

Oware, Kofi Mintah

**Article**

## Mandatory CSR expenditure and firm performance in lag periods: Evidence from India

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\*Corresponding author: Kofi Mintah Oware, Department of Banking Technology and Finance, Kumasi Technical University-Ghana, Kumasi, Ghana  
E-mail: [kofimintah.oware@kstu.edu.gh](mailto:kofimintah.oware@kstu.edu.gh)

Reviewing editor:  
Collins G. Ntim, Accounting,  
University of Southampton,  
Southampton United Kingdom

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Mandatory CSR expenditure and firm performance in lag periods: Evidence from India

Kofi Mintah Oware<sup>1\*</sup>

**Abstract:** This study examines whether mandatory CSR expenditure has the same effect on firm performance after years of implementation. The data set consists of 80 firms with 640 firm-year observations on the Bombay Stock Exchange in India from 2013 to 2020 that practised sustainability reporting. This study used panel regression with random effect & fixed effect, and generalized method of moments (GMM) assumptions. The first findings show that mandatory CSR expenditure in the current year negatively affects Tobin q. The second findings show that mandatory CSR expenditure in the lag years (1 to 2 years) has no association with return on assets or Tobin q. The third findings show that mandatory CSR expenditure in the lag years (3 and above) has no association with return on assets or Tobin q. The re-alignment between voluntary CSR investment and associated benefit mostly happens in lag 1 and 2, but mandatory CSR shows insignificant results. Our results are robust to controlling firm-level variables. Previous studies examined mandatory CSR expenditure on firm performance, but this new study addresses the shorter and longer lag of mandatory CSR expenditure on firm performance. The study's implication suggests the possible acceptability of allowing firms to write CSR expenditure as tax-deductible until the CSR expenditure and the associated benefit are aligned. However, until then, managers must be authorised to spend on CSR activities, knowing there is a safety net when CSR expenditures do not produce positive firm performance in subsequent years.

**Subjects:** Sustainable Development; Finance; Business, Management and Accounting; Sustainability Education, Training & Leadership

**Keywords:** Mandatory CSR expenditure; Firm performance; Institutional theory; India; Lag effect

### ABOUT THE AUTHOR

Kofi Mintah Oware has a PhD in Business Administration (sustainability finance and management) from Mangalore University, India and an MBA from Aberdeen Business School (Robert Gordon University-UK). He is currently a senior lecturer in the banking technology and finance department. He is also a chartered accountant with membership from the Institute of Chartered Accountants (ICA), Ghana and the Institute of Cost Executive & Accountants (ICEA)-UK. Before joining Academia, he worked in blue-chip companies for 12 years in various capacities, including chief accountant, head of finance and, general manager for finance & administration in Ghana and research consultant to Aberdeen Businesswomen network in the United Kingdom. In academia, he has 31 publications in the various journal, including three "A" s under ABDC (Meditari Accountancy Research), three "B" s under ABDC (Social Responsibility Journal & Society and Business Review), Sage publications and 17 other publications in Scopus Indexed journals.

## 1. Introduction

Firms use corporate social responsibility (CSR) to undertake social responsibility to society and the community, and its applications have mostly been voluntary (Jain et al., 2015; Thirarungrueang, 2013). However, emerging economies have shifted to mandatory CSR reporting or combined mandatory and voluntary CSR reporting (Bansal et al., 2021) to address firms' concerns that do not address environmental and social issues. It is necessary because corporate social irresponsibility is evident (Z. Chen et al., 2020). Moreover, the concerns expressed by governments and stakeholders form the basis of the institutionalisation of CSR (Oberoi, 2018). India became the first country in 2013 to mandatorily regulate firms to report on their CSR activities (Bansal et al., 2021). However, firms have raised issues with mandatorily CSR reporting, making some firms treat the mandatory policy as suboptimal (Adegbite et al., 2019). Other studies have also identified a negative association between mandatory CSR expenditure and firm performance (Bhattacharyya et al., 2021; Garg & Gupta, 2020). Nonetheless, some studies confirm that firms that invest in CSR activities increase performance because stakeholders patronise their products and perceive these firms to be legitimate and responsible (Jادیyappa et al., 2019). From the perspective of short-term and long-term benefits, a study using regression discontinuity design concluded with a mixed outcome where firms in India benefited in the short term but had mixed findings in the long-term (Beloskar & Rao, 2021). The policy of mandatory CSR expenditure has been in place since 2013, and enough data are available now to examine the policy implication to the firms which incur the cost. Given this mixed background, we question the certainty of a continuous benefit for a firm mandatorily undertaking CSR expenditure. The concept of CSR makes companies and managers responsible for meeting the community's and society's welfare needs after exploiting the community's resources (Bowen, 1953; Carroll, 1979; Davis & Blomstrom, 1966; S. Sharma, 2009). Therefore, this study goes back to the beginning of the policy in 2013 and examines its effect on firm performance. The aim of this study seeks to provide plausible answers to the questions raised in this study which include; (1) whether the immediate mandatory CSR expenditure causes an increase in firm performance of listed firms in India, (2) whether lag periods mandatory CSR expenditure cause lower yields in return on assets and firm value. Lastly, we ask whether the effect of mandatory CSR expenditure on firm performance is larger in beta coefficient in the immediate periods than in lag periods. Given the questions raised and identified gaps yet to be examined by researchers, this study examines mandatory CSR expenditure and firm performance in the lag periods using the Indian stock market as a testing ground.

There is a link between voluntary CSR reporting and firm performance (Lee, 2020; C. Y. Chen et al., 2021). After introducing mandatory reporting to address the weakness in voluntary reporting, studies undertaken showed an association between mandatory CSR expenditure and firm performance (Y. C. Chen et al., 2018; Nair & Bhattacharyya, 2019; Omar & Zallom, 2016). Subsequent studies have also established a link between lag years of voluntary CSR and firm performance (Janamrung & Issarawornrawanich, 2015; Lee, 2020). However, researchers have not examined whether the benefits accrued or not are sustainable. Also, no studies examine the alignment between mandatory investment in CSR activities and firm performance to see whether it occurs in the shorter lag period (0 to 2 years) or longer lag periods (3 years and above). Accordingly, the present study examines whether a shorter or longer lag of mandatory CSR expenditure affects the firm performance of listed firms in India and whether the continuous enforcement of CSR expenditure is sustainable. The data set consists of 80 firms with 640 firm-year observations. Our initial search generated 500 firms, but the firms that submitted sustainability reports (CSR assurance reports) as part of their reporting requirements amounted to 131 firms between 2013 to 2020 (Appendix A). Descriptive statistics, panel regression with random & fixed effect assumptions and generalized method of moments (GMM) are the research models for examining the study.

