

Volume 10, Number 1

Print ISSN: 2574-0474

Online ISSN: 2574-0482

GLOBAL JOURNAL OF ACCOUNTING AND FINANCE

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THE IMPACT OF MANAGEMENT CONTROL SYSTEMS AND LEADERSHIP ON INNOVATION: THE MEDIATING ROLE OF ORGANIZATIONAL COMPLEXITY

Noriaki Oku, Tokyo International University
Mohsen Souissi, Fayetteville State University

ABSTRACT

This study aims to examine the impact of the interplay between the management control systems (MCS) and leadership on the capacity of organizations to innovate. It also evaluates the role of organizational complexity (OC) as the mediating variable of that relationship.

This study employs a survey data collected from 526 full-time managers across various Japanese firms. A hierarchical regression analysis was conducted to analyze the data and test the proposed model.

The findings suggest that interplay between MCS and leadership styles significantly influence innovation. In addition, it demonstrates that OC mediates the relationship between MCS, leadership, and innovation by accentuating the effectiveness of the impact of the interplay of MCS and leadership.

This expands the extant literature by increasing our understanding of how different MCS and leadership styles can be effectively integrated to support innovation, particularly in highly complex organizational settings. Japanese firms may leverage the interplay between MCS and leadership to enhance innovation. The findings pertain to a Japanese context which may limit generalizability to different cultural settings. Moreover, the study uses employees' creative activity as a proxy for innovation; using a different measure to capture innovation may yield different outcomes.

Keywords: *Levers of Control (LOC), Management Control Systems, Leadership, Creative Activities*

JEL Classification Code: M41

1.INTRODUCTION

For organizations to thrive in today's changing environment, organizations across various industries and countries must be nimble and adopt a proactive approach (Tushman & Nadler, 1986). Moreover, they must possess dynamic capabilities to effectively leverage their current strengths and strategy, while also seeking new opportunities (Tushman, 2017). Such

opportunities may result from either incremental advancements or disruptive innovations (Christensen, 1997). However, innovation is the outcome of strategic management and leadership that leverage the organizational capabilities to make innovativeness an integral part of the organization's culture (Tushman & Nadler, 1986). Innovation is crucial for companies to improve their performance and create competitive advantage (Shanker et al., 2017; Henri, 2006). The relationships between formal Management Control Systems (MCS) and innovation have been the object of interest in a growing stream of research. Our first motivation stems from the concerns that empirical work addressing the impact of MCS on innovation has been inconclusive. Traditionally, MCS has been viewed as a hindrance to innovation, which thrives on uncertainty, experimentation, flexibility, and initiative, owing to its emphasis on efficiently delivering intended results (Davila, 2005). However, a growing body of empirical work has found that MCS may enhance innovation (e.g., Bisbe & Malagueño, 2009; Bisbe & Otley, 2004; Healy et al., 2018; Henri, 2006; Simons, 1995). Several of these studies have proposed that the effective use of MCS in promoting innovation depends on the attributes of the use of the systems (Adler & Borys, 1996; Bisbe & Otley, 2004; Ferreira & Otley, 2009; Henri, 2006; Simons, 1995). A large body of the literature addressing the role of portion of the research on the role of MCS in enhancing innovation is built upon the frameworks and theories such as Simons' (1995) Levers of Control model that distinguishes between interactive and diagnostic use of control systems (e.g., Bisbe & Otley, 2004, Healy et al., 2018, Henri, 2006, Chenhall & Moers, 2015; Martyn et al., 2016). Each system possesses unique characteristics crucial for successful business strategy implementation, and innovation necessitates the reconciliation of these four systems (Simons, 2000).

Another important line of research argues that leadership may influence organizations' strategic initiatives and MCS implementation, (e.g. Abernethy, Bouwens, & van Lent, 2010; Menguc, Auh, & Shih, 2007); firm innovation and creativity (e.g. García-Morales, Jiménez-Barrionuevo, & Gutiérrez-Gutiérrez, 2012; Gumusluoglu & Ilsev, 2009). Although MCS and leadership share commonalities in influencing organizational behavior, their interrelationships have not been thoroughly examined. Oku (2023) explored the relationship between leadership and LOC-based MCS, focusing on their impact on strategy implementation. However, the dynamics of the impact of MCS and leadership in specific contexts have not been fully explored. Thus, faced with the dearth of studies addressing the interplay between MCS and leadership and its impact on innovation, the second motivation of the study aims at expanding this line of research.

However, the dynamics of the impact of MCS and leadership in specific contexts have not been fully explored. Thus, an additional motivation is to focus on the context of organizational complexity. Research into the role of organizational complexity in improvement of performance has not been conclusive. Some argue that organizational complexity, characterized by complex and interdependent structures, processes, and relationships, can hinder communication between top managers and employees, thus affecting the effectiveness of MCS. As organizations become more complex, managerial leadership may also become less influential, and instructions may become harder to convey as decision-making processes become increasingly complicated. Others argue that complex organizations are better equipped to adapt

to an ever-changing environment and that complexity promotes cross-fertilization of ideas and cross-functional interactions; brings together different perspectives and expertise and therefore encourages innovation and creativity.

As management control literature mainly spans European and Anglo-Saxon perspectives, the third motivation of the study lies in its contribution to calls in the management accounting and control literatures to shed more light on matters related to control and innovation in different contexts, especially in Asian contexts (Speklé & Kruis, 2014). Historically, research on Japanese management control have shed the lights on management control practices that have strengthened Japanese companies' competitiveness worldwide over the last three decades or so. Such practices include total quality management, target costing, Kaizen costing, combining formal and informal mechanisms to enhance continuous improvement (Shimizu, 2017; Yokota, 2023). These systems reflect a culture that centers around achieving long-term goals, harmony, and consensus building and provides for little room for disruptive change. Despite these insights, there is a dearth of academic research that addresses how MCS interplay with leadership styles and impact innovation in a Japanese distinctive cultural and business environment. This study aims to fill this gap by tackling the interaction between MCS and leadership, considering organizational complexity as a mediating factor.

The remaining sections of this study are organized as follows. Section 2 reviews literature and sets forth several testable hypotheses. Section 3 discusses the methodology employed while Section 4 presents and discusses the results. The final section concludes and evaluates some of the limitations and introduces some directions for future research.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Over the last two decades or so, Simons' (1995) levers of control (LOC) framework have sparked a considerable debate in the literature pertaining to management control systems. Chief among this debate is whether these levers enable organizations enhance their capabilities, such as innovativeness and organizational learning (Bedford, Malmi, & Sandelin, 2016; Henri, 2006; Widener, 2007). The LoC comprises four different components: beliefs systems, boundary systems, diagnostic systems, and interactive systems. Beliefs systems are "(...) the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organization" (Simons, 1995, p.34). Boundary systems are "(...) explicit statements embedded in formal information systems that define and communicate specific risks to be avoided" (Simons, 1995, p.39). Diagnostic controls systems are "the formal information systems that managers use to monitor organizational outcomes and correct deviations from preset standards of performance" (Simons, 1995, p.59). Finally, and most importantly, interactive control systems are "(...) formal information systems that managers use to involve themselves regularly and personally in the decision activities of subordinates" (Simons, 1995, p.95). According to Simons (2000), managers use the four levers to ensure success in strategy implementation, organizational learning and effective resource allocation.

However, this research examining the association between these four levers of controls with enhancement of organizational capabilities such as innovativeness have been characterized by ambiguities and inconclusive findings. Many studies examine only one or two systems in isolation (Martyn et al., 2016). For instance, Henri (2006) has found that the use of interactive systems contributes to the generation and dissemination of knowledge and boosts collaboration. In contrast, Simons (2000) claims that the effectiveness of the LOC lies in their combined use which is hatred by many other scholars (e.g., Malmi & Brown 2008; Grabner & Moers, 2013). Specifically, the combined use of the LOC can create a tension between” opportunistic innovation and predictable goal achievement (Simons, 1995, p.153) leading to the development of capabilities and performance (Henri, 2006; Widener, 2007). In similar vein, Haneda and Ito (2018) state that implementing more than one management practice at the same time is associated with a higher probability of innovating new products. Building on the LOC framework, scholars documented significant links between MCS and innovation (Moll, 2015, Guo et al., 2019). However, Bisbe and Otley (2004) discovered that the use of interactive control systems may benefit low-innovating firms but has negative effects on high-innovating ones. In contrast, employing a performance measurement system as an interactive management system has been shown to positively affect innovation through improved competence, whereas utilizing a diagnostic management system has a negative effect (Henri, 2006). Recently, interactive and diagnostic control systems have been found to have complementary effects on innovation; both systems are proven to be effective for innovation (Bedford, 2015; Chen et al., 2023). In addition to interactive and diagnostic control systems, innovation requires the use of beliefs and boundary systems. The four LOC systems mutually influence organizational performance (Widener, 2007; Oku, 2023). Barros et al., 2022 revealed that the surveyed firm fosters innovation by integrating the four LOC systems. In summary, the four systems appear to foster innovation. Based on these arguments, this study postulates that:

H1. The use of the four LOC systems (beliefs, boundary, diagnostic control, and interactive control) impacts innovation.

Some empirical studies have found that certain leaders' behavior triggers the choice of specific MCS practices that contribute to innovation performance. (Jansen, 2011). Recently, Numerous studies have examined the relationship between innovation and leadership (Daft, 1978; Hughes et al., 2018, Abernethy et al. (2010), Kruis et al., 2016; Su and Baird, 2017; Su and Baird, 2018; Oku, 2023; Vaccaro et al., 20120. The crucial role played by leaders in facilitating innovation has been documented by Daft (1978). In similar vein, Gumusluoglu and Ilsev, (2009, p.265) state that “leadership is among the most important factors affecting innovation.” Moreover, Vaccaro et al., 2012, examined the impact of leadership styles (e.g., transactional and transformational leadership styles) on the innovation in Holland. They found that organizational leaders promote interest in innovation. It is argued that participatory leaders making decisions about t projects while taking into account their subordinates' input were instrumental in boosting employees' creativity (Crețu, 2015). Alharbi et al., (2020) showed that transformational leadership motivated their subordinates to seek innovative ways in performing their tasks beyond expected performance. Additionally, Oku (2023) developed and demonstrated

a model elucidating the influence of leadership and four systems on exploratory strategies concerning innovation. The commonality of these studies is that they address initiating structures and considerations as Stogdill and Coons' (1957) leadership styles which has been widely used in the management control literature (Abernethy et al., 2010; Hartmann et al., 2010). The initiating structure leadership is a task-oriented approach that involves organizing and defining work activities, setting goals, clarifying expectations, and providing directions for achieving these goals. Consideration leadership is a relationship-oriented style that entails showing concern for subordinates' needs, feelings, and well-being. This study adopts Stogdill and Coons' (1957) leadership style model and hypothesizes:

H2. Leadership (initiating structure or consideration leadership style) impacts innovation

The identification of contextual variables potentially implicated in the design of effective MCS can be traced to the original structural contingency frameworks developed within organizational theory (Gerdin & Greve, 2004; Grabner & Moers, 2013). It is widely recognized in management control literature that contextual factors play a crucial role in the interplay between MCS and innovation. Among these contextual factors lies the organizational complexity which may mediate the relationship between MCS design and innovation. The results of empirical research are consistent on the positive relationship between complexity and innovation (Damanpour, 1991). Organizational complexity can influence the way MCS are implemented and how innovation is fostered (Taipaleenmaki, 2014). Empirical research has shown that structural complexity is positively associated with innovation (Ettlie et al. 1984, Zmud, 1984). In complex organizations, accumulation of knowledge is expanded through cross-fertilization of ideas between experts across various functional areas which eventually leads to more innovation. (Aiken and Hage 1971, Kimberly and Evanisko 1981). Moreover, research on maturity of companies and its interplay with MCS have gained ground in the management control literature. Research shows strong evidence about the positive association between the maturity of an organization and the extent of MCS usage (Bollinger et al., 2019; Haustein et al., 2014). In addition, it is argued that mature organizations on the one hand possess more resources for new projects and are more diversified, offering more opportunities to their employees to be more creative and on the other hand they tend to be more bureaucratic and less nimble and crippled with inertia that makes them unable to adapt quickly (Hitt et al. 1990). As organizations advance through organizational life cycle stages, from start-up to growth to maturity, complexity within organizations increases (Simons, 1995). Simons (1995) posits that the utilization of the four LOC systems varies across different stages of an organization's lifecycle. Consequently, the adoption of these systems is likely to fluctuate in response to shifts in organizational complexity. Previous research on leadership, including seminal works by Fiedler (1967), Lawrence and Lorsch (1967), and Lorsch and Morse (1974), has extensively examined the influence of organizational complexity on performance.

In their extensive study of Japanese organizations, Nonaka & Takeuchi (1995) argues that at the cornerstone of the organizational design at the Japanese companies as it relates to the innovation process is redundancy defined as the conscious overlapping of company information,

business activities, and managerial responsibilities. They document that a redundant organization is fertile ground in creating and proliferating new knowledge since it encourages frequent dialogue and communication within organizations. The organizational logic of redundancy is the core of the product-development process. For Instance, at Canon, product-development teams were formed across different functional divisions whereby these competing teams produce different approaches to the project and put forth the pros and cons of their proposals which in turn enable the organization to look at a project from different perspectives. That process enables the cross-fertilization of ideas, dissemination of new knowledge which eventually leads to a more refined approach. Such organizational culture creates an environment conducive to creativity, and continuous improvement. Hence it is hypothesized that:

H3. Organizational complexity impacts the use of the four LOC systems and leadership in innovation.

3. RESEARCH METHOD

The authors gathered survey data from business unit managers of firms from manufacturing, technology, and service industries, spanning the key innovative sectors of Japan's economic fabric and capturing diversification in organizational complexity and innovation practices. The managers report to the top management and are positioned to assess leadership characteristics and management control system designed to improve employees' innovation and organizational performance. The selection procedure was based on the following. Researchers identified a sample of service, technology, and manufacturing firms that reflect the regional distribution of firms throughout Japan. The sample, which comprises 526 full-time managers, was drawn from the list of firms publicly listed in the Tokyo stock exchange as of 2024. In total, 526 respondents participated, with no missing data for any questionnaire items. The ages of the respondents ranged from 30 to 60 years, with an average of 50.28.

To examine the influence of MCS and leadership on innovation, a hierarchical regression analysis was conducted using creative activity (*CRAC*) as the objective variable. The questionnaire comprised 13 items on *CRAC*, based on Zhou and George (2001). For other explanatory variables, I referred to Widener (2007) and Müller-Stewens et al. (2020) for the four LOC systems—beliefs (*BESY*), boundary (*BOSY*), diagnostic control (*DISY*), interactive control (*INSY*)—and Abernathy et al., (2010) for the initiating structure (*INLE*) and consideration leadership styles (*COLE*). Organizational complexity (*COMP*) was assessed through questionnaires based on Simons (1995) that included the elements of decision-making process complexity and organizational structure complexity. The questionnaire, excluding *CRAC*, comprised four items for *BESY*, four items for *BOSY*, five items for *DISY*, eight items for *INSY*, six items for *INLE*, six items for *COLE*, and ten items for *COMP*.

The questionnaire items comprising the above eight variables were rated on a 7-point scale ranging from 1 to 7 (1 = "Not at all," 2 = "Mostly disagree," 3 = "Somewhat disagree," 4 = "Cannot say either way," 5 = "Somewhat agree," 6 = "Mostly agree" and 7 = "Completely agree"). Each variable was quantified using the mean value of the question items that comprised it. To determine the impact on the objective variable between the four LOC systems; the two

leadership styles; the four LOC systems and two leadership styles; and organizational complexity, the four LOC systems, and two leadership styles, I established variables for each interaction. Furthermore, I set respondents' age (*AGE*) and number of employees at the company (*EMPL*) as control variables. Based on our hypotheses and variables, the following model equation was tested.

$$CRAC = \beta_0 + \beta_1 BESY + \beta_2 BOSY + \beta_3 DISY + \beta_4 INSY + \beta_5 INLE + \beta_6 COMP + \beta_7 COLE + \beta_8 COMP \times BESY + \beta_9 COMP \times BOSY + \beta_{10} COMP \times DISY + \beta_{11} COMP \times INSY + \beta_{12} COMP \times INLE + \beta_{13} COMP \times COLE + \beta_{14} BESY \times INLE + \beta_{15} BOSY \times INLE + \beta_{16} DISY \times INLE + \beta_{17} INSY \times INLE + \beta_{18} BESY \times COLE + \beta_{19} BOSY \times COLE + \beta_{20} DISY \times COLE + \beta_{21} INSY \times COLE + \beta_{22} BESY \times BOSY + \beta_{23} BESY \times DISY + \beta_{24} BESY \times INSY + \beta_{25} BOSY \times DISY + \beta_{26} BOSY \times INSY + \beta_{27} DISY \times INSY + \beta_{28} INLE \times COLE + \beta_{29} AGE + \beta_{30} EMPL + e$$

A hierarchical multiple regression analysis using the stepwise method was conducted on the model with *CRAC* as the objective variable. The study used SPSS to perform the analysis, setting the entry criteria at $p < 0.05$ and the removal criteria at $p > 0.10$. Five variables—*DISY*, *INSY*, *COLE*, *COMP*×*INSY*, and *COMP*×*INLE*—were selected for the final model. The results show that the variables dropped from the model were not statistically significant. Additionally, a bootstrap method was applied to the five selected variables to confirm robustness of the final model.

4. RESULTS

Table 1 presents descriptive statistics, including the number of responses, means, standard deviations, minimum and maximum values, and Spearman's rank correlations for the eight variables. The mean scores in Table 1 suggest a moderate use of belief, diagnostic, and interactive systems and a relatively higher level of use of boundary systems. Creative activity demonstrates a mean value of 3.99 while the belief systems, the boundary systems, the diagnostic systems, the interactive systems, initiating structure leadership, consideration leadership, and complexity displays mean values of 3.9, 4.24, 3.87, 3.85, 4.07, 3.95, 4.04, respectively. The findings show a positive association between creative activity and all the independent variables of interest. The Cronbach's alpha coefficients for the questionnaire items comprising the eight variables exceeded 0.9 (the minimum value for *COMP* is 0.908), indicating no reliability problems. Correlation coefficients for pairs of variables are in Table 1. No independent variables are correlated highly enough to cause concern with multicollinearity. Note that all correlations are significant at $p < 0.01$.

Table 1 Descriptive Statistics and Intercorrelations Among Study Variables (N = 526)													
Variable	mM	SSD	RRan ge	MM in	MM ax	1	2	3	4	5	6	7	8
1CRAC	3.99	1.22	6.00	1.00	7.00	—							
2BESY	3.90	1.28	6.00	1.00	7.00	.54**	—						
3BOSY	4.24	1.25	6.00	1.00	7.00	.43**	.71**	—					
4DISY	3.87	1.35	6.00	1.00	7.00	.61**	.73**	.61**	—				
5INSY	3.85	1.28	6.00	1.00	7.00	.60**	.83**	.67**	.84**	—			
6INLE	4.07	1.19	6.00	1.00	7.00	.50**	.70**	.70**	.59**	.65**	—		
7COLE	3.95	1.23	6.00	1.00	7.00	.52**	.77**	.65**	.62**	.69**	.83**	—	
8COMP	4.04	0.99	5.70	1.00	6.70	.46**	.62**	.63**	.52**	.61**	.68**	.63**	—

Note. *M* = mean, *SD* = standard deviation.

$p < .01$ (2-tailed). All correlations are significant at the .01 level.

Variables were measured on a 7-point scale unless otherwise noted.

Table 2 presents the results of our analysis. The model's overall fit yielded an F-statistic of 92.162 ($p < 0.01$) and an adjusted R-squared value of 0.465. In our regression model, the variance inflation factor (VIF) for *INSY* was recorded at 5.15. The regression coefficients for the five selected variables were within 5% probability of significance. Although a VIF value exceeding five generally warrants caution, indicating moderate multicollinearity, it does not reach the stringent threshold of ten. This variable plays a critical role within the theoretical framework and objectives of this study. Excluding it at this stage could compromise the quality of this study.

Table2 Regression Results Predicting Creativity Using Bootstrapped Estimates (1,000 Samples)						
Predictor	B	SE	LL	UL	p	VIF
Constant	1.30	0.16	0.99	1.64	< .001	—
DISY	0.33	0.08	0.17	0.48	< .001	4.35
INSY	0.16	0.08	0.15	0.33	= .035	5.15
COLE	0.20	0.05	0.08	0.30	< .001	2.06
COMP × INSY	0.16	0.06	0.05	0.26	< .001	3.63
COMP × INLE	-0.12	0.06	-0.23	-0.01	= .035	3.70

Adjusted $R^2 = .465$

Note: Bootstrap method with 1,000 samples was used. B = unstandardized coefficient; SE = standard error; LL = lower limit; UL = upper limit of 95% confidence interval; VIF = variance inflation factor.

With respect to the effects of individual control levers on innovation, table 2 shows the coefficients for DISY (beta=0.33, $p < 0.001$) and INSY (Beta=0.16, $p < 0.001$) are positive and significant providing partial support of H1. The table also reveals a positive and significant coefficient for COLE (Beta=0.20, $p < 0.001$) providing support for H2. H3 posits that the organizational complexity impacts the use of the four LOC systems and leadership in innovation.

The interaction term $COMP \times INSY$ is positive and significant ($\text{Beta}=0.16$, $p<0.1$) while the interplay term $COMP \times INLE$ is negative and significant ($\text{Beta}=-0.12$, $p<0.05$) providing partial support of H3.

5. DISCUSSION

The findings of this study contribute to the rich body of literature addressing the role of LOC in boosting innovation and sheds light on the important interactions between organizational complexity and leadership in enhancing innovation.

First, within the realm of LOC, this study documents that diagnostic and interactive control systems positively impact employees' creative activities. However, not all four LOC systems were effective. This result supports Simons' (1995) assertion that interactive control systems promote innovation. Contrary to Henri's (2006) findings, which suggested a negative impact of diagnostic control systems on innovation, this study observed a positive effect. While goal setting and behavioral management in a diagnostic control system can restrict employee initiatives and potentially inhibit innovation, effective management within this system can foster innovation. Conversely, beliefs and boundary systems did not significantly influence innovation.

