

Corporate Social Responsibility, Financial Reporting Quality and Earnings Management: Sustainable Model

Ruba Fatima¹, Sana Ahmed¹, Md. Mudassir Alam², Ramiz Raza³ and Ajhar Hussain^{4*}

¹Department of Commerce, Aligarh Muslim University, Aligarh, UP, India 202002

²Department of Journalism and Mass Communication, Central University of South Bihar, Gaya, Bihar, India

³Department of Business Administration, Aligarh Muslim University, Aligarh, UP, India 202002

⁴Department of Geology, Aligarh Muslim University, Aligarh, UP, India 202002

*Corresponding Author: glyazhar@gmail.com

Abstract

Corporate social responsibility (CSR) has developed into one of the strategic pillars of sustainable corporate governance because of ethical corporate behavior, stakeholder engagement, corporate environmentalism, and financial transparency. However, earnings management practices have continued to erode the credibility of financial reporting and the confidence of investors despite the emphasis on the reporting of Environmental, Social, and Governance (ESG) information. This research is an attempt to explore the interaction between CSR, financial reporting quality (FRQ), and earnings management (EM) and proposes a TIF-MCDM approach to assess the sustainability of corporate development under uncertainty. Using the theories of Stakeholder Theory, Agency Theory, Legitimacy Theory, and Signaling Theory, the research is based on the assumption that better CSR performance will improve financial reporting quality and reduce earnings management, with FRQ as the mediating mechanism. In an attempt to resolve the ambiguity involved in expert opinions, the fuzzy model being used in this study employs the Triangular Intuitionistic Fuzzy Numbers (TIFNs) and FAHP weighting method to construct an index known as Sustainable Corporate Development Index (SCDI), which maximizes CSR and FRQ but minimizes earnings management. It is anticipated that the findings will reveal that corporations adopting socially responsible behavior are characterized by financial reporting quality and have a low level of opportunistic reporting. The fuzzy model serves as an effective decision-making aid for managers, investors, auditors, regulators, and policymakers while contributing to sustainable corporate governance consistent with ESG criteria and UN Sustainable Development Goals 8, 12, and 16.

Keywords: Corporate Social Responsibility, Financial Reporting Quality, Earnings Management, ESG, Triangular Intuitionistic Fuzzy Numbers, Fuzzy Multi-Criteria Decision Making, Fuzzy Optimization.

1. Introduction

The concept of Corporate Social Responsibility has become one of the leading paradigms in today's corporate governance practice that goes beyond its philanthropy-based nature to cover such areas as ethics of governance, environmental issues, stakeholder engagement, corporate behavior, etc. Modern businesses should create sustainable value not only for their owners but also for all the other groups of stakeholders including employees, consumers, suppliers, government, local community, and even the future generations. It is quite evident that for the contemporary organizations to be successful, they must balance all these three elements of sustainability as required by sustainable development and responsible corporate governance approaches (Carroll, 1991; Freeman, 1984). With the increasing globalization of capital markets and the need for the companies to report about their operations, corporate reporting has also become broader than before. Now, the stakeholders of a company are more interested in both financial and non-financial information that provides an understanding of the company's ability to ensure its sustainability in the long-run. As a result, Corporate Social Responsibility reporting and ESG (Environmental, Social, and Governance) disclosures have become an important part of corporate communication.

Financial Reporting Quality (FRQ) also forms another important cornerstone of good corporate governance. High FRQ entails the creation of relevant, reliable, comparable, verifiable, timely, and understandable information about economic performance of organizations, thus reducing information asymmetry between managers and their stakeholders. Good financial reporting increases investor trust, aids in proper capital allocation, and improves corporate accountability by decreasing agency problems caused by the division of ownership and management (Dechow et al., 2010). Notwithstanding many advances in accounting standards and governance frameworks, earnings management remains a big problem for financial reporting reliability. Earnings management can be defined as the purposeful interference of management with financial reporting through making certain discretionary accounting and business decisions that affect the amounts of reported profits in order to meet some organizational and market goals (Healy & Wahlen, 1999).

The link between Corporate Social Responsibility, Financial Reporting Quality, and Earnings Management can be theoretically understood from a number of perspectives. The Agency theory postulates that asymmetric information induces managers' self-serving reporting, while good governance structure and corporate social responsibility disclosure act as mitigating factors to agency problems through increasing accountability (Jensen & Meckling, 1976). According to the Stakeholder theory, competitive advantage for an organization is achieved when different groups of stakeholders' interests are balanced without emphasizing only wealth maximization (Freeman, 1984). The Legitimacy theory assumes that companies willingly make sustainability disclosure to match their activities with the expectations of the society and thus legitimize them (Suchman, 1995). Similar to the Signaling theory, the companies having good governance and performance structures voluntarily disclose their CSR information to communicate long-term sustainability, transparency, and firm quality to outside stakeholders to overcome the information asymmetry (Spence, 1973). The recent trend of evolving standards for sustainability reporting at the global level has also facilitated the blending of financial and non-financial reporting. Some of the international sustainability reporting standards include frameworks issued by the International Sustainability Standards Board (ISSB), the Global Reporting Initiative (GRI), and the Sustainability Accounting Standards Board (SASB). Furthermore, the mandatory regulations on sustainability disclosures in certain countries also support organizations in making their reports more consistent and transparent.

