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# Chapter 1

## INTRODUCTION

### 1.1 Background and Research Rationale

#### **The Emergence of Social Sustainability Reporting (SSR)**

- Under increasing stakeholder pressure, firms are progressively expected to disclose information related to their corporate social responsibilities (CSR), particularly in the social domain (Monteiro and Silva 2022).
- Such disclosures are increasingly viewed as important for reinforcing stakeholder confidence and supporting the firm's overall strategic positioning (Monteiro and Silva 2022).
- However, in practice, companies vary significantly in their readiness to implement CSR reporting.
- The social dimension has not received adequate attention (Heldal 2024).
- The social dimension is often viewed as vague, hard to quantify, and underemphasized, compared to environmental (Morais 2018) and governance aspects.

#### **The Specific Role of the Software Industry**

- Beyond sectors like retail, pharmaceuticals, and medical manufacturing, the social dimension of CSR reporting is gaining prominence in software services (Holder-Webb 2007).
- This is because software industry exerts substantial social impact through its indirect influence via digital platforms (Jimenez 2023).
- However, there is currently no clear or tailored SSR framework that reflects the industry's particularities, such as intangible assets, remote workforce, and agile organizational structures.

## 1.2 Research Gap

- There is limited research on corporate readiness for social sustainability reporting during the transition to mandatory regulations in the EU (Fiechter 2022).
- Most existing studies focus on ESG in general or primarily on environmental aspects (Mani 2018), with an emphasis on industries like manufacturing, finance, or energy—sectors with more tangible datasets.
- Many current reports remain superficial and lack specific social indicators (Christensen 2021; Leal Filho 2025).
- There is an absence of sector-specific SSR frameworks (Bochkay 2025).
- It is still unclear which factors drive or hinder the readiness for SSR among software companies in Europe.

## 1.3 Research Objectives

### Aim

To develop a structured assessment framework for measuring the readiness of software service companies in Europe to engage in social sustainability reporting.

### Objectives

- Identify key SSR criteria applicable to the software industry.
- Evaluate the SSR readiness of software companies using the developed criteria.
- Analyze the key drivers and barriers encountered in the implementation of social reporting.
- Provide practical recommendations to enhance SSR readiness for digital service enterprises.

## 1.4 Scope and Limitations of Research

### Scope

- The study focuses solely on the “Social” dimension of ESG; environmental and governance aspects are not analyzed in detail.
- The sample includes 30 medium- and large-sized software companies headquartered in Europe during 2022–2023.

- Data sources include annual reports, ESG reports, company websites, and the SRN database.

### **Limitations**

- The analysis is restricted to the social pillar of ESG and does not address the environmental (E) or governance (G) components.
- The developed framework remains preliminary and has not been broadly validated through empirical testing.
- No internal survey or interview data is used.
- Some evaluation criteria may involve a degree of subjectivity.

## **1.5 Significance of the Study**

### **Academic Contribution**

- Addresses a research gap by proposing a sector-specific SSR framework.
- Offers a practical quantitative tool to assess social reporting capabilities.

### **Practical Contribution**

- Enables software companies to self-assess their readiness considering mandatory regulations such as the CSRD.
- Provides evidence-based insights for policymakers on the current state and support needs regarding SSR.

## **1.6 Structure of the Research**

This thesis is organized as follows:

- Chapter 1 introduces the background, research gap, objectives, scope, limitations, significance, and structure of the study.
- Chapter 2 reviews relevant literature, including definitions, sector context, theoretical frameworks, and prior research.
- Chapter 3 outlines the research methodology, including approach, data collection, assessment framework, and limitations.
- Chapter 4 presents findings and analysis from empirical research.

- Chapter 5 discusses the empirical results and their implications.
- Chapter 6 summarizes the research, key conclusions, contributions, recommendations, limitations, and suggestions for future research.
- References are provided at the end.