Additionally, this study explored the interactions among the four LOC systems. However, these interactions did not yield significant results. Simons (1995) demonstrated that although these systems are interrelated, their functioning may vary according to organizational contexts. One possible explanation for the lack of impact on innovation is that diagnostic and interactive control systems provide specific performance feedback directly to employees, whereas belief and boundary systems establish broader organizational directions and rules, which may not directly induce behavioral changes.

Second, in the leadership domain, only the consideration leadership style positively influences innovation. This aligns with Edmondson's (2018) theory, suggesting that management considerations for employee initiatives enhance psychological safety and foster innovation. Psychological safety empowers individuals to express themselves and take risks without fear. Therefore, consideration leadership, which emphasizes strong interpersonal relationships, may effectively enhance this environment and support innovation. Conversely, the authors did not observe a direct impact of the initiating structure leadership style on innovation. This task-oriented leadership style alone may not be sufficient to encourage innovation through spontaneous employee actions, although it does not explicitly hinder innovation. This is consistent with the findings of Nonaka & Takeuchi (1995) documenting Japanese management control system favors teamwork where decisions are reached by collaboration between employees across departments for ideas sharing and problem solving which in turn create new knowledge and supports innovation.

Finally, regarding the impact of organizational complexity on LOC and leadership, this study observed a synergistic relationship between organizational complexity and the use of interactive control systems in fostering innovation. Our results indicate that the effectiveness of interactive control systems in promoting innovation increases with organizational complexity. It is crucial for top management to understand and actively address the complexities of their

organizations to effectively promote innovation. This is in line with the findings of Haneda and Ito (2018) documenting a positive association between organizational management and product innovation. Conversely, the study found a counterproductive relationship between organizational complexity and the initiating structure leadership style concerning innovation. In highly complex environments, a leadership style emphasizing rigid instructions and rules may limit innovation by stifling employee creativity and flexibility. As organizational complexity increases, adopting leadership approaches to more flexible and participatory styles may foster innovation. This is consistent with the findings of Ettlie et al., 1984; Zmud, 1984; Taipaleenmaki, 2014).

6. CONCLUSION

In this study, we hypothesized that both LOC systems and the two leadership styles significantly impact innovation, with this effect moderated by the level of organizational complexity. Additionally, we examined the role of organizational complexity. Employing an empirical approach, this study utilized survey data collected from 526 full-time employees across various Japanese firms. Our findings suggest that the interplay between the LOC systems and leadership styles significantly influences innovation. Furthermore, organizational complexity significantly influences the effectiveness of both MCS and leadership styles. High organizational complexity often necessitates more nuanced management approaches to foster innovation effectively. This study enhances the understanding of how different management control systems and leadership styles can be effectively integrated to support innovation, particularly in highly complex contexts. This suggests that a combination of interactive and diagnostic control systems, complemented by consideration in leadership, can create an environment conducive to innovation.

This study has several limitations. First, it relies on survey data from managers of various Japanese firms, which may limit the generalizability of our findings to diverse cultural and industrial contexts. Diverse cultures and industries may exhibit distinct relationships between MCS usage, leadership styles, and innovation owing to unique organizational behaviors and management practices. Second, this study focused on employees' creative activity as a proxy for innovation, which may not fully capture the concept's breadth and depth. Future research could incorporate variables that encompass various innovation aspects such as process, organizational, and radical or incremental innovation. Third, cross-sectional data collection limits the ability to establish causal relationships. Longitudinal studies could provide deeper insights into how changes in leadership and management control systems influence innovation over time. The fourth limitation stems from the measurement of firm innovation. In this study, the innovation construct was captured by 13 items on creativity based on Zhou and George (2001). Some caution should be exerted in interpreting the results regarding possible biases in the measure.

ACKNOWLEDGEMENTS

This study was supported by JSPS KAKENHI (Grant Number JP23K01704).

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ESG DISCLOSURES AND FIRM VALUE: UNVEILING THE DYNAMICS WITHIN NIGERIAN FIRMS

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ABSTRACT

As environmental, social, and governance (ESG) considerations become increasingly central to corporate strategy and long-term sustainability, many countries are taking steps to align with global reporting standards. In March 2024, Nigeria—the largest economy in Africa—released a Roadmap Report to adopt the IFRS Sustainability Disclosure Standards, signaling its commitment to enhancing ESG transparency and attracting international investment.

This study examines the determinants and implications of ESG disclosure ratings for 103 listed Nigerian firms in 2022. We find that firm profitability and size are significantly associated with ESG disclosure ratings, suggesting that larger and financially stronger firms are more likely to engage in ESG practices. However, we find no significant relationship between ESG ratings and firm market value, highlighting a disconnect between disclosure practices and investor valuation. This gap may reflect poor disclosure quality, limited investor awareness, and weak regulatory enforcement.

Our findings offer important insights for regulators and market participants. While policymakers are promoting ESG reporting, domestic investors have yet to fully incorporate these ratings into their valuation models. This misalignment suggests a need for stronger reporting standards, targeted investor education, and enhanced regulatory enforcement to support ESG integration in Nigeria's capital market.

INTRODUCTION

In recent years, environmental, social, and governance (ESG) considerations have become increasingly influential in corporate strategy and decision-making, driven by rising global concern over climate change, social inequality, and governance failures. Stakeholders—including investors, employees, customers, and regulators—are demanding more sustainable, transparent, and socially responsible business practices (Aouadi & Marsat, 2018; Dechow, 2023).

Empirical research in developed markets generally supports a positive relationship between ESG initiatives and firm performance or valuation (Whelan et al., 2021; Aouadi & Marsat, 2018). However, these benefits may not be universally transferable. Scholars caution that the effectiveness and market response to ESG initiatives are often shaped by institutional context. In emerging markets, weak regulatory frameworks, limited enforcement, and different

investor behaviors may attenuate the financial benefits of ESG engagement (Aydoğmuş et al., 2022; Hassani & Bahini, 2022).

As Africa's largest economy, Nigeria offers a compelling setting to examine ESG disclosure in an emerging market context. This study analyzes ESG disclosure ratings for 103 listed Nigerian firms in 2022 to address two key research questions: (1) What firm-level characteristics are associated with ESG disclosure? and (2) Is there a significant relationship between ESG ratings and firm value?

Our results show that firm profitability and size are positively associated with ESG disclosure ratings, suggesting that larger and more financially sound firms are better positioned to invest in sustainability initiatives. However, ESG ratings do not significantly predict firm market value, revealing a disconnect between disclosure practices and investor valuation in Nigeria.

This gap may reflect structural and behavioral barriers within the Nigerian capital market. Prior studies have consistently reported low-quality and inconsistent ESG disclosures in Nigeria. For instance, Umoren et al. (2015) and Okafor et al. (2025) find that environmental and social disclosures are particularly limited, with environmental disclosures often falling below 10%. Such deficiencies likely reduce the credibility of ESG information, thereby weakening its utility in investment decision-making. Additional constraints include low investor awareness, inadequate regulatory enforcement, and the absence of standardized reporting frameworks (Ngwa et al., 2025; Ofonye, 2025).

This study makes three key contributions to the ESG literature. First, it extends the determinants literature by providing direct evidence that profitability remains a central driver of ESG reporting in an underexplored African emerging market, demonstrating that firm-level financial capacity shapes disclosure behavior even in low-regulation environments. Second, it contributes to the consequences literature by documenting a clear disconnect between ESG ratings and firm market value in Nigeria—an empirical pattern that challenges the assumption that the valuation premium observed in developed markets generalizes to emerging economies, and that points to institutional voids, disclosure quality issues, and limited investor sophistication as plausible explanations. Third, the study offers timely policy-relevant evidence to support Nigeria's 2024 Roadmap Report for adopting the IFRS Sustainability Disclosure Standards, providing the Financial Reporting Council of Nigeria (FRCN) and other regulators with a baseline empirical foundation for designing enforcement mechanisms, standardized reporting frameworks, and investor education initiatives. Collectively, these contributions advance a more nuanced, context-sensitive understanding of how ESG dynamics unfold in low-regulation emerging markets.

The rest of this paper is structured as follows: Section 2 reviews prior studies. Section 3 delves into the methodology. Section 4 presents the empirical results. Finally, Section 5 concludes the paper by summarizing the key findings, acknowledging limitations, and suggesting avenues for future research.

LITERATURE REVIEW

Environmental, social, and governance (ESG) considerations have become increasingly prominent in evaluating corporate performance and long-term sustainability. This global shift is reflected in the rapid proliferation of ESG frameworks and investment strategies, with ESG assets projected to exceed \$53 trillion by 2025 (Bloomberg, 2021).

A growing body of research has examined the determinants and consequences of ESG disclosure, as well as the moderating role of institutional context. Comprehensive reviews by Busch and Friede (2018) and Huang (2021) emphasize that ESG outcomes are shaped not only by firm-level characteristics but also by country-specific institutional factors. This review synthesizes key theoretical and empirical contributions, with particular attention to how these dynamics apply within the Nigerian context.

Determinants of ESG Disclosure

Multiple theoretical frameworks underpin ESG disclosure behavior. Stakeholder Theory (Freeman, 1984) emphasizes firms' accountability to a broad range of stakeholders, with ESG practices enhancing legitimacy and stakeholder trust (Post et al., 2011). Legitimacy Theory (Suchman, 1995) suggests that ESG disclosure helps firms align with societal expectations and reduce reputational risk (Clarke & Gibson-Sweet, 1999). Institutional Theory (DiMaggio & Powell, 1983) posits that organizations respond to coercive, normative, and mimetic pressures, leading to ESG adoption as a form of institutional conformity (Campbell, 2007).

Other perspectives, such as Agency Theory (Jensen & Meckling, 1976), frame ESG disclosure as a tool for reducing information asymmetry between managers and investors (Ellili, 2020). Complementary frameworks like Signaling Theory and Voluntary Disclosure Theory argue that firms use ESG reporting to differentiate themselves and attract capital by signaling superior governance and ethical standards (Katmon et al., 2019).

Consequences of ESG Disclosure

Empirical studies link transparent ESG reporting to improved capital market outcomes, including higher analyst forecast accuracy, lower cost of capital, and enhanced firm reputation (Dhaliwal et al., 2012; Christensen, 2016; Truong et al., 2021). Additional benefits include stronger management quality, employee engagement, and social legitimacy (Qian & Schaltegger, 2017).

However, evidence on ESG's impact on financial performance is mixed. While some studies report positive associations (e.g., Chen et al., 2018), others find no significant or even negative effects—particularly in contexts where ESG disclosure is symbolic, inconsistent, or driven by compliance rather than strategy (Luo et al., 2015). These disparities often hinge on the credibility and comparability of ESG information, as well as whether reporting is voluntary or mandatory.

Moderating Factors of Country Characteristics

The relationship between ESG disclosure and firm outcomes is influenced by national context. For example, economic conditions such as resource dependency or scarcity may shape environmental behavior (Zhu et al., 2007), while social norms, public expectations, and regulatory enforcement affect ESG credibility and implementation (Pasquero, 1991; Sharma & Vredenburg, 1998; Christmann, 2000).

A meta-analysis by Dixon-Fowler et al. (2013), spanning 39 studies across disciplines, found that U.S. firms benefit more from ESG initiatives ($r = 0.07$) than international firms ($r = -0.01$). The authors conclude that U.S. firms appear to derive greater benefits from ESG engagement than their international counterparts (p. 353) and attribute this to stronger governance structures, investor awareness, and enforcement mechanisms in developed markets. Their findings highlight the importance of examining ESG dynamics in developing countries, where institutional environments differ substantially.

ESG Disclosure in the Nigerian Context

In Nigeria, ESG reporting remains fragmented and largely unregulated, with significant variation across firms and sectors. Umoren et al. (2015) and Okafor et al. (2025) report that while governance information is more commonly disclosed (81%), environmental disclosures are rarely reported—by only about 7% of firms. Many Nigerian companies fall short of international standards such as the Global Reporting Initiative (GRI), signaling weak integration of global ESG frameworks.

Regulatory gaps further compound these issues. Ofonye (2025) calls for standardized ESG reporting guidelines and sector-specific enforcement mechanisms. Practical barriers—including limited expertise, high compliance costs, and weak institutional support—also constrain ESG adoption (Ngwa et al., 2025).

Research on ESG determinants in Nigeria has yielded mixed findings. Umoren et al. (2015) identify Big Four auditor affiliation as a key driver, while firm size and profitability were not significant. In contrast, Ngwa et al. (2025) emphasize the role of firm-specific capabilities and institutional context in shaping ESG practices.

The financial impact of ESG disclosure in Nigeria also remains inconclusive. Ngwa et al. (2025) report reputational benefits and improved stakeholder trust, yet Bassey et al. (2022) find no significant relationship between ESG performance and firm financial outcomes in panel data analysis. These discrepancies may result from methodological differences, but they also point to persistent challenges in disclosure quality, data comparability, and market engagement.

Taken together, the literature reveals that ESG disclosure is shaped by a complex interplay of firm characteristics, theoretical motivations, and institutional environments. In Nigeria, low disclosure quality, weak enforcement, and limited investor engagement continue to constrain the effectiveness of ESG practices.

SAMPLE SELECTION AND HYPOTHESIS DEVELOPMENT

Our sample comprises publicly listed firms on the Nigerian Exchange (NGX) as of December 31, 2022. Starting with all 161 listed firms, we excluded 58 observations due to missing or incomplete financial data and ESG ratings, resulting in a final sample of 103 firms (approximately 64% of NGX listings). Financial data were collected from annual reports, the African Financials database, and company investor relations websites. ESG ratings were obtained from Risk Insights: Futuristic Risk Management—a leading African ESG data provider. These ratings, ranging from 1 (lowest) to 4 (highest), are based on publicly verifiable information across ten categories: resource use, emissions, environmental innovation, workforce, human rights, community engagement, product responsibility, management practices, shareholder relations, and CSR strategy.

Table 1 presents ESG ratings by sector. The sample covers a diverse range of industries, with insurance (15 firms), banking (13 firms), and food (9 firms) being the most represented. ESG ratings are highest in the investment (mean = 3.00) and banking (mean = 2.54) sectors, likely due to stronger regulatory oversight and heightened investor scrutiny.

In contrast, mining (mean = 1.00) shows the weakest ESG performance. This lower score could stem from weaker regulatory enforcement, underdeveloped ESG reporting standards, or less external accountability. Additionally, the limited number of firms in this sector raises the possibility of outlier effects and reduces the robustness of sector-level comparisons.

We acknowledge three key limitations of our dataset. First, the modest sample size reduces statistical power and constrains the detection of subtle relationships. Second, the focus on a single country limits the broader applicability of our findings, given Nigeria's unique regulatory and institutional environment. Third, although we observe sectoral variation in ESG performance, the sample size does not support the use of industry fixed effects in our regression analysis. Consequently, sector-specific influences on ESG reporting and firm valuation are not explicitly accounted for. These limitations are discussed further in the conclusion, along with suggestions for future research.

Table 1 SECTOR DISTRIBUTION		
Sector	Count	Mean ESG Ratings
Insurance	15	2.07
Banking	13	2.54
Food	9	2.33
Technology	8	2.50
Industrial holding	7	2.14
Building & associated	5	2.40
Energy	5	2.20
Transport	5	2.00
Beverages	4	2.25
Tourism	4	2.00
Agricultural	4	1.50
Retail	3	2.00
Pharmaceuticals	3	2.00
Agri-industrial	3	2.00
Printing & publishing	3	1.67
Engineering	3	1.67
Investment	2	3.00
Financial	2	2.00
Property	2	1.50
Health	1	2.00
Communications	1	2.00
Mining	1	1.00

Sources: <https://africanfinancials.com/nigeria/>; <https://riskinsights.co.za/nigeria-esg-gps-ratings>

Our first hypothesis examines the determinants of ESG disclosure, with a particular focus on firm profitability. Prior research suggests that firm-specific factors such as profitability, size, and leverage play a key role in shaping ESG engagement (Seow, 2024). Profitable firms are generally more capable of allocating resources toward sustainability initiatives and reporting (Oikonomou et al., 2012; Eccles & Serafeim, 2013). Profitability may also attract greater stakeholder scrutiny, increasing pressure to disclose ESG performance (Cheng et al., 2014).

Moreover, ESG reporting can serve as a risk mitigation tool for well-resourced firms, enhancing their reputational and legal standing (Kim et al., 2014; Margolis et al., 2009).

While most of this evidence is drawn from developed economies, the theoretical rationale extends to emerging markets. In the Nigerian context—where ESG frameworks are still evolving—profitable firms may be early adopters of disclosure practices as part of broader legitimacy and signaling strategies. Based on this rationale, we propose the following hypothesis:

***H1:** There is a positive association between firms' profitability and their ESG disclosure ratings in Nigeria.*

Our second hypothesis explores the relationship between ESG disclosure and firm value. In developed markets, ESG transparency is generally associated with enhanced firm performance due to better governance, investor confidence, and stakeholder engagement (Dhaliwal et al., 2012; Christensen, 2016; Truong et al., 2021). However, these relationships may not translate directly to emerging markets. Dixon-Fowler et al. (2013) find that ESG benefits are greater in developed countries, where regulatory enforcement and investor ESG awareness are stronger.

In Nigeria, weak regulatory frameworks, low ESG literacy, and inconsistent disclosure practices may reduce the salience of ESG ratings in investment decisions (Sharma & Vredenburg, 1998; Zhu et al., 2007; Ngwa et al., 2025). Although ESG adoption may yield reputational advantages (Ngwa et al., 2025), its financial impact remains unclear. Bassey et al. (2022), for instance, report no significant relationship between ESG engagement and firm financial performance in Nigeria. Given these mixed and context-dependent findings, we adopt a conservative, null-form hypothesis:

***H2:** There is no association between firms' ESG disclosure ratings and their firm value in Nigeria.*

EMPIRICAL TESTS AND RESULTS

To address our two research questions, we begin with descriptive statistics followed by regression analyses. Table 2 presents summary statistics for the key variables. All variables are defined in Appendix A.

The average Tobin's Q (TQ) across the sample is 1.22. Although a TQ above 1 typically reflects a market premium, the median TQ of 0.59 indicates that most firms trade below the book value of their assets, with the mean elevated by a small number of high-valuation outliers. Regarding firm performance, the mean Return on Assets (ROA) is 4%, while Return on Equity (ROE) averages 15%. Although these values are at or just below the often-cited efficiency benchmarks of 5% (for ROA) and 15% (for ROE), they indicate moderate performance among most firms in the sample.

The Debt-to-Equity Ratio (DTE) has a mean of 3.40, indicating a strong reliance on debt financing—significantly above the optimal 1.0–2.0 range typically recommended in the literature. This suggests potential concerns regarding financial leverage and capital structure stability in the Nigerian corporate context.

The average Profit After Tax (*PAT*) is approximately NGN 23.1 million, reflecting substantial variation in financial outcomes across firms, which is consistent with the diverse industry composition of the sample.

In terms of ESG performance, the mean value of the dummy variable *ESG_G* is 0.24, indicating that only about one-quarter of firms received an "above average" ESG rating. This low proportion reflects the cautious, inconsistent, or evolving nature of ESG disclosure among Nigerian firms. The standard deviations for all variables fall within acceptable ranges, supporting the overall reliability of the dataset for regression analysis.

Table 2 DESCRIPTIVE STATISTICS				
Variable	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>St. Dev</i>
<i>TQ</i>	103	1.22	0.59	2.24
<i>SIZE</i>	103	4.76	4.60	1.05
<i>PAT</i>	103	23085.49	1316.10	63610.86
<i>ROA</i>	103	0.04	0.03	0.08
<i>ROE</i>	103	0.15	0.11	0.40
<i>DTE</i>	103	3.40	2.08	4.00
<i>ESG_G</i>	103	0.24	0.00	0.43

Using *R/RStudio*, we computed a Pearson correlation matrix to examine pairwise relationships among the study variables, as shown in Table 3. The matrix presents correlation coefficients, which range from -1 (perfect negative correlation) to $+1$ (perfect positive correlation), with values near zero indicating weak or no linear association. Corresponding p-values are provided in parentheses to assess statistical significance, with thresholds below 0.05 considered significant at the 5% level.

The results reveal that *ESG_G* is positively and significantly correlated with both firm size (*SIZE*) and profitability (*PAT*), suggesting that larger and more profitable firms are more likely to be rated as having "good" ESG disclosure. In contrast, *ESG_G* shows no significant correlation with *ROA* or *ROE*, implying that performance measures may not fully capture the dynamics influencing ESG disclosure classification. *ESG_G* also displays a modest positive correlation with leverage (*DTE*), indicating a potentially complex relationship between ESG ratings and capital structure decisions.

As for Tobin's *Q* (*TQ*), it exhibits generally weak correlations with other variables, except for a modest negative correlation with *DTE*, suggesting that firms with higher financial leverage tend to receive lower market values—consistent with conventional capital structure theory.

