

Sustainability Reporting: A Comparative Study of Standardisation vs. Voluntary Disclosures Across Industries in China

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Abstract: This study examines the sustainability reporting practices across four major industries in China: Energy, Manufacturing, Technology, and Financial Services, focusing on comparing standardized (mandatory) and voluntary reporting frameworks. The research highlights significant industry-specific differences influenced by regulatory environments and market pressures by analyzing the extent to which companies in these sectors adopt sustainability reporting and their perceived effectiveness. The Energy and Manufacturing sectors strongly prefer mandatory reporting due to government regulations addressing environmental and social impacts, with 85% and 80% of companies adhering to compulsory sustainability frameworks. Conversely, the Technology and Financial Services sectors predominantly engage in voluntary reporting, with 75% and 70% of companies in these industries choosing to report on sustainability efforts without government mandates. The findings suggest that industries with higher environmental impacts are more likely to adopt standardized reporting frameworks, while those with lower immediate impacts benefit from the flexibility of voluntary disclosures. The study further emphasizes the need for sector-specific reporting standards that balance regulatory requirements and voluntary initiatives to promote greater transparency and accountability in sustainability practices. Future research could explore the effectiveness of different reporting frameworks in achieving corporate sustainability outcomes and the challenges companies face in adopting and implementing these practices.

Keywords: Sustainability reporting, mandatory reporting, voluntary reporting, corporate transparency, China industries.

1. Introduction

Sustainability reporting has become an essential element of corporate accountability, indicating a company's environmental, social, and governance (ESG) performance. Developing sustainability disclosures in China exemplifies the interaction between obligatory regulations and discretionary efforts. This dual strategy is influenced by legal advancements, investor expectations, and worldwide pressures to conform to international standards such as the Worldwide Reporting Initiative (GRI) and the International Sustainability Standards Board (ISSB). The sustainability reporting environment in China can be categorised into three phases: the promotion of voluntary disclosures (pre-2008), a blend of voluntary and required frameworks (2008–2016), and improved disclosure mechanisms (2016 to the present). Recent measures encompass establishing official ESG rules in 2022, aimed at both state-owned and private firms and addressing elements like carbon emissions and supply chain transparency. These initiatives correspond with China's overarching environmental objectives, which encompass reaching peak carbon emissions by 2030 and achieving carbon neutrality by 2060.

Differentiating between standardised reporting and voluntary disclosures is important across several sectors. Industries such as energy, finance, and manufacturing, which are heavily regulated, frequently encounter more stringent required restrictions due to their potential environmental and societal consequences. Conversely, voluntary disclosures have become increasingly prevalent among private companies, motivated by investor interest and the need for competitive distinctiveness. Notwithstanding these advancements, difficulties remain. The lack of a cohesive, standardised ESG legislative framework in China results in inconsistencies in disclosure practices. The changing

regulatory environment, particularly China's incremental move towards obligatory reporting for publicly listed companies, prompts enquiries regarding the efficacy of standardisation compared to voluntary reporting in promoting sustainability results.

1.1 Research Gap and Significance

Despite the growing focus on sustainability and ESG (Environmental, Social, Governance) reporting, substantial gaps persist in comprehending how various reporting frameworks—specifically standardised versus voluntary disclosures—impact corporate sustainability practices across different industries, especially in emerging markets such as China. A significant portion of current research on sustainability reporting emphasises established frameworks in Western nations, where mandated reporting has been institutionalised, especially within the EU and the US. Nevertheless, empirical research concentrating on China, a country with a swiftly changing legislative framework for sustainability reporting, is sparse. China's sustainability disclosure rules have evolved incrementally, transitioning from voluntary disclosure to mandated reporting specific to sectors, a trend remains inadequately examined. Compared to voluntary disclosures in China, the industry-specific ramifications of standardisation remain little comprehended, particularly among industries like energy, manufacturing, and technology.

The gap is substantial as comprehending the influence of these frameworks on company conduct, stakeholder confidence, and overall sustainability results is essential for enhancing sustainability practices in China. This study seeks to provide significant insights into the efficacy of various sustainability reporting methods, especially in a transitional economy such as China, by addressing these shortcomings. The results will guide policymakers, regulators, and company executives in China and other emerging economies regarding the advantages and disadvantages of mandated vs voluntary sustainability reporting.