The study contributes to the existing knowledge in three ways. First, our study contributes to the debate on mandatory CSR expenditure and firm performance by adding new knowledge that previous studies have not examined. Previous studies examined mandatory CSR expenditure on

firm performance (Beloskar & Rao, 2021; Y. C. Chen et al., 2018; Garg et al., 2021; Nair & Bhattacharyya, 2019; Omar & Zallom, 2016), but this new study addresses the shorter and longer lag of mandatory CSR expenditure on firm performance. Secondly, previous studies examined the lag between voluntary CSR expenditure and firm performance (Janamrungsakul & Issarawornrawanich, 2015). However, this study further examines the lag of mandatory CSR expenditure instead of voluntary CSR expenditure. Also, this study compares the effect of mandatory CSR expenditure on firm performance to see whether the immediate impact is larger than the lag effect. The third contribution of the study provides a deeper understanding of institutional theory (DiMaggio & Powell, 1983) in relation to mandatory CSR expenditure and firm performance in India, an emerging economy. The remainder of the paper is organised as follows. Section 2 provides an overview of the empirical literature, underpinning theory and hypotheses development. Section 3 shows the data set, variables description, model specification, and estimation techniques. Sections 4 present the result and discussion. Finally, section 5 shows the conclusion and the implication of the study.

## 2. Literature review and hypotheses development

### 2.1. Institutional theory

According to institutional theory, an institution contains norms and regulations. An enterprise can be forced to embrace the proper practice accepted by the community and society through coercive isomorphism (DiMaggio & Powell, 1983; Matten & Moon, 2008; Ministry of Corporate Affairs, 2009, 2013). The implementation of sustainable development goals, which are urged to solve environmental and social concerns identified by global stakeholders, is one of these norms. However, the current shift to enforcing sustainable development goals through mandatory reporting rather than voluntary reporting necessitates more academic debate to determine its success in delivering the sustainability agenda's outcomes and impact on business performance. Given that India has witnessed a shift from voluntary CSR reporting to mandatory CSR reporting since 2013, we, therefore, ask whether the institutions are effective enough to improve CSR expenditure to guarantee an increase in firm performance. Different authors have examined mandatory CSR and firm performance using institutional theory. For example, a study showed that compulsory spending increased beyond voluntary spending after the Act's introduction (Nair & Bhattacharyya, 2019). We perceive this study to add to the debate on sustainable development agenda by understanding the relationship between mandatory CSR expenditure and financial performance in lag periods through institutional theory as the underlying theory.

### 2.2. History of voluntary and mandatory CSR reporting in India

The history of corporate social responsibility in India is traced to the 19<sup>th</sup> century and has its roots in four models. The four models include; the ethical model, the statist model, the liberal model and the stakeholders' model (Kumar et al., 2001). According to research conducted by the authors, the Cadbury brothers from England and the Tata family from India first pioneered corporate social responsibility (Kumar et al., 2001). Gandhi also believed colonial masters were only trustees, and the ownership of everything belonged to the people of India, and that the trustees were responsible for ensuring the social progress of the owners of the land resources, and this concept was captured by Gandhi in 1939 (Kumar et al., 2001). A second model of corporate social responsibility emerged after India's independence which included the socialist version and capitalist version of a framework where the government, through policies, captured the concept of corporate social responsibility in labour laws and management principles, which has still survived the centuries (Kumar et al., 2001).

The final concept of corporate social responsibility is the stakeholder's approach, which covers all stakeholders affected by the firm activities and can also affect the firm activities (Freeman, 1984). This global concept is now practised in India (Sharma, 2009). However, it was first postulated that the author argued that a firm's pursuance included the welfare of employees, customers, and society (Bowen, 1953). Subsequent variations had the person concept and the four-part definition of economic, legal, ethical and discretionary (Carroll, 1979; Davis & Blomstrom, 1966). The liberalisation of

the Indian economy took place in the 1990s, and India shifted from the traditional philanthropy style to a more stakeholder approach. Companies are responsible for meeting the community's and society's welfare needs through corporate social responsibility (Sharma, 2009). To ensure compliance, the Indian Company's Act 2013 amended now requires companies to spend an average of 2 per cent of their net profit after tax for the previous three years of operations on corporate social responsibility. Section 135 of the amended Act instructs firms and companies to report on nine pillars which cover; the need to be ethical, transparent and accountable, suitable goods and services, responsible to all stakeholders, promote human rights, protect and restore the environment, promote inclusive growth and development, and provide value to the consumer (Ministry of Corporate Affairs, 2013).

### **2.3. Mandatory CSR expenditure and firm performance**

Emerging economies have either shifted to mandatory CSR reporting or combined mandatory and voluntary CSR reporting (Bansal et al., 2021) to address environmental and social issues (Oberoi, 2018). However, voluntary CSR expenditure is prevalent in developed economies, making mandatory CSR expenditure ineffective (Thirarungueang, 2013). Previous studies have examined mandatory CSR reporting and firm performance or mandatory CSR reporting and CSR disclosure (Jain et al., 2015; Manchiraju & Rajgopal, 2017; Oware & Mallikarjunappa, 2020). Even though many studies showed a positive and statistically significant association between mandatory CSR expenditure and firm performance (Omar & Zallom, 2016), some led to a decrease in firm profitability (Y. C. Chen et al., 2018). Therefore, we wonder whether mandatory reporting can sustainably contribute to firm performance in the Indian context after its 2013 implementation. We argue on mandatory CSR expenditure-firm performance nexus because previous studies showed that some firms struggle with the new policy and see the policy as sub-optimal when forced to mandatory spend on CSR. The consequence negatively affects shareholder value (Manchiraju & Rajgopal, 2017). Similarly, another study using Indian data as a testing ground also showed that mandatory CSR expenditures negatively affect firms' market performance (Asit Bhattacharyya & Rahman, 2020), making mandatory CSR classified by some firms as shareholder expense. Other studies also similarly argued that mandatory CSR expenditure lowers firm performance measured by firm value and market performance (Garg & Gupta, 2020). Conversely, the context of India also showed that the implementation of mandatory reporting has significantly caused CSR to positively affect firm value (Jadiyappa et al., 2019).