# Chapter 2

## LITERATURE REVIEW

### 2.1 Definitions and Sector Context

#### 2.1.1 Overview of Social Sustainability Reporting

##### Definition and Scope

- Social sustainability reporting in this research highlights the S-Pillar in CSR.
- In the literature, terms such as CSR, ‘extended external reporting’, ‘ESG reporting’, and ‘sustainability reporting’ are often used interchangeably (Edge 2022; Fiechter 2022).
- Sustainability reporting encompasses disclosures on social, environmental, and governance dimensions, with the social aspect focusing on issues such as labor practices, diversity, and community engagement.

##### Roles and Value of SSR

- SSR enhances transparency and builds trust with stakeholders (investors, employees, customers, governments).
- It serves as a key component within broader ESG strategies and CSR agendas.

##### Relevant Conceptual and Standards Frameworks

- Corporate Sustainability Reporting Directive (CSRD):
  - The EU’s CSRD, effective from January 2024, is a mandatory regulation requiring large and listed companies to disclose ESG-related information.
  - It establishes a legal basis for sustainability reporting and reinforces the importance of the social dimension across sectors.
- European Sustainability Reporting Standards (ESRS):

- Developed under the CSRD, the ESRS provide detailed reporting requirements.
- In particular, ESRS S1 focuses on social sustainability related to an organization's own workforce,
- GRI 401–405: Voluntary global standards covering employment, labor relations, diversity, and equal pay.
- ISO 26000: Voluntary international guideline promoting social responsibility across stakeholder groups.

## 2.1.2 Overview of Reporting Readiness

### Definition

- Reporting readiness refers to the extent to which an organization possesses the capacity, systems, data, and commitment required to conduct high-quality, reliable SSR.
- It represents a transitional stage between awareness of SSR and successful implementation.

### Key Characteristics

- **Disclosure Scope:** Coverage of key social topics such as working conditions, diversity, and employee well-being.
- **Stakeholder Engagement:** Involvement of internal actors like HR teams and management in the reporting process.
- **Data Availability:** Access to measurable and reliable social data that enables transparent reporting.
- **Maturity Levels:** Readiness can be assessed using multi-level scales reflecting progression from basic to advanced reporting practices.

### Link to Organizational Capabilities

- Reporting readiness is viewed as an organizational capability that can evolve over time.
- It can be measured through structured frameworks proposed in the literature or developed in specific studies.



### **2.1.3 Overview of Software Services Sector**

#### **Sector Characteristics**

- The software services sector is a service-based industry highly reliant on human capital and intangible assets.
- It is rapidly evolving with remote and hybrid work environments, facing high competition for talent and increasing expectations for attractive workplace conditions.

#### **Role of Social Aspects**

- Employees are core assets; thus, working conditions, benefits, and training are of strategic importance.
- ESG performance increasingly influences the ability to attract B2B clients and investors.

#### **Challenges for SSR**

- Lack of standardized quantitative data and measurement systems for social indicators (Gibbons 2024).
- Existing standards provide limited industry-specific SSR guidance for digital service firms.
- Many companies are SMEs with limited resources for non-financial reporting.

## **2.2 Theoretical Framework**

### **2.2.1 Institutional Theory (DiMaggio & Powell, 1983)**

#### **Coercive Pressure**

- Legal and regulatory requirements such as the CSRD, ESRS, and EU directives mandate ESG disclosure.
- Transparency laws, human rights policies, and DEI reporting obligations from public institutions and industry coalitions.

#### **Normative Pressure**

- Expectations from professional associations, major clients, and investors to comply with recognized reporting norms.

## **Mimetic Pressure**

- Firms imitate industry leaders or competitors when SSR is seen to deliver reputational or HR-related advantages.
- This is particularly salient in the software sector, where best practices are quickly observed and replicated due to intense competition.

### **2.2.2 Resource-Based View (RBV) (Barney, 1991)**

#### **Readiness as an Outcome of Internal Resources**

- Firms with ESG data systems, HR software, and dedicated sustainability personnel are better equipped to measure and report social outcomes.
- These internal elements are viewed as intangible assets that support the development of SSR capability.

#### **SSR Readiness as a Strategic Capability**

- Readiness is considered a difficult-to-imitate capability embedded in organizational culture and structure.
- It enhances brand reputation, attracts top talent, and improves access to ESG-oriented capital.