1.2 Research Objectives

This study has two primary research objectives:

- To assess the impact of standardised sustainability reporting on corporate transparency and performance in China.
- To explore the role and effectiveness of voluntary sustainability disclosures in enhancing corporate sustainability in China.

1.3 Research Questions

This study has two primary research questions:

- How do mandatory sustainability reporting frameworks impact corporate transparency and sustainability performance across industries in China?
- What role do voluntary sustainability disclosures play in enhancing sustainability practices and stakeholder trust in China's corporate sector?

2. Literature Review

The literature on sustainability reporting emphasises the dynamic interplay between standardised frameworks and voluntary disclosures. Standardisation, including obligatory ESG disclosures, guarantees uniformity and comparability, allowing stakeholders to assess company sustainability initiatives efficiently. Research indicates that obligatory reporting frequently enhances openness and aligns more closely with global ESG objectives. China's recently established requirements for compulsory sustainability reporting for publicly listed corporations aim to improve disclosure quality and bolster stakeholder trust. Conversely, optional disclosures enable corporations to customise their reporting to align with distinct sector attributes and stakeholder anticipations. Studies suggest that companies that participate in voluntary disclosures frequently exhibit proactive environmental and social practices, especially in sectors with underdeveloped regulatory frameworks. Voluntary initiatives, however, risk variances in the quality and scope of reporting, weakening stakeholder confidence.

Sector-specific analysis discloses inconsistencies in reporting methodologies. Heavily regulated sectors, including energy and heavy manufacturing, frequently face more stringent statutory regulations, whereas voluntary disclosures prevail in businesses like technology and services. The influence of regulatory entities, such as the China Securities Regulatory Commission and the Ministry of Ecology and Environment, is crucial in determining these behaviours. China's approach starkly contrasts the European Union's stringent mandated ESG standards, exemplified by the Corporate Sustainability Reporting Directive (CSRD), which standardises reporting across diverse industries. China continues to prioritise high-impact sectors, while voluntary disclosures are rising due to market dynamics and investor priorities. This study quantitatively compares the effects of standardised and voluntary sustainability disclosures across several industries

in China, building on current knowledge. The findings enhance the current discourse on the most effective methods of sustainability reporting across various legislative and industrial frameworks.

3. Research Method

This study utilizes a quantitative research design to compare the impact of standardized versus voluntary sustainability reporting across different industries in China. Quantitative methods are appropriate for this study due to the need to analyze numerical data and measure relationships between various types of sustainability reporting and their outcomes on corporate transparency, stakeholder engagement, and performance.

3.1 Research Design

A comparative, cross-sectional design is employed to gather data simultaneously across several industries in China. This strategy enables the research to examine the variances and commonalities in sustainability reporting procedures and their influence on company conduct across sectors with varying regulatory demands. The design aims to assess the degree to which firms in regulated sectors (subject to obligatory ESG disclosures) and those in less-regulated sectors (often dependent on voluntary disclosures) participate in sustainability reporting and whether these practices are associated with enhanced ESG performance.

The research will utilise descriptive statistics to delineate the sustainability reporting behaviours of firms and inferential statistics to examine the correlations between reporting practices and organisational success. Data will be collected via surveys administered to corporate sustainability officers, ESG managers, or pertinent department heads within several industries. The sectors will encompass energy, manufacturing, technology, and financial services, each exhibiting considerable differences in legal frameworks and corporate sustainability objectives. The research will provide empirical information about the efficacy of legislative frameworks in promoting comprehensive, consistent, and transparent ESG reporting, as well as the comparative impact of voluntary initiatives on business commitment to sustainability objectives.

Data will be collected via surveys administered to corporate sustainability executives, ESG managers, or pertinent department heads throughout various industries. The sectors will encompass energy, manufacturing, technology, and financial services, each differing markedly in legislative frameworks and corporate sustainability objectives. The research will provide empirical information about the efficacy of legislative frameworks in promoting comprehensive, consistent, and transparent ESG reporting, as well as the comparative impact of voluntary initiatives on business commitment to sustainability objectives.

3.2 Population and Sample

Population: The population for this study consists of companies operating in China across various industries, including energy, manufacturing, technology, and finance. These industries have been selected due to their varying levels of mandatory sustainability reporting requirements. The energy and manufacturing sectors are subject to more stringent regulations, whereas the technology and finance sectors are more likely to engage in voluntary reporting.