CSR has become sensitive to institutional pressures, which causes an increase in CSR expenditure and its associated increase in firm performance (Nair & Bhattacharyya, 2019). Yet still, we are uncertain whether the increase is sustainable after many years of implementing the policy. Therefore, we ask if reversing back to voluntary reporting is appropriate to guarantee an increase in firm performance. Previous studies argued a positive association between voluntary CSR and firm performance (Lee, 2020; C. Y. Chen et al., 2021). There is evidence that companies undertaking voluntary CSR reporting have higher return assets than those mandatorily CSR reporting, indicating that mandatory reporting is losing its effect to attract more firms (C. Y. Chen et al., 2021). It is also reported that mandatory reporting leads to lower levels of disclosure (Arena et al., 2018) in some jurisdictions. Nonetheless, the positive association between mandatory CSR expenditure and firm performance causes us to believe that, through institutional theory, firms can undertake mandatory expenditure and reporting, which legitimately causes firms to operate in the community or receive the patronage of its products on the market. It is, however, notable that regulatory non-compliance threatens the legitimacy of a firm operation (Mobus, 2005). The uncertainty of whether mandatory CSR expenditure is sustainable after many years of policy implementation informs the need to investigate the plausibility of the assertion. Table 1 shows the summary of CSR expenditure-financial performance studies.

**Table 1. Summary of mandatory CSR expenditure-Financial performance studies**

Source/Authors	Title	Geographical Focus	CSR expenditure measurement	Financial Performance measurement
Adegbite et al. (2019).	Financial and corporate social performance in the UK listed firms: the relevance of non-linearity and lag effects.	UK listed companies	social performance data from Thomson Reuters Asset4 in DataStream	two accounting-based measures (return on assets—ROA and return on equity—ROE).
Beloskar and Rao (2021)	Corporate Social Responsibility: Is Too Much Bad?—Evidence from India. <i>Asia-Pacific Financial Markets</i> ,	Indian firms	Prowess database from the Centre for Monitoring Indian Economy (CMIE). Annual CSR expenditure as a percentage of average net profit of last three years	short-term financial performance (ROA, ROCE, and RONW) Tobin's Q, EV/Total Assets and L1VA/ Total Revenue which are indicators of long-term financial performance
Bhattacharyya, A., & Khan, M. (2021)	Financial inclusion, corporate social responsibility and firm performance —analysis of interactive relationship	Indian firms	CSR spending at the firm level (ACSREXP) we have used the amount spent for CSR by a company in that year and is extracted from Prowess database	firm performance is measured in the existing literature by ROA and Tobin's Q.
A. Bhattacharyya and Khan (2021)	Is better banking performance associated with financial inclusion and mandated CSR expenditure in a developing country?	Indian companies	Natural logarithm of actual CSR expenditure	return on assets (ROA) and stock return (SR)
Asit Bhattacharyya and Rahman (2020)	Mandatory CSR expenditure and stock return.	Annual report information of Indian companies	Natural log of actual amount spent on CSR activities	Annual stock return
Garg and Gupta (2020)	Mandatory CSR expenditure and firm performance: Evidence from India	Indian corporate sector	mean percentage value of CSR expenditure	stock returns
Garg et al. (2021)	Is CSR expenditure relevant to the firms in India?	Indian corporate sector	the amount of CSR expenditure	stock returns and systematic risk (beta)
Jadiyappa et al. (2019)	Does social responsibility improve firm value? Evidence from mandatory corporate social responsibility regulations in India	Indian corporate sector	CSR ratio = ratio of CSR expenditure scaled by total sales	Tobin's Q

(Continued)



**Table 1. (Continued)**

Source/Authors	Title	Geographical Focus	CSR expenditure measurement	Financial Performance measurement
Janamrungs and Issarawornwanich (2015)	The association between corporate social responsibility index and performance of firms in industrial products and resources industries: empirical evidence from Thailand.	Stock Exchange of Thailand (SET).	CSR index score reflects a firm's responsibility toward the community, employees and environment.	Tobin's Q return on equity (ROE) return on assets (ROA),
Lee (2020)	CSR impact on the firm market value: Evidence from tour and travel companies listed on Chinese stock markets	Chinese stock markets	5-point Likert scale is used to measure the CSR activity,	Market value, Sales, ROA, Tobin Q and Risk ratio
Manchiraju and Rajgopal (2017)	Does Corporate Social Responsibility (CSR) Create Shareholder Value? Evidence from the Indian Companies Act 2013.	Indian corporate sector	the amount of CSR expenditure,	stock price
Mukherjee et al. (2018)	Mandatory Corporate Social Responsibility: The Indian experience	the Indian experience	Dollar value of CSR spending	ROE
Nair and Bhattacharyya (2019)	Mandatory corporate social responsibility in India and its effect on corporate financial performance: Perspectives from institutional theory and resource-based view	Prowess database contains Indian corporate sector information	CSR Intensity as our proxy for CSR spending,	Return on assets (ROA)
Omar and Zallom (2016)	Corporate social responsibility and market value: evidence from Jordan.	Jordanian firms listed on the Amman Stock Exchange (ASE)	Construction of the corporate social responsibility index	market value (measured by Tobin Q)
Sharma and Aggarwal (2021)	Impact of mandatory corporate social responsibility on corporate financial performance: the Indian experience	The Indian experience	actual total amount spent on CSR activities	ROA, ROE return on net assets (RONA).
Oware & Mallikarjunappa, 2020	CSR expenditure, mandatory CSR reporting and financial performance of listed firms in India: an institutional theory perspective	The Indian experience	CSR expenditure	ROA, ROE, SPR, Tobin's Q