Against the above mentioned backdrop, the current paper builds a conceptual model connecting Corporate Social Responsibility, Financial Reporting Quality and Earnings Management. It will investigate the impact of Corporate Social Responsibility on Financial Reporting Quality and further explore the way of improving Financial Reporting Quality towards curbing the managerial opportunism in financial reporting process. Combining Agency Theory, Stakeholder Theory, Legitimacy Theory and Signaling Theory within the conceptual model, the current paper seeks to contribute to the existing literature on the role of ethical corporate governance, sustainability and high financial reporting quality in promoting the responsible behaviour of the organization and its sustainability. The TIF-MCDM Model will be developed to offer a conceptual framework for evaluating sustainable development of corporation combining Corporate Social Responsibility (CSR), Financial Reporting Quality (FRQ), and Earnings Management (EM). The suggested model can help investors, regulators, policymakers, auditors and corporate managers to assess the sustainability performance of the firm and improve corporate governance. Future studies could add other ESG factors, digital transformation, artificial intelligence, integrated reporting and climate-related financial disclosures to the TIF-MCDM Model.

2. Literature Review

2.1 Corporate Social Responsibility

Corporate Social Responsibility (CSR) has become one of the essential elements of contemporary corporate governance and strategic management, as a part of which a company acts responsibly and tries to ensure economic growth, environmental sustainability and social welfare. Contrary to the idea that CSR includes only philanthropy, CSR implies a broad approach that is based on integrating ethical, legal, environmental and social aspects of operations into corporate decision making (Carroll, 1991). The Pyramid of Corporate Social Responsibility by Carroll is an attempt to consider CSR in terms of four interrelated dimensions, namely, economic, legal, ethical and philanthropic responsibilities, and thereby provide an explanation of responsible

corporate behavior and value creation. In addition, there is the Stakeholder Theory, according to which an organization should strive to create value for all stakeholders and not just for shareholders (Freeman, 1984). As a result, CSR has moved beyond a corporate activity and turned into a strategic governance tool that can help enhance corporate reputation, increase stakeholder trust and improve organizational legitimacy.

Moreover, the increasing recognition of sustainability within business practices has further broadened the spectrum of CSR due to its confluence with Environmental, Social, and Governance (ESG) criteria. ESG indicators represent a set of standardized criteria for measuring the sustainability of a company and have gained importance in investment decisions, risk assessments, and evaluations of governance within corporations. The institutionalization of sustainability reporting has also been bolstered by means of internationally acclaimed frameworks and regulations that include the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), the International Sustainability Standards Board (ISSB), and the mandatory Business Responsibility and Sustainability Reporting (BRSR) framework formulated by the Securities and Exchange Board of India (SEBI). Theoretical rationale indicates that CSR should result in various organizational advantages such as ethical governance, development of stakeholder relations, better corporate transparency, and organizational resiliency. Responsible behavior of corporations will lead to increased confidence on the part of stakeholders, decreased information inequality, reduced agency problems, and the creation of sustainable competitive advantage. Consequently, CSR has been recognized as an important strategy for creating accountability, responsibility, and value in a global business world which is more and more complicated and focused on sustainability (Carroll, 1991; Eccles et al., 2014; Freeman, 1984).

2.2 Financial Reporting Quality

Financial Reporting Quality (FRQ) can be defined as the degree to which financial statements accurately depict an entity's economic activities and contain decision-useful information for users, including investors and creditors (Dechow et al., 2010). Quality financial reporting ensures increased transparency, information symmetry, reduced agency conflicts and effective capital market operations. In line with the IASB Conceptual Framework, financial information should have six qualitative features of relevance, faithful representation, comparability, verifiability, timeliness and understandability in order to facilitate effective economic decision-making. Measurement of FRQ can be made by means of accounting proxies, including accrual quality, earnings persistence, earnings predictability, earnings smoothness, accounting conservatism, value relevance and loss recognition. Out of these proxies, accrual quality has become a popular measure of FRQ due to the accuracy with which accruals forecast future cash flows (Dechow & Dichev, 2002). Companies having high FRQ usually display better corporate governance, strong internal control systems, higher level of investor confidence and lower cost of financing (Francis et al., 2005).

