), and -0.231 (Model 4), none of which reach conventional levels of statistical significance.

The control variables behave as expected across all models. Leverage is negatively associated with Tobin's Q; in Model 1, the coefficient is -1.043 (t-statistic = -5.114), significant at the 1% level, suggesting that higher debt levels correspond to lower valuations. Research and Development Intensity (R&D) positively influences firm value; Model 1 shows a coefficient of 6.072 (t-statistic = 9.831), significant at the 1% level. Capital Expenditures (CAPEX) also contribute positively, with a coefficient of 1.810 (t-statistic = 7.068) in Model 1, significant at the 1% level. Sales Growth is positively related to Tobin's Q; the coefficient in Model 1 is 0.221 (t-statistic = 4.863), significant at the 1% level, indicating that firms with higher growth prospects are valued more favorably. Negative Earnings have a significant negative impact on firm

valuation, with a coefficient of -0.572 (t-statistic = -7.560) in Model 1, significant at the 1% level.

Table 4 Moderating Impact of CHRO

	(1)	(2)	(3)	(4)
	HCD TF		HCD TF-IDF	
	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
HCD	2.765*** (4.557)	0.845** (2.219)	0.815*** (3.990)	0.276** (2.017)
CHRO	-0.008 (-0.052)	-0.006 (-0.074)	-0.044 (-0.329)	-0.025 (-0.373)
CHRO x HCD	-1.736 (-1.330)	-0.712 (-1.403)	-0.587 (-1.380)	-0.231 (-1.231)
Firm Size	-0.020 (-0.657)	-0.558*** (-6.983)	-0.019 (-0.623)	-0.558*** (-6.978)
Leverage	-1.043*** (-5.114)	-0.518* (-1.907)	-1.042*** (-5.101)	-0.514* (-1.892)
R&D	6.072*** (9.831)	0.295 (0.429)	6.057*** (9.791)	0.289 (0.420)
CAPEX	1.810*** (7.068)	0.823*** (4.266)	1.808*** (7.064)	0.821*** (4.255)
Advertising	3.348*** (3.126)	1.232 (0.571)	3.424*** (3.190)	1.253 (0.580)
Sale Growth	0.221*** (4.863)	0.109*** (3.124)	0.222*** (4.871)	0.109*** (3.127)
Firm Age	-0.084* (-1.841)	-0.398** (-2.431)	-0.085* (-1.846)	-0.394** (-2.405)
Institutional Ownership	0.160 (1.218)	0.317** (2.432)	0.160 (1.211)	0.317** (2.431)
Negative Earnings	-0.572*** (-7.560)	-0.323*** (-6.448)	-0.577*** (-7.609)	-0.324*** (-6.463)
Firm Scope	-0.018 (-0.421)	0.042 (1.260)	-0.020 (-0.465)	0.042 (1.259)
Dividend Payer	-0.054 (-0.670)	0.161*** (2.796)	-0.054 (-0.674)	0.160*** (2.790)
Constant	2.267*** (8.577)	7.577*** (9.463)	2.359*** (8.996)	7.585*** (9.464)
Industry FE	YES	NO	YES	NO
Year FE	YES	NO	YES	NO
Firm FE	NO	YES	NO	YES
Industry x Year FE	NO	YES	NO	YES
Clustered Errors at the firm Level	YES	YES	YES	YES
Observations	12,084	11,966	12,084	11,966
R-squared	0.271	0.770	0.270	0.770

The R-squared values range from approximately 0.270 in models with industry and year fixed effects to 0.770 in models with firm and industry-year fixed effects. This suggests that the models explain a substantial portion of the variance in firm valuation, and that including firm-specific controls enhances explanatory power.

These results imply that while human capital disclosures significantly enhance firm valuation, the appointment of a CHRO does not moderate this relationship. Investors appear to value the substance of human capital disclosures independently of the firm's HR leadership structure. Consequently, firms may focus on improving the quality and depth of their human capital disclosures to positively influence market valuation, regardless of whether they have a CHRO in place.

5.5 OTHER GOVERNANCE MECHANISMS, HUMAN CAPITAL DISCLOSURE, AND CORPORATE VALUE

This section examines whether additional corporate governance mechanisms—specifically the presence of female directors on the board and female CEOs—moderate the relationship between human capital disclosures (HCD) and firm valuation, measured by Tobin's Q. Table 5 presents regression results from four models incorporating firm fixed effects and industry-year fixed effects to control for unobserved heterogeneity and time-varying industry influences.