(Continued)



Table 1. (Continued)				
Source/Authors	Title	Geographical Focus	CSR expenditure measurement	Financial Performance measurement
Oware and Mallikarjunappa (2019)	Corporate social responsibility investment, third-party assurance and firm performance in India: The moderating effect of financial leverage	The Indian experience	CSR investment, third-party assurance	ROA, ROE

## 2.4. Hypothesis development

### 2.4.1. The effect of mandatory CSR expenditure

The gap between social expectations from firms meeting their obligations has caused some countries to introduce government regulations, and India is the first of its kind (Bansal et al., 2021). However, the expectation of the intended purpose is still not achieved, leading to a decline in the unwillingness of firms to spend more on CSR (Mukherjee et al., 2018). However, a higher CSR magnitude is expected to lead to higher utilisation of the firm's assets (Janamrung & Issarawornrawanich, 2015) or an increase in firm value, which is the shareholder's expectation. Moreover, many studies showed a positive and statistical association between mandatory CSR expenditure or disclosure and firm performance (Omar & Zallom, 2016). Other studies also showed an insignificant positive association between mandatory CSR expenditure and stock price returns and profitability (Garg et al., 2021; Sharma & Aggarwal, 2021). Nevertheless, the associated benefit is short-term mainly because the relationship between the variables is based on immediate year mandatory expenditure. Therefore, using India as a testing ground, we re-examine the relationship and propose the hypothesis that states:

*H1: Mandatory CSR expenditure in the current year is associated with the firm performance of listed firms.*

### 2.4.2. The lag effect of mandatory CSR expenditure

Previous studies have argued that an investment in CSR guarantees a return measure by ROA and Tobin's q within two years (Janamrung & Issarawornrawanich, 2015). Still, the argument is related to voluntary and not mandatory. A related study using the Chinese Stock market data argued that CSR activity positively correlates with market value for the current period and can sustain the association even in a lag of two time periods (Lee, 2020). But whether pressured firms' investment in CSR or mandatory CSR expenditure will lead to an increase in returns over a two-time lag period lacks empirical evidence. We argue a negative significance because previous studies showed that firms with mandatory responsibilities treat mandatory CSR reporting as suboptimal to firms operating goals (Adegbite et al., 2019). The suboptimal treatment of CSR causes firms to adjust their CSR commitment to meeting societal obligations (Adegbite et al., 2019). The consequence is in line with our expectations. Therefore, we test if a two-time lag mandatory CSR expenditure will negatively affect firm performance in the below hypothesis. The hypothesis states that:

*H2: Mandatory CSR expenditure in the lag years (1 to 2 years) affects the firm performance of listed firms.*

The loss of motivation to attract more firms into CSR reporting with the pressured regulation (Bansal et al., 2021; C. Y. Chen et al., 2021) lays the foundation to ask whether mandatory CSR expenditure has the same effect on a firm performance after years of implementation. In a normal time, it is suggested that there is a limitation between the alignment of the cost of investment in CSR and associated benefits, and the expected lag periods will lead to higher firm performance (Lee, 2020). However, with the introduction of mandatory reporting, we argue an un-sustainability of the relationship leading to no association in the long lag periods between mandatory CSR expenditure and firm performance (market value and return on assets). Mandatory CSR expenditure sometimes decreases firm profitability (Y. C. Chen et al., 2018). Reasons may include the struggle firms go through due to the new policy and see the policy as sub-optimal when forced mandatory spending on CSR (Adegbite et al., 2019). We argue that a compulsory continuous CSR expenditure by firms will not improve firms' profitability because of the decrease in the motivation to continue and the likelihood of the history of corporate social irresponsibility to affect shareholders' perception towards a mixed reaction to the stock market (Z. Chen et al., 2020). It can also

be argued that the lack of a relationship or negative relationship between firm performance and CSR is when CSR activities are initiated to comply with government-imposed regulations. Therefore, we propose that longer lags of mandatory CSR expenditure will not increase firm performance.

*H3: Mandatory CSR expenditure in the lag years (3 years or more) has no association with the firm performance of listed firms.*

### 3. Research design and methodology

#### 3.1. Data

To test mandatory CSR expenditure in the immediate year and lag periods and its effect on firm performance in India, this study constructs panel data from 2013 to 2020 inclusive. The year 2013 is included in the study because the financial year of Indian firms cover April to March of the following year, and some firms immediately implemented the policy. The data set consists of 80 firms with 640 firm-year observations. Our initial search generated 500 firms, but the firms that submitted sustainability reports (CSR assurance reports) as part of their reporting requirements amounted to 131 firms between 2013 to 2020 (Appendix A). To have a balanced panel, all missing data years and firms were removed from the sample size, and the final sample size of 80 firms with 640 firm-year observations was used for this study. Green Clean organisation and Sustainability outlook report on all large firms (based on Company's Act 2013, section 135) in India that submit sustainability reports ("BRR and Sustainability Report Tracker for Listed Companies," 2019; Green Clean Guide, 2011). Data is from each firm web page. The context of India is used for the emerging economy because India is the first country to mandatorily regulate firms to report on their CSR activities (Bansal et al., 2021).

#### 3.2. Model specification

To examine mandatory CSR reporting and firm performance of listed firms, and using previous studies on the time-lagged model (Lee & Kim, 2006), we specify the following economic model based on panel regression with random and fixed effect assumptions.

$$FP_{it} = \alpha + \beta_1 MCSRE_{it-0} + \beta_2 MCSRE_{it-1} + \beta_3 MCSRE_{it-2} + \beta_4 MCSRE_{it-3} + \sum \phi CTRL_{it} + \mu_{it} \quad (1)$$

Where,  $i$  and  $t$  denote the cross-sectional units and period, respectively.  $\alpha$  represents the intercept,  $\beta_{1-4}$  and  $\phi$  = parameters for estimation/regression coefficient; and  $\mu$  = Error term.  $FP_{it}$  represents firm performance.  $MCSRE$  also represents mandatory CSR expenditure from year zero to lag three years. Finally, the variable  $CTRL_{it}$  represents the control variables, including financial leverage, firm size, board independence, year effect, CSR committee no of meetings, CSR committee no of members and Growth sales percentage.