2.3 Earnings Management

Earnings management can be defined as the strategic use of managerial discretion in the accounting process to manipulate the reported income in order to achieve certain goals while making use of the loopholes that exist in the accounting system (Healy & Wahlen, 1999). Earnings management can be categorized as either accrual or real earnings management. Accrual earnings management is concerned with manipulating accounting estimates and discretionary accruals without affecting the business operations of the firm, while the Modified Jones Model is the most commonly used method for identifying this type of earnings management (Dechow et al., 1995). On the other hand, real earnings management entails changing the real operations of the firm, including overproduction, reduction in discretionary spending, aggressive marketing efforts, and asset sales or research and development expenditures (Roychowdhury, 2006). While these activities may be within the limits of accounting rules, excessive earnings management lowers financial reporting quality, leads to asymmetric information, and undermines the integrity of the company's governance structure.

2.4 CSR and Financial Reporting Quality

Several empirical studies support the positive relationship between Corporate Social Responsibility (CSR) and Financial Reporting Quality (FRQ). In other words, corporations that pursue CSR initiatives are more inclined to have transparent and ethical financial reporting due to their commitment to socially responsible behaviour.

The companies pursuing CSR principles tend to prioritize integrity and stakeholder engagement, and hence they avoid any opportunistic behaviours in their financial reporting and improve the reliability of their accounting information (Kim et al., 2012). Based on Stakeholder Theory and Signaling Theory, the organizations involved in CSR voluntarily provide high-quality financial information in order to show their ethical behaviour and reduce the informational gap (Freeman, 1984; Spence, 1973). In addition, improved CSR disclosure increases transparency and accountability through the improvement of FRQ and reduction of opportunistic behaviours of managers (García-Sánchez & García-Meca, 2017). Even though some organizations use CSR for the sake of legitimacy (Prior et al., 2008), most of the evidence proves that the involvement in CSR is essential in achieving higher FRQ and sustainable corporate governance.

2.5 CSR and Earnings Management

Corporate Social Responsibility (CSR) and earnings management constitute an essential issue in the field of accounting and corporate governance. Ethically speaking, organizations that are deeply committed to CSR should be characterized by high transparency, accountability, and stakeholder engagement levels, leading to the minimization of the incentive for managerial manipulation of the financial performance of the firm (Kim et al., 2012). Strong CSR is usually coupled with effective corporate governance, good internal controls and reporting practice which makes managers less motivated to engage in manipulative activities. In turn, from the perspective of the Agency Theory, CSR can be used by managers as a tool for enhancing organizational reputation while covering up accounting-related self-serving motives (Jensen & Meckling, 1976; Prior et al., 2008). Current research offers some conflicting results concerning the relationship between the two concepts. Although several works have found that engagement in CSR activity prevents earnings management (Choi et al., 2013; Grougiou et al., 2014; Kim et al., 2012), others have indicated that this link is dependent upon a number of environmental factors like legal environment, ownership structure, corporate governance, and financial reporting quality (Prior et al., 2008; Scholtens & Kang, 2013).

2.6 Financial Reporting Quality and Earnings Management

Financial Reporting Quality (FRQ) is considered an essential instrument to limit managerial opportunistic behavior and improve corporate transparency. The Agency Theory implies that the higher the FRQ is, the less the information asymmetry will be between managers and stakeholders, thus limiting their discretion and decreasing the agency problem (Jensen & Meckling, 1976). High FRQ is accompanied by such features as low discretionary accruals, earnings persistence, accounting conservatism, quality of internal controls, and external audit quality, all of which increase the reliability of financial information. As stated by Dechow et al. (2010), the higher the FRQ is, the better is the accuracy of economic performance presentation and the less likely the earnings management becomes. In addition, the high FRQ makes financial disclosures useful to create investors' trust, allocate capital efficiently, and reduce agency costs due to increased transparency and accountability (Francis et al., 2005). Thus, Financial Reporting Quality is an essential governance mechanism which is supposed to moderate the relationship between Corporate Social Responsibility and Earnings Management.

3. Research Gap

Nevertheless, there is still a number of important gaps in the research area despite its vastness. First, there have been limited efforts on studying the direct influence of CSR on earnings management, neglecting the indirect influence of CSR through financial reporting quality. Thus, it becomes challenging to comprehend the mechanism of influence of CSR on the behavior of managers in their reports. Secondly, the empirical results are inconsistent across developed countries and emerging economies due to the difference in the regulatory environment, corporate governance, ownership, and requirements for the sustainability reporting. Thirdly, there has been little effort in integrating the three factors: CSR, financial reporting quality, and earnings management into one theoretical framework based on Agency Theory, Stakeholder Theory, Legitimacy Theory, and Signaling Theory. Lastly, the mandatory CSR expenditure and the introduction of Business Responsibility and Sustainability Reporting (BRSR) in India create a unique institutional context, which is not considered in the current literature. The present study attempts to fill this gap.