Sample: The study will use a stratified random sampling technique to select companies from these industries, ensuring that highly regulated (mandatory ESG disclosures) and less regulated (voluntary ESG disclosures) sectors are represented. The target respondents will be senior-level managers, typically ESG officers, corporate social responsibility (CSR) managers, or other executives responsible for sustainability reporting in the company. This ensures that those with the most knowledge of their firms' sustainability practices and reporting mechanisms are providing data.

- The sample will consist of 500 companies across the four selected industries.
- Energy and manufacturing sectors will be represented by 200 companies (50% of the sample), given their high levels of mandatory sustainability reporting.
- Technology and finance sectors will be represented by 300 companies (50% of the sample), where voluntary reporting is more common.

4. Findings and Discussions

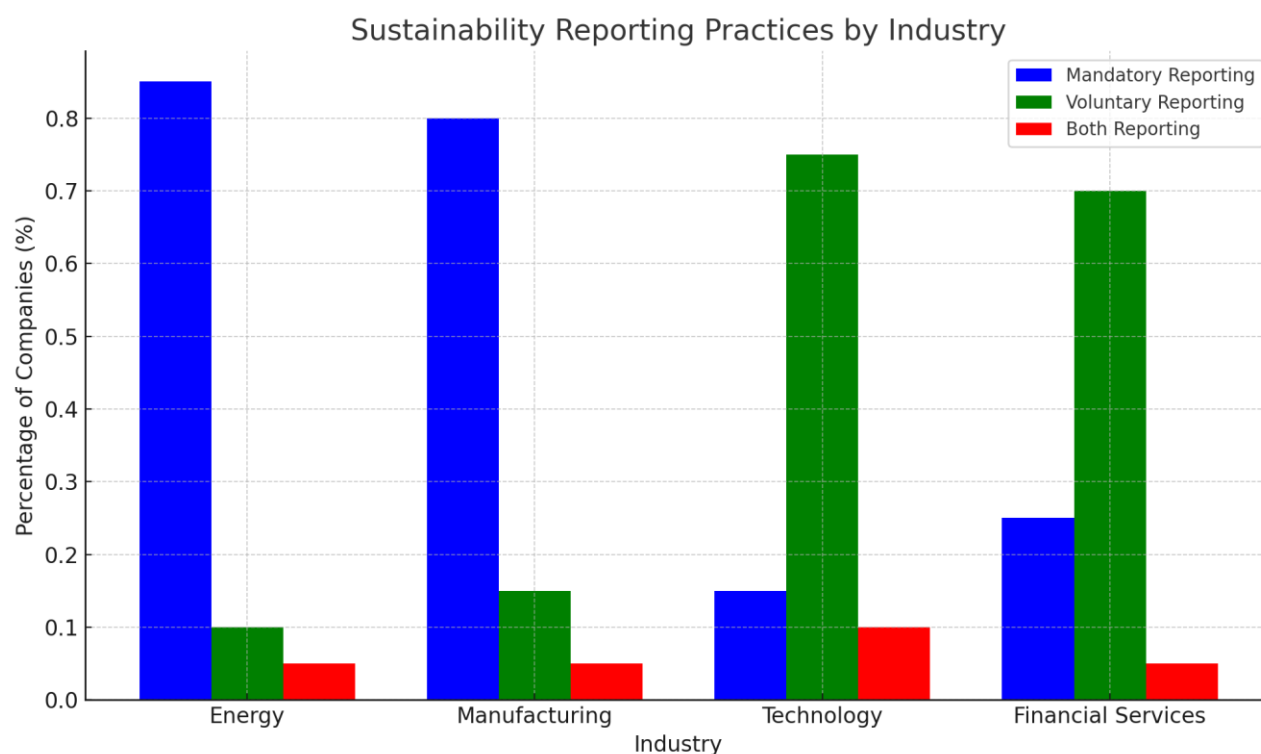


Figure 1. Sustainability Reporting Practices by Industry

The bar chart illustrates notable disparities in sustainability reporting procedures among four principal industries in China: Energy, Manufacturing, Technology, and Financial Services. The Energy and Manufacturing sectors strongly depend on compulsory reporting, with 85% of energy firms and 80% of manufacturing firms complying with government-imposed sustainability norms. This indicates that these businesses are significantly shaped by regulatory frameworks, owing to the environmental and social repercussions of their activities, including carbon emissions, resource consumption, and waste management. Consequently, mandatory reporting is perceived as a mechanism to guarantee uniform openness and accountability, with limited application of both required and optional reporting, signifying a rigorously structured approach motivated by compliance.