#### 3.3. Dependent variable

The choice of firm performance measured by firm value (Tobin's  $q$ ) and asset utilisation (ROA) is used by previous studies in association with CSR (Janamrung & Issarawornrawanich, 2015; Nandy, 2020; Oware & Mallikarjunappa, 2019; Velte, 2017). To help measure whether firms can achieve sustainable operations (Z. Chen et al., 2020), we define Tobin's  $q$  and return on assets (ROA) below.

- (i) Tobin's  $q$  is measured as Tobin  $q$  = (Market value of equity + Book value of Total Liability)/ Total Asset.
- (ii) Return on assets (ROA) is calculated as the natural log of net income over total assets.

#### 3.4. Independent variables

Mandatory CSR investment or expenditure depends on CSR requirements for large firms in the Indian Companies Act 2013, section 135. The Act makes it mandatory for companies with at least Rs 5 crores net profit or Rs 1,000 crores turnovers or Rs 500 crores net worth to spend at least 2 per cent of the

**Table 2. Descriptive statistics**

	Symbol	Obs.	Mean	Std. Dev.	Min.	Max
Return on Assets	ROA	640	1.892	0.985	0	3.701
Tobin's q	TOB	640	3.804	3.844	0	25.151
Mandatory CSR expenditure in Lag0	MCSRE t-0	640	5.116	1.987	0	9.047
Mandatory CSR expenditure in Lag1	MCSRE t-1	640	4.458	2.522	0	9.047
Mandatory CSR expenditure in Lag2	MCSRE t-2	640	3.937	2.837	0	9.047
Mandatory CSR expenditure in Lag 3 and above	MCSRE t-3	640	3.298	2.992	0	9.047
Financial leverage	FL	640	0.348	0.477	0	1
Firm size	FS	640	11.992	1.511	8	16
Board independence	IBZ	640	5.639	1.654	1	13
Year effect	YDU	640	16.500	2.293	13	20
CSR committee no of meetings	CSRM	640	3.781	1.743	0	8
CSR committee no of members	CSRN	640	2.186	1.666	0	9
Growth sales percentages	GSAL	640	0.993	0.298	-6.441	1.248

**Table 3. Correlation coefficients and variance inflation factor (VIF)**

	1	2	3	4	5	6	7	8	9	10	VIF
ROA	1										
TOB	0.609***	1									1.500
MCSRE <sub>t-0</sub>	0.380***	0.040	1								4.050
MCSRE <sub>t-1</sub>	0.267***	0.036	0.626***	1							3.040
MCSRE <sub>t-2</sub>	0.201***	0.033	0.435***	0.739***	1						3.980
MCSRE <sub>t-3</sub>	0.148***	0.034	0.303***	0.568***	0.781***	1					3.760
FL	-0.493***	-0.195***	-0.161***	-0.108***	-0.074*	-0.053	1				1.290
FS	-0.174***	-0.384***	0.680***	0.450***	0.320***	0.229***	0.171***	1			3.250
IBZ	0.082**	0.012	0.199***	0.116***	0.072*	0.036	-0.174***	0.189***	1		1.100
YDU	0.044	0.003	0.112***	-0.356***	-0.593***	-0.717***	-0.044	0.075*	0.016	1	3.280
CSRM	0.050	-0.006	0.441***	0.253***	0.138***	0.049	0.030	0.365***	0.076*	0.209***	1.410
CSRN	0.117***	-0.079**	0.564***	0.337***	0.195***	0.093**	0.023	0.476***	0.110**	0.199***	1.680
GSAL	-0.034	-0.100**	0.060	0.039	0.024	0.014	0.031	0.114***	0.016	-0.009	1.020
	<b>11</b>	<b>12</b>	<b>13</b>								
CSRM	1										
CSRN	0.464***	1									
GSAL	0.017	0.057	1								

Note: \*\*p < 0.05, \*\*\*p < 0.01 and \*p < 0.10 level (two-tailed), N = 640. Pairwise Correlation.

average net profits of three years on CSR agenda (Ministry of Corporate Affairs, 2009, 2013). Previous studies have mandatory CSR expenditure as a variable (Yadaw & Sinha, 2021). We use the natural logarithm of mandatory CSR expenditure, consistent with previous studies (Nakamura, 2015). This study examines the lag of one to three years of mandatory CSR expenditure.

### 3.5. Control variables

$CTRL_{it}$  represents the control variables, including firm size, sustainability report format, year effect, the total board size, CSR investment, and type of industry

(1) Firm size measures a firm's capacity to undertake CSR and sustainability activities. It is calculated as the natural logarithm of the firm's total assets (Razali et al., 2016).

(2) Financial leverage measures the ratio of total liabilities to total assets (Clarkson et al., 2008; Cormier et al., 2011; Mishra & Suar, 2010).

(3) Year indicator dummy represents the timing effect and uses a dummy variable in the model to control the year effect (Qui et al., 2016). This aids in dealing with cross-sectional dependence, among other issues.

(4) Board independence is the total number of outside directors on the board (Inoue & Lee, 2011).

(5) CSR committee membership is the number of committee members who decide on the CSR activities of the firm (Yekini et al., 2015; 6) CSR committee is the number of meetings held annually to deliberate on CSR activities (Yekini et al., 2015).

(7) Sales growth is the natural logarithm of sales of the current period to the previous period multiplied by 100 per cent. It is a control variable to reduce substantial sales revenue (Luo & Bhattacharya, 2006).

### 3.6. Methodology

We applied panel regression with random & fixed effect and generalized method of moments (GMM) assumptions (A. Bhattacharyya & Khan, 2021; Nandy, 2020) to test the study's  $H1$ ,  $H2$  and  $H3$ , and results were analysed with Stata 15.0. The model applies 680 firm-year observations for listed firms that submit sustainability reports within the 2013 to 2020 accounting year. The choice of GMM addresses endogeneity problems across panels (Wooldridge, 2002). The estimated standard errors are robust to remove heteroscedasticity and serial correlation effects (Wooldridge, 2002).