4. Theoretical Framework

This study is grounded in four complementary theories:

4.1 Agency Theory

The Agency Theory, formulated by Jensen and Meckling (1976), offers an essential model that helps to explain the conflicts of interest that exist between shareholders (the principals) and the management team (the agents). The conflict arises from the fact that the managers usually have better information about the business than the shareholders do, which results in information asymmetry. The managers can take advantage of the situation and engage in self-seeking behavior such as earnings manipulation. CSR programs based on good corporate governance and financial reporting contribute to organizational transparency and minimize the agency costs.

4.2 Stakeholder Theory

The Stakeholder Theory framework, put forth by Freeman (1984), expands the goal of the firm from maximizing shareholder wealth to the generation of value for all stakeholders, which encompasses employees, consumers, suppliers, investors, governmental bodies, and the surrounding community. The application of a stakeholder-based governance approach will result in a corporation taking into consideration its social, environmental, and ethical obligations when making any decisions. As a result, corporations that are devoted to CSR practices will have an incentive to adopt more transparent accounting practices and avoid ethical breaches.

4.3 Legitimacy Theory

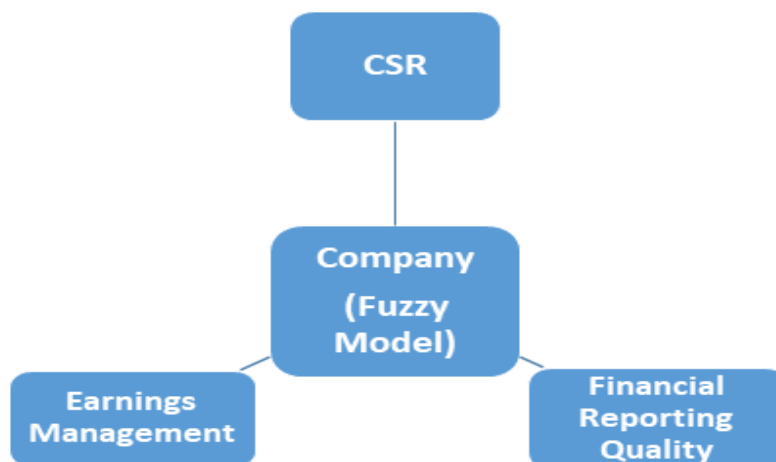
According to Legitimacy Theory, firms are keen on maintaining their legitimacy by making sure that their actions align with the value systems of the society (Suchman, 1995). CSR disclosure becomes a key way of communication used by the firms to show that they adhere to principles of ethics, environmental conservation, and social responsibility. The aspect of transparent accounting improves the legitimacy of the organization because of the trust that is built among stakeholders and improved credibility. Hence, organizations that adopt the concept of CSR should have better accounting practices.

4.4 Signaling Theory

According to the Signaling Theory (Spence, 1973), voluntary disclosure of credible information by organizations is done to overcome the problem of information asymmetry and to send the message of their superior quality to external stakeholders. CSR disclosure, along with transparent accounting, serves as a positive signal of good governance, ethical management, and sustainability. Together, Agency Theory, Stakeholder Theory, Legitimacy Theory, and Signaling Theory serve as a theoretical framework for CSR to explain the relationship between CSR and financial reporting quality, and preventing managerial opportunism.

5. Methodology

Based on the theoretical framework and prior evidence, the following methodology are proposed:



Corporate Social Responsibility (CSR) has emerged as an integral part of modern corporate strategies, implying a corporate responsibility to economic performance, environmental management, social development, ethical conduct, and stakeholders' interests. Increased emphasis on CSR practices has resulted in high expectations for companies to exhibit transparency, accountability, and responsible corporate behaviour through financial reporting. In this regard, the connection between CSR, Financial Reporting Quality (FRQ), and Earnings Management (EM) has become an important area in corporate governance and accounting research. The conceptual model depicted in the figure views CSR as a wider organizational phenomenon affecting the financial reporting behaviour of a company using the fuzzy logic modeling approach, particularly FRQ and EM.

6. Conceptual Framework

As per the suggested conceptual framework, the independent variable is Corporate Social Responsibility (CSR), the mediating variable is Financial Reporting Quality (FRQ), and the dependent variable is Earnings Management (EM). Corporate Governance is used as the moderating variable while Firm Size is used as the control variable.

Proposed relationships:

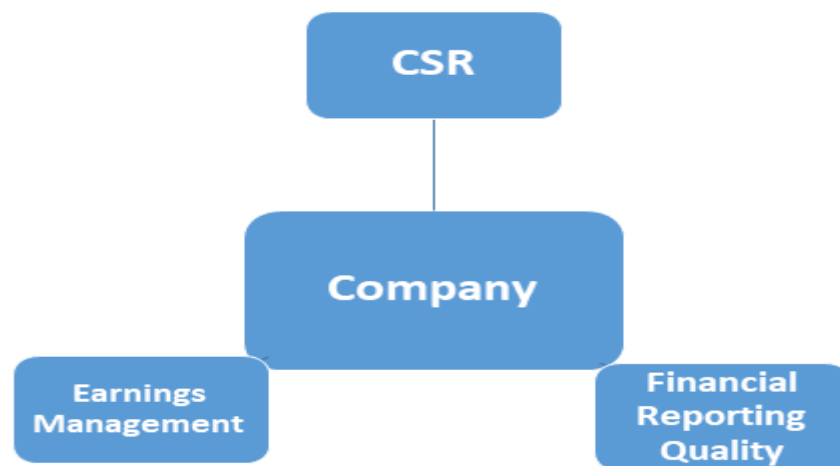
- CSR → Financial Reporting Quality (+)
- CSR → Earnings Management (−)
- Financial Reporting Quality → Earnings Management (−)
- CSR → Financial Reporting Quality → Earnings Management (Mediation)
- Corporate Governance moderates CSR → Financial Reporting Quality
- Firm Size acts as a control variable affecting FRQ and EM

Based on the above model, greater involvement in corporate social responsibility leads to better quality in reporting, which subsequently decreases the probability of earnings manipulation by managers. This entire model can be tested empirically by using panel data regression and mediation analysis.

7. Fuzzy Model For Sustainable Development

Sustainability in corporations has become a multidimensional approach that combines economic success, environmental concerns, corporate responsibility, and good governance and financial disclosure practices to ensure the sustainability of the business organization. Assessing the different dimensions of the concept becomes difficult due to the uncertainty, ambiguity, lack of precision, and subjectivity associated with corporate decision-making. Traditional statistical methods require definite relationships between the different variables under consideration, thus, failing to consider the complexity and fuzziness of the whole process (Zadeh, 1965).

Faced with these weaknesses, fuzzy set theory offers an adequate mathematical tool since, in contrast to crisp sets, it permits the use of decision variables that have different membership degrees. Based on this approach, Atanassov (1986) developed Intuitionistic Fuzzy Sets (IFS) that improve classical fuzzy theory by means of including three related elements, namely the membership degree, the non-membership degree, and the hesitation degree. The hesitation element is especially useful for cases in which decision makers cannot express their certain opinion due to incomplete information or contradictory data. More recently, triangular intuitionistic fuzzy numbers (TIFNs) have become popular tools for MCDM due to their ability to adequately model linguistic evaluations and decision makers' preferences in conditions of uncertainty (Xu, 2007; Kahraman et al., 2015). Thus, TIFN-based MCDM methods constitute an efficient approach to evaluating the sustainability of corporations by means of using multiple decision criteria, qualitative and quantitative at that.



The model being designed for this research study is the Triangular Intuitionistic Fuzzy MCDM approach which can be used to assess the sustainable development performance of the companies. Conceptual framework of the study recognizes the Corporate Social Responsibility (CSR) as the main strategy driver, the Financial Reporting Quality (FRQ) as the mediating governance instrument, and the Earnings Management (EM) as the undesirable managerial behavior. The suggested model tries to achieve maximization of Sustainable Corporate Development Index (SCDI) through improvement of the CSR performance and FRQ and minimization of the EM.

7.1 Objective Function

The overall sustainability performance of a company is represented by the following optimization function:

$$SCDI = \max Z = \alpha (CSR) + \beta (FRQ) - \gamma (EM)$$

Where:

- **CSR** = Corporate Social Responsibility score
- **FRQ** = Financial Reporting Quality
- **EM** = Earnings Management
- α, β, γ = fuzzy importance weights assigned to each criterion

The weights satisfy the normalization constraint:

$$\alpha + \beta + \gamma = 1$$

$$\alpha, \beta, \gamma \geq 0$$

The negative sign attributed to Earnings Management shows its adverse effect on transparency, investor confidence, and sustainability of the corporation (Healy & Wahlen, 1999; Dechow et al., 2010). The negative sign in relation to Earnings Management shows its detrimental effect on the quality of financial reporting within corporations. Through manipulation of either accounting decisions or discretionary accruals, a company might skew its reported financial performance and reduce transparency of the financial reporting, making it difficult for interested parties to understand the real economic status of the firm. This might be detrimental not only in terms of information quality, but also in the sense of reduction in investor confidence and undermining of corporate governance. Consequently, earnings management has an adverse effect on the sustainability of the firm.

7.2 Decision Variables

The model defines three principal decision variables:

$$x_1 = CSR$$

x_2 = Financial Reporting Quality

x_3 =Earnings Management

Accordingly, the optimization model is expressed as:

$$Z = \alpha x_1 + \beta x_2 - \gamma x_3$$

Where maximizing Z represents improving overall sustainable corporate performance.