Table 3
CORRELATION MATRIX

Variable	<i>TQ</i>	<i>SIZE</i>	<i>PAT</i>	<i>ROA</i>	<i>ROE</i>	<i>DTE</i>	<i>ESG_G</i>
<i>TQ</i>	1						
<i>SIZE</i>	-0.058 (0.560)	1					
<i>PAT</i>	0.119 (0.230)	0.593 (<0.001)***	1				
<i>ROA</i>	0.143 (0.150)	0.042 (0.673)	0.179 (0.071)*	1			
<i>ROE</i>	0.086 (0.386)	0.098 (0.325)	0.230 (0.019)**	0.723 (<0.001)***	1		
<i>DTE</i>	-0.199 (0.044)**	0.519 (<0.001)***	0.254 (0.010)**	-0.081 (0.418)	0.074 (0.459)	1	
<i>ESG_G</i>	0.038 (0.701)	0.589 (<0.001)***	0.476 (<0.001)***	0.031 (0.755)	0.109 (0.275)	0.401 (<0.001)***	1

* Statistically significant at 10%

** Statistically significant at 5%

*** Statistically significant at 1%

To test our hypotheses, we employ two multivariate regression models, controlling for key firm-specific factors in line with prior literature. These controls include firm size (*SIZE*), performance measures (*ROA* or *ROE*), and financial leverage (*DTE*).

$$ESG_G = \beta_0 + \beta_1 PAT + \beta_2 SIZE + \beta_3 ROA + \beta_4 DTE + \varepsilon \quad \text{Model (1)}$$

$$TQ = \beta_0 + \beta_1 ESG_G + \beta_2 SIZE + \beta_3 ROE + \beta_4 DTE + \varepsilon \quad \text{Model (2)}$$

Model (1) tests Hypothesis 1, which posits a positive association between firm profitability—measured by profit after tax (*PAT*)—and ESG disclosure ratings in Nigeria. The dependent variable, *ESG_G*, is a binary indicator equal to 1 if a firm's ESG rating is above the sample mean and 0 otherwise.

Table 4
RESULT FOR H1

Variable	Coefficient	Pr(> t)
<i>PAT</i>	0.001	0.038 **
<i>SIZE</i>	0.161	0.001 ***
<i>ROA</i>	-0.061	0.890
<i>DTE</i>	0.016	0.125
Constant	-0.605	0.003 ***
Observations	103	
R-squared	0.388	
Adj R-squared	0.363	

* Statistically significant at 10%

** Statistically significant at 5%

*** Statistically significant at 1%

The variable of interest, Profit After Tax (*PAT*), is statistically significant ($p= 0.038$), indicating a positive association between firm profitability and ESG disclosure ratings. This finding supports Hypothesis 1 and is consistent with prior research, suggesting that financially stronger firms are more likely to invest in sustainability initiatives and transparent ESG reporting (Eccles & Serafeim, 2013; Cheng et al., 2014). Higher profitability not only enables firms to absorb the costs of ESG activities but also provides strategic incentives to enhance disclosure as a means of strengthening reputation and meeting stakeholder expectations.

In addition, firm size (*SIZE*) shows a statistically significant positive relationship with ESG disclosure ratings. This suggests that larger firms are more likely to exceed the sample average in ESG performance, likely due to their heightened public visibility, greater regulatory oversight, and increased stakeholder expectations. Consistent with prior research, larger organizations often face stronger pressure to demonstrate accountability and transparency, which in turn drives more extensive ESG reporting (Umoren et al., 2015; Seow, 2024).

In contrast, Return on Assets (*ROA*) and Debt-to-Equity Ratio (*DTE*) do not exhibit statistically significant associations with ESG disclosure ratings. This suggests that short-term operational efficiency and financial leverage may not directly influence ESG reporting behavior among Nigerian firms. These findings may reflect the broader institutional context, where weak regulatory enforcement and limited ESG-related incentives result in compliance that is often symbolic rather than strategically embedded.

Hypothesis 2 examines whether there is a statistically significant relationship between firms' ESG disclosure ratings and their market value within the Nigerian context. To test this hypothesis, we estimate a regression model in which Tobin's Q (*TQ*) serves as the dependent variable, representing firm value, and the dummy variable *ESG_G*—indicating "above average"

ESG disclosure—is the primary independent variable of interest. The model also includes firm size (*SIZE*), return on equity (*ROE*), and debt-to-equity ratio (*DTE*) as control variables to account for key firm-specific characteristics that may affect firm value. The regression results are presented in Table 5.

Table 5 RESULT FOR H2		
Variable	Coefficient	Pr(> t)
<i>ESG_G</i>	0.732	0.252
<i>SIZE</i>	-0.040	0.887
<i>ROE</i>	0.511	0.355
<i>DTE</i>	-0.142	0.031 **
Constant	1.635	0.179
Observations	103	
R-squared	0.065	
Adj R-squared	0.027	

* Statistically significant at 10%

** Statistically significant at 5%

*** Statistically significant at 1%

The regression analysis in Table 5 reveals a positive but statistically insignificant coefficient for *ESG_G* ($p = 0.252$), consistent with Hypothesis 2. This result suggests that Nigerian firms with "Good" ESG disclosure ratings do not exhibit significantly higher firm value, as measured by Tobin's Q. While this contrasts with findings from developed markets—where ESG disclosures are often rewarded by investors (e.g., Dhaliwal et al., 2012; Truong et al., 2021)—it aligns with studies pointing to the limited informativeness and impact of ESG ratings in emerging markets.

A key explanation lies in the poor quality and inconsistency of ESG reporting in Nigeria. Okafor et al. (2025) and Umoren et al. (2015) show that Nigerian firms often fall short of international disclosure standards like the GRI, particularly in environmental and social dimensions, with environmental disclosures made by only about 7% of firms. These superficial and fragmented practices erode the credibility of ESG reports and reduce their value to investors. Regulatory and institutional weaknesses further compound the issue: Ofonye (2025) highlights enforcement gaps and the absence of sector-specific standards, while Ngwa et al. (2025) point to barriers such as limited expertise, high compliance costs, and weak institutional support—conditions that foster symbolic rather than substantive ESG engagement.

Investor behavior also plays a role. While ESG is often perceived to enhance corporate reputation (Ngwa et al., 2025), many investors lack the awareness or confidence to incorporate

ESG scores into valuation models. As a result, ESG disclosures may be overlooked or discounted in investment decisions.

Taken together, the absence of a significant relationship between ESG disclosure and firm value in Nigeria likely stems from a combination of poor disclosure quality, institutional voids, and low investor engagement. These challenges underscore the need for stronger enforcement mechanisms, standardized reporting frameworks, and investor education to improve the market relevance of ESG in emerging economies.

CONCLUSION, LIMITATIONS, AND FURTHER RESEARCH

This study examines both the determinants and consequences of ESG disclosure ratings in Nigeria, offering timely insights from one of Africa's most influential emerging markets. Based on data from 103 listed Nigerian firms in 2022, we find that firm profitability and size are positively associated with higher ESG ratings—suggesting that more financially robust and larger firms are better positioned to invest in sustainability initiatives. However, in contrast to evidence from developed markets, ESG disclosure does not significantly predict firm value in Nigeria. This disconnect likely reflects the low quality and limited strategic integration of ESG reporting, coupled with underdeveloped investor engagement with sustainability metrics.

These findings highlight the need for regulatory bodies—such as the Financial Reporting Council of Nigeria (FRCN)—to implement and enforce standardized ESG reporting frameworks. Equally important is advancing investor education to improve the valuation relevance of ESG factors in Nigeria's capital markets. As Nigeria prepares for the mandatory adoption of the IFRS Sustainability Disclosure Standards by 2028, with voluntary adoption beginning in 2024 (FRCN, 2024), our study provides timely empirical insights into the current state of ESG disclosure and its market disconnect—offering an evidence-based foundation to support the FRCN's policy implementation, enforcement planning, and stakeholder engagement efforts.

While our study contributes to the ESG literature by demonstrating how firm-specific and institutional factors shape ESG disclosure and its financial implications in under-researched contexts, several limitations should be noted. First, the analysis is based on a cross-sectional sample of 103 firms, which, although representative of the Nigerian Exchange (NGX), limits generalizability beyond the national setting. Second, ESG ratings were obtained from a single provider, Risk Insights, potentially introducing measurement bias due to methodological differences across rating agencies.

Third, we were unable to control for industry-specific effects due to sample size constraints, despite the likelihood that ESG practices and valuation implications vary by sector. Lastly, our binary classification of ESG performance may not fully capture the nuance of disclosure quality.

To build on our findings, future research should consider conducting cross-country analyses to benchmark Nigeria's ESG practices against other emerging and developed markets. Such comparative work could offer broader context and help identify institutional factors that enable or hinder effective ESG integration. Expanding the dataset to include a larger number of

firms and a longer time horizon would also allow for longitudinal analysis, offering insights into how ESG practices evolve over time and in response to policy shifts.

Additionally, incorporating industry-level controls could shed light on sector-specific dynamics, particularly given that ESG materiality and stakeholder expectations often vary widely across sectors such as finance, manufacturing, and extractive industries. Finally, employing disaggregated or alternative ESG metrics—such as analyzing environmental, social, and governance components separately, or comparing ratings from multiple providers—would offer a more nuanced understanding of ESG disclosure quality and its financial implications.

AI DISCLOSURE STATEMENT

The authors used generative AI tools (Anthropic's Claude) to assist with light language editing and proofreading of the manuscript. The AI tools were not used to generate research ideas, conduct analysis, or produce substantive content. The authors take full responsibility for the accuracy, originality, and integrity of all content, citations, and findings reported in this paper.

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Appendix A VARIABLE DEFINITION	
Variable	Definition
Tobin's Q (TQ)	A proxy of firms' value. Calculated by dividing the market value of a firm's assets by the book value of total assets.
Firm size (SIZE)	Natural logarithm of total assets.
Profit after tax (PAT)	A proxy of firms' profitability in thousands of Nigerian Naira (NGN). It is the net income of a company after accounting for all taxes owed to the government.
Return on assets (ROA)	Measures a company's ability to generate profit from its assets. Calculated by dividing net income by average total assets.
Return on equity (ROE)	Measures a company's profitability relative to its shareholders' equity. Calculated by dividing net income by shareholders' equity.
Debt to equity (DTE)	Measures firms' financial leverage. Calculated by dividing a firm's total debt by its shareholders' equity.
ESG rating_Good (ESG_G)	A dummy variable with a value of 1 when ESG disclosure is rated as "above average" and 0 otherwise.

Sources: <https://africanfinancials.com/nigeria/>; <https://riskinsights.co.za/nigeria-esg-gps-ratings>

THE EFFECTS OF SPECIFIC GOALS AND THE SALIENCE OF COSTS OF ACCOUNTING DISCRETION ON EARNINGS MANIPULATION

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ABSTRACT

Using an experiment, we study whether more specific goals increase managers' propensity to use aggressive accounting estimates by desensitizing them to the costs of such choices. We provide evidence for this mechanism by testing whether increasing the salience of aggressive accounting costs reduces managers' exercise of accounting discretion. We operationalize goals using analysts' forecast revisions and their specificity by varying the predictability of those revisions. Among participants with higher levels of accounting knowledge and work experience, we find that goal specificity and the salience of the costs of managing earnings interact such that managers with more specific goals engage in higher levels of earnings management than managers with less specific goals when the salience of earnings management costs is low. However, as the salience of the adverse consequences of earnings management increases, managers with more specific goals reduce their exercise of accounting discretion more than managers with less specific goals.

INTRODUCTION

Earnings manipulation is pervasive and often detrimental (Healy and Palepu, 2001; Healy and Wahlen, 1999, for reviews). In their review, Dichev, Graham, Harvey, and Rajgopal (2013) find that nearly 400 Chief Financial Officers (CFOs) surveyed believe that one-fifth of companies intentionally manage earnings in any given quarter, with the distortion being as high as 10% of the realized earnings. The CFOs in the survey further report that earnings manipulation is primarily driven by motivation to “influence stock price” and “the pressure to hit benchmarks.” One such influential benchmark is analysts' forecasts (Levitt, 1998). Managers enjoy a market premium for meeting analysts' forecasts and face a penalty for missing them (Kasznik and McNichols, 2002). The motivation for meeting or beating analysts' forecasts is linked to maximizing share prices, improving management credibility with respect to its stakeholders, and avoiding potential litigation, which could be triggered by negative earnings surprises (Bartov et al., 2002). In this study, we examine how the specificity of analyst forecasts

affects management's choice to manipulate earnings. We also examine whether forecast specificity desensitizes managers to the negative consequences of their actions.

Understanding managers' reactions to analysts' forecast specificity is important for several reasons. First, predictability of forecasts, a proxy for forecast specificity in this study, is more dispersed in a post Regulation Fair Disclosure (RegFD) world (Bailey et al., 2003). Therefore, studying this change can add to our understanding of how analyst characteristics impact management behavior. Second, forecast specificity may draw managers' attention away from ethical considerations. Research suggests that focusing on specific difficult goals can promote unethical behavior (Welsh and Ordóñez, 2014). According to Bordalo, Gennaioli, and Shleifer (2012), the goal of a specific forecast will be more salient and weighted more in the managers' decision-making process than the goal of a non-specific forecast. This increased weight on specific forecasts could lead to decreased weight placed on the ethical consequences of management actions. Providing insight into how forecast specificity could affect ethical behavior can improve managerial decision-making. Third, since the adverse consequences of earnings manipulation are costly, investigating a mechanism by which managers might be prompted to think about these consequences before making their decisions would benefit managerial decision-making. The mechanism proposed in this study, which increases the salience of the negative consequences of accounting discretion by highlighting them, can be implemented in reports provided by the management team to the manager.

To test our hypothesis, we conduct an experiment using a 2×2 between-subjects design. We manipulate forecast specificity by providing participants with a sequence of analysts' past forecast revisions that allows for a more or less predictable upcoming analyst forecast. In the more predictable condition, analysts reduce earnings by one cent for every revision, making it easier to predict upcoming revisions. In the less predictable condition, analysts' upcoming revisions are random. The mean and variance of these revisions were held constant. We also manipulate the salience of earnings management costs (low versus high). Given that a more specific forecast is likely to focus away from the possible consequences of earnings manipulation, we investigate whether making these costs more salient (by highlighting the description of these costs in the experimental instructions) can alleviate the negative impact of a specific benchmark. In the experiment, participants decide how much to cut warranty expenses, which can help them meet or beat analysts' forecast revisions. They further answer questions regarding the predictability of forecast revisions and the importance of the adverse consequences of earnings manipulation in their decision-making process.

Experiments offer several advantages. First, the biggest challenge facing archival studies testing earnings manipulation is determining what unmanaged earnings look like (Hemmer and Labro, 2019; Jacob and Jorgensen, 2007). An experimental setting allows us to directly address this challenge by providing a scenario wherein earnings before the manager's future actions are unmanaged. Second, in archival settings, it is difficult to distinguish between actual operational and earnings manipulation decisions to meet a benchmark. An experiment allows us to hold all factors other than the treatment of interest constant, resulting in stronger causal inferences related to earnings manipulation. Third, in archival studies, it is very difficult to determine whether managers considered the potential costs of their actions before exercising discretion to bias

results in their favor. Using an experiment, we can isolate the effects of cost salience on managers' decisions to engage in earnings manipulation.

This study has theoretical and practical implications. It extends the earnings manipulation literature by providing evidence that forecast specificity, a characteristic of forecasts, has an impact on earnings manipulation behavior that differs depending on the salience of the adverse consequences of managing earnings. The increased use of predictive analytics and other big data tools has improved managers' forecasting capabilities (Chase, 2014; Halladay, 2013). These data tools increase forecast specificity, which could potentially affect managers' earnings manipulation behavior.

Our research contributes to accounting theory. Prior studies have focused on other proxies for forecast specificity, namely, forecast precision (Han and Tan, 2007) and prior forecast accuracy (Hirst et al., 1999). Our research introduces a new proxy for specificity, namely, forecast predictability, which is less explored in the accounting literature. While prior studies on forecast characteristics—such as forecast precision (Han and Tan, 2007), prior forecast accuracy (Hirst et al., 1999), and forecast boldness (Kadous, Mercer, and Thayer, 2009)—have primarily examined how these characteristics affect investor reactions to forecasts, our study shifts the focus to the managerial side by examining how forecast characteristics influence managers' decisions to exercise accounting discretion. This shift from investor decision-making to managerial behavior speaks to the supply side of earnings manipulation and provides a distinct theoretical contribution. Furthermore, predictability is conceptually different from both precision (the form of earnings guidance) and accuracy (the closeness of a forecast to actual results): a forecast can be precise and accurate at any single point in time yet be part of an unpredictable series of revisions. Predictability captures the temporal consistency of the forecast series, which uniquely affects how confidently managers can anticipate the next benchmark. By connecting forecast predictability to the goal-setting literature, we introduce a distinct theoretical mechanism—goal specificity and its interaction with cost salience—that has not been explored in the forecast characteristics literature. Prior studies on forecast characteristics have not examined how these characteristics may trigger unintended consequences through goal-setting processes.

Predictability affects both forecast accuracy (measured as the difference between the manager's guidance and the actual results) and precision (earnings guidance form). A more predictable forecast, *ceteris paribus*, results in more precise and accurate forecasts.¹ Another contribution of this study is that we examine managers' decision-making regarding meeting or beating analyst expectations, whereas most prior research has focused on investor decision-making regarding earnings targets. Using salience theory, we test whether increased earnings manipulation is an unintended consequence of an increase in goal specificity. From a practical perspective, increasing the salience of adverse effects can reduce managers' egregious behavior. Prior research has found that increasing the salience of moral issues improves the recognition of ethical problems and ethical decision-making (Gautschi and Jones, 1998). Increasing the salience

¹ Research provides evidence that managers might choose the precision of their guidance for strategic reasons (Hirst et al., 2008). In our experiment this strategic behavior is ruled out since we look at managers' behavior in an internal decision-making scenario.

of moral issues by having decision-makers read a model code of ethics reduces dishonest behavior (Shu et al., 2011). The salience of moral considerations is affected by the amount of light available while making a decision (Chiou and Cheng, 2013) and the placement of a signature field either before or after a contract can affect a person's honesty (Shu et al., 2012). By providing evidence that increasing the salience of unintended consequences of earnings manipulation by highlighting these consequences can reduce managers' biased exercise of their accounting discretion, we provide a possible intervention to help reduce earnings manipulation behavior.

The remainder of this paper is organized as follows. The next section discusses the theories used to develop the experiment and provides specific hypotheses. The experimental method used to investigate the research question is discussed in the following section. The next section discusses the results of the experiment, and the final section concludes the paper.

BACKGROUND AND HYPOTHESES

Review Of Earnings Manipulation Literature

Earnings manipulation involves managers' deliberate misrepresentation of accounting information, using their accounting and operational discretion to achieve a desired objective (Healy and Wahlen, 1999). A common factor in many earnings manipulation studies is the existence of a target that managers aim to achieve by biasing performance measures (Dechow and Skinner, 2000; Kasznik, 1999; Nelson et al., 2002).

Managers manipulate performance measures in response to the pressure generated to meet their financial targets (Merchant, 1990). Analyst earnings estimates are a major benchmark that managers aspire to meet or beat (Brown and Caylor, 2005; Degeorge, Patel, and Zeckhauser, 1999; Fuller and Jensen, 2010; Kasznik and McNichols, 2002; Levitt, 1998). A significant body of research provides evidence that managers manage earnings around this benchmark (Dichev et al., 2013; Healy and Wahlen, 1999) as firms are well rewarded for meeting or beating an analyst forecast, whether through actual performance or managing earnings (Bartov, Givoly, and Hayn, 2002).² Several studies document the negative consequences of interrupting a string of meetings or beating estimates (Burgstahler and Dichev, 1997; Burgstahler and Eames, 2006; Cheng and Warfield, 2005). While prior studies focus on the incentive effects of benchmarks on earnings

² However, Koh, Matsumoto, and Rajgopal (2008) find that post Enron, the market has become increasingly skeptical of companies that meet or beat analyst forecasts. They find that the premium assigned by the market to meeting or beating forecasts by a very small margin (one cent) has disappeared, while the premium assigned by the market for larger margins has diminished. This is also supported by Bartov and Cohen (2008) who, post Sarbanes-Oxley, find a significant decline in managers' propensity to meet or beat analyst expectations. A recent study by Bird, Karolyi, and Ruchti (2019) finds that post Sarbanes-Oxley, the equilibrium earnings management has reduced by 36 percent. They attribute this to the increased costs of managing earnings. They also note that this decrease in earnings management is notwithstanding the fact that, capital markets increased the reward for meeting benchmarks. This increased premium could be ascribed to the market attributing the meeting of earnings benchmarks to performance and not earnings management. Hence, the management could still earn a premium by managing earnings if their actions remain undetected by the market.

manipulation, we study the effects of a benchmark characteristic—the specificity of the benchmark—on managers’ use of accounting discretion.³ The benchmark in this study is analysts’ earnings forecasts, which are revised in response to economic and non-economic factors.

Analysts’ Forecast Revisions

Analysts’ revise forecasts quite frequently. Gleason and Lee (2003) find that from October 1993 to December 1998, there were over 372,021 forecast revisions. From January 2011 to May 2019, over 9,455 analysts issued approximately 949,271 forecasts (including revisions). These are three to 36 months ahead.⁴ Many factors might contribute to the unpredictability of analysts’ forecast revisions, such as: (1) macroeconomic factors could lead to divergence in analysts and management earnings estimates (Hutton, Lee, and Shu, 2012); (2) variation in the consistency of analysts’ forecasts due to analysts’ industry experience and primary research (Brown et al., 2015, 2016; Hilary and Hsu, 2013); (3) increased information uncertainty leads to increased forecast errors (Zhang, 2006); and (4) behavioral biases, including overreactions and underreactions to information, herding, and risk aversion (Shefrin, 2001; Trueman, 2015; Welch, 2000; De Bondt and Thaler, 1990). These factors increase uncertainty regarding analysts’ forecast revisions, which might affect managers’ responses to meet them. Since managers have incentives to meet or beat analyst forecasts (Graham et al., 2005), the increased variation in forecast predictability will result in a moving target that managers might find difficult to hit.

A critical component of analysts’ forecasts is the private information provided by management. Both buy-side and sell-side analysts have emphasized the importance of private information as an input in their forecasting process (Soltes, 2014; Brown, Call, Clement, and Sharp, 2016; Brown et al., 2016).⁵ However, Regulation Fair Disclosure (RegFD) reduces the selective disclosure of private information to analysts. RegFD has an impact on analysts’ information environments. There has been an increase in both analysts’ forecast dispersion (Irani

³ Kadous, Mercer, and Thayer (2009) examine two characteristics of analyst forecasts, namely forecast boldness and forecast accuracy. They find that investors attribute the accuracy or inaccuracy of bold forecasts to the analyst’s characteristics (internal attribution) while they attribute the accuracy or inaccuracy of non-bold forecasts to the forecasting environment (external attribution). Our study looks at a different characteristic of analyst forecasts, namely, forecast predictability and its effects on management’s earnings management behavior.