## 4. Empirical results and discussions

Tables 2 to 5 show the study's empirical analysis: subsections 4.1 show descriptive statistics, correlation coefficients, and variance inflation factor. Subsections 4.2 and 4.3 show the regression tests and results.

### 4.1. Descriptive statistics and correlation matrix

Table 2 presents the descriptive statistics of variables. Firm performance is measured by Tobin's  $q$  and return on assets. ROA has a mean of 1.892 and a standard deviation of 0.985. It indicates a deviation of 52.06% from the mean and shows that ROA is not even among these industries. Similarly, Tobin's  $q$  has a mean of 3.804 and a standard deviation of 3.844. The deviation from the mean is more than 100%, indicating that Tobin's  $q$  is not even among firms in these industries. The study shows that mandatory CSR expenditure (MCSRE) in lag zero has a mean of 5.116 and a standard deviation of 1.987. It indicates a deviation of 38.80% from the mean and shows that MCSRE is not even among these industries.

Table 3 shows the correlation matrix of the variables under study. The results allow the ruling out of the possible existence of multicollinearity between the studied model variables. The largest significant coefficient among the independent variables is 0.781 and 0.680, which is below the threshold of 0.800 suggested by other authors (Damodar, 2004; Dougherty, 2017). The study employs another test (VIF) to ensure no multicollinearity. A variance inflation factor (VIF) shows that VIFs are less than 5.0, below the threshold of 10.0 (Gujarati & Porter, 2008), indicating that there is no multicollinearity problem in the study.

#### 4.2. Regression Tests

A poolability test (Pooled OLS verse Fixed Effect) and the Hausman test are used to determine the model appropriateness between fixed effect and pooled OLS regression and also between Random Effects (RE) and Fixed Effects (FE; Baltagi, 2005; Hausman, 1978). A null hypothesis is where pooled OLS is appropriate, and p-values are insignificant at a 1% significance level. Under Hypothesis 1 to 3, the poolability test using F-test under Tobin's q and ROA shows the F test is significant at 1% (p-value is equal to 0.000), hence pooled OLS rejected. However, under the Hausman test, a choice between FE and RE shows that RE is appropriate under Tobin's q [p-value is equal to 0.181, which is insignificant]. Under ROA, it indicates that FE is appropriate [p-value is equal to 0.000, which is significant].

#### 4.3. Regression results and discussions

The regression results are in Table 4. *H1* states that mandatory CSR expenditure in the current year is associated with the firm performance of listed firms in India. Model 1 and 2 from Table 4 under panel regression shows that mandatory CSR expenditure in the current year has no association with return on assets or Tobin q. To reduce any form of endogeneity in the results, Table 5 shows the output of the study using the general method of moments (GMM). Model 2 from Table 5 shows that mandatory CSR expenditure in the current year negatively affects Tobin q [ $\beta = -0.291^{**}$ ,  $SE = 0.113$ ]. *H1* is supported. A higher CSR magnitude is expected to lead to higher utilisation of the firm's assets (Janamrung & Issarawornrawanich, 2015) or an increase in firm value, which is the shareholder's expectation. We expected a short-term benefit, given that previous studies have argued a positive association between CSR expenditure and firm performance (Omar & Zallom, 2016). However, the outcome of this study depicts the opposite. Nonetheless, the outcome is consistent with a previous study in India on the banking sector, which showed a negative association between mandatory CSR expenditure and accounting returns (Bhattacharyya et al., 2021). Other studies have argued that the limitation between the alignment of investment cost in CSR and associated benefits contributes to the negative association (Lee, 2020). The negative association implies firms are unwilling to undertake CSR activities because of its effect on the firm's performance's bottom line. We perceive in this study that the mandatory employing firms to undertake CSR falls into coercion. The implication of coercion may contribute to firms treating CSR expenditure as a suboptimal policy of the firm operating activities. Another possible reason for the negative association may suggest that the current design of the legislation cannot achieve its purpose for both society and the firm. Similarly, the limitation between the alignment of investment cost in CSR and associated benefits may have contributed to the delayed benefit to the listed firms in India.

*H2* states that mandatory CSR expenditure in the lag years (1 to 2 years) affects the firm performance of listed firms in India. Model 3 and 5 from Table 4 under panel regression shows that mandatory CSR expenditure in the lag years (1 to 2 years) has a positive association with return on assets [ $(\beta = 0.017^{*}$ ,  $SE = 0.010)$  ( $\beta = 0.018^{*}$ ,  $SE = 0.009$ )]. However, to reduce any form of endogeneity in the results, Table 5 with Model 3 to 6, using the generalized method of moments (GMM), shows that mandatory CSR expenditure in the lag years (1 to 2 years) has no association with return on assets or Tobin q. *H2* is not supported. Also, *H3* states that mandatory CSR expenditure in the lag years (3 years or more) has no association with the firm performance of listed firms in India. Model 7 and 8 from Table 4 under panel regression shows that the lag effect (3 years or more) of mandatory CSR expenditure has no association with the return on assets of Tobin's q.