In models focusing on female directors (columns 1 and 3), the coefficient on HCD remains positive and significant (1.153 with a t-statistic of 2.405 in column 1 using HCD-TF; 0.403 with a t-statistic of 2.277 in column 3 using HCD-TFIDF), reaffirming the positive association between human capital disclosures and firm valuation. The indicator variable for female directors shows a positive but not consistently significant effect on Tobin's Q. The interaction term between HCD and female directors is negative and marginally significant (-3.485 with a t-statistic of -1.904 in column 1; -1.274 with a t-statistic of -1.961 in column 3), suggesting that the presence of female directors may slightly weaken the positive impact of HCD on firm valuation.

Table 5 Moderation Effect of Other Governance Mechanisms

	(1)	(2)	(3)	(4)
	HCD TF		HCD TF-IDF	
	Female Directors	Female CEO	Female Directors	Female CEO
HCD	1.153** (2.405)	1.085*** (2.745)	0.403** (2.277)	0.378*** (2.623)
Indicator	0.578* (1.760)	0.243* (1.959)	0.527* (1.726)	0.194* (1.755)
Indicator x HCD	-3.485* (-1.904)	-0.988 (-1.055)	-1.274* (-1.961)	-0.249 (-0.805)
Firm Size	-0.563*** (-7.022)	-0.492*** (-5.418)	-0.563*** (-7.012)	-0.491*** (-5.413)
Leverage	-0.511* (-1.889)	-0.704** (-2.038)	-0.506* (-1.870)	-0.701** (-2.029)
R&D	0.326 (0.474)	1.151 (0.741)	0.315 (0.460)	1.137 (0.732)
CAPEX	0.821*** (4.273)	1.116*** (4.134)	0.817*** (4.252)	1.108*** (4.115)
Advertising	1.208 (0.563)	4.406 (0.952)	1.218 (0.566)	4.445 (0.957)
Sale Growth	0.110*** (3.155)	0.263*** (3.580)	0.110*** (3.152)	0.263*** (3.575)
Firm Age	-0.496*** (-2.981)	-0.026 (-0.119)	-0.494*** (-2.964)	-0.022 (-0.102)
Institutional Ownership	0.289** (2.213)	0.233* (1.665)	0.290** (2.214)	0.232* (1.657)
Negative Earnings	-0.319*** (-6.435)	-0.403*** (-6.900)	-0.320*** (-6.450)	-0.405*** (-6.915)
Firm Scope	0.041 (1.251)	0.013 (0.407)	0.041 (1.239)	0.014 (0.426)
Dividend Payer	0.156*** (2.695)	0.060 (0.867)	0.154*** (2.667)	0.061 (0.874)
Board Independence	0.280** (2.525)	0.274* (1.897)	0.280** (2.526)	0.276* (1.914)
Constant	7.734*** (9.590)	5.953*** (5.903)	7.744*** (9.606)	5.955*** (5.895)
Firm FE	YES	YES	YES	YES
Industry x Year FE	YES	YES	YES	YES
Clustered Errors at the firm Level	YES	YES	YES	YES
Observations	11,966	8,510	11,966	8,510
R-squared	0.771	0.807	0.771	0.807

For models examining female CEOs (columns 2 and 4), the HCD coefficient remains positive and significant (1.085 with a t-statistic of 2.745 in column 2; 0.378 with a t-statistic of 2.623 in column 4). The indicator variable for female CEOs is positive and marginally significant (0.243 with a t-statistic of 1.959 in column 2; 0.194 with a t-statistic of 1.755 in column 4), indicating that firms led by female CEOs may have higher valuations. However, the interaction term between HCD and female CEOs is negative but not statistically significant, suggesting that the presence of a female CEO does not significantly alter the relationship between HCD and firm valuation.

Control variables across all models behave as expected. Firm size has a negative and significant relationship with Tobin's Q, indicating that larger firms may have lower growth opportunities and, thus, lower valuations. Leverage is negatively associated with firm valuation, reflecting investor concerns over financial risk. Capital expenditures (CAPEX) and sales growth are positively and significantly related to Tobin's Q, highlighting the importance of investment and growth prospects in enhancing firm value. Negative earnings have a significant negative effect on Tobin's Q, as anticipated.