⁴ Data compiled from I/B/E/S by the authors.

⁵ Apart from private information, managers use earnings guidance to influence analyst expectations (Baik and Jiang, 2006; Burgstahler and Eames, 2006; Cotter et al., 2006). Post RegFD, the findings relating managements’ earnings guidance and analyst forecasts have been mixed. Heflin, Subramanyam, and Zhang (2003) find an increase in earnings guidance but, Gomes, Gorton, and Madureira (2007) find that the increase in earnings guidance is restricted to large and medium firms. Evidence regarding expectations management and earnings management post RegFD is also mixed. While Koh et al., (2008) find that managers increasingly manage expectations through earnings guidance in lieu of earnings management, (Bartov and Cohen, 2008) find the opposite i.e., an increased use of earnings management to meet or beat analyst expectations.

and Karamanou, 2003) and idiosyncratic information discovery (Mohanram and Sunder, 2006).⁶ Both consensus and individual analyst forecasts have become less accurate (Agrawal et al., 2006). The magnitude of analysts' revisions per unit of surprise increased after RegFD (Kross and Suk, 2012), while analysts' viewed management's earnings guidance with more caution (Kross et al., 2011). The promulgation of RegFD increased the uncertainty of analysts' forecasts, inherently decreasing the predictability of this benchmark. To study how the decreased predictability of this benchmark affects managers' earnings manipulation behavior, we examine goal-setting literature.

Goal Setting Theory

According to the goal-setting theory, specific and challenging goals improve task performance (Locke and Latham, 1990). A goal is the aim or object of an action. The core tenets of goal-setting theory are: (1) specific, high goals lead to better performance when compared with easy, vague, or no goal; (2) the degree of difficulty of the goal and performance are directly proportional; and (3) variables such as performance feedback, participation in decision making, and competition have no effect on performance unless they lead to the setting of or commitment to a specific goal (Latham and Locke, 2018). Our study focuses on goal specificity. Goal specificity is the "degree of quantitative precision with which the aim [goal] is specified"⁷ (Locke et al., 1981). A specific goal focuses on the action required to achieve it (Locke et al., 1981). Vague goals can be interpreted differently by different people, but specific goals will likely be interpreted in similar ways (Locke et al., 1989). Specific goals influence task performance by providing better direction for choosing an appropriate task strategy (Klein et al., 1990; Locke et al., 1981). Therefore, more specific goals direct individuals not only to the goal but also to promote decision-making to achieve the goal.

Goal predictability is an important determinant of specificity, and the connection between the two warrants explicit articulation. A more predictable series of analyst forecast revisions enables the manager to form a more precise expectation of the upcoming revision, effectively narrowing the range of target outcomes. This narrower range functions as a more specific goal because it reduces ambiguity about what the manager is trying to achieve, thereby activating the mechanisms identified in goal-setting theory (Locke and Latham, 1990). Research on the representativeness heuristic (Kahneman and Tversky, 1972) further supports this link: individuals extrapolate more confidently from consistent patterns, treating a predictable trend as a stronger signal of future values than an inconsistent series. We note, however, that

⁶ The evidence on analysts' forecast accuracy and dispersion post RegFD is mixed (see Koch, Lefanowicz, and Robinson, 2013 for a detailed review of RegFD related literature).

⁷ We differentiate between goal specificity, precision, and accuracy. Precision is defined as the closeness of two or more measurements to each other. Precision is independent of accuracy. In accounting, precision relates to the form of earnings guidance. Accuracy is defined as the closeness of a measured value to a standard or known value. In accounting, accuracy relates to forecast errors. Prior research uses specificity and precision interchangeably (Bamber and Cheon, 1998). In our paper, however, specificity is a function of accuracy and precision.

predictability is a proxy for specificity and does not directly manipulate it; we address this distinction in the Limitations section. According to Millner and Heyen (2017), a prediction system is an information structure that moves through time with the decision maker, producing forecasts of future events, with the accuracy of forecasts determined by the lead time. Prediction systems not only provide information to decision-makers for future periods but also set expectations about future information demands. The extent of predictability of a series depends on the amount of information conveyed by the past regarding the future values of the predicted variables. This means that predictability is a matter of degree, and some processes are inherently easy to predict, whereas predicting others could be challenging (Diebold and Kilian, 2001). Short-term series are generally more predictable than long-term series.

Predictions can be broadly categorized into two types: clinical and mechanical predictions (Grove et al., 2000). Clinical or intuitive prediction refers to the process by which researchers combine data using informal, subjective methods. Mechanical prediction is well specified in nature; that is, it uses formal mathematical and statistical models. In general, mechanical prediction does not require expert judgment.

Studies have shown that decision makers have systematic biases when making intuitive predictions. One such bias is the representativeness heuristic. The representative heuristic states that decision makers' predictions are influenced by (1) similarities between the characteristics of the sample and its parent population, and (2) the features of the data-generating process (Kahneman and Tversky, 1972). Intuitive predictions can, therefore, be insensitive to the reliability of the evidence or to the prior probability of the event occurrence, thus violating the norms of mechanical (statistical) prediction (Kahneman and Tversky, 1973). Thus, decision makers violate the law of large numbers by ascribing population characteristics to a small, randomly drawn sample (Tversky and Kahneman, 1971). Therefore, perceived predictability can affect goal specificity when making intuitive predictions.

Predictability plays an important role in determining goal specificity. More predictable information, *ceteris paribus*, results in more accurate and precise forecasts. The higher the accuracy and precision of forecasts, the more specific the goal. Although goal setting is seen to improve performance, recent research suggests that it may have certain negative effects. Focusing on specific difficult goals⁸ might result in a lack of focus on non-goal areas, increased unethical behavior, inhibited learning, and increased risk taking (Niven and Healy, 2016; Ordóñez et al., 2009; Schweitzer, Ordóñez, and Douma, 2004; Welsh and Ordóñez, 2014).

One unintended consequence of goal setting is unethical behavior. Schweitzer et al. (2004) provide evidence that the mere psychological benefit of achieving a goal without economic incentives is sufficient to encourage unethical behavior. Welsh and Ordóñez (2014) found that the depletion of self-regulatory resources caused by high goals can motivate

⁸ Most researchers examine goal specificity in conjunction with goal difficulty (Latham and Locke, 2018; Locke and Latham, 1990). Specific goals by themselves need not result in high performance as specific goals can vary in difficulty (Locke and Latham, 2002). However, when performance is controlled, specific goals can reduce the variance in performance by reducing the ambiguity of what goals to achieve (Locke, Chah, Harrison, and Lustgarten, 1989).

individuals to resort to unethical means to attain them. They argue that if the focus is on the outcome, then the need to attain that goal motivates unethical behavior. However, the salience of the outcome requirement motivated by the goal also makes the consequences of not attaining the goal salient. The salience of the consequences of not attaining a goal could induce loss aversion in individuals (also see Welsh, Bush, Thiel, and Bonner, 2019 who arrive at similar conclusions) and induce risk-seeking behavior (Larrick et al., 2009). Individuals who focus on attaining a specific objective are more likely to engage in risk-taking behavior than those who want to maintain the status quo (Gino and Margolis, 2011). In the context of earnings manipulation, disregarding the consequences of accounting discretion is a risk that managers take to meet or beat analysts' forecasts.

Influence of Increasing the Salience of Costs

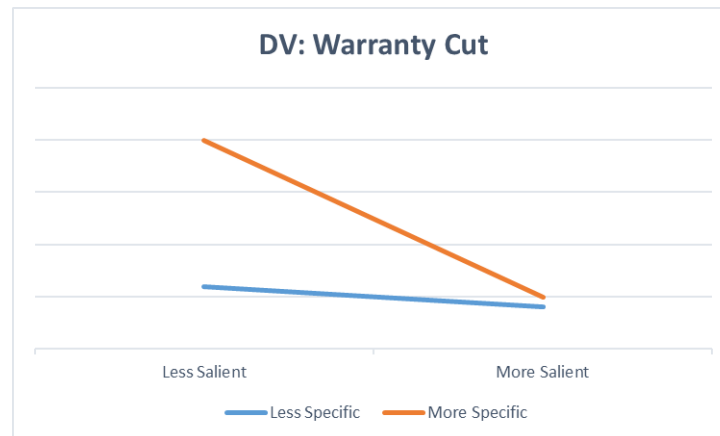
When specific goals become more salient, the decision weight assigned to the potential costs of achieving those goals may be reduced. According to salience theory, individuals are context-specific or "local" thinkers (Bordalo et al., 2012b, 2012a, 2013b, 2013a, 2016). When a goal is more specific, it captures a larger share of the decision-maker's attention. Local thinkers place greater weight on salient factors and relatively less on less salient factors in their decision-making process. While it is conceptually possible for both goals and costs to be simultaneously salient, the local thinker framework suggests that the relative weight placed on a specific goal increases at the expense of less prominent considerations, including costs. This reweighting occurs not because cost information is suppressed or unavailable, but because attentional resources are disproportionately allocated to the focal goal. As the manager focuses on the salient goal and allocates less decision weight to the costs of achieving that goal, she is more likely to exercise accounting discretion. Increasing the salience of the costs of managing earnings could therefore counteract this attentional asymmetry and reduce the willingness to exercise accounting discretion to achieve a specific goal.

The above discussion suggests the following prediction:

Hypothesis: Earnings manipulation is higher when the goal is more specific as compared to when the goal is less specific, particularly when the costs of managing earnings are less salient.

This hypothesis implies that the positive association between goal specificity and earnings manipulation is attenuated as the salience of earnings manipulation costs increases. In other words, while managers with more specific goals tend to engage in greater earnings manipulation when costs are not salient, this difference narrows—and may reverse—when costs become more salient.

Figure 1 provides a graphical representation of the hypothesis.

Figure 1: Predicted pattern of results

EXPERIMENT

Participants

The participants in this experiment were 200 individuals from Amazon's Mechanical Turk platform (hereafter AMT - see Farrell, Grenier, and Leiby, 2016, Goodman, Cryder, and Cheema, 2013 and Rennekamp, 2012 for a more detailed discussion on AMT). We recruited participants within the U.S. who had an approval of at least 95 percent. Ninety-three percent of the participants were over 25 years of age, while 81 percent had full-time work experience of six years or more. Approximately 39 percent of participants were female. Seventy-four percent of participants took two courses in accounting and/or finance. The participants were paid \$2 for completing the experiment, with a \$0.50 bonus for correctly answering the attention check question. On average, participants completed the study in 11 min, earning an hourly rate of \$13.63.⁹

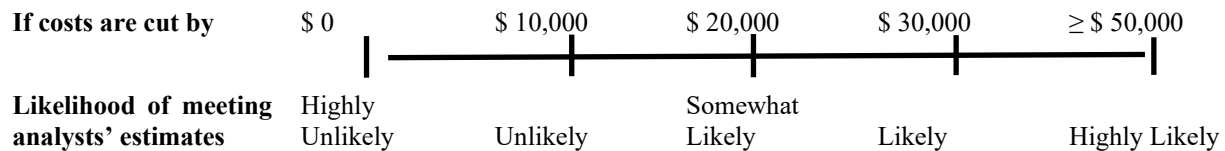
Procedure and Setting

In our experiment, we operationalized goals using analysts' forecast revisions and goal specificity by varying the predictability of analysts' forecast revisions. The experimental setting was similar to that used by Hales, Koka, and Venkataraman (2018). Participants assumed the role of the CEO of a hypothetical firm, Zeta. Participants viewed the summarized financial statement data for three years for the firm. This data suggests that Zeta's financial performance is strong. They were told that Zeta met or exceeded the analysts' consensus expectations for the

⁹ The Institutional Review Board (IRB) at the author's institution approved the experimental studies in this paper.

past three years. Participants were then told that every year, analysts provided earnings forecasts at the beginning of the year. They were also informed that analysts revise their forecasts twice every quarter and that analysts have revised the forecast seven times in the year so far. They were further informed that the last revision was expected in two weeks. Zeta has been short of analysts' earnings forecasts throughout the year and is not expected to meet the final future forecast revision. As described in greater detail below, the action taken by the participants to address this shortfall is the primary dependent variable. Before proceeding to make their decision, participants were told that if Zeta missed its earnings estimates, Zeta's stock price could fall, the rating of Zeta could be downgraded, and employee bonuses across the board would be adversely affected.¹⁰

Participants were told that the analyst's initial estimate for Zeta was \$1.45 for the year, and all subsequent revisions were lower than \$1.45, whereas internal estimates show that the company can realistically achieve an Earnings Per Share (EPS) of \$1.33. The last revision in all cases was \$1.38, which resulted in a significant shortfall.¹¹ They were further informed that all options to meet analysts' forecasts were exhausted, except for reducing the accruals of warranty expenses.¹² Participants were informed that they could reduce warranty expenses by \$50,000 to compensate for the shortfall between internal estimates and analysts' forecasts. To introduce subjectivity into the participants' decision-making, they were provided with the following graph, which shows the relationship between the amount of warranty expenses cut and the likelihood of meeting the earnings forecast.



Following this graph, the independent variables were introduced to participants.

¹⁰ The reminders of the adverse consequences of missing earnings targets are provided in all conditions. This could bias against our prediction that earnings management will be higher when the benchmark is more predictable (i.e., specific) and the costs of managing the benchmark are not highlighted.

¹¹ This ensures that if there is any fixation on the last forecast revision, it is held constant in all conditions.

¹² In this experiment, we use an accrual earnings management option only as the costs associated with accrual earnings management – restatement and possible subsequent SEC action – are more concrete than the costs associated with real earnings management, which includes reduced future earnings due to factors like increased competition and a more challenging operating environment (Asay, 2018).

Independent Variables

All participants were made aware of the costs involved in choosing to reduce warranty expenses. More specifically, they were provided with the following statements.

The cost of reducing the estimate is that Zeta may have to accrue a higher warranty expense in the next year (2020) to make up for the shortfall, if warranty claims continue at the historic rate, probably reducing next year's profit. Another cost is that inadequately providing for warranty expense may require Zeta to restate their financial results in the future. This could attract SEC attention and, could negatively affect Zeta's stock price.

The first independent variable we manipulated is the salience of costs. We manipulated the salience of costs by highlighting these statements in the cost-salient condition and not highlighting these statements in the cost-not-salient condition. Therefore, the cost-related information provided across all conditions is held constant.

The second independent variable we manipulated is analysts' forecast predictability. To manipulate forecast predictability, we provided details on analysts' prior forecasts and forecast revisions.¹³ Under both conditions, the analysts provided one initial forecast and seven revised forecasts.¹⁴ In the more predictable condition, analysts' forecasts followed a decreasing trend of one cent every forecast.¹⁵ In the less predictable condition, there was no discernible trend in analysts' forecast revision. However, the mean and standard deviation of the forecast revisions remained constant across both conditions.¹⁶ Additionally, we informed the participants across

¹³ This manipulation is similar to Tang and Venkataraman (2017), who manipulate the frequency and consistency of past management earnings guidance by manipulating both the number of times and the times at which management has provided earnings guidance. We provide participants with a table of forecast revisions as well as a line graph plotting the forecast revisions. Research suggests that since points are bounded by lines into a single object, individuals encode them in terms of their slope (Pinker, 1990), interpret them as depicting continuous change (Zacks and Tversky, 1999), and are generally better at identifying trends (P. Shah and Hoeffner, 2002) in the data (Peebles and Ali, 2009, 2015).

¹⁴ Gleason and Lee (2003) state that the median number of one-year-ahead earnings forecast revisions per firm was nine. We use this as a benchmark for the number of revisions in this experiment.

¹⁵ The expectations management literature provides evidence that analysts consider managements' earnings guidance while issuing forecasts (Cotter et al., 2006). The management is known to guide analysts' forecasts downwards to ensure that the analysts' forecasts are beatable (Baik and Jiang, 2006). Analysts are known to revise their short term forecasts in accordance with managements' guidance to gain favor with the firms they are following and, in return, secure business from these firms (Feng and McVay, 2010). We do not provide earnings guidance in this experiment since (1) the setting involves earnings management and as mentioned earlier, firms that provide regular guidance are less likely to manage earnings, and (2) providing management guidance could divert attention from the main independent variable, which is the predictability of forecast revisions, resulting in additional noise. Since we do not provide earnings guidance, the issue of managers influencing analyst forecasts is absent in this study.

both conditions that, considering the forecast revision pattern of analysts in previous years, there will be another forecast revision between the time they make their decision and the end of the accounting period, that is, the ‘end of the year’.

To maintain the environmental uncertainty constant, we provided all participants with internal earnings estimates coinciding with analysts’ forecast revisions. The aggregate analyst forecast error in relation to these internal estimates, and the number of times these internal estimates have missed or exceeded analysts’ forecast revisions, are also held constant across conditions.

Dependent Variable and Other Questions

Participants were told that it was early in the fourth quarter and that they could impact Zeta’s final earnings number by cutting warranty accrual expenses. Participants were asked how much they intended to cut expenses (on a scale of \$0 to \$50,000). This is the primary dependent variable (warranty-cut).

Participants also indicated whether they thought the following pieces of information were important to their decision: analysts’ consensus EPS forecasts, the company’s internal EPS estimates, and the potential consequences of cutting warranty expenses. Participants provided responses on a 5-point Likert scale with endpoints 1 (not at all important) and 5 (very important). Next, all participants indicated (1) how much they thought the share price of the company would fall if it failed to meet analysts’ earnings forecasts, and (2) how much they thought that restatement risk would increase if warranty expenses were cut by \$50,000. These responses were also provided on a 5-point Likert scale.

RESULTS

Attention and Manipulation Checks

An attention check question appeared before the dependent variable, and other measures were elicited. The question asked was whether the company had met analysts’ consensus forecasts over the past three years. Of the 200 participants, 189 provided the correct answer to the attention-check question.

To ascertain whether the manipulation of specificity was successful, we asked participants to indicate on a 1 - (not at all) to 5 - (a great deal) point scale how predictable they found the analysts’ consensus EPS forecasts (predictability score). We find that the predictability scores were significantly different among the conditions (mean score for the less specific

¹⁶ In the experiment, we hold forecast precision constant by providing point management guidance and point analyst estimates across all conditions. We also hold the statistical predictability constant by providing the same management and analyst estimates across all conditions. However, clinical predictability might not be constant since the pattern of analyst forecasts differs across conditions.

condition = 2.88, mean score for the more specific condition = 3.53, $F_{1,198} = 19.165, p < 0.001$), indicating successful manipulation of specificity.

To ascertain whether the manipulation of cost salience was successful, we tried two approaches. In the first approach, we asked participants to indicate on a 1 - (not at all important) to 5 - (extremely important) point scale the importance of the potential consequences of cutting warranty accrual expense in their decision. We found that the scores for this question were not significantly different across conditions (mean score for the less salient condition = 4.05, mean score for the more salient condition = 3.90, $F_{1,198} = 1.179, p = 0.279$). In the second approach, we asked participants to indicate the number of adverse consequences of the earnings manipulation they recalled in the study. They could indicate one, two, or three adverse consequences, with three being the maximum, since there were three adverse consequences in the study. We find that the difference in the number of adverse consequences indicated was not significantly different across the conditions (mean score for the less salient condition = 2.10, mean score for the more salient condition = 2.09, $F_{1,198} = 0.009, p = 0.924$). Testing for the effectiveness of salience manipulation is difficult because manipulating salience changes the weight participants attribute to a factor in their decision-making process, which may not manifest as differences in self-reported importance or explicit recall. This distinction is consistent with how salience theory operates: salience affects the relative weighting of factors during decision-making, not necessarily participants' conscious evaluations of those factors when assessed in a separate post-hoc question (Bordalo et al., 2012). Moreover, a potential ceiling effect may have further obscured differences: participants in both conditions reported high-cost importance (means of 4.05 and 3.90 on a 5-point scale), leaving limited room for the manipulation to produce detectable differences on this self-report measure. Despite the non-significant manipulation checks, the significant interaction effect between specificity and salience (reported below) suggests that the highlighting manipulation influenced decision behavior in the predicted direction, consistent with the view that salience operates on decision weighting rather than on consciously accessible evaluations. We acknowledge the non-significant manipulation checks as a limitation and suggest that future research could employ process-tracing methods (e.g., eye-tracking) or response-time measures to more directly assess the attentional impact of salience manipulations.

Effects of Specificity and Salience on Earnings Manipulation

Hypothesis 1 predicts that managers will engage in higher levels of earnings manipulation when a goal is more specific than when a goal is less specific, and when the costs of managing earnings are less salient. The descriptive statistics for warranty cuts are provided in Table 1. We conducted an ANOVA for the entire sample, with specificity and salience as independent variables and warranty cut as the dependent variable. We failed to find any significant results ($p = 0.800$). We also analyzed the data after excluding participants who (1) missed the attention check question, (2) spent less than three minutes completing the study, and

(3) did not satisfy the Median Absolute Deviation (MAD)¹⁷-based measure proposed by Iglewicz and Hoaglin (1993). In each case, we failed to find any significant results ($p = 0.823, p = 0.819$, and $p = 0.437$ respectively).