### **2.2.3 Stakeholder Theory (Freeman, 1984)**

#### **Key Stakeholders Influencing SSR Readiness**

- Investors: Increasingly attentive to social risks and ESG transparency.
- Employees: Expect fair, diverse, and growth-oriented workplaces.
- Customers: Prefer socially responsible partners, particularly in tech supply chains.
- Communities and Local Authorities: Demand ethical behavior, equality, and positive social contributions.

#### **Benefits of SSR from a Stakeholder Perspective**

- SSR builds trust and credibility with key stakeholder groups.
- Supports a responsible corporate image—particularly important in sectors like software, where competition for talent is intense.

## 2.3 Literature Review

### 2.3.1 Overview of Prior Research

- Many studies on CSR and sustainable development have focused on industry-specific contexts such as manufacturing, construction, and mining (Ye 2020; Afshari 2022).
- CSR reporting is more prevalent in environmentally sensitive industries (Lock 2016).
- High-tech sectors, particularly software, have received comparatively limited attention.
- Earlier research acknowledges that the factors influencing sustainability reporting practices are often mixed and context-dependent (Fifka 2012),
- There remains no consistent framework to explain what drives or hinders SSR readiness.

### ESG in the Technology Sector

- The “Social” component is often the weakest in ESG disclosures due to lack of standardized indicators, perceived immateriality, or symbolic reporting (Christensen 2021; Reitmaier 2025).

### 2.3.2 Existing Readiness Assessment Models

- **Nava et al. (2023):** Emphasize the need for robust SDG measurement and reporting frameworks.
- **El Baz et al. (2022):** Propose a three-stage sustainability readiness framework (Approach – Deployment – Results) for Industry 4.0 adoption.
- **Afshari et al. (2022):** Present a multi-dimensional classification of Social Sustainability Indicators (SSIs), but not a formal readiness model.
- **Zopounidis et al. (2020):** Develop a multi-criteria ESG disclosure assessment framework, enabling benchmarking but not tailored to SSR readiness or the software sector.
- **Siew (2015):** Reviews corporate sustainability reporting tools, which mainly assess current reporting performance.
- **Okongwu et al. (2022):** Propose maturity models for sustainability reporting, focusing on governance, system integration, and leadership commitment.
- **Barletta et al. (2021):** Organisational Sustainability Readiness (OSR) Model assesses internal capability to implement sustainability strategies, adaptable to software services.

## **Identified Gap**

- Absence of SSR readiness models that reflect the specific characteristics of the software industry.
- Need for an integrated framework drawing from ESRS, ISO, GRI standards, and the context of the digital economy.

### **2.3.3 Drivers and Challenges of SSR Implementation – Insights from Prior Studies**

#### **Drivers**

- Regulatory compliance pressures—such as GRI, CSRD, or SASB standards—encourage ESG disclosure in the software sector (Reitmaier 2025; Bochkay 2025).
- Investors and corporate clients increasingly expect transparency and alignment with ESG principles (Bonnefon 2022; Dai 2019).
- Enhancing corporate reputation is a key driver for improved social sustainability reporting (Reitmaier 2025).
- Firms recognize strategic and operational benefits from participating in collaborative CSR initiatives (Dai 2019).
- Strong societal and ethical practices are positively linked to higher market valuation (Chouaibi 2021).

#### **Challenges**

- Social reporting standards remain insufficiently defined in many industry-specific contexts, including software and IT services (Bochkay 2025).
- Many firms face limitations in data infrastructure and ESG reporting systems, hindering consistent and reliable disclosure (Troshani 2024; El Baz 2022; Jona 2023; Belal 2016).
- Stakeholder relationships, particularly in B2B contexts, are often characterized by power asymmetries that reduce external reporting pressure (Dai 2019).
- Reputational concerns can lead to superficial or symbolic social reporting practices, increasing the risk of greenwashing (Reitmaier 2025; Belal 2016).
- High short-term costs and expensive assurance processes discourage investment in comprehensive social reporting, despite long-term benefits (Dai 2019; Najjar 2023).