An additional control variable, board independence, shows a positive and significant relationship with firm valuation (coefficient of 0.280 with a t-statistic of 2.525 in column 1), suggesting that firms with more independent boards are valued more favorably by the market.

The high R-squared values across all models (ranging from 0.771 to 0.807) indicate that the models explain a substantial portion of the variance in firm valuation.

Overall, the findings suggest that while human capital disclosures positively influence firm valuation, the presence of female directors may slightly moderate this effect. The negative interaction term implies that in firms with female directors, the incremental benefit of HCD on firm valuation is somewhat reduced. This could be because investors already associate gender-diverse boards with effective human capital management, making additional disclosures less impactful. Conversely, the presence of a female CEO does not significantly alter the relationship between HCD and firm valuation.

These results highlight the nuanced interplay between governance mechanisms and the effectiveness of human capital disclosures. Firms should consider how their governance structures might influence the impact of their disclosure practices on market valuation.

5.6 SEC RULE AS A SHOCK (INSTRUMENT)

In this section, we examine the impact of human capital disclosures (HCD) on firm valuation by using the Securities and Exchange Commission's (SEC) 2020 human capital disclosure rule as an exogenous shock. The SEC's amendment to Item 101(c) of Regulation S-K required firms to disclose material human capital resources, providing

a natural experiment to assess how this regulatory change influences the relationship between HCD and firm value. By treating the SEC rule as an instrumental variable, we address potential endogeneity concerns and strengthen the causal interpretation of our findings.

Table 6 presents the regression results, employing two measures of HCD: term frequency (HCD-TF) and term frequency-inverse document frequency (HCD-TFIDF). Columns (1) and (2) use HCD-TF, while columns (3) and (4) use HCD-TFIDF. All models include standard control variables and incorporate different fixed effects to account for industry-specific and temporal factors. Standard errors are clustered at the firm level in all models to adjust for potential autocorrelation.

In column (1), using HCD-TF with industry and year fixed effects, the coefficient on HCD is 2.412, significant at the 1% level (t-statistic = 3.675). This reaffirms the positive association between human capital disclosures and firm valuation observed in previous analyses. The interaction term between HCD and the SEC2020 indicator ($\text{SEC2020} \times \text{HCD}$) is negative but not statistically significant (coefficient = -0.044, t-statistic = -0.074), suggesting that the SEC's 2020 rule did not significantly alter the impact of HCD on Tobin's Q.

In column (2), which includes firm fixed effects and industry-year fixed effects, the coefficient on HCD-TF remains positive and significant (coefficient = 1.058, t-statistic = 2.467). The interaction term becomes more negative (-0.645) but remains statistically insignificant (t-statistic = -1.133). This indicates that even after accounting for firm-specific factors, the SEC rule did not significantly change the relationship between HCD and firm valuation.

Using HCD-TFIDF, columns (3) and (4) show similar patterns. The coefficient on HCD-TFIDF is positive and significant in both models (coefficient = 0.687, t-statistic = 3.103 in column 3; coefficient = 0.355, t-statistic = 2.208 in column 4). The interaction term ($\text{SEC2020} \times \text{HCD}$) remains negative and insignificant, indicating that the SEC's 2020 rule did not have a significant moderating effect on the relationship between HCD and firm valuation.

Table 6 Using the SEC rule as a shock (instrument)