Table 1: Mean [median] (standard deviation) of warranty cut proposals in each condition (\$)

	N	
More Specific-More Salient	50	27,211.26 [29,965.00] (13,346.32)
Less Specific-More Salient	51	29,293.73 [30,000.00] (15,301.25)
More Specific-Less Salient	48	30,197.46 [30,035.00] (12,068.31)
Less Specific-Less Salient	51	31,289.80 [30,352.00] (14,283.60)

Given the analyst earnings forecast context of our study, the financial data provided to participants, and the participants' role as company managers, we expect participants in our study to have prior managerial experience and some accounting knowledge. To ensure that we consider responses from participants who possess these prerequisites and have clearly paid attention to them during the study, we apply multiple filters to the data. The first filter we applied was whether the participants had provided the correct answer to the attention-check question. We then applied the MAD-based measure to identify outliers based on the time taken to complete the study. Further, we chose participants with significant work experience and above-average accounting knowledge. The final sample size that we used for further analysis consisted of 53 participants. These participants had at least 11 years of work experience and had taken at least two accounting and/or finance courses. This reduced sample pool was more aligned with the prerequisites for completing the study than the full sample of participants. Participants in the full

¹⁷ The MAD approach is a semi-parametric method of detecting outliers which modifies the Z-scores to calculate the cutoff statistic M where, $M_i = 0.6745(x_i - \bar{x})/MAD$ where $\bar{x}$ is the median and MAD is the median absolute deviation. Absolute values of M above 3.5 are treated as potential outliers. This method is useful for detecting outliers in small datasets. We applied the MAD approach to identify outliers based on time. It identifies outliers on both ends of the distribution.

sample pool had less than 11 years of work experience and had taken less than two accounting or finance courses, while participants in the sample pool, excluding participants with the desired prerequisites, had less than 11 years of work experience and had taken at most one accounting or finance course.

Since the reduced pool of participants is small, we used covariates to reduce the residual variance in the outcome (Hopkin et al., 2015; Raudenbush, 1997). We run an ANCOVA with warranty cut as the dependent variable, specificity and salience as independent variables, and measures of the importance of the adverse consequences of cutting the warranty expense, number of adverse consequences identified, task difficulty, measure of potential share price decline, risk perception, importance of analysts' forecasts, and importance of internal earnings estimates (all collected on 5-point Likert scales) as covariates in our analysis.¹⁸ The summary statistics for these covariates are provided in Table 2.

Table 2: Mean [median] (SD) of covariates for reduced sample							
Condition	Analyst	Cost	Int. Est.	Share Dec.	Rest. Risk	Difficulty	No. Cost
MPMS	4.000	4.125	4.063	2.688	3.625	2.438	2.688
	[4.000]	[4.500]	[4.000]	[3.000]	[3.500]	[2.000]	[3.000]
	(0.816)	(1.025)	(0.854)	(0.479)	(1.025)	(0.892)	(0.704)
LPMS	4.000	3.643	3.786	2.857	3.143	3.286	2.000
	[4.000]	[4.000]	[4.000]	[3.000]	[3.000]	[3.500]	[2.000]
	(1.038)	(1.447)	(1.311)	(0.864)	(1.099)	(1.069)	(0.784)
MPLS	3.857	4.000	3.857	2.857	3.857	2.571	2.429
	[4.000]	[4.000]	[4.000]	[3.000]	[4.000]	[3.000]	[3.000]
	(0.690)	(1.155)	(1.069)	(0.690)	(1.069)	(0.976)	(0.976)
LPLS	3.938	4.313	3.750	3.000	3.625	2.625	2.250
	[4.000]	[4.500]	[4.000]	[3.000]	[4.000]	[2.000]	[3.000]
	(0.854)	(0.793)	(0.856)	(0.816)	(1.088)	(1.088)	(0.931)
Total	3.962	4.038	3.868	2.849	3.528	2.736	2.340
	[4.000]	[4.000]	[4.000]	[3.000]	[3.000]	[3.000]	[3.000]
	(0.854)	(1.109)	(1.001)	(0.718)	(1.067)	(1.041)	(0.854)
MPMS – More Predictable More Salient							
LPMS – Less Predictable More Salient							
MPLS - More Predictable Less Salient							
LPLS – Less Predictable Less Salient							
Analyst – Importance of analyst forecast in decision making							
Cost – Importance of cost in decision making							
Int. Est. – Importance of internal estimates in decision making							
Share Dec. – Quantum of share price decrease							

¹⁸ We follow Myers, Well, and Lorch, Jr., 2010 to ensure that the inclusion of the covariates do not violate the assumptions of ANCOVA.

Rest. Risk: Quantum of increase in risk of restatement and adverse consequences if warranty cut is made.

Difficulty – Measure of task difficulty

No. Costs – Number of costs recollected

All measures except No. The costs were collected on 5-point Likert scale. No. The costs were between 1 and 3.

We find that risk perception, the importance of analysts' forecasts, and the importance of internal earnings estimates are statistically significant ($p < 0.01$, $p < 0.01$, and $p = 0.053$, respectively), and the interaction between specificity and salience is significant ($F_{1,42} = 5.015, p = 0.030$). Therefore, we include only risk perception, the importance of analyst forecasts, and the importance of internal estimates as covariates in further analyses. Prior literature indicates that restatement risk, analyst forecasts, and internal earnings estimates are all decision-relevant. For example, Palmrose, Richardson, and Scholz (2004) show that restatement announcements produce significant market reactions, suggesting that investors revise their judgments when previously issued financial information is called into question. So (2013) shows that investors overweight analyst forecasts, indicating that analyst forecasts influence valuation judgments. In addition, Goodman, Neamtiu, Shroff, and White (2014) find that management forecast quality affects capital investment decisions, indicating that internal earnings estimates can influence managerial resource-allocation choices. The marginal means of the warranty cut for this sample are provided in Table 3.

Table 3: Estimated marginal means of warranty cut proposals in each condition (\$)

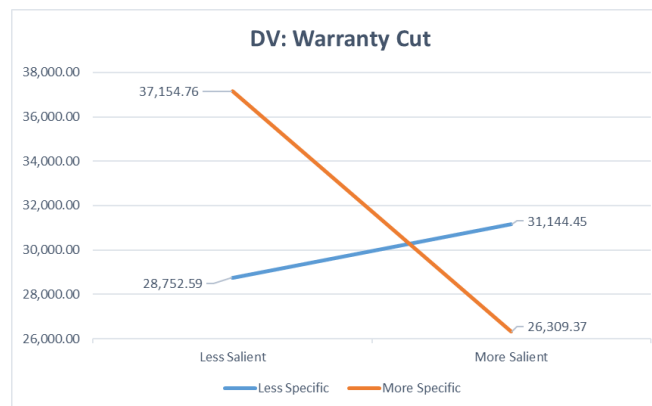
	N	
More Specific-More Salient	16	26,309.37
Less Specific-More Salient	14	31,144.45
More Specific-Less Salient	7	37,154.76
Less Specific-Less Salient	16	28,752.59

The covariates appearing in the model are evaluated at the following values: Risk Perception = 3.53, importance of analysts' forecasts = 3.96, and importance of internal earnings estimates = 3.87.

To measure risk perception, we asked participants on a 5-point Likert scale how much the restatement risk increased if they cut warranty expenses by \$50,000. To measure the importance of analysts' forecasts and internal estimates, we asked participants on 5-point Likert scales how important the analysts' forecasts were and how important internal estimates were in their decision to cut warranty expenses. Participants' innate risk perceptions can affect their egregious behavior (Becker, 1968). Participants in the reduced pool, due to the length of their work experience and higher level of accounting knowledge, might have inherent views on analysts' forecasts and internal estimates, which could affect their accounting discretion.

We conducted an ANCOVA on the reduced sample with specificity and salience as independent variables, warranty cut as the dependent variable, and participants' risk perception, the importance of analysts' forecasts, and the importance of internal estimates as covariates. Recall that hypothesis 1 predicts an interaction between specificity and salience such that earnings manipulation is higher when the goal is more specific than when the goal is less specific, particularly when the costs of earnings manipulation are less salient. Figure 2 plots the marginal means for all the conditions.

Figure 2: Actual pattern of results



The mean values show the predicted patterns of the results. The difference in means between the more and less specific goal conditions is \$8,402.18 when costs are less salient and decreases by \$13,237.30 when the costs are more salient.

The results of the ANCOVA are provided in Panel A of Table 4.¹⁹ The interaction between specificity and salience was also significant ($F_{1,46} = 5.444, p = 0.024$). Panel B of Table 4 presents the results of the simple effect analysis. We find that when salience is low, the mean difference between the more specific and less specific conditions is positive (8402.18) and significant ($F_{1,46} = 3.610, p = 0.064$) and when salience is high, the mean difference between the more specific and less specific conditions is negative (-4835.08) and not significant ($F_{1,46} = 1.765, p = 0.191$). These results are consistent with hypothesis 1.

¹⁹ The Levene's test fails to reject the null hypothesis that the error variance of the dependent variable is equal across groups ($F_{3,49} = 0.343, p = 0.795$)

Table 4

Table 4 Panel A: ANCOVA with warranty cut as dependent variable					
Source	df	Mean Square	F	Sig.	Partial η^2
Restatement Risk	1	1935779138.265	20.511	0.000	0.308
Analyst Forecast	1	627458210.357	6.648	0.013	0.126
Internal Estimate	1	393505344.615	4.169	0.047	0.083
Specificity	1	35943020.682	0.381	0.540	0.008
Salience	1	204592195.967	2.168	0.148	0.045
Specificity*Salience	1	513772629.957	5.444	0.024**	0.106
Error	46	94378252.106			
Total	53				
Corrected Total	52				

Table 4 Panel B: Simple Effects					
Condition	I	J	(I-J)	F-Statistic	p-Value
Less Salient	More Specific	Less Specific	8402.184	3.610	0.064*
More Salient	More Specific	Less Specific	-4835.079	1.765	0.191

This table reports the results for the hypothesis. The hypothesis predicts that managers engage in higher levels of earnings manipulation when the goal is more specific than when the goal is less specific, when the costs of managing earnings are less salient. Panel A contains the results of the ANCOVA with warranty cut proposal as the dependent variable, specificity and salience as the independent variables, and the risk perception and importance of analysts' forecasts and internal earnings estimates as covariates. Participants were randomly assigned to one of the four conditions obtained by crossing less specific or more specific conditions with less salient or more salient conditions, resulting in the four conditions reported above. Panel B reports the results of the simple effects test, which breaks down the simple main effect and helps identify the pattern of the results.

** denotes significance at 5% - two-tailed

* denotes significance at the 10% two-tailed level

A methodological concern with our ANCOVA specification is that the covariates—restatement risk perception, importance of analyst forecasts, and importance of internal estimates—were measured after participants received the experimental manipulations. Conditioning on post-treatment variables can introduce overcontrol bias by partialing out variance that lies on the causal path from treatment to outcome (Rosenbaum, 1984; Montgomery, Nyhan, and Torres, 2018). We address this concern in three ways. First, we conduct an ANOVA without covariates: the interaction between specificity and salience remains directionally consistent and marginally significant ($F_{1,49} = 2.989, p = 0.090$), two-tailed, unreported), demonstrating that the core finding does not depend on the inclusion of post-treatment covariates. Second, as shown in Table 2, none of the covariate means differ significantly across the four experimental conditions, suggesting that the manipulations did not substantially affect these measures—a necessary precondition for post-treatment bias (Rosenbaum, 1984). Third, the

covariates were included to reduce residual variance in a small sample ($N = 53$), following recommendations for maximizing statistical power in small-sample experiments (Hopkin et al., 2015; Raudenbush, 1997). These covariates capture stable individual differences—participants' innate risk perceptions and pre-existing views about the importance of analyst forecasts—that are theoretically related to the dependent variable but conceptually distinct from the treatment effect. Nevertheless, readers should interpret the covariate-adjusted results alongside the unadjusted ANOVA as converging evidence.

To assess the practical significance of the findings, we report partial eta-squared (η^2p) for the key effects. The interaction between specificity and salience yields a partial η^2p of 0.106, indicating a medium-to-large effect in the context of behavioral experiments. In substantive terms, the mean difference in warranty cuts between the more and less specific goal conditions is \$8,402 when costs are less salient, representing approximately 17% of the maximum possible cut (\$50,000). When costs are made salient, this difference shifts by \$13,237—a meaningful swing in the experimental context. We acknowledge that the simple effects are individually weak ($p = 0.064$ and $p = 0.191$), which is expected given the small cell sizes ($N = 7$ to 16). The significant interaction ($p = 0.024$) is the theoretically predicted effect, and the simple effects are reported to illuminate the pattern rather than as standalone hypothesis tests. From a practical standpoint, these results suggest that organizations seeking to curb earnings manipulation behavior may benefit from interventions that increase the salience of costs associated with accounting discretion, particularly when managers face specific benchmarks. However, given the small sample and experimental setting, such policy implications should be treated as directional rather than definitive.

In summary, we find that among participants with higher levels of work experience and accounting knowledge, goal specificity increases earnings manipulation behavior when the costs of earnings manipulation are less salient. However, when the salience of these costs increases, the positive effect of goal specificity on accounting discretion is significantly attenuated, such that the difference between more and less specific goal conditions narrows and becomes non-significant.²⁰

Additional Analysis

Despite attempts to hold environmental uncertainty constant across conditions, it is possible that participants perceived different levels of uncertainty given the manipulation of analyst forecast predictability (Rupar, 2017). Participants may assume that analyst forecasts are less specific because the company's environment is uncertain. In an uncertain environment, shareholders may be forgiving if managers fail to meet analysts' forecasts. Aware of this benefit of doubt, managers may be less willing to exercise their accounting discretion. To test this

²⁰ To address issues of non-normality of the dependent variable, we conduct all tests in the study using rank-transformation of the dependent results (Kachelmeier and Messier, 1990). The significance of coefficients and direction of effects remain unchanged in this analysis.

alternative hypothesis, we examine participants' responses to the following question: How much do you think the share price would decrease if the company fails to meet the analysts' forecast?", collected using a 5-point Likert scale (1 = none at all, 5 = a great deal). Inconsistent with the alternative hypothesis, we found no significant difference in participants' responses to this question across the four conditions ($F_{3,49} = 0.492, p = 0.689$).

Another potential explanation for why participants in the low-specificity condition might have engaged in lower levels of earnings manipulation compared to higher levels of earnings manipulation is that it was more difficult to process less specific forecasts than more specific forecasts. Research shows that it is easier to process consistent trends than inconsistent information (Koonce and Lipe, 2010; Shah and Oppenheimer, 2007). To rule out this alternative explanation, we elicit participants' response to the question "How difficult did you find this study?" on a 5-point Likert scale (1 = extremely easy, 5 = extremely difficult). There was no significant difference in this measure across the two levels of specificity ($t = -1.602, p = 0.115$) or across the four conditions in this study ($F_{3,49} = 1.964, p = 0.132$).

To further explore the mechanism through which the salience manipulation influences behavior, we examined whether participants' self-reported importance of the cost consequences moderates the interaction between specificity and salience. We added the three-way interaction term (Specificity $\times$ Salience $\times$ Cost Importance) to the ANCOVA model. The three-way interaction did not reach statistical significance ($p > 0.10$), consistent with the non-significant manipulation check findings and suggesting that the salience manipulation affects decision weighting in ways not fully captured by self-reported cost importance. However, the pattern of coefficients is directionally consistent with our theoretical account, suggesting that the salience manipulation's effect is somewhat stronger among participants who rated cost consequences as more important. We also note that the small sample size ($N = 53$) limits the statistical power to detect higher-order interactions. Given the significant interaction between specificity and salience ($F_{1,46} = 5.444, p = 0.024$) and the inclusion of restatement risk as a significant covariate ($F_{1,46} = 20.511, p < 0.001$), the evidence suggests that the salience manipulation influenced behavior through the intended channel of attentional reweighting, controlling for participants' innate risk perceptions. We acknowledge that formal mediation analysis is not feasible given the sample size and recommend that future research with larger samples employ mediation techniques to test whether changes in cost decision-weight mediate the specificity-salience interaction.

CONCLUSION

In this study, we examine the effects of goal specificity and the salience of earnings manipulation costs on managers' exercise of accounting discretion, finding that managers with significant work experience and above-average accounting knowledge engage in higher levels of earnings manipulation when the goal is specific than when the goal is not specific, especially when the costs of managing earnings are not salient. We also find that the positive effect of goal specificity on earnings manipulation is significantly attenuated when the costs of earnings

manipulation are made more salient, such that the difference between more and less specific goal conditions narrows and becomes non-significant under high-cost salience.

This study has several limitations that future research should address. First, we collected data via Amazon Mechanical Turk, which, while validated for accounting experiments (Farrell et al., 2016; Rennekamp, 2012), offers less control over the experimental procedure than a laboratory setting. Actual managers face real-world incentives, career pressures, and organizational dynamics that our experimental scenario cannot fully replicate. Future research should test these predictions with practicing managers or senior MBA students with relevant professional experience.

Second, the experiment required in-depth accounting knowledge, necessitating a reduced sample of 53 participants with cell sizes ranging from 7 to 16. The smallest cell (More Specific–Less Salient, $N = 7$) is a particular concern, and results for that condition should be interpreted with caution. Although ANCOVA is robust to moderate violations of its assumptions, and the use of covariates helps reduce residual variance in small samples (Hopkin et al., 2015; Raudenbush, 1997), a larger, more balanced sample would provide greater statistical power. The ANOVA without covariates shows the interaction at marginal significance ($F = 2.989, p = 0.090$), offering directional support, but replication with larger samples is warranted.

Third, the cost salience manipulation did not produce significant differences on our two manipulation check measures. As discussed in the Results section, this likely reflects the nature of salience effects, which operate on decision weighting rather than on conscious evaluations accessible via self-report. A potential ceiling effect (means of 4.05 and 3.90 on a 5-point scale) may have further limited detection. Future research could use eye-tracking or response-time data to assess attentional impact more directly. Relatedly, our sample size precluded formal mediation analysis; future studies with larger samples should employ mediation techniques to test the mechanism.

Fourth, the ANCOVA covariates (restatement risk perception, importance of analyst forecasts, importance of internal estimates) were measured after the experimental manipulations, raising the concern of overcontrol bias (Rosenbaum, 1984; Montgomery, Nyhan, and Torres, 2018). We mitigate this concern by showing that (a) the unadjusted ANOVA produces a directionally consistent interaction ($F = 2.989, p = 0.090$), and (b) none of the covariate means differ significantly across conditions. Nevertheless, the covariate-adjusted and unadjusted results should be interpreted as converging evidence.

Fifth, the covariates were elicited immediately after the dependent variable, which could produce anchoring or consistency effects. Eliciting these measures in a separate session days before the experiment would reduce this concern, though it introduces logistical challenges in an online setting.

Sixth, while predictability is a theoretically motivated proxy for specificity, it is not a direct manipulation of specificity and could influence related constructs such as perceived environmental uncertainty. Our additional analyses provide evidence against the environmental uncertainty interpretation, but future research could use alternative operationalizations to triangulate our findings.

Finally, our study uses warranty accrual adjustments as the earnings manipulation instrument, which involves relatively concrete costs. The results may differ for instruments with more diffuse costs, such as real earnings manipulation activities. Future research should examine whether the specificity–salience interaction generalizes across different types of accounting discretion.

Our study contributes to the earnings manipulation literature by (i) showing that goal specificity influences earnings manipulation and (ii) increasing the salience of adverse consequences of earnings manipulation can reduce managers' exercise of their accounting discretion.

The results of this study also provide important insights into firms' goal-setting processes. This study provides evidence that greater goal specificity can lead managers to disregard the consequences of their actions and engage in egregious behavior. Managers should consider the consequences of setting specific goals and how this might affect employees' ability to attain them.

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UNVEILING ECONOMIC RESILIENCE: POST-PANDEMIC CHILD TAX CREDIT EXPANSION AND ITS ROLE IN POVERTY ALLEVIATION, ECONOMIC STABILITY, AND TAX POLICY REFORM FOR DOCUMENTED AND MIXED-STATUS FAMILIES

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ABSTRACT

The Child Tax Credit (CTC) expansion under the American Rescue Plan (ARP) in 2021 significantly increased the credit's value and extended eligibility, offering a natural experiment in temporary versus permanent tax relief. This study applies a comparative accounting framework to secondary data from the Center on Poverty and Social Policy at Columbia University, examining child poverty across a pre-pandemic baseline, COVID-19 relief without the enhanced CTC, and COVID-19 relief with the enhanced CTC. We find that the enhanced CTC reduced total child poverty by 27.1% in December 2021, with effects varying by demographic group, from a 36.5% reduction among Latino children to 22.6% among Asian children. Following the credit's expiration in January 2022, child poverty rose sharply across all groups within a single month. These findings offer accounting and policy insights into the CTC's role in poverty alleviation, particularly for mixed-status and documented immigrant families who remain disproportionately excluded from full benefits.

Keywords: *Child Tax Credit (CTC), American Rescue Plan (ARP), Fiscal Policy, Economic Resilience, Social Equity, Tax Reform, Post-Pandemic Recovery*

1.0 INTRODUCTION

The COVID-19 pandemic triggered unprecedented disruptions across the U.S. economy, leading to massive job losses, increased financial instability, and heightened child poverty. As Petrosky-Nadeau and Valletta (2020) report, over 20 million jobs were eliminated between March and April 2020, creating widespread economic hardship. The ripple effects extended beyond the labor market, straining families and exacerbating existing disparities, particularly for immigrant communities.

Bi and Gulati (2021) further illustrate the severity of this downturn, highlighting how government-imposed restrictions and behavioral responses to the pandemic led to an economic standstill. The resulting 1.5% decline in U.S. gross domestic product (GDP) from 2019 to 2020 (\$21,380.98B to \$21,060.47B) (MacroTrends, 2023) underscored the urgent need for large-scale

fiscal interventions. While the economy has since recovered, with U.S. GDP reaching \$27,357.80B by the end of 2023 (Bureau of Economic Analysis, 2024), the economic scarring from the pandemic continues to affect vulnerable populations disproportionately.

The American Rescue Plan (ARP) of 2021 introduced a range of relief measures to stabilize the economy and support struggling households. A central component was the historic expansion of the Child Tax Credit (CTC), which increased the maximum credit from \$2,000 per child to \$3,600 for children under six and \$3,000 for children aged 6-17 (Pressman & Scott, 2022). The ARP also introduced monthly advance payments, ensuring families received ongoing financial assistance throughout 2021.

The enhanced CTC played a critical role in addressing child poverty among both documented and undocumented families residing legally in the U.S. Historically, tax credits like the CTC excluded undocumented children and mixed-status families, creating disparities in financial support. While the ARP provided expanded benefits, eligibility restrictions continued to limit relief for certain immigrant families. As a result, Latino and Asian families—many of whom belong to mixed-status households—faced unique challenges in accessing these benefits, further widening economic inequality (Henslin, 2019).