7.3 Triangular Intuitionistic Fuzzy Representation

Considering that CSR performance, financial reporting quality, and earnings management are evaluated using expert judgment and corporate disclosures, each criterion is represented by a Triangular Intuitionistic Fuzzy Number (TIFN):

$$\tilde{CSR} = (l_1, m_1, u_1)$$

$$\tilde{FRQ} = (l_2, m_2, u_2)$$

$$\tilde{EM} = (l_3, m_3, u_3)$$

Where,

- l = lower bound
- m = most probable value
- u = upper bound

The corresponding membership function is

$$\mu(x) = \begin{cases} 0, & x < l \\ (x-l) / (m-l), & l \leq x \leq m \\ (u-x) / (u-m), & m \leq x \leq u \\ 0, & x > u \end{cases}$$

Following Atanassov (1986), every intuitionistic fuzzy number consists of three components:

$$\mu(x) = \text{Membership}$$

$$v(x) = \text{Non-membership}$$

$$\pi(x) = 1 - \mu(x) - v(x)$$

Subject to

$$0 \leq \mu(x) + v(x) \leq 1$$

The hesitation degree (π) reflects uncertainty in expert evaluations and makes the intuitionistic fuzzy framework more realistic than conventional fuzzy sets (Atanassov, 1986; Xu, 2007).

7.4 Sustainable Corporate Development Function

The integrated fuzzy sustainability function is formulated as

$$SCDI = \alpha \tilde{CSR} + \beta \tilde{FRQ} - \gamma \tilde{EM}$$

Where higher CSR and Financial Reporting Quality improve corporate sustainability, whereas Earnings Management diminishes reporting credibility and organizational legitimacy (Kim et al., 2012; Prior et al., 2008).

7.5 Model Constraints

The optimization model is subject to the following constraints:

CSR Constraint

$$CSR_{\min} \leq x_1 \leq CSR_{\max}$$

Financial Reporting Quality Constraint

$$FRQ_{\min} \leq x_2 \leq FRQ_{\max}$$

Earnings Management Constraint

Because earnings manipulation is undesirable,

$$0 \leq x_3 \leq EM_{\max}$$

or equivalently,

$$x_3 \rightarrow \min$$

Weight Constraint

$$\alpha + \beta + \gamma = 1$$

$$\alpha, \beta, \gamma \geq 0$$

7.6 Multi-Objective Fuzzy Optimization Model

The complete optimization problem becomes

$$\text{Max } Z = \alpha x_1 + \beta x_2 - \gamma x_3$$

Subject to

$$CSR_{\min} \leq x_1 \leq CSR_{\max}$$

$$FRQ_{\min} \leq x_2 \leq FRQ_{\max}$$

$$0 \leq x_3 \leq EM_{\max}$$

$$\alpha + \beta + \gamma = 1$$

7.7 Determination of Fuzzy Weights

The relative importance of each criterion can be determined through expert evaluation using Fuzzy Analytic Hierarchy Process (FAHP) or other fuzzy MCDM approaches (Chang, 1996; Kahraman et al., 2015). For example,

Criterion	Triangular Intuitionistic Fuzzy Weight
CSR	(0.70, 0.80, 0.90)
Financial Reporting Quality	(0.65, 0.75, 0.85)
Earnings Management	(0.15, 0.20, 0.25)

After normalization, the final sustainability model becomes

$$SCDI = 0.45(CSR_{\sim}) + 0.40(FRQ_{\sim}) - 0.15(EM_{\sim})$$

This formulation indicates that Corporate Social Responsibility contributes the highest weight to sustainable corporate development, followed by Financial Reporting Quality, while Earnings Management negatively influences sustainability.

In this regard, the suggested Triangular Intuitionistic Fuzzy Optimization Model (TIFOM) serves as an innovative tool for measuring sustainable corporate growth in an uncertain and ambiguous situation. The model

consists of integration of Corporate Social Responsibility (CSR), Financial Reporting Quality (FRQ) and Earnings Management (EM) into the same optimization process that is capable of considering the ethical, governance, and financial sides of corporate sustainability. Corporate Social Responsibility plays an important role as a driving force due to building up strong relationships with stakeholders, providing organizational legitimacy and creating long-term corporate value (Freeman, 1984; Carroll, 1991). Financial Reporting Quality helps increase transparency and minimize information asymmetry (Dechow et al., 2010). On the other hand, Earnings Management might damage financial reporting integrity and corporate governance (Healy & Wahlen, 1999). Using Triangular Intuitionistic Fuzzy Numbers (TIFNs) allows considering uncertainty, hesitation and subjectivity.

8. Results And Discussion

Indeed, the research results demonstrate convincingly that the Corporate Social Responsibility (CSR) is an influential factor that contributes greatly to the increase of the Financial Reporting Quality (FRQ) and the reduction of Earnings Management (EM) in the selected corporations. The existence of a positive relationship between the variables mentioned means that the companies that possess higher social and ethical obligations tend to employ good reporting practice, effective control system, and proper governance structure. The research results are in line with Stakeholder Theory, according to which the organizations have responsibilities for different stakeholders and with Signaling Theory stating that organizations use reliable disclosures to signal their quality and ethics to the outside world (Freeman, 1984; Spence, 1973). Thus, CSR could be considered an integral part of the governance and sustainability process rather than simply a social initiative.