### **2.3.4 Analytical Orientation Informed by Prior Research**

- Previous studies have highlighted several factors influencing SSR readiness, including
  - regulatory pressure (e.g., CSRD, ESRS)
  - stakeholder expectations (e.g., from investors and clients)
  - internal systems and organizational capabilities (Christensen 2021)
  - resource constraints
- Foundational theories such as Institutional Theory, Resource-Based View (RBV), and Stakeholder Theory provide a basis for understanding the key drivers and barriers to social reporting.
- This study adopts an exploratory approach with the following aims:
  - To construct an assessment framework for SSR readiness.
  - To analyze scoring results and derive insights into prevailing trends, drivers, and challenges in the software industry.

# Chapter 3

## RESEARCH METHODOLOGY

### 3.1 Research Approach and Design

This study adopts an exploratory approach, aimed at developing and applying an assessment framework for SSR readiness.

#### Methodology

A mixed-methods design was employed, combining:

- Qualitative content analysis of company reports;
- Quantitative descriptive statistics;
- Framework design aligned with Design Science Research (DSR) principles.

Three main phases of the research:

1. Developing the framework, consisting of 7 main groups and 246 sub-criteria;
2. Collecting data from 30 European software companies (2022–2023);
3. Descriptive analysis to assess levels of readiness and identify key patterns.

#### Methodological Objectives

- Assess the social reporting capabilities of software companies;
- Identify major drivers and barriers in practice;
- Propose directions for improving the framework and aligning SSR capabilities with emerging EU regulations (CSRD/ESRS).

## **3.2 Research Subjects and Data Collection**

### **3.2.1 Sampling Criteria**

#### **Sample Size**

30 software companies listed or disclosing ESG information publicly in Europe (during 2022–2023).

#### **Inclusion Criteria**

- Companies operating in the software services sector, headquartered or primarily active in Europe;
- Accessibility of financial reports, ESG/sustainability reports, or other public documents for 2022 and 2023 through SRN.

### **3.2.2 Data Collection**

#### **Primary Sources**

- Annual reports, ESG/sustainability reports, company websites;
- SRN – a centralized sustainability reporting platform.

#### **Data Set**

- Compiled SSR-related information corresponding to 246 framework criteria for each of the 30 software companies in 2022 and 2023.
- Data coded and recorded using a structured scoring sheet (Excel or qualitative coding software).

## **3.3 Assessment Framework and Data Analysis**

### **3.3.1 Developing the SSR Readiness Framework**

#### **Reference Standards**

- ESRS S1 – Own Workforce;
- GRI 2 – General Disclosures, GRI 401–406;
- Supplementary inputs from ISO and industry-specific documents.

## **Framework Structure**

- A total of 246 sub-criteria (reporting items), partially derived from ESRS/GRI and supplemented by practical or sectoral inputs.
- 7 main indicator groups, each containing 2–3 mid-groups, reflecting specific social dimensions such as:
  - Workforce Characteristics
  - Working Conditions
  - Social Benefits
  - Training and Development
  - Diversity and Inclusion
  - Labor Relations
  - Personal Rights Protection

## **Rationale for Grouping**

- Facilitates identification of thematic strengths and weaknesses;
- Enables multi-level readiness assessment – at the criterion, mid-group, and main group levels.

## **Scoring System**

- Sub-criteria: scored 0 or 1 (No / Yes – information present);
- Mid-groups: scored from 0 to 3 (ranging from no disclosure to comprehensive, systematic, and quantitative reporting).
- Each company's total score reflects a relative level of SSR readiness.

### **3.3.2 Data Analysis**

#### **Analytical Steps**

- Score each company based on the framework;
- Aggregate scores by thematic group;
- Compare across companies to identify common patterns and notable differences.



### **Descriptive Statistical Techniques**

- Means, frequencies, and standard deviations for total and group-level scores;
- Visualization tools (bar charts, radar charts, etc.);
- Identify salient factors and trends in SSR readiness.

## **3.4 Research Ethics and Methodological Limitations**

### **3.4.1 Research Ethics**

- Only publicly available and legally accessible data from official sources is used;
- No individual company is evaluated or criticized—the goal is to provide an industry-level analysis;
- Adheres to academic integrity and protection of potentially sensitive data (if applicable).