The expiration of the enhanced CTC in January 2022 exposed the fragility of temporary financial relief, leading to a sharp rise in child poverty (Center on Poverty and Social Policy, 2023) and reigniting debates on long-term policy solutions. By 2024, Congressional attempts to reinstate aspects of the expanded credit had stalled amid competing priorities, leaving families to navigate post-pandemic economic uncertainty without the robust support that proved effective during the crisis (Congressional Research Service, 2024).

This study hypothesizes that a long-term, inclusive Child Tax Credit (CTC) policy—designed to extend benefits beyond the pandemic and expand eligibility for mixed-status and legally residing undocumented families—can serve as a sustainable mechanism for reducing childhood poverty, improving economic resilience, and fostering long-term economic growth. Specifically, we propose that:

1. Extending monthly CTC payments beyond the pandemic period will enhance financial stability for low- and middle-income families, reducing poverty rates and improving economic security.
2. Broadening CTC eligibility to legally residing undocumented children and mixed-status families will reduce economic disparities while ensuring equitable access to tax-based benefits.
3. Integrating the CTC into a permanent tax structure will stimulate consumer spending, leading to sustained economic growth and a potential increase in GDP.
4. Refining tax administration and outreach strategies will improve access for historically underserved families, particularly those in Latino and Asian communities, who have faced difficulties in navigating the tax system.

The relevance of these hypotheses has only intensified in the post-pandemic landscape, as economic pressures from inflation and uneven recovery patterns have reinforced the need for structural support mechanisms for vulnerable families (Economic Policy Institute, 2024).

1.1 Use of Secondary Data

To evaluate this hypothesis, this study relies on secondary data, drawing from government reports, economic research, and policy analyses. Data sources include:

- The Center on Poverty and Social Policy at Columbia University provides empirical insights on the impact of the expanded CTC on child poverty rates.
- U.S. Census Bureau and IRS Tax Data, offering demographic and economic perspectives on tax credit distribution.
- Legislative reports and policy papers analyzing the legal and administrative barriers affecting CTC eligibility for immigrant families.
- Academic studies and think tank analyses assessing the long-term economic consequences of CTC modifications and tax-based relief programs.
- Post-pandemic economic indicators from the Bureau of Economic Analysis and Department of Labor, contextualizing CTC impacts within broader recovery patterns.

By leveraging these established datasets, this research assesses the effectiveness of the CTC in reducing poverty across different demographic groups. It compares pre- and post-expansion trends to understand the broader fiscal implications and their persistence through 2024.

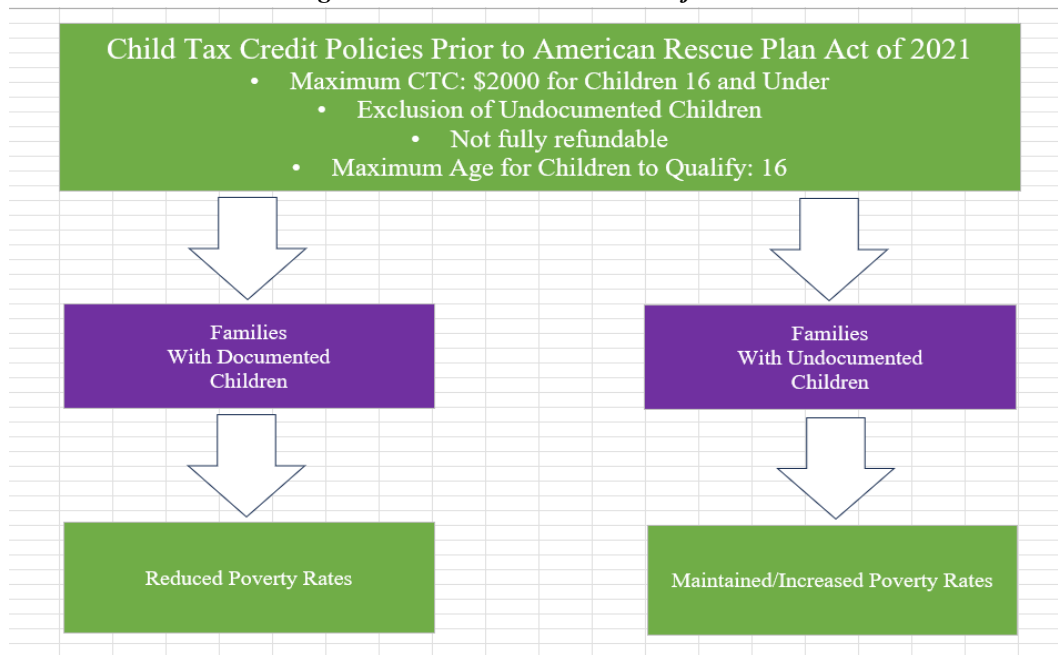
2.0 LITERATURE REVIEW

Since it was originally established in the Taxpayer Relief Act of 1997, the Child Tax Credit (CTC) has sought to fulfill its mission as legislation providing fiscal relief to underprivileged families, supporting workforce development, and stimulating the United States' economic system. Although subsequent CTC-related acts have preserved and extended the credit, they have remained limited in scope, particularly regarding the maximum credit amount per child, the age range of qualifying children, payment methods, and family eligibility. Regarding the latter limitation, the CTC has historically been unavailable to immigrant families legally residing in the United States with their children.

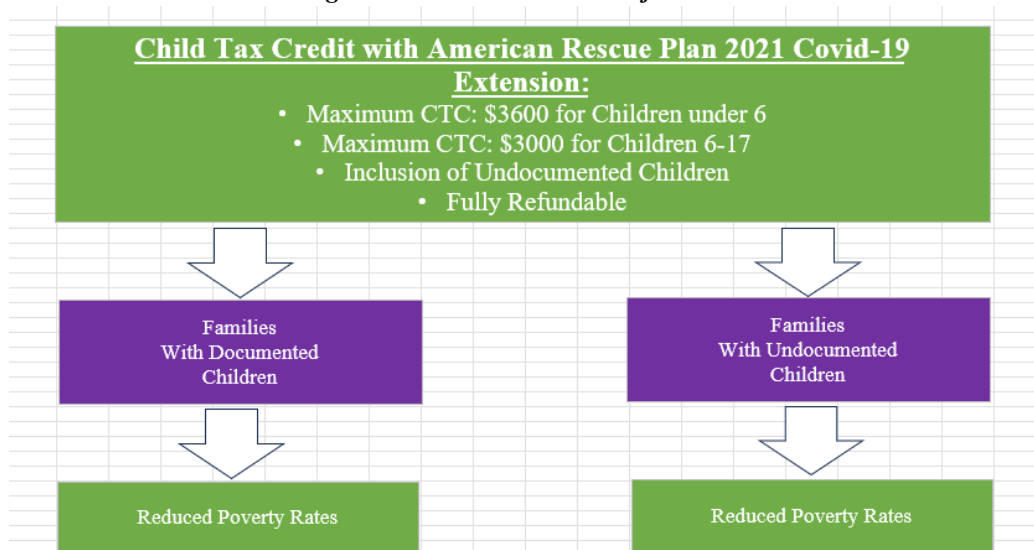
In 2020, COVID-19 severely impacted the United States labor market and economy, escalating poverty levels nationwide. In response, numerous fiscal measures were enacted to assist U.S. residents financially, reduce family poverty, and stimulate the lagging economy. Additionally, the American Rescue Plan (ARP) was enacted in 2021 to expand the reach of the CTC like never before. With the ARP, the maximum CTC available per child was increased, the method by which the CTC was distributed was altered to assist in monthly provision budgeting, the age requirements for the CTC were relaxed, the percentage of refundable CTC was altered, and the scope of the CTC was expanded to include legally residing immigrant families. The CTC changes identified through a literature review and their impact on families are displayed in the Pre-Pandemic CTC Benefit and CTC Benefit models designed by the authors and are shown in

Figures 1 & 2. Additionally, the models reveal the negative impact of removing the ARP CTC extension on families in early 2022.

Figure 1: Pre-Pandemic CTC Benefit Model



Source: Narsing, Horton-Roark, Sullivan, Ford, & Beattie-Moore

Figure 2: Pandemic CTC Benefits Model

Source: Narsing, Horton-Roark, Sullivan, Ford, & Beattie-Moore

Our review of the literature is structured to provide a foundational understanding of the Child Tax Credit and its interplay with accounting principles, especially in times of economic distress, across five key areas: the Historical Genesis of the Child Tax Credit, tracing its origins and primary motivations; the Evolutionary Dynamics of CTC and its Implications for Accounting, examining how accounting practices have adapted as the credit evolved; the American Rescue Plan (ARP) Act of 2021, analyzing its transformative expansion of the CTC's capabilities during the COVID-19 pandemic; Diverse State Involvement with the CTC, highlighting the accounting challenges and opportunities that arise across state jurisdictions; and Addressing Childhood Poverty and Accounting's Crucial Role in Cash Transfers, exploring accounting's role in combating childhood poverty through CTC. Together, these sections give readers a thorough understanding of CTC's historical roots, current application, and potential future trajectory.

2.1 Historical Genesis of the Child Tax Credit

The Child Tax Credit (CTC), originally presented by the 1997 Taxpayer Relief Act, represented more than just another national fiscal policy. It symbolized the nation's dedication to child welfare by integrating financial and social welfare mechanisms to assist families in providing for their children while simultaneously stimulating the U.S. economy in both the short and long term. According to David Wessel, director of the Hutchins Center on Fiscal and Monetary Policy, "Since being enacted nearly 25 years ago, the Child Tax Credit (CTC) has been a significant component of the federal government's effort to aid families with children" (Miller,

2021). While enacted in 1997, CTC was conceived at least six years earlier, making its initial implementation the product of extensive political and financial debate.

The National Commission on Children first introduced the idea of the CTC policy in 1991, recommending a \$1,000 refundable child tax credit for all children through age 18 (Wessel, 2021). This proposal aimed to counteract rising living costs, stagnant wages, and increasing tax burdens, which placed significant financial strain on families with children (Congressional Research Service, 2018). Additionally, a dependent exemption was included, designed to provide economic relief by reducing taxable income per dependent. However, it was not until 1994 that a child tax credit proposal was included in legislative efforts aligned with the Contract with America (Hungerford & Thiess, 2013). Even then, the 1994 proposals faced considerable resistance and were not enacted.

Ahead of the 1994 midterm elections, the Republican Party introduced a series of policy proposals advocating for a \$500 per-child tax credit for all qualifying U.S. families (Wessel, 2021). These efforts materialized into the American Dream Restoration Act and the Tax Fairness and Deficit Reduction Act of 1995, designed to implement key CTC policies originally conceptualized in 1991. In addition to establishing a \$500 per-child credit, these acts sought to introduce income-based phase-outs for families earning over \$200,000. Although aligned with the original Commission's recommendations, modifications were made to accommodate fiscally conservative members of Congress. Despite this, the Clinton administration opposed the bills, leading to legislative stalemates.

In response, President Clinton proposed his own CTC policies during the 104th Congress. His Middle-Class Bill of Rights Tax Relief Act of 1995 introduced a \$300-per-child non-refundable tax credit, scheduled to increase to \$500 per child after 1998 (Sawhill & Rodrigue, 2016). Under Clinton's model, income phaseouts would begin at \$60,000 instead of \$200,000, and eligibility would be limited to children under 13 years old. While Clinton's proposal required lower government spending, making it fiscally attractive, the Republican-led Congress rejected it due to its narrower eligibility requirements. As a result, the 104th Congress failed to reach an agreement on either proposal.

It was not until the Taxpayer Relief Act of 1997 that CTC was officially enacted. The final legislation, negotiated between the House, the Senate, and the Clinton Administration, established a \$500 nonrefundable tax credit per child under 17 (Uradu & Velasquez, 2023). Despite reaching bipartisan consensus, key policy discussions continued, particularly regarding how CTC would be integrated into the Earned Income Tax Credit (EITC). The House and Senate proposed applying the CTC after the EITC, reducing overall tax liability for qualifying families. Clinton, however, proposed that the CTC be claimed before the EITC, allowing taxpayers to maximize their CTC claims without affecting their EITC eligibility. Other areas of debate included the interaction between the CTC and dependent care credits, the qualifying child age threshold, and income phase-out levels. After extensive negotiations, the Taxpayer Relief Act of 1997 was finalized, officially establishing the CTC as a permanent tax policy.

The final CTC structure was a compromise among lawmakers. The 1997 version was implemented as a \$500 nonrefundable credit, phased out by \$50 for every \$1,000 of income above the thresholds of \$110,000 for joint filers, \$75,000 for heads of household, and \$55,000

for married individuals filing separately (Uradu & Velasquez, 2023). While CTC benefited middle-class families, low-income households with minimal tax liabilities received little to no benefit. The credit was only refundable for taxpayers with three or more qualifying children, calculated as payroll tax liabilities exceeding EITC claims. Ultimately, while far from the original 1991 proposal, the 1997 CTC legislation established a foundational tax relief mechanism for families with children.

2.2 Evolutionary Dynamics of CTC and Implications for Accounting

Since its inception, CTC has evolved through multiple legislative acts, leading to substantial changes in accounting and tax computation methodologies (Smith & Johnson, 1999). To fully understand its impact on financial policy, it is necessary to examine the accounting complexities introduced with each legislative shift and how they have influenced taxpayer compliance, tax revenue, and economic outcomes.

Each legislative modification to the CTC required corresponding adjustments to tax administration systems, affecting both tax preparation processes and governmental accounting procedures. From an accounting perspective, these changes necessitated modifications to revenue recognition principles, liability calculations for refundable credits, and reconciliation procedures between estimated and actual credit distributions. The technical accounting challenges intensified as the CTC evolved from a simple nonrefundable credit to a complex refundable benefit with varying thresholds, phase-out schedules, and eligibility criteria. Tax practitioners and governmental accountants had to adapt their procedures to handle these computational complexities while maintaining compliance with federal tax code requirements and governmental accounting standards.

Shortly after the 1997 Taxpayer Relief Act, policymakers enacted modifications to the CTC through the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999. This act repealed a provision that previously reduced the refundable portion of the CTC by the Alternative Minimum Tax (AMT) for tax year 1998. Additionally, it allowed personal non-refundable credits, including the CTC, to fully offset a taxpayer's regular income tax liability for 1998 (Congressional Research Service, 2018). The Omnibus Act was largely intended to improve the fiscal budget, increasing direct spending by \$1.135 billion and on-budget revenues by \$1.110 billion between 1999 and 2003 (Congressional Budget Office, 1998).

Further modifications to the CTC came with the Ticket to Work and Work Incentives Improvement Act of 1999, which extended provisions from the Omnibus Act to allow CTC and other nonrefundable personal credits to offset both regular tax liability and AMT for an additional year. The Act also eliminated restrictions on refundable portions of the CTC, ensuring that families with higher payroll tax burdens could fully access the intended tax relief benefits.

Entering the new millennium, further expansions occurred with the Economic Growth and Tax Relief Reconciliation Act (EGTRRA) of 2001, which gradually increased the maximum credit amount to \$1,000 per child by 2010 and introduced permanent refundability provisions. Later acts, including the Jobs and Growth Tax Relief Reconciliation Act of 2003 and the

Working Families Tax Relief Act of 2004, accelerated these scheduled increases, ensuring a more immediate financial impact on taxpayers.

The CTC continued evolving through the Emergency Economic Stabilization Act of 2008 and the American Recovery and Reinvestment Act of 2009, which lowered the refundability threshold to \$3,000. Legislative changes in 2010, 2012, 2015, and 2017 further expanded eligibility and refundability, though they continued to exclude legally residing undocumented children.

By 2021, CTC had grown into a crucial financial support system for millions of families, yet its implementation remained subject to political and economic shifts. The American Rescue Plan (ARP) of 2021 marked the most significant expansion in CTC history, reshaping its administrative and accounting frameworks to accommodate monthly direct payments and broader eligibility.

2.3. The American Rescue Plan Act of 2021: Expanding the CTC's Capabilities in a Time of Crisis.

As Pressman and Scott (2022) indicate, "Until 2018, families with children were helped indirectly through tax exemptions for children and some child tax credits (CTC). These benefits mainly helped middle-income families in high tax brackets. Things changed with the American Rescue Plan Act of 2021" (Pressman & Scott, 2022). Historically, CTC was used to help families of all income levels with qualifying children to receive government-funded assistance. The goal of the CTC was to assist families in times of economic hardship and to reduce the number of children raised in the United States in poverty. Until 2021, CTC's positive impact on low-income families had increased through revision-based legislation. However, the policies were not prepared to adequately support U.S.-residing families during a crisis such as the COVID-19 pandemic and resulting lockdown.

The COVID-19 pandemic and lockdown resulted in the massive shutdown of many business operations and an increase in unemployment rates across the United States. For families with children, the issue of unemployment was magnified by the fact that, with children unable to attend school and forced to learn remotely, parents could not go out looking for work if it meant leaving children at home. Furthermore, the risk of spreading COVID-19 to children was a concern that promoted social isolation, which also resulted in prolonged unemployment periods. With parents out of work, many faced the challenge of making ends meet while caring for their children.

Cox, Jacoby, and Marr (2022) describe how, instead of addressing the negative impact COVID-19 was causing, federal policymakers attempted to reduce the financial decline felt by individuals and their families. The policymakers enacted five bills in 2020 that provided an estimated \$3.3 trillion of relief to taxpayers across the United States, providing Economic Impact Payments (EIPs) primarily through direct deposits (Cox et al., 2022). These stimulus-related EIPs were largely enacted by the CARES Act of March 2020, relief legislation enacted in December 2020, and, later, by the American Rescue Plan of March 2021 (Cox et al., 2022).

Additionally, through the American Rescue Plan (ARP) in 2021, policymakers expanded the CTC to a scope it had not previously reached to boost financial aid to American families.

As Cox, Jacoby, and Marr (2022) indicate, while policymakers' actions in 2020 provided economic relief during the COVID-19 pandemic, the ARP of 2021 left a lasting impact on families. In 2021, the Plan raised the maximum CTC for children under 6 from \$2,000 to \$3,600 and for children aged 6-17 from \$3,000 to \$3,600 (Center on Budget and Policy Priorities, 2022). Not only was this the first time that CTC included 17-year-olds in its eligible children range, but it was also the first time that CTC was "fully refundable." Full credit was available to all children in families with low or no earnings in a year, a policy that became widespread during the COVID-19 pandemic as businesses struggled even after the Lockdown (Cox et al., 2022). The Rescue Plan had a lasting impact on children and their families since prior to the Plan's enactment.

"An estimated 27 million children received less than the full Child Tax Credit amount because their families' incomes were too low, including roughly half of Black children, half of Latino children, roughly 20 percent of white children, 20 percent of Asian children, and roughly half of children living in rural areas" (Cox et al., 2022).

An additional asset included in the American Rescue Plan was that, for the first time, half of the expanded CTC amounts were delivered every month to families from July to December 2021 (Golshan, 2021). This enabled many families with poor financial management skills to properly budget their CTC payments throughout the year for groceries, childcare, healthcare, etc.

The impact of the American Rescue Plan of 2021 on reducing nationwide childhood poverty has been apparent. As Cox and associates indicate, in "December 2021. . . [the Plan's assistance] kept an estimated 3.7 million children out of poverty, a 29 percent reduction" (Cox et al., 2022). An additional unprecedented provision from the ARP expanded CTC's reach to involve more children in mixed-status families to be claimed for CTC. This enabled various immigrant families legally residing in the U.S. and contributing to the economy and workforce to receive much-needed assistance.

Katie Fleischer (2022) of Ms. Magazine highlights the impact of the CTC's expanded reach on low-income families across demographics. According to Fleischer, CTC was a huge help for low-income families. In Fleischer's article concerning the matter, one low-income mother stated, "To get the child tax credit payments has been a huge help. . . If I could talk to President Biden, I would tell him that he should make the child tax credit permanent. . . because people need help even without a pandemic going on" (Fleischer, 2022). According to Fleischer, the data agree with this mother's and other mothers' statements that, in the six months since the expanded CTC was active, child poverty was reduced by 30%, keeping 3.7 million children out of poverty in December (Fleischer, 2022). Not only can it be argued that the CTC extension positively impacted low-income families, but it can also be inferred that it positively impacted the U.S. economy as a whole. As previously stated, the U.S. GDP dropped 1.5% between 2019 and 2020 to \$21,060.47B in 2020 (MacroTrends, 2023). In 2021, the GDP sharply rose from \$21,060.47B in 2020 to \$23,315.08B, a 10.71% increase from 2020 (MacroTrends, 2023).

2.4. Diverse State Involvement: Expanding Accounting and Economic Horizons.

Since its original inception in 1991 and ultimate legislative passage in 1997, the CTC has added another layer of accounting requirements for tax codes in the United States. Not only must accountants stay current with changing CTC national policies, but they must also navigate the added challenges that state legislatures pose for CTC-style returns. Rifkin's (2003) mention of seven states adopting child tax credits merely scratches the surface. As each state crafts its own legislation, accountants face the monumental task of navigating a maze of variations (Rifkin, 2003). Martinez and Peterson (2005) shed light on the sheer breadth of accounting challenges, such as maintaining compliance across state and federal jurisdictions and reconciling discrepancies that arise from these differences (Martinez & Peterson, 2005).

State-level analysis reveals interesting variations in CTC net benefits per capita as a share of states' Gross Domestic Product. Hammond and Orr (2021) indicate that the top 3 states regarding net benefit per capita are Alaska, Mississippi, and Louisiana (Hammond & Orr, 2021). According to Hammond and Orr, this is largely because average family sizes determine most CTC benefits. Additionally, regarding states' gross domestic product (GDP), the CTC provides the largest relative benefit to rural states with lower economic output (Hammond & Orr, 2021). This has historically been the case with CTC, which is fitting, provided that its purpose has been to assist low-income families in supporting themselves financially, thereby increasing nationwide economic resilience.