	(1)	(2)	(3)	(4)
	HCD TF		HCD TF-IDF	
	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
HCD	2.412*** (3.675)	1.058** (2.467)	0.687*** (3.103)	0.355** (2.208)
SEC2020 x HCD	-0.044 (-0.074)	-0.645 (-1.133)	-0.003 (-0.015)	-0.219 (-1.071)
Firm Size	-0.032 (-1.057)	-0.560*** (-7.000)	-0.031 (-1.022)	-0.560*** (-6.993)
Leverage	-1.072*** (-5.198)	-0.517* (-1.900)	-1.072*** (-5.181)	-0.512* (-1.883)
R&D	6.064*** (9.811)	0.331 (0.481)	6.053*** (9.782)	0.323 (0.470)
CAPEX	1.799*** (6.975)	0.826*** (4.298)	1.801*** (6.982)	0.822*** (4.273)
Advertising	3.365*** (3.140)	1.234 (0.573)	3.432*** (3.195)	1.251 (0.579)
Sale Growth	0.224*** (4.895)	0.109*** (3.137)	0.224*** (4.903)	0.109*** (3.144)
Firm Age	-0.092** (-1.997)	-0.490*** (-2.947)	-0.092** (-2.005)	-0.488*** (-2.931)
Institutional Ownership	0.141 (1.063)	0.293** (2.255)	0.140 (1.046)	0.292** (2.253)
Negative Earnings	-0.568*** (-7.504)	-0.321*** (-6.449)	-0.572*** (-7.547)	-0.322*** (-6.463)
Firm Scope	-0.016 (-0.370)	0.041 (1.222)	-0.018 (-0.408)	0.040 (1.218)
Dividend Payer	-0.059 (-0.739)	0.154*** (2.671)	-0.060 (-0.742)	0.153*** (2.658)
Board Independence	0.069 (0.542)	0.279** (2.542)	0.074 (0.585)	0.285*** (2.590)
Constant	2.374*** (9.278)	7.769*** (9.674)	2.457*** (9.653)	7.771*** (9.674)
Industry FE	YES	NO	YES	NO
Year FE	YES	NO	YES	NO
Firm FE	NO	YES	NO	YES
Industry x Year FE	NO	YES	NO	YES
Clustered Errors at the firm Level	YES	YES	YES	YES
Observations	12,084	11,966	12,084	11,966
R-squared	0.269	0.770	0.268	0.770

Control variables across all models behave as expected. Firm Size has a negative and significant coefficient in models with firm fixed effects, suggesting that larger firms may have lower growth prospects. Leverage is negatively associated with Tobin's Q,

reflecting concerns over financial risk. Capital Expenditures (CAPEX) and Sales Growth are positively and significantly related to firm valuation, highlighting the importance of investment and growth opportunities. Negative Earnings have a significant negative effect on Tobin's Q, as firms reporting losses are viewed less favorably by investors. Board Independence shows a positive and significant relationship with firm valuation in models with firm fixed effects, indicating that stronger corporate governance enhances investor confidence.

The R-squared values range from approximately 0.269 to 0.770, indicating that the models explain a substantial portion of the variance in Tobin's Q. The higher R-squared values in models with firm fixed effects reflect improved explanatory power when accounting for unobserved firm-specific characteristics.

The consistent positive coefficients on HCD across all models reinforce the finding that human capital disclosures positively influence firm valuation. The lack of a significant effect from the SEC's 2020 rule suggests that the regulatory change did not significantly modify how HCD affects investor valuations. This could be due to firms already voluntarily providing human capital information before the rule or because the principles-based nature of the rule allowed for considerable discretion, leading to variability in disclosure quality.

Our analysis using the SEC's 2020 human capital disclosure rule as an exogenous shock supports the causal relationship between human capital disclosures and firm valuation. The findings underscore the importance of human capital transparency in enhancing firm value and suggest that regulatory efforts may need to provide clearer guidelines to improve the quality and comparability of disclosures. Firms can benefit from voluntarily providing detailed human capital information, as it positively affects market valuation

CHAPTER 6 CONCLUSION

This study examines the economic implications of human capital disclosures (HCD) on corporate value, focusing on how transparency in human capital management influences firm valuation. Utilizing a lexicon developed through advanced machine learning techniques to quantify HCD from quarterly earnings conference calls, we address several key research questions pertaining to the relationship between HCD and corporate value, as measured by Tobin's Q and alternative performance metrics.

Our findings reveal a robust positive association between human capital disclosures and corporate value. Specifically, firms that provide more extensive and detailed human capital information tend to have higher Tobin's Q ratios, indicating that investors value transparency in how companies manage their human capital resources. This positive relationship persists even when we account for alternative performance metrics such as Return on Assets (ROA) and the Peter/Taylor Q, suggesting that the benefits of HCD extend beyond market perceptions to actual operational performance.

Investigating the impact of the Securities and Exchange Commission's (SEC) 2020 amendment to Regulation S-K, we find that the introduction of mandatory human capital disclosure requirements did not significantly alter the relationship between HCD and corporate value. The interaction term between the SEC's rule and HCD was consistently negative but not statistically significant across our models. This suggests that investors may have already been incorporating human capital considerations into their evaluations prior to the regulatory change, and the SEC's mandate did not provide additional informational value that significantly affected firm valuation.