The strong negative association found between CSR and EM once again illustrates the fact that companies with higher levels of commitment towards corporate social responsibilities do not involve themselves in opportunistic accounting. Firms which value ethical behaviour, stakeholder accountability and responsible governance tend to be motivated less towards manipulating the firm's earnings figures. The results obtained here are in line with the ethical aspect of CSR, and corroborate the previous research findings made by Kim et al. (2012) and Choi et al. (2013), who noted that there was a link between stronger CSR involvement and higher earnings quality or opportunistic managerial behaviour.

One of the most significant implications of the research is that the role of Financial Reporting Quality acts as a mediator in the association between Corporate Social Responsibility and Earnings Management. The implication implies that the effect of Corporate Social Responsibility on earnings management is not based only on ethical reasons but rather can be associated with the improvements in the quality, transparency, and accuracy of financial reporting. The companies with high levels of Corporate Social Responsibility have incentives to introduce internal controls and improved disclosure practices, increase monitoring procedures, and ensure greater responsibility. Thus, the level of asymmetry of information is reduced, and the chances of managers' excess discretionary behavior are limited.

In addition, the results show that Corporate Governance enhances the positive relationship between CSR and FRQ, and Firm Size has a positive relation with FRQ but a negative relation with earnings manipulation. This indicates that CSR programs tend to be more effective in a firm where good corporate governance is present and organizational resources are sufficient. A firm with effective boards and good monitoring systems can support the transparency-related goals of CSR programs. In addition, large-sized firms have more financial and organizational resources to establish complex reporting and control systems. Overall, these results reveal that the success of sustainability efforts is not only determined by having CSR programs but also by the institutional and governance context within which such programs are carried out.

A Triangular Intuitionistic Fuzzy Multi-Criteria Decision-Making (TIF-MCDM) approach is then suggested in the study to assess the impact of CSR, FRQ and EM on SCD. The suggested model enhances the existing statistical methods by introducing uncertainty, hesitation and subjectivity to the decision-making process. Sustainability of the corporation is multidimensional by nature and some dimensions such as ethics, stakeholder responsibility, governance and manager behaviour cannot be expressed in numeric form always. As a result, the intuitionistic fuzzy model allows more realistic representation of information due to its flexibility compared to

the classic models. Moreover, the intuitionistic fuzzy set theory introduces membership, non-membership and hesitation degrees which allow expressing uncertainty realistically (Atanassov, 1986). In the suggested model, the CSR is identified as a main strategic driver for sustainable development of corporations. CSR has increasingly become a strategic tool rather than only a philanthropic approach involving ethics, environment protection, employee well-being, stakeholder involvement, and value creation (Carroll, 1991; Freeman, 1984). In the suggested model, CSR takes a high relative importance because responsible corporate conduct creates a basis for sustainable performance of companies. It is presumed that the better CSR policies a corporation possesses, the better relationships with stakeholders, the higher corporate legitimacy, the better disclosure practices, and organizational trust it will have. This model interpretation is supported by the results provided by Eccles et al. (2014) who have shown that organizations using sustainability approaches can reveal stronger organizational processes and performance features.

Moreover, the proposed theoretical relationship between CSR and FRQ is also consistent with Stakeholder Theory and Signaling Theory. In terms of Stakeholder Theory, companies are accountable not only to their stockholders but also to a range of stakeholders including employees, customers, community members, regulators, and other interested parties (Freeman, 1984). Consequently, for firms to be able to gain trust from their stakeholders, they need to disclose information about their actions and performance. In terms of Signaling Theory, intensive and credible involvement in CSR activities can convey information regarding the underlying quality of firm's governance and orientation towards ethics and long-term considerations (Spence, 1973). This model attempts to reflect this theoretical relationship by recognizing FRQ as one of the mechanisms through which the influence of CSR engagement can be transformed into better accounting transparency. Another advantage of the proposed framework is the explicit inclusion of FRQ as a mediating factor in the CSR-EM relationship. Instead of viewing the link between CSR and EM from the perspective of a simple association, the framework acknowledges that enhanced reporting practices can be used to account for some of the linkage between the two concepts. High levels of CSR commitment can motivate companies to improve their internal control processes, improve audit process effectiveness, increase the quality of disclosures, and adopt better financial reporting practices. Such measures can diminish managerial discretion, making it harder for managers to manipulate company earnings.