The CTC expansion took this one step further, providing a comparable per capita benefit for households in higher-income areas in the United States, both metro and non-metro regions, whilst still assisting rural areas more than metro areas (Hammond & Orr, 2021). In fact, the CTC expansion represents just over \$14 billion in new purchasing power for households in the non-metro regions, roughly doubling the value it afforded families before 2021 (Hammond & Orr, 2021). Regardless, the fact that it has assisted families across multiple regions during COVID-19 created economic support like it never had before.

2.5. Addressing Childhood Poverty: Accounting's Crucial Role in Cash Transfers and the Pioneering of New Accounting Frontiers.

Jones (2010) masterfully underscores the correlation between combating childhood poverty and economic interventions like the CTC. However, an overlooked segment that remains is the mechanics of accounting behind these direct cash transfers. For instance, reconciliation measures and their interface with other socioeconomic policies demand scrutiny (Harrison & Clark, 2011).

Williams (2021) detailed the American Rescue Plan's (ARP's) interventions, which are not just of socio-economic concern. Their nuanced accounting challenges —such as monthly disbursement tracking, end-of-year tax alignment, and potential rectifications for discrepancies—stand at the forefront of modern accounting concerns, necessitating novel solutions (Anderson & Turner, 2022).

The 2021 expansion introduced significant accounting complexity. CTC shifted from a once-a-year tax credit into a hybrid system that combined advance monthly payments with year-end reconciliation. From a governmental accounting perspective, this transformation required proper classification and reporting under Government Accounting Standards Board (GASB) Statement No. 33, which governs nonexchange transactions. The primary technical challenge involved reconciling monthly advance payments against year-end tax liabilities. This required sophisticated tracking systems that interface with IRS databases and individual taxpayer accounts. These enhanced financial reporting mechanisms were necessary to ensure accuracy and prevent improper payments while maintaining accessibility for eligible families.

Recent work by Devereux and Sabates-Wheeler (2023) extends this analysis by examining how post-pandemic accounting systems have evolved to handle the complexities of targeted cash transfers. Their research highlights the critical role of modernized accounting infrastructure in maintaining the integrity of social support mechanisms while adapting to fiscal constraints arising from pandemic-era spending. Similarly, Nguyen (2024) documents how tax authorities worldwide have reimagined reconciliation processes to balance the competing demands of rapid disbursement and accurate accountability, particularly relevant to child-focused tax benefits in economically volatile periods.

The post-pandemic accounting landscape reveals a transformation in how financial systems approach social welfare distribution. Where traditional accounting frameworks often treated tax credits as ancillary processes, contemporary models recognize them as central components requiring specialized protocols and integrated tracking mechanisms (Horowitz & Matthews, 2023). This evolution represents both a technical advancement in accounting practice and a philosophical shift in how financial systems conceptualize their role in addressing social inequities.

3.0 METHODOLOGY

This study addresses a gap in the accounting literature on the Child Tax Credit (CTC). Existing research has examined CTC's socio-economic effects extensively, but has given limited attention to the accounting methodologies that enable its execution. This study examines those accounting techniques to clarify how CTC-related processes achieve precision, efficiency, and transparency.

This study examines CTC implementation through the lens of governmental accounting frameworks, particularly as outlined in Governmental Accounting Standards Board (GASB) principles for tax-based transfer programs. The analysis considers how accounting systems govern eligibility verification, benefit reconciliation processes, and compliance reporting. These accounting mechanisms directly influence program accessibility and effectiveness, particularly for populations facing administrative barriers.

Our primary dataset comes from The Center on Poverty and Social Policy at Columbia University School of Social Work, a leading research center. The Center has been pivotal in advancing understanding of poverty dynamics within the U.S.

Leading academic figures such as Zachary Parolin (Bocconi University), Sophie Collyer, and Megan A. Curran (both affiliated with Columbia University) have examined the effects of the expanded Child Tax Credit. Their research highlights two key factors. First, it demonstrates the tangible repercussions of the six-monthly CTC disbursements on the holistic well-being of children, including the increased healthcare benefits as well as economic stability afforded by the CTC expansion and revisions related to the American Rescue Plan of 2021 (ARP) (Parolin et al., 2022). Secondly, they emphasize that the unfortunate socio-economic repercussions observed post the cessation of these payments revealed a somber reality: post-January 2022, childhood poverty rates surpassed those observed at the commencement of the pandemic (Parolin et al., 2022).

While the core research by the scholars provides profound insights into the socio-economic dimensions, our study takes the analysis of the CTC and its economic impact a step further by performing four key tasks:

3.1 Data Analysis Framework

Our analysis framework examines the CTC impact through two critical transition periods:

1. **Pre-ARP to ARP implementation (December 2020 to December 2021):** Analyzing the immediate effects of CTC enhancement during the pandemic period
2. **ARP implementation to post-expansion (December 2021-January 2022):** Examining the immediate aftermath of benefit expiration

This approach enables us to identify clear policy effects by examining changes in poverty rates during well-defined policy transition points. For each period, we used the Supplemental Poverty Measure (SPM) methodology, as employed by the Center on Poverty and Social Policy, to ensure consistency with established poverty measurement approaches.

To derive conclusions from the secondary data, we employed comparative statistical analysis to examine changes in the poverty rate across two distinct policy transition points. For each transition period, we calculated percentage changes in child poverty rates by demographic group and assessed the magnitude of policy effects using the Center on Poverty and Social Policy's Supplemental Poverty Measure methodology. This approach allows us to isolate the CTC's specific contribution by comparing outcomes under three scenarios: pre-COVID baseline, COVID relief without enhanced CTC, and COVID relief with enhanced CTC. The differential between these scenarios provides quantifiable estimates of the CTC's impact on poverty reduction. We further analyzed reversal effects by examining January 2022 data, which represent the first full month following benefit expiration, providing a natural experiment to assess the consequences of policy withdrawal.

3.2 Demographic Analysis

Our research disaggregates data along racial/ethnic lines to assess variations in CTC impact across population segments:

Racial/ethnic categorization: White, Black, Latino, Asian, and other classifications

This demographic segmentation allows for the identification of disparate policy impacts and highlights specific barriers affecting underserved populations.

3.3 Accounting Process Examination

To understand the technical mechanisms through which CTC policies translate into outcomes, we examined:

1. **Eligibility requirements:** Documentation standards and access barriers, particularly for immigrant families.

CTC administration relies on multiple interconnected accounting mechanisms. The eligibility verification process requires cross-referencing data from IRS tax records, Social Security Administration databases, and state reporting systems. Governmental entities must account for refundable credits by recognizing both the tax liability offset and the cash outflow for amounts exceeding the tax owed. This requires dual classification under governmental fund accounting principles. Additional reconciliation complexities emerged from the monthly advance payment structure. Agencies needed to track cumulative distributions, adjust for mid-year eligibility changes, and reconcile advance payments against final credit determinations at year-end. These procedures align with Generally Accepted Accounting Principles (GAAP) for governmental entities while meeting the distinct requirements of tax-based transfer programs.

2. **Distribution mechanisms:** Monthly payment structure versus annual lump sum approaches
3. **Tax filing integration:** Relationship between CTC structure and tax administration

For each dimension, we evaluated effectiveness in reaching eligible populations, particularly historically marginalized groups, based on available data from the Center on Poverty and Social Policy.

3.4 Analytical Approach

Our quantitative analysis employed a comparative approach, examining:

1. **Direct impact measurement:** Quantifying poverty reduction attributable to specific policy interventions
2. **Comparative policy assessment:** Evaluating CTC effects relative to other pandemic relief measures
3. **Temporal pattern identification:** Tracking changes in poverty rates across policy transition points

These techniques enabled us to assess both the immediate poverty reduction effects of the enhanced CTC and the consequences of its expiration in January 2022.

Collectively, we meticulously juxtaposed the data with established accounting principles and practices, offering readers a comprehensive lens to appreciate the intersections and correlations between the CTC and its accounting dimensions.

4.0 RESULTS

Our analysis reveals clear connections between the Child Tax Credit (CTC) and its accounting dimensions. Drawing on research by Parolin, Collyer, & Curran (2022), the following tables illustrate the CTC's impacts during the pandemic and its subsequent economic repercussions.

Table 1 quantifies CTC's poverty-reduction effectiveness by comparing three policy scenarios: a pre-pandemic baseline, COVID relief without enhanced CTC, and COVID relief with enhanced CTC. This comparative structure isolates the CTC's specific contribution, demonstrating that while general COVID relief reduced child poverty by 11.4%, the addition of enhanced CTC benefits produced a 27.1% reduction. The differential impact across demographic groups reveals important equity implications, with Latino children experiencing the largest relative benefit (36.5% reduction) compared to Asian children (22.6% reduction). These variations reflect both the CTC expansion's design features and underlying differences in family income distributions across demographic groups.

Table 1: Monthly Poverty Rate Impact (000) (December 2021)			
Parameter	Pre-COVID Relief	COVID Relief w/o CTC	COVID Relief w/ CTC
Total Children in Poverty	13,953	12,361	8,984
White Children Benefitted	4,556	4,121	2,750
Black Children Benefitted	3,261	2,913	2,175
Latino Children Benefitted	4,979	4,250	3,165
Asian Children Benefitted	731	682	519
Other (Unclassified/Multiple Ethnicities)	426	395	303

Source: Parolin and Curran (2022), Center on Poverty and Social Policy at Columbia University, Monthly SPM Poverty for December 2021.

The following conclusions can be drawn from the quantitative breakdown in Table 1.

Overall Impact on Child Poverty: Implementing COVID-19 relief measures without the Child Tax Credit (CTC) decreased the total number of children in poverty by 11.4% (1.592 million). When the CTC was included, the number decreased further by 27.1% (3.377 million), resulting in 8.984 million children in poverty.

Impact on White Children: The number of white children benefiting decreased by 9.5% (0.435 million) with COVID relief, excluding the CTC. Incorporating the CTC led to an additional 33.2% decrease (1.371 million), leaving 2.75 million benefiting.

Impact on Black Children: Black children saw a 10.7% decrease (0.348 million) in the number of beneficiaries in the initial COVID relief. With the CTC, the decrease extended to 33.3% (1.086 million), bringing the total to 2.175 million.

Impact on Latino Children: The Latino child population that benefited from the initial COVID relief decreased by 14.6% (0.729 million). Including CTC, the decrease was amplified to 36.5% (1.814 million), bringing the total to 3.165 million.

Impact on Asian Children: The number of Asian children benefiting from the relief initially decreased by 6.7% (0.049 million). The introduction of CTC led to a 22.6% decrease (0.212 million), bringing the total to 0.519 million.

Impact on Other Ethnicities: Children classified under 'Other' saw a 7.3% reduction (0.031 million) with the first phase of COVID relief. Including the CTC further decreased by 23.2% (0.092 million), bringing the total to 0.303 million.

Table 2 extends the analysis by examining the relation between the CTC and other COVID-19 relief measures. The combined impact consistently exceeded the sum of individual interventions, suggesting complementary policy effects. For Black children, the enhancement was particularly pronounced, with combined interventions increasing poverty reduction by 47.4% beyond CTC alone. This amplification effect indicates that integrated social policy approaches produce superior outcomes compared to isolated interventions. From an accounting perspective, these interactions complicate benefit attribution and require sophisticated tracking systems to prevent duplication while maximizing coverage for eligible families.

Table 2: Child Poverty Alleviation (000) - Comparative Analysis		
Parameter	CTC Only	COVID Relief w/ CTC
White Children Moved out of Poverty	1,370	1,805
Black Children Moved out of Poverty	737	1,086
Latino Children Moved out of Poverty	1,356	1,814
Asian Children Moved out of Poverty	163	212
Other (Unclassified/Multiple Ethnicities)	94	124

Source: Parolin and Curran (2022), Center on Poverty and Social Policy at Columbia University, Monthly SPM Poverty for December 2021.

As implied by the findings, the following is true.

White Children: The CTC lifted 1.37 million white children from poverty. This number rose significantly to 1.805 million, driven by broader COVID-19 relief measures — an increase of 31.7%.

Black Children: For Black children, the CTC on its own was responsible for alleviating poverty for 0.737 million. Combining CTC with other COVID interventions increased this effect, benefiting 1.086 million — an uplift of 47.4%.

Latino Children: The CTC lifted 1.356 million Latino children from poverty. When synergized with other COVID relief measures, this number surged to 1.814 million, marking a 33.7% increment.

Asian Children: Among Asian children, 0.163 million were moved out of poverty solely due to the CTC. This number rose to 0.212 million when paired with other COVID-19 relief measures, translating to a growth of 30%.

Other Ethnicities: For children categorized under ‘Other,’ 0.094 million were uplifted from poverty by the CTC alone. With the inclusion of additional COVID relief, this increased to 0.124 million — an expansion of 31.9%.

Table 3 documents the immediate consequences of benefit expiration and provides empirical evidence of CTC’s stabilizing role. The January 2022 data represent a natural experiment in policy withdrawal, with child poverty rates reverting toward pre-expansion levels within a single month. The magnitude of increase varied across demographic groups: white children experienced a 52.3% increase, Latino children 42.4%, Black children 30.4%, and Asian children 27%. These differential impacts reflect both the varying reliance on CTC benefits across communities and the underlying economic vulnerabilities that the enhanced credit had temporarily mitigated. From an administrative perspective, the rapid transition highlights both the efficiency of the payment distribution system and the precarious financial position of many families who lack sufficient economic buffers to absorb the loss of benefits.

Table 3: Transition in Child Poverty (000) (December 2021 – January 2022)		
Parameter	December 2021	January 2022
White Children in Poverty	2,750	4,189
Black Children in Poverty	2,175	2,837
Latino Children in Poverty	3,165	4,509
Asian Children in Poverty	519	659
Other (Unclassified/Multiple Ethnicities)	303	380

Source: Parolin and Curran (2022), Center on Poverty and Social Policy at Columbia University, Monthly SPM Poverty for December 2021.

According to the results presented in Table 3, the following observations are apparent.

White Children: There was an alarming increase in white children falling into poverty, rising from 2.75 million in December 2021 to 4.189 million in January 2022. This represents a 52.3% spike within just a month.

Black Children: Black children experiencing poverty also observed a significant rise, from 2.175 million in December to 2.837 million in January, marking a 30.4% escalation.

Latino Children: The impact was profoundly pronounced among Latino children. Their numbers in poverty leaped from 3.165 million in December to 4.509 million in January, indicating a 42.4% surge.

Asian Children: For Asian children, the poverty rate grew by 27% within this short span, moving from 0.519 million to 0.659 million.

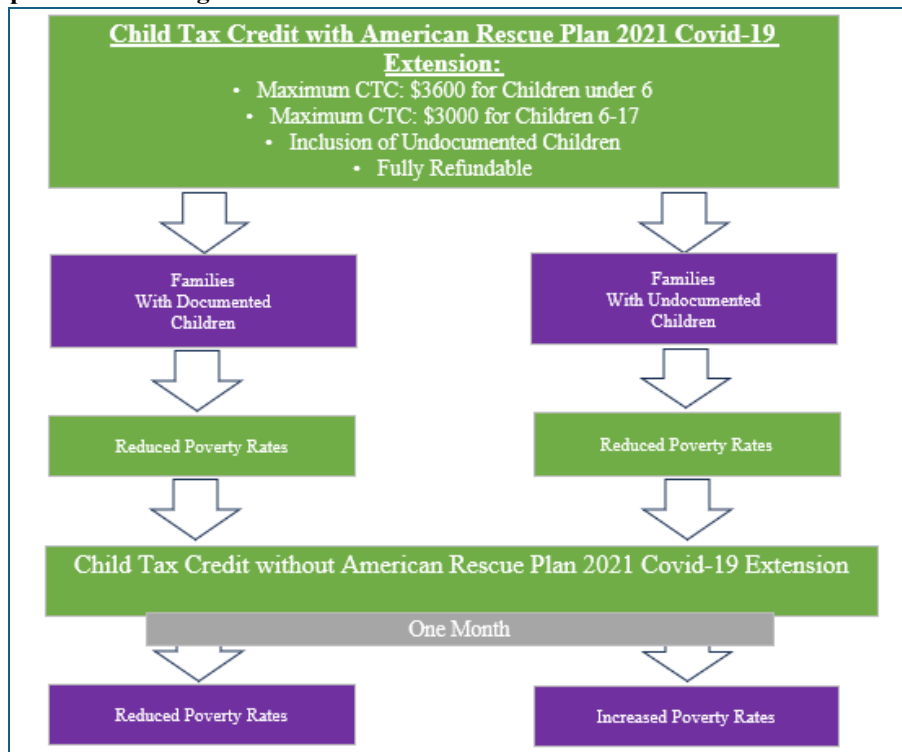
Other Ethnicities: The number of children classified under 'Other' in poverty increased by 25.4%, rising from 0.303 million in December to 0.380 million in January.

This data vividly portrays the crucial role of the monthly Child Tax Credit in mitigating child poverty and the grave consequences of its discontinuation, accentuating the need for consistent financial interventions.

5.0 DISCUSSION

Based on the results, a post-ARP removal model has been constructed (Figure 3) to describe the negative impact of CTC extension removal on some families that previously benefited from the ARP.

Figure 3: Impact of Removing CTC Extension on Families with Documented and Mixed-Status Families.

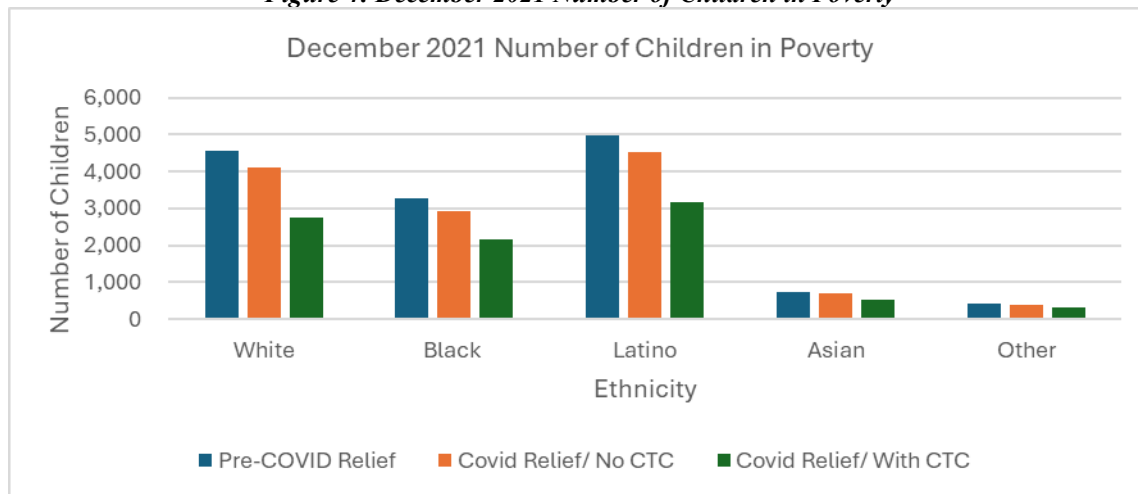


Source: Narsing, Horton-Roark, Sullivan, Ford, & Beattie-Moore (2023)

In its current structure, the Child Tax Credit (CTC) presents more than just an accounting innovation; it encapsulates a vision for socio-economic betterment. As stated by Hammond and Orr, "Since its creation in 1997, the Child Tax Credit (CTC) has grown to become a central pillar of family policy in the United States, providing tax relief and income support to households with dependent children" (Hammond & Orr, 2021). The CTC expansions of the American Rescue Plan 2021 sought to increase the CTC's impact on families affected by the COVID-19 pandemic and resulting lockdown, taking the CTC's previously stated mission one step further. Through our research, we have unveiled not just its operational efficacy in providing economic relief and reducing nationwide poverty levels but its profound ramifications in shaping the well-being of children nationwide, especially against the backdrop of the pandemic.

The data show a conspicuous decline in child poverty when the CTC is in effect. The potency of the CTC as a tool for poverty alleviation becomes evident in the significant reductions across all ethnic categories. As Hamilton, Roll, Despard, Maag, Chun, Brugger, and Grinstein-Weiss (2022) indicate, "The 2021 temporary expansion of the child tax credit (CTC) was unprecedented in its reach, lifting 3.7 million children out of poverty as of December 2021. . . Overall. . . families used the CTC to cover routine expenses without reducing their employment" (Hamilton et al., 2022). As Hamilton and associates indicated, the CTC expansions, when utilized by lower-income households, resulted in "improved nutrition, decreased reliance on credit cards and other high-risk financial services, and also . . . [enabled] long term educational investments for both parents and children" (Hamilton et al, 2022). The changes were especially promising for Black, Hispanic, and other minority families, as shown in Figure 4.

Our findings demonstrate that the accounting dimension extends beyond technical procedures. Financial systems themselves shape policy outcomes. The CTC's effectiveness depended on more than benefit amounts; it required accounting infrastructure capable of enabling timely, accurate distribution. Real-time reconciliation capabilities were necessary for the monthly payment system, which challenged traditional annual tax processing cycles. Agencies faced competing objectives: rapid disbursement to address immediate needs versus thorough verification to prevent improper payments. This tension reflects broader questions in governmental accounting regarding risk tolerance and administrative efficiency. Differential access rates across demographic groups indicate that accounting procedures can create equity barriers. These barriers emerge particularly when documentation requirements or system interfaces disadvantage populations with limited technological access or language barriers.

Figure 4: December 2021 Number of Children in Poverty

Source: Parolin and Curran (2022), Center on Poverty and Social Policy at Columbia University, Monthly SPM Poverty for December 2021.