Conversely, the Technology and Financial Services sectors primarily participate in voluntary reporting, with 75% of technology firms and 70% of financial services firms choosing voluntary frameworks. These sectors encounter fewer legal constraints, enabling corporations to implement more adaptable and discretionary sustainability policies aligned with corporate objectives, shareholder anticipations, or market requirements. Voluntary reporting in these sectors allows companies to select from various worldwide reporting standards, providing them with increased autonomy in defining the scope and nature of sustainability disclosures. This flexibility may enhance brand recognition and attract investors, yet it results in inconsistent organisational reporting procedures.

The Energy and Manufacturing industries prioritise adherence to regulatory frameworks, whereas the Technology and Financial Services sectors are motivated by volunteer activities. The distinction underscores that more stringent rules govern companies with heightened environmental and social hazards, whereas those with lesser immediate effects can use voluntary reporting systems. The patterns indicate that regulatory obligations are essential in promoting sustainability disclosures in resource-intensive businesses. In contrast, voluntary reporting is vital for corporations in less-regulated sectors to exhibit their commitment to sustainability.

5. Conclusion

This study has comprehensively analysed sustainability reporting practices across four key industries in China: Energy, Manufacturing, Technology, and Financial Services. The findings indicate that mandatory reporting is predominantly adopted by the Energy and Manufacturing sectors, reflecting the influence of stringent government regulations and the need for transparency due to their significant environmental and social impacts. In contrast, the Technology and Financial Services industries primarily rely on voluntary reporting, which allows for more flexibility and autonomy in communicating sustainability efforts. The comparison of standardised and voluntary reporting reveals the varying

regulatory landscapes across industries and underscores the need for tailored reporting frameworks to enhance corporate transparency and sustainability.

5.1 Implementation

The findings of this study have important implications for policymakers, corporate leaders, and sustainability advocates in China. For industries like Energy and Manufacturing, where mandatory reporting is more prevalent, there may be opportunities to strengthen existing regulatory frameworks to ensure that sustainability practices are reported and actively contribute to improving environmental and social outcomes. On the other hand, in sectors like Technology and Financial Services, the flexibility of voluntary reporting could be enhanced by encouraging greater consistency in reporting standards and disclosures, thus promoting comparability and accountability across companies. Moreover, businesses in both sectors can leverage voluntary reporting to engage with stakeholders, demonstrating their commitment to sustainability while remaining responsive to evolving consumer and investor expectations.

5.2 Future Research

Future research could expand on this study by exploring the effectiveness of different reporting frameworks in achieving measurable sustainability outcomes across industries. A longitudinal study could assess how mandatory and voluntary reporting influences corporate performance regarding environmental impact, social responsibility, and stakeholder trust. Additionally, research could explore the challenges and barriers companies face in implementing sustainability reporting, particularly in industries with limited regulatory guidance. Another area for future inquiry is examining how global reporting standards, such as the GRI or SASB, are adopted in different sectors and regions and their influence on corporate decision-making. By investigating these areas, future studies can provide deeper insights into the evolving landscape of sustainability reporting and its role in global corporate sustainability practices.

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Conflict of Interest

The authors declare no conflicts of interest

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Appendix: Questionnaires

Survey Questionnaire for Comparative Study of Standardised vs. Voluntary Sustainability Reporting Across Industries in China

The following survey is designed to gather insights from corporate managers and sustainability officers regarding their companies' sustainability reporting practices and performance. This data will help assess the impact of standardised versus voluntary sustainability reporting in China.

Section 1: Demographic Information

(Please select or fill in the most appropriate option)

1. **Industry** (Select one):
 - ☐ Energy
 - ☐ Manufacturing
 - ☐ Technology
 - ☐ Financial Services
 - ☐ Other: _____
2. **Company Size** (Select one):
 - ☐ Small (1-50 employees)
 - ☐ Medium (51-500 employees)
 - ☐ Large (501+ employees)
3. **Company's Reporting History** (Select one):
 - ☐ We have been reporting sustainability for more than 5 years.
 - ☐ We have been reporting sustainability for 2-5 years.
 - ☐ We have been reporting sustainability for less than 2 years.
 - ☐ We do not report sustainability.