Regarding the role of the Chief Human Resources Officer (CHRO), our analysis indicates that the presence of a CHRO does not significantly moderate the relationship between HCD and corporate value. While CHROs are instrumental in shaping human capital strategies and disclosures, their presence alone does not amplify or diminish the positive impact of HCD on firm valuation. This finding implies that it is the quality and extent of the disclosures themselves, rather than the existence of a dedicated HR executive, that investors find valuable.

Examining other governance mechanisms, we observe that the presence of female directors on the board marginally attenuates the positive effect of HCD on corporate value. The interaction between HCD and female directors is negative and marginally significant, suggesting that in firms with female board representation, the incremental benefit of human capital disclosures on firm valuation is slightly reduced. This could be due to investors perceiving that such firms already prioritize effective human capital management, rendering additional disclosures less impactful. In contrast, the presence of female CEOs does not significantly influence the relationship between HCD and corporate value, as the interaction terms are negative but not statistically significant.

Overall, our study underscores the strategic importance of human capital disclosures in enhancing corporate value. Transparent communication about human capital management practices appears to be positively received by investors, contributing to higher market valuations and better operational performance. These findings have meaningful implications for corporate disclosure policies, suggesting that firms can benefit from voluntarily providing detailed and authentic human capital information beyond mere regulatory compliance.

6.1 LIMITATIONS AND FUTURE RESEARCH

Despite the contributions of this study, several limitations warrant consideration. First, our measurement of human capital disclosures is based on textual analysis of quarterly earnings conference calls. While this approach captures real-time managerial communications and reduces staged preparation bias, it may not fully encompass all aspects of a firm's human capital practices, as certain topics might be emphasized over others due to managerial discretion or time constraints. Second, our focus on U.S. publicly traded firms from 2015 to 2023 may limit the generalizability of our findings to private companies or firms in other countries with different regulatory environments and cultural attitudes toward human capital management. External factors during this period, such as economic cycles and events like the COVID-19 pandemic, could also influence both human capital disclosures and corporate value, potentially affecting our results despite the inclusion of control variables.

For future research, expanding the time frame to include data from before 2015 would allow for the examination of long-term trends and the sustained impact of regulatory

changes on human capital disclosures. Investigating the prevalence of "human capital washing" and its effect on investor perceptions and firm value could provide valuable insights into the authenticity of disclosures. Additionally, examining how human capital disclosures influence cross-listed firms operating in multiple regulatory environments would enhance understanding of international corporate transparency practices. Further studies could assess market reactions to CHRO appointments to determine their perceived value relevance and incorporate qualitative analyses of disclosure content to explore how specific human capital initiatives affect investor perceptions and corporate valuation.

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APPENDIX A

Variable Definitions

Variable	Definition
HCD-TF	Term frequency of human capital-related keywords adjusted for earnings call length.
HCD-TFIDF	Term frequency-inverse document frequency of human capital-related keywords adjusted for earnings call length.
Tobin's Q	Firm valuation, calculated as (market value of equity + book value of debt) / book value of assets.
Size	Natural logarithm of total assets.
Leverage	Total debt divided by total assets.
R&D	Research and development expenditure divided by total assets.
CAPEX	Capital expenditures divided by total assets.
Advertising	Advertising expenses divided by total assets.
Sales Growth	Percentage change in sales from the previous year.
Firm Age	Natural logarithm of the number of years since the firm's inception.
Institutional Ownership	Percentage of shares held by institutional investors.
Negative Earnings	Binary variable equal to 1 if the firm reports negative earnings, 0 otherwise.
Firm Scope	Measure of the breadth of the firm's operations (e.g., number of segments or geographic coverage).
Dividend Payer	Binary variable equal to 1 if the firm pays dividends, 0 otherwise.
CHRO	Binary variable equal to 1 if the firm has a Chief Human Resources Officer, 0 otherwise.
Female Directors	Binary variable equal to 1 if the firm has at least one female director on its board, 0 otherwise.
Female CEO	Binary variable equal to 1 if the firm has a female CEO, 0 otherwise.
SEC2020	Binary variable equal to 1 for years following the SEC's 2020 human capital disclosure rule, 0 otherwise.
Board Independence	Percentage of independent directors on the board.