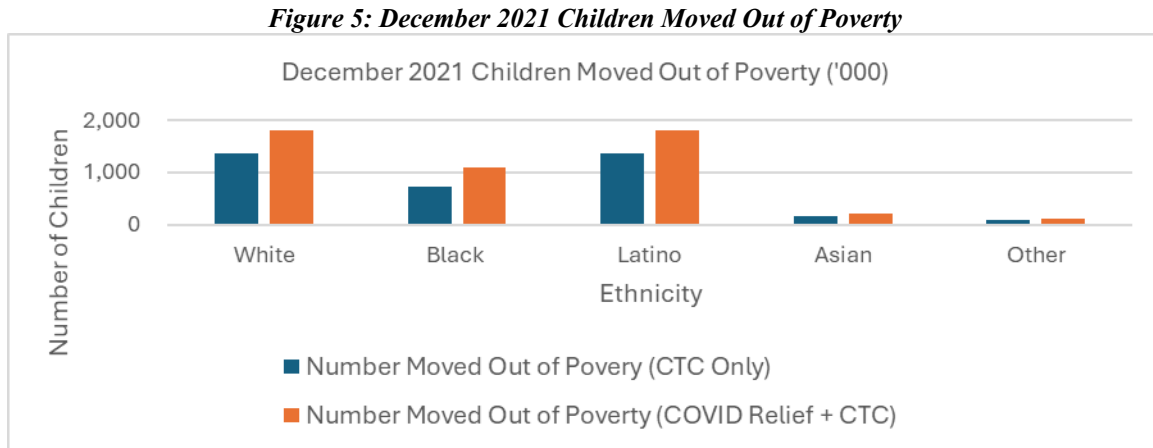
Interestingly, the most remarkable benefit is seen among Latino children, suggesting the profound impact of such fiscal policies on specific demographics. While it is heartening to see the decline, the modest reduction in child poverty achieved with only generic COVID relief measures, compared to when the CTC is incorporated, underscores the indispensable and transformative role of the CTC.

Furthermore, the comparative analysis between children who moved out of poverty solely due to the CTC and those who did so when the CTC was paired with other COVID relief measures, such as Economic Impact Payments (EIPs), offers intriguing insights. As defined by Cox, Jacoby, and Marr (2022), EIPs involve the three rounds of Economic Impact Payments provided by relief legislation enacted in 2020 and 2021 (Cox et al., 2022). The EIPs were designed as stimulus payments for employed and unemployed individuals and delivered primarily via direct deposit to most households (Cox et al., 2022). Following the first round of COVID-19-related EIPs, each subsequent round of relief legislation expanded eligibility to certain groups previously left out of financial aid, including adults claimed as tax dependents and certain households that include immigrants (Cox et al., 2022).

By working with the Social Security Administration and the Department of Veterans Affairs, the IRS enabled payments to benefit older adults, people with disabilities, and veterans (Cox et al., 2022). It was proven that the first two rounds of EIPs reduced the poverty rates for Black and Latino children by 6.8 percent each, Asian children by 3.6 percent, and white children by 2.8 percent (Cox et al., 2022). As the research indicates, while this certainly assisted lower-income families regarding financial support during COVID-19, additional support from the expanded CTC policies offered significant further assistance.

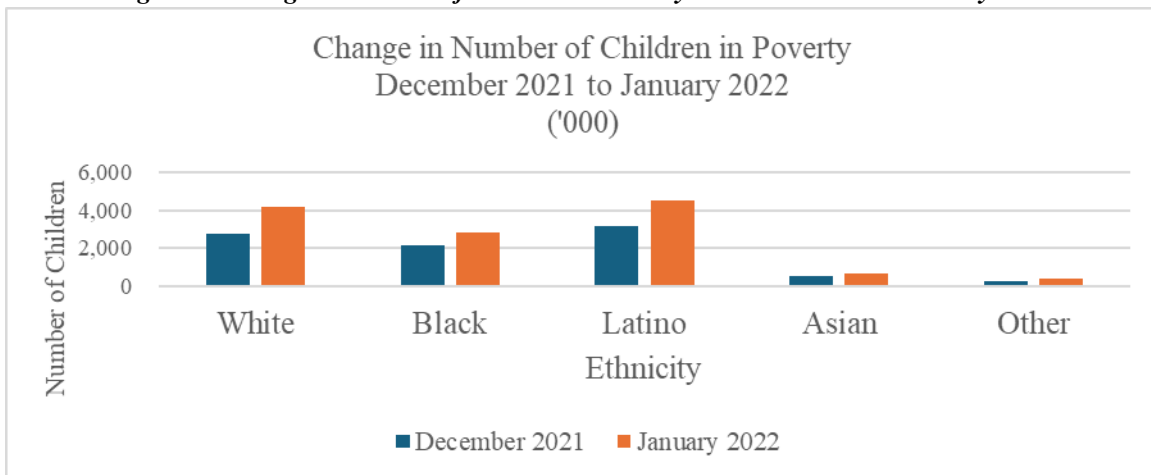
The consistent and across-the-board uplift for all ethnicities when the two interventions are combined attests to the compounded benefits of synergistic fiscal strategies. This insight

underscores the premise that while standalone measures have value, their efficacy is accentuated manifold when integrated holistically. This trend is demonstrated in Figure 5.



Source: Parolin and Curran (2022), Center on Poverty and Social Policy at Columbia University, *Monthly SPM Poverty for December 2021*.

One of the most startling revelations from our research was the repercussions of discontinuing CTC. The subsequent and precipitous rise in child poverty rates over a short period offers a stark testimony to the critical stabilizing role the CTC played during its tenure, as shown in Figure 3. This volatility, especially given its socio-economic implications, underscores the importance of temporal consistency in fiscal and accounting policies. Fleischer (2022) emphasizes this in "The Child Tax Credit Proved Unrestricted Cash Keeps Families Out of Poverty. Without It, Low-Income Families Are Struggling." As previously stated, through interviews, Fleischer could gauge the high degree of assistance the expanded CTC policies provided to lower-income families. At the same time, Fleischer points out that without the expanded CTC policies, millions of children (disproportionately children of color) have been thrust back into poverty (Fleischer, 2022). Over a single month, the impact of removing the CTC's expanded benefits was evident: childhood poverty rates rose from 12 percent in December 2021 to 17 percent in January 2022, as shown in Figure 6 (Fleischer, 2022).

Figure 6: Change in Number of Children in Poverty December 2021 to January 2022

Source: Parolin and Curran (2022), Center on Poverty and Social Policy at Columbia University, Monthly SPM Poverty for December 2021.

5.1 Post-Pandemic Policy Evolution and Current Landscape

The trajectory of child poverty rates following the expiration of the expanded CTC reveals concerning patterns that persist into 2024. According to the most recent data from the U.S. Census Bureau (2024), child poverty rates have stabilized at levels significantly higher than those observed during the enhanced CTC period, though somewhat below pre-pandemic levels. This pattern suggests that while the economic recovery has provided some buffer against the worst outcomes, the absence of targeted support mechanisms continues to leave vulnerable families exposed to financial precarity.

Congressional efforts to restore elements of the expanded CTC have faced multiple obstacles since 2022. The Tax Relief for American Families and Workers Act, introduced in early 2024, proposed modest CTC expansions, including incremental increases to the credit's refundable portion (Joint Committee on Taxation, 2024). However, these proposals fall substantially short of the comprehensive reforms implemented under the ARP and have faced significant opposition amid broader debates about fiscal priorities.

The accounting implications of these policy fluctuations extend beyond theoretical concerns. Tax practitioners and financial institutions have reported increased compliance complexities and administrative burdens as families navigate changing eligibility requirements and documentation standards (American Institute of Certified Public Accountants, 2023). These practical challenges highlight how the technical aspects of tax administration directly influence the lived experiences of families seeking financial support.

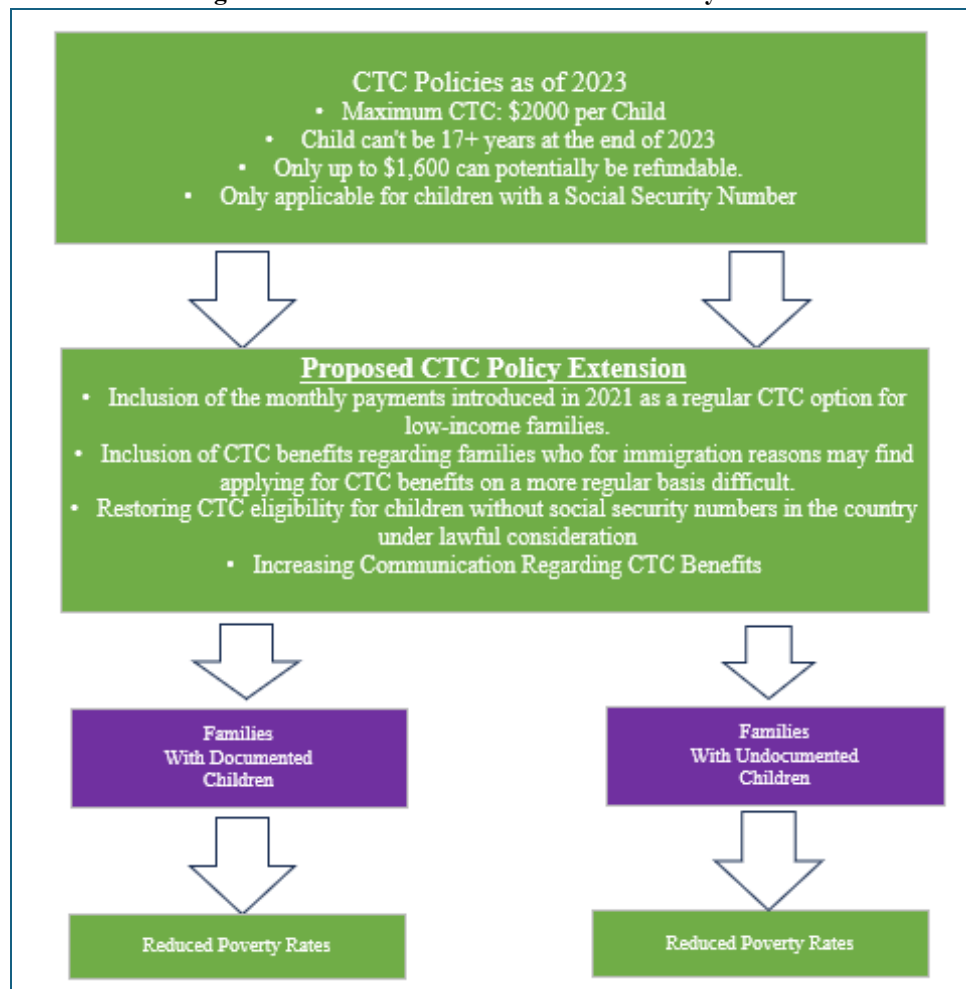
Perhaps most concerning is evidence that the benefits realized during the enhanced CTC period, including improved nutrition, reduced reliance on high-interest debt, and increased educational investments, have begun to erode as families readjust to more limited support structures (Children's Defense Fund, 2024). This regression underscores the temporality of gains

achieved through time-limited interventions and reinforces the case for permanent policy solutions.

This exploration furthers our understanding of the Child Tax Credit beyond its accounting mechanics. It beckons a reevaluation of accounting as a field concerned with fiscal precision and one intertwined with socio-economic outcomes. The varying impacts across demographics call for a tailored, empathetic accounting approach, ensuring that policies are financially sound and socio-economically transformative.

By meticulously tracing the journey from fiscal policy to accounting practices to tangible societal impacts, we underscore the need for an integrated, holistic perspective in accounting. Many individuals have argued for an extension of the CTC's expanded benefits, but despite efforts in legislation to bring this about, no favorable solutions have been reached (Fleischer, 2022). This approach elevates the discipline from financial custodians to socio-economic resilience and progress architects.

Based on the research and results of our study, the authors propose a revised CTC model. The model is shown in Figure 7. It could implement aspects of the CTC extension of the ARP to improve the financial situation of multiple families impacted by the ARP removal.

Figure 7: Revised CTC Post-COVID-19 Policy Model

Source: Narsing, Horton-Roark, Sullivan, Ford, & Beattie-Moore (2023)

This model vividly delineates the transition from CTC policies as of 2023 to the proposed policy extensions, particularly highlighting the division between families with documented and undocumented children. The consequences of these changes extend beyond immediate fiscal changes to broader societal and economic ramifications.

5.2 Policy Recommendations

Based on the empirical evidence and analysis presented, we propose the following concrete policy recommendations to enhance the effectiveness of the Child Tax Credit as a tool for economic resilience and poverty reduction:

1. Implement a Permanent Monthly Payment Structure: Our analysis demonstrates that monthly disbursements significantly improved household financial management and

reduced economic instability. We recommend establishing a permanent option for monthly CTC payments, particularly for households below 200% of the federal poverty line, with appropriate administrative infrastructure to support consistent delivery.

2. **Expand Eligibility for Mixed-Status Families:** To address persistent disparities in benefit access, we recommend restoring CTC eligibility for all children legally residing in the United States, regardless of Social Security Number status. This would rectify the documented inequities faced by Latino and Asian families, while promoting broader economic inclusion.
3. **Enhance Refundability Provisions:** Full refundability should be restored to ensure the CTC reaches families with the most significant economic need. The current partial refundability limitations disproportionately affect the lowest-income households, as evidenced by increases in the poverty rate following the expiration of full refundability provisions.
4. **Implement Inflation Adjustment Mechanisms:** To maintain the real value of CTC benefits in an inflationary environment, we recommend automatic annual adjustments to credit amounts based on the Consumer Price Index for All Urban Consumers (CPI-U). This would prevent erosion of purchasing power over time.
5. **Develop Integrated Administrative Systems:** To reduce barriers to access, tax authorities should implement integrated verification systems that leverage existing government databases to automatically determine eligibility where possible, reducing documentation burdens on vulnerable families.

These recommendations are directly informed by our study's empirical findings and address the specific mechanisms through which CTC influences economic outcomes. They represent a balanced approach that acknowledges fiscal constraints while prioritizing evidence-based interventions with demonstrated effectiveness.

5.3 Economic Contributions and Policy Considerations for Mixed-Status Families

A critical aspect of our analysis that warrants specific attention is the economic contribution of mixed-status families to the U.S. economy and how this relates to their access to tax benefits, such as the CTC. Our research focuses specifically on families in which children legally reside in the United States but who may lack Social Security numbers, often living in households with parents or guardians who have varying immigration statuses.

This economic contribution is substantial and well-documented. Studies from the Institute on Taxation and Economic Policy (ITEP, 2023) document that immigrant families, including those with mixed legal status, contribute substantially to state and local taxes through sales taxes, property taxes (directly as homeowners or indirectly through rent), and income taxes paid via Individual Taxpayer Identification Numbers (ITINs). Additionally, many of these families contribute to Social Security and Medicare through payroll withholding, even though they may not be eligible to claim these benefits.

The policy challenge is particularly complex for children in these households. These children, regardless of their documentation status, are being raised in the United States, attending American schools, and may contribute to the future U.S. workforce and tax base. As our data

demonstrates, excluding these children from full CTC benefits creates economic hardship that may impair their development and future productivity.

The temporary expansion of CTC eligibility under the ARP to more children in mixed-status families acknowledged these children's position within the U.S. economic system. Our findings show that the subsequent reversal of these provisions directly impacted poverty rates among these economically vulnerable families. This presents policymakers with a nuanced challenge: how to address the needs of legally residing children within broader immigration policy considerations.

Our proposed CTC model (Figure 7) offers a pragmatic approach by focusing on the child's legal residence rather than requiring a Social Security number. This approach recognizes that these children are being raised within the U.S. economic system, regardless of technicalities related to documentation. Such a policy would not address broader immigration status questions but would ensure that children growing up in America have access to poverty-reduction measures that support their development and future economic potential.

This approach acknowledges the legitimate legal distinctions in immigration status while recognizing that children's economic well-being has implications for future productivity, educational outcomes, and healthcare costs that affect the broader U.S. economy. By narrowly focusing on legally residing children rather than making claims about adults with varying immigration statuses, such a policy could support economic development goals while respecting the complex legal and political considerations surrounding immigration policy.

6.0 SIGNIFICANCE AND IMPACT

This research makes several significant contributions to the understanding of tax policy as a mechanism for economic resilience and social equity. First, by documenting both the immediate impacts of CTC expansion and its subsequent contraction, we provide clear evidence of how tax policy changes translate into real-world outcomes for vulnerable populations. The dramatic reduction in child poverty during the enhanced CTC period, followed by its immediate reversal in January 2022, offers policymakers a natural experiment that demonstrates the direct relationship between tax credit structure and economic well-being.

Second, our analysis advances accounting discourse by illuminating the intersection between tax administration and social welfare outcomes. The accounting procedures that govern CTC implementation—from eligibility verification to payment disbursement—directly influence who benefits and to what degree. By identifying specific features that enhance or impede program effectiveness, particularly for immigrant families, we contribute to a more nuanced understanding of accounting's role in advancing economic equity.

Third, our detailed examination of the immediate aftermath of benefit expiration provides valuable insights into the consequences of temporary interventions. The stark increase in child poverty rates observed in January 2022 demonstrates how quickly gains can be reversed when support structures are withdrawn, with implications for program design and implementation.

Finally, this research contributes to broader economic understanding by demonstrating how targeted tax interventions functioned as stabilizers during economic volatility. The CTC's

effectiveness in maintaining household financial security during the pandemic recovery period suggests potential applications for similar mechanisms in future economic disruptions.

Collectively, these contributions advance both theoretical understanding and practical application of tax policy as a tool for fostering economic resilience in an increasingly volatile global economy.

7.0 CONCLUSION

The revised CTC model post-COVID-19 is a significant policy proposition that aims to address past challenges while preparing for a more inclusive future. While its economic implications are directly tangible in potential GDP growth, its societal impacts—though harder to quantify—are profound, promising a better, more inclusive future for all children, regardless of their documentation status.

In socio-economic policy, the Child Tax Credit (CTC) connects families' aspirations with the larger goals of societal equity and well-being. This research examined the hypothesis that accounting practices, far from being mere mechanistic tools, are instrumental in shaping the delivery, impact, and evolution of such seminal policies. We examined the original mission of the CTC and how it has been fulfilled, especially during the COVID-19 pandemic, through the expanded CTC benefits of 2021, thereby confirming the relationship between accounting's rigor and the transformative potential of the CTC.

Accounting is not merely about numbers. It reveals patterns in data and financial trends. Through the accounting lens, we have examined how the CTC demonstrates that accounting practices can both mirror and mold socio-economic realities. Our analysis highlights disparities and guides policy adjustments by showing the impact that expanded CTC benefits had on relief received by low-income households during COVID-19, the improvements in children's lives, and the repercussions families felt once benefits expired.

The CTC is important. As families face the multifaceted challenges of a rapidly evolving world, the CTC provides stability and a promise of support. This research shows that the efficacy of these policies depends on the precision, transparency, and adaptability of the accounting practices that underpin them, through which individuals must file for the CTC, as well as on the processes by which the CTC principles are explained to families to help them gain optimal benefits. Not only will these benefits positively impact parents, but they should also improve their children's present and future lives.

As we move further from the acute phase of the pandemic, the lessons learned from the CTC expansion remain vitally relevant. The temporary nature of the enhanced benefits created a natural experiment that demonstrated both the potential of comprehensive tax policy to address structural inequities and the consequences of allowing such supports to lapse. The accounting profession has a unique responsibility to translate these lessons into frameworks that balance fiscal prudence with social equity.

Looking ahead, integrating modern accounting technologies with progressive tax policies offers promising avenues for creating more responsive, efficient, and equitable support systems. Digital payment infrastructure, advanced data analytics, and streamlined verification processes

can reduce administrative barriers while enhancing program integrity. These innovations, when guided by the social welfare principles that motivated the original CTC expansion, represent the next frontier in accounting's contribution to economic resilience.

Policies like the CTC are crucial chapters in the grand narrative of societal progression. Moreover, accounting emerges not just as a scribe documenting these chapters, but as a co-author, shaping their contours, depth, and resonance in the post-pandemic economic landscape.

8.0 LIMITATIONS AND FUTURE WORK

The importance of this research to the accounting field is evident. By dissecting the intricate interplay between the Child Tax Credit (CTC) and its broader societal implications, we have shown that accounting practices can transcend traditional boundaries and profoundly influence socio-economic landscapes. However, like any study, our exploration has limitations that warrant consideration and provide direction for future endeavors.

Building on these limitations, there is a compelling avenue for future research. First and foremost, a more prolonged study encompassing varied economic climates would offer richer insights. Diving deeper into families' specific challenges in accessing CTC could highlight inefficiencies and areas for improvement in policy design and accounting dimensions.

Furthermore, the accounting field would benefit immensely from collaborative interdisciplinary studies. Partnering with sociologists, economists, and public policy experts can ensure that accounting practices for instruments such as the CTC are technically sound and socially optimal.

With technological advancements and the increasing adoption of digital solutions in accounting, exploring how technology can streamline, optimize, and even personalize the delivery of benefits such as CTC represents a valuable avenue for future research. The rapid development of financial technology since the pandemic has created opportunities to reimagine benefit delivery systems in ways that could significantly reduce administrative barriers for vulnerable populations.

Additionally, comparative research examining how other nations have structured and delivered child benefits during and after the pandemic could provide valuable insights for U.S. policy development. Countries, including Canada and numerous European nations, have implemented various models of child-focused financial support with different accounting structures and delivery mechanisms that merit careful study (Organization for Economic Co-operation and Development, 2023).

While this research illuminates the powerful nexus between accounting practices and societal well-being through the lens of the CTC, it also opens the door to many possibilities. Each limitation underscores the vast potential for the accounting field to innovate, evolve, and lead in shaping a socio-economically resilient future. One way this can be done involves revising the CTC benefits once more, incorporating the monthly payments, which appeared to be helpful to families needing to budget their limited income in 2021, as a regular CTC option for low-income families.

Another way would be to restore the ease with which CTC benefits were accessible to all ethnicities in 2021, especially for Hispanic families who, for immigration-related reasons, may find applying for CTC benefits more difficult (Unidos US, 2021). Another way is to restore CTC eligibility for children without Social Security numbers to the pre-2018 standard (Unidos US, 2021). Regardless of the methods used, as the research indicates, revising the CTC's benefits to a version closer to 2021 would be beneficial for low-income families and their children as a whole, as the nation seeks to revise its fiscal policies to promote economic growth while recovering from COVID-19.

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