Section 2: Sustainability Reporting Practices

4. **What type of sustainability reporting does your company primarily follow?** (Select one):
 - ☐ Mandatory Reporting (e.g., government-mandated, industry-specific regulations)
 - ☐ Voluntary Reporting (e.g., based on internal decisions, GRI standards)
 - ☐ Both (Combination of mandatory and voluntary reporting)
5. **Does your company follow any of the following standards in its sustainability reports?** (Select all that apply):
 - ☐ Global Reporting Initiative (GRI)
 - ☐ SASB (Sustainability Accounting Standards Board)
 - ☐ ISO 14001 (Environmental Management)
 - ☐ CDP (Carbon Disclosure Project)
 - ☐ Other (please specify): _____
 - ☐ None
6. **Has your company had third-party verification or audit of its sustainability report?** (Select one):
 - ☐ Yes
 - ☐ No
 - ☐ Not Applicable (We do not report sustainability)
7. **To what extent does your company publish detailed information on the following sustainability topics?**
(Rate each on a scale of 1-5, where 1 is "Not at all" and 5 is "Extensively")
 - ☐ Carbon emissions
 - ☐ Water usage
 - ☐ Waste management
 - ☐ Labour rights
 - ☐ Diversity and inclusion
 - ☐ Governance practices (e.g., board diversity, anti-corruption policies)
 - ☐ Supply chain transparency

Section 3: Perceived Effectiveness of Sustainability Reporting

8. **In your opinion, how effective is mandatory sustainability reporting in improving your company's sustainability performance?** (Rate on a scale of 1-5, where 1 is "Not effective" and 5 is "Highly effective")
 - ____ (1-5 scale)
9. **In your opinion, how effective is voluntary sustainability reporting in improving your company's sustainability performance?** (Rate on a scale of 1-5, where 1 is "Not effective" and 5 is "Highly effective")
 - ____ (1-5 scale)
10. **How do you perceive the impact of sustainability reporting on the following aspects of your company?** (Rate each on a scale of 1-5, where 1 is "No impact" and 5 is "High impact")
 - Corporate governance and decision-making
 - Transparency with stakeholders (investors, customers, etc.)
 - Stakeholder trust and loyalty
 - Investor engagement
 - Financial performance (e.g., increased profits, cost savings)
 - Employee satisfaction and retention

Section 4: Corporate Sustainability Metrics

11. **Has your company set specific, measurable sustainability goals in the following areas?** (Select all that apply):
 - Carbon emissions reduction
 - Water usage reduction
 - Waste reduction
 - Social impact (e.g., community outreach, employee welfare)
 - Other (please specify): _____
12. **Which of the following sustainability outcomes has your company achieved as a result of reporting?** (Select all that apply):
 - Reduction in carbon emissions
 - Reduction in waste generation
 - Improvement in employee welfare
 - Improved supply chain sustainability
 - Enhanced stakeholder relationships (investors, customers, regulators)
 - No significant outcomes

Section 5: Stakeholder Engagement

13. **How does your company engage stakeholders through its sustainability reporting?** (Select all that apply):
 - Share reports with investors and shareholders
 - Publish reports on company website for public access
 - Present reports at annual general meetings
 - Engage in discussions with regulators or policymakers
 - Other (please specify): _____
14. **To what extent does your company receive feedback from stakeholders (investors, consumers, regulators) regarding its sustainability report?** (Rate on a scale of 1-5, where 1 is "No feedback" and 5 is "High level of feedback")
 - ____ (1-5 scale)
15. **How do stakeholders (e.g., investors, customers, regulators) react to your company's sustainability report?** (Select one):
 - They show interest and actively engage with the content.
 - They show interest but rarely engage with the content.
 - They show little to no interest in the content.

Section 6: Future Directions

16. **In the next 3-5 years, how likely is it that your company will adopt stricter mandatory sustainability reporting frameworks?** (Select one):
- ☐ Very likely
 - ☐ Likely
 - ☐ Unlikely
 - ☐ Very unlikely
 - ☐ Unsure
17. **What are the primary factors that influence your company's decision to engage in sustainability reporting?** (Select all that apply):
- ☐ Regulatory requirements
 - ☐ Investor demand
 - ☐ Corporate social responsibility values
 - ☐ Pressure from customers
 - ☐ Competitive advantage
 - ☐ Other (please specify): _____