**Table 4. Panel RE & FE regression: Mandatory CSR expenditure and firm performance**

	ROA	Tobin's q	ROA	Tobin's q	ROA	Tobin's q	ROA	Tobin's q
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<b>CTL variables</b>								
Financial leverage	-0.235*** [0.077]	0.183 [0.274]	-0.230*** [0.077]	0.186 [0.274]	-0.228*** [0.077]	0.188 [0.274]	-0.235*** [0.077]	0.197 [0.273]
Firm size	-0.310*** [0.085]	-1.033*** [0.176]	-0.317*** [0.066]	-1.027*** [0.169]	-0.316*** [0.066]	-1.026*** [0.168]	-0.306*** [0.066]	-1.018*** [0.167]
Board independence	0.038** [0.018]	0.115* [0.066]	0.038** [0.018]	0.116* [0.066]	0.040** [0.018]	0.118* [0.066]	0.038** [0.018]	0.124* [0.066]
Year effect	0.032*** [0.008]	0.036 [0.029]	0.042*** [0.009]	0.057* [0.034]	0.048*** [0.011]	0.073* [0.040]	0.040*** [0.018]	0.096** [0.046]
Growth sales %	-0.072 [0.057]	-0.275 [0.214]	-0.070 [0.057]	-0.272 [0.214]	-0.068 [0.057]	-0.267 [0.215]	-0.070 [0.057]	-0.261 [0.214]
CSR committee members	-0.028 [0.018]	0.075 [0.068]	-0.032* [0.019]	0.069 [0.068]	-0.032* [0.018]	0.067 [0.069]	-0.030 [0.018]	0.066 [0.069]
CSR committee no of meetings	0.004 [0.020]	0.008 [0.074]	0.004 [0.019]	0.010 [0.072]	0.005 [0.019]	0.011 [0.072]	0.009 [0.019]	0.012 [0.072]
<b>Independent variables</b>								
MCSRE t-0	0.027 [0.028]	0.062 [0.098]						
MCSRE t-1			0.017* [0.010]	0.040 [0.036]				
MCSRE t-2					0.018* [0.009]	0.042 [0.034]		
MCSRE t-3							0.007 [0.009]	0.057 [0.035]
Regression	FE	RE	FE	RE	FE	RE	FE	RE
Within R <sup>2</sup>	0.086	0.031	0.089	0.034	0.090	0.035	0.085	0.037
Between R <sup>2</sup>	0.124	0.203	0.099	0.191	0.097	0.190	0.090	0.192

(Continued)

**Table 4. (Continued)**

	ROA	Tobin's q	ROA	Tobin's q	ROA	Tobin's q	ROA	Tobin's q
Overall R <sup>2</sup>	0.116	0.180	0.095	0.171	0.094	0.170	0.088	0.172
Obs.	640	640	640	640	640	640	640	640

Table 5. GMM regression: Mandatory CSR expenditure and firm performance

	ROA	Tobin's q	ROA	Tobin's q	ROA	Tobin's q	ROA	Tobin's q	ROA	Tobin's q
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8		
<b>CTL variables</b>										
Financial leverage	-0.181* [0.107]	0.345 [0.277]	-0.186* [0.108]	0.332 [0.281]	-0.191* [0.108]	0.328 [0.281]	-0.202* [0.109]	0.324 [0.283]		
Firm size	-0.054 [0.085]	-0.717*** [0.250]	-0.055 [0.098]	-0.776*** [0.256]	-0.062 [0.093]	-0.751*** [0.255]	-0.055 [0.028]	-0.766*** [0.253]		
Board independence	0.021 [0.028]	0.160** [0.071]	0.023 [0.028]	0.169** [0.072]	0.023 [0.028]	0.171** [0.073]	0.024 [0.028]	0.169** [0.072]		
Year effect	0.011 [0.009]	0.008 [0.024]	0.007 [0.011]	-0.011 [0.028]	0.010 [0.013]	-0.026 [0.035]	-0.010 [0.015]	-0.022 [0.088]		
Growth sales %	0.013 [0.052]	0.344*** [0.131]	0.017 [0.053]	0.353*** [0.133]	0.020 [0.052]	0.348*** [0.133]	0.016 [0.053]	0.351*** [0.134]		
CSR committee meetings	0.034 [0.032]	0.025 [0.073]	-0.059** [0.029]	0.010 [0.074]	-0.058** [0.029]	-0.001 [0.082]	0.037 [0.032]	-0.007 [0.082]		
CSR committee members	-0.055* [0.028]	-0.002 [0.080]	0.034 [0.032]	-0.009 [0.082]	0.032 [0.032]	0.013 [0.074]	-0.055* [0.030]	0.013 [0.074]		
ROA/Tobin q L1	0.273*** [0.067]	0.388*** [0.062]	0.291*** [0.065]	0.400*** [0.063]	0.289*** [0.066]	0.400*** [0.064]	0.307*** [0.067]	0.406*** [0.064]		
<b>Independent variables</b>										
MCSRE t-0	-0.051 [0.045]	-0.291** [0.113]								
MCSRE t-1			-0.002 [0.009]	-0.001 [0.024]						
MCSRE t-2					0.002 [0.008]	-0.017 [0.025]				
MCSRE t-3							-0.015 [0.009]	-0.010 [0.026]		
Regression	GMM	GMM	GMM	GMM	GMM	GMM	GMM	GMM		

(Continued)

Table 5. (Continued)							
	ROA	Tobin's q	ROA	Tobin's q	ROA	Tobin's q	Tobin's q
Wald Chi-square	31.01***	88.57***	29.60***	81.34***	28.88***	81.09***	80.50***
No of instruments	30	30	30	30	30	30	30
Obs.	480	480	480	480	480	480	480

Similarly, and under GMM, the results showed that Models 7 and 8 under Table 5 also indicate no association between mandatory CSR expenditure in the lag years (3 years or more) and return on assets or Tobin  $q$ .  $H3$  is not supported. Contrary to our expectation, the outcome of this study is inconsistent with previous studies that argued that a voluntary investment in CSR guarantees a return measure by ROA and Tobin's  $q$  within two years (Janamrungsakul & Issarawornrawanich, 2015). The struggle firms go through due to the new policy sees the policy as sub-optimal when forced to mandatory spend on CSR (Adegbite et al., 2019). Initially, the effect may lead to a negative association but is likely to have no association after two to three lag periods. The decrease in motivation and the likelihood of the history of corporate social irresponsibility can affect shareholders' perception of a mixed reaction to the stock market (Z. Chen et al., 2020), leading to no or near insignificance. A regression discontinuity design study concluded with a mixed outcome where firms in India benefited in the short term but had mixed findings in the long-term (Beloskar & Rao, 2021). We argue that firms' continuous mandatory CSR expenditure will not improve profitability. This is confirmed by a study that showed the unwillingness of firms to spend more on CSR (Mukherjee et al., 2018). It can also be argued that the lack of a relationship or negative relationship between firm performance and CSR is when CSR activities are initiated to comply with government-imposed regulations. It is less likely that firms' performance will be positive. Further, there are also chances that the managers who begin to report CSR spending following the Act's implementation may feel the need to manipulate earnings to spend less on CSR expenditure. This can occur when the expected alignment of investment cost in CSR and associated benefits passes its limit period.