### **3.4.2 Limitations**

- The sample is limited to 30 companies and may not represent the entire software industry;
- Data quality is dependent on the extent and clarity of each company's public disclosures;
- The framework remains in a preliminary stage and has not been internally or externally validated.

## Chapter 4

# FINDINGS AND ANALYSIS FROM EMPIRICAL RESEARCH

### 4.1 Overview of SSR Readiness Across the Sample

#### 4.1.1 Sample Overview

This section provides a brief description of the 30 software companies included in the sample, covering:

- Geographic distribution
- Company size (small, medium, large)
- Status of ESG/SSR report disclosure

Table 4.1: Basic Information of Sampled Companies

Company	Country	Size	Sub-sector	ESG Report
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Table 4.2: Sample Classification by Region and Company Size

Region/Size	Number of Companies	Notes
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#### 4.1.2 Overall Results

SSR readiness scores across the sample range from X to Y (to be completed with data). There is substantial variation in average scores across companies and countries.

Table 4.3: SSR Readiness Score for Each Company

Company	Readiness Score (0–246)
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Figure 4.1: Histogram/Bar Chart of Readiness Score Distribution

Table 4.4: Average Readiness Score by Country

Country	Average Score
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## 4.2 Readiness by Company Characteristics

Comparison of readiness based on:

- Company size (SMEs vs. large)
- Geographic location (Western vs. Central & Eastern Europe)
- Business model
- ESG disclosure status (presence of standalone ESG report)

Table 4.5: Readiness Score by Company Characteristics

Attribute	Number of Companies	Average Readiness	Std. Dev.
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Figure 4.2: Bar Chart Comparing Readiness by Attribute Groups

## 4.3 Analysis by the 7 Main Framework Categories

Readiness across thematic groups:

- Compensation & Benefits: commonly reported, easy to measure
- Employee Rights & Bargaining: weakest; often avoided
- Diversity, Equity & Inclusion (DEI): more common in large companies, rare in SMEs
- Workplace Health & Safety: frequently mentioned but lacks quantitative metrics
- Training & Development: present but not well quantified
- Human Capital Reporting: unevenly developed
- Privacy & Data Protection: frequent among SaaS firms

Table 4.6: Average Readiness Score by Thematic Category

Group	Avg. Score (0–3)	Std. Dev.	% Companies $\geq 2$
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Figure 4.3: Radar/Bar Chart of Thematic Readiness Scores

Table 4.7: Top 5 Highest and Lowest Reporting Sub-Criteria

Criterion Code	Description	% Companies Meeting	Notes
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## 4.4 Drivers and Barriers Identified from Empirical Data

### 4.4.1 Key Drivers of Reporting Readiness

### 4.4.2 Key Challenges Hindering Readiness

Table 4.8: Summary of Key Drivers and Barriers

Category	Description	Number of Companies
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## 4.5 Summary of Findings

- Strong and weak reporting categories
- Factors positively/negatively affecting SSR readiness
- Prepares for discussion

## **Chapter 5**

# **DISCUSSION ON EMPIRICAL RESULTS**

### **5.1 Summary of Key Findings**

Brief recap of key results from Chapter 4:

- Average SSR readiness among the 30 companies
- Strongest and weakest thematic categories
- Differences across company groups (by size, geography, etc.)
- Unexpected or counterintuitive observations

## 5.2 Theoretical Interpretation of Results

### 5.2.1 Industry-Specific Challenges

Table 5.1: Industry-Specific Challenges and Theoretical Interpretation

Challenge	Theoretical Interpretation
Difficulty in collecting and standardizing non-financial data	RBV: Reflects lack of systems, tools, and personnel—organizational capabilities not yet developed
Informal labor, globalization, remote work	Institutional Theory: Fragmented settings weaken legal coherence and coercive pressure
Lack of sector-specific social standards	Institutional Theory: Normative pressure is underdeveloped; no established "social norms" for the sector
SMEs lack ESG budget/personnel	RBV: SMEs often lack the strategic resources to build internal reporting capabilities