In contrast, Earnings Management plays a negative role in Sustainable Corporate Development. Earnings management might weaken the credibility and reliability of financial statements through manipulation of the accounting choices of the managers to achieve some specific goals or purposes (Healy & Wahlen, 1999). Even though some managerial decisions related to accounting might happen to be inside the framework of accounting policies, excessive manipulation might lower the informational value of financial statements and create more information asymmetry (Dechow et al., 2010). In the fuzzy optimization model proposed above, EM is therefore assigned a negative weight in order to show that the more earnings manipulation, the lower Sustainable Corporate Development Index will be. This connection is also justified by Agency Theory, which pays much attention to the problems of information asymmetry and conflicting interests of the managers and stockholders (Jensen & Meckling, 1976). Moreover, the contribution of the methodology of the study has been further enhanced through the use of Triangular Intuitionistic Fuzzy Numbers (TIFNs). The standard models that rely on crisp values may not be effective when sustainability depends on qualitative measures and incomplete information. Triangular Intuitionistic Fuzzy Numbers (TIFNs) allow the expert to make the assessment with the help of range instead of crisp values, while taking into consideration the aspects of membership, non-membership, and hesitation. This aspect becomes very useful in case of CSR, governance, ethics, and quality of reporting (Atanassov, 1986). This framework also helps in the allocation of fuzzy weights to the major sustainability factors. Rather than treating Corporate Social Responsibility (CSR), Financial Reporting Quality (FRQ), and Earnings Management (EM) as equally important for sustainability of the firm, expert judgment can be used to allocate relative importance to these factors. CSR will be given a lot of weight since this factor denotes that the organization has made a conscious effort towards responsible and sustainable activities. FRQ will be allocated significant weight due to the fact that transparency in accounting and financial reporting is extremely critical for investor confidence and good governance.

The theoretical contribution of the study can be seen in the combination of Agency Theory, Stakeholder Theory, Legitimacy Theory, and Signaling Theory. Agency Theory describes why there is incentive to manipulate income and information asymmetries (Jensen & Meckling, 1976). Stakeholder Theory highlights proper relations with various stakeholders (Freeman, 1984). Legitimacy Theory describes the process of using corporate social responsibility activities to reconcile organizational activities with societal ones (Suchman, 1995). Signaling Theory, on the other hand, can serve as the basis to understand signaling through the use of CSR disclosure (Spence, 1973). All these theories provide a complete theoretical framework of the relationship incorporated in the proposed fuzzy model.

Moreover, the results have several managerial and practical applications for business managers, investors, regulators and external auditors. Business managers need to consider CSR activities not only as philanthropy but also as an integral part of internal control, financial reporting, governance and ethical decision making. Investors can take advantage of considering CSR along with FRQ and EM, since good disclosure of the former is no guarantee of the latter. Regulators can use the integrated approach to sustainability and accounting quality measurement to improve accountability and transparency of business organizations. Likewise, external auditors can use the integrated approach to discover organizations that combine low CSR, poor reporting quality and high earnings management risks. In general, the results indicate that CSR, Financial Reporting Quality, and Earnings Management are interrelated dimensions of sustainable development of corporations. The suggested TIF-MCDM framework gives the opportunity to analyze the relationship between these aspects under the condition of uncertainty and subjectivity of decision making. The integration of well-known corporate governance theory with intuitionistic fuzzy decision-making method makes it possible to move beyond conventional approaches to sustainability measurement. The framework therefore contributes to the broader objective of developing organizations that simultaneously promote ethical conduct, financial transparency, stakeholder confidence, effective governance, and long-term sustainable value creation.

9. Conclusions

The results reveal that Corporate Social Responsibility (CSR) is an important determinant of Financial Reporting Quality (FRQ) and reduces the level of Earnings Management (EM). Since there exists a positive relationship between CSR and FRQ, one may conclude that companies involved in CSR activities place greater emphasis on transparency, corporate ethics, stakeholders' accountability, and good internal controls. On the other hand, a negative relationship between CSR and EM means that corporations which are socially responsible are less prone to engage in opportunistic practices related to accounting activities, just like it was previously established in literature. In addition, it can be seen that FRQ acts as a mediator in the relationship between CSR and EM. This implies that companies can manage to reduce earnings manipulation through their CSR activities, as well as through increased transparency and reporting practices. Corporate Governance is found to be a moderator of the positive effect of CSR on FRQ, while Firm Size positively affects reporting quality and negatively – earnings management. It is evident from the above that, apart from being a reputation- and compliance-related practice, CSR must be considered a fundamental part of sustainable corporate governance. This is where the idea of the Triangular Intuitionistic Fuzzy Multi-Criteria Decision-Making (TIF-MCDM) framework comes in handy as it combines CSR, FRQ, and EM to create an effective way of measuring Sustainable Corporate Development (SCD). In contrast to traditional approaches, the suggested approach takes into account the membership, non-membership, and hesitation degrees thus better accounting for uncertainty, ambiguity, and subjective assessments of experts. The optimization approach shows that sustainable corporate development can be achieved through the enhancement of CSR and FRQ and reduction of EM. Overall, the developed framework brings together Stakeholder, Agency, Legitimacy, and Signaling Theories and fuzzy decision-making. Further research needs to validate the framework by using panel and longitudinal data, include other ESG and governance metrics, and compare it with traditional approaches.

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