Regarding the control variables in Table 5, we find that firm size is negatively and statistically significant with firm performance (Tobin's  $q$ ) of listed firms in India. Also, the study shows that financial leverage is negatively and statistically significant with return on assets (ROA). However, the growth sales percentage is positively and statistically significant with Tobin  $q$ .

## 5. Conclusions

This study examines whether mandatory CSR expenditure has the same effect on firm performance after years of implementation. The data set consists of 80 firms with 640 firm-year observations on the Indian stock market from 2013 to 2020 that practised sustainability reporting. Descriptive statistics, panel regression with random effect & fixed effect assumptions, and generalised method of moments (GMM) are the research models for examining the study. The first findings show that mandatory CSR expenditure in the current year negatively affects Tobin  $q$ . We perceive that the policy of pressuring firms may have contributed to firms treating CSR expenditure as a suboptimal policy of the firm operating activities. Also, the limitation between the alignment of investment cost in CSR and associated benefits may have contributed to the delayed benefit amounting to a negative association for listed firms in India. The second findings show that mandatory CSR expenditure in the lag years (1 to 2 years) has no association with return on assets or Tobin  $q$ . The third findings show that mandatory CSR expenditure in the lag years (3 years or more) has no association with return on assets or Tobin  $q$ . From the second and third findings, we perceive that firms' continuous mandatory CSR expenditure may decrease the momentum after some time. There are also chances that the managers who begin to report CSR spending following the Act's implementation may feel the need to manipulate earnings to spend less on CSR expenditure. The consequence leads to corporate social irresponsibility, which may lead to a mixed reaction from stakeholders and no or near insignificance. Regarding the control variables, we find that firm size is negatively and statistically significant with firm performance (Tobin's  $q$ ) of listed firms in India. Also, the study shows that financial leverage is negatively and statistically significant with return on assets (ROA). Growth sales percentage is, however, positively and statistically significant with Tobin  $q$ .

## **5.1. The implications of the study, future directions and study limitations**

### **5.1.1. Theoretical contribution**

Our study contributes to the debate on mandatory CSR expenditure and firm performance by adding new knowledge that previous studies have not examined. Previous studies examined mandatory CSR expenditure on firm performance (Beloskar & Rao, 2021; Y. C. Chen et al., 2018; Garg et al., 2021; Nair & Bhattacharyya, 2019; Omar & Zallom, 2016) but this new study addresses the shorter and longer lag of mandatory CSR expenditure on firm performance. Secondly, previous studies examined the lag between voluntary CSR expenditure and firm performance (Janamrungsakul & Issarawornrawanich, 2015). However, this study further explores the lag of mandatory CSR expenditure instead of voluntary CSR expenditure. Also, this study compares the effect of mandatory CSR expenditure on firm performance to the immediate impact of the lag effect. The third contribution of the study provides a deeper understanding of institutional theory (DiMaggio & Powell, 1983) in relation to mandatory CSR expenditure and firm performance in India, an emerging economy.

### **5.1.2. Managerial implications of the study**

The insignificant association between mandatory CSR expenditure and firm performance in the lag periods might worry management about who benefits from the investment. The expected non-alignment of investment costs in CSR and associated benefits after the spending has passed the accepted limit causes managers to be wary of their investments. There are also chances that the managers who begin to report CSR spending following the Act's implementation may feel the need to manipulate earnings to spend less on CSR expenditure. Possible to allow firms to write CSR expenditure as tax-deductible until the CSR expenditure and the associated benefit are aligned. However, managers must be authorised to spend until then, knowing there is a safety net when CSR expenditure does not materialise into positive firm performance in subsequent years. We are tempted to argue that a possible reintroduction of voluntary CSR expenditure or a blend of mandatory and voluntary CSR expenditure might better firm performance measured by return on assets and Tobin's q. We make this argument of the mixture because it is suggested that voluntary CSR expenditure mostly leads to firm performance in a previous study.

### **5.1.3. Policy implications of the study**

The policy of mandatory reporting as an institutional tool is causing firms, through coerciveness, to undertake CSR expenditure. Still, the pressure policy does not benefit the previous year's investments. A possible reason for the negative association may suggest that the current design of the legislation cannot achieve its purpose for both society and the firm, and the need to relook at the policy is needed. Policymakers must consult stakeholders to choose an acceptable middle ground for both parties. The output of this study shows that lag years two and three or more are insignificant to benefit the firm after CSR investment or expenditure. As argued by the author, we see the need to blend both mandatory and voluntary CSR expenditures (Haslam, 2020). The complete application of mandatory CSR expenditure is causing ineffectiveness in the lag years beyond three years. The addressing of this concern may require firms to be allowed to practice 50 percent voluntary CSR expenditure and 50 percent mandatory CSR expenditure. An alternative to the business world is to enable firms to practise the accounting of making CSR expenditure tax-deductible to reduce the burden on firms.

### **5.1.4. Limitations and future research direction**

The definition of large firms that practise sustainability reporting (CSR assurance reporting) in India, according to Indian Company's Act 2013, section 135, puts a lot of firms outside the study criteria, which may limit the generalisation of the study results. To examine the willingness of firms to undertake CSR activities, this study was further limited to the introduction of mandatory CSR reporting, which was in 2013. Future studies can look at the comparative performance between family and non-family firms. Also, this study used CSR expenditure, but future studies can examine mandatory CSR disclosure and firm performance in the lag years. The performance indicators were limited to the natural logarithm of return on assets (ROA) and Tobin's q. Future studies return on assets and stock price returns as the dependent variables.

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## Author details

Kofi Mintah Oware<sup>1</sup>

E-mail: [kofimintah.oware@kstu.edu.gh](mailto:kofimintah.oware@kstu.edu.gh)

ORCID ID: <http://orcid.org/0000-0003-1136-2894>

<sup>1</sup> Department of Banking Technology and Finance, Kumasi Technical University-Ghana, Kumasi, Ghana.

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## Appendix A: Description of the sample of study on the Bombay Stock Exchange

	Large firms after amended Act 2013	Large firms with sustainability reporting after the amended Act 2013
Population of study	500	131
Sample size between 2013-2019		103
Sample size after removing firms with missing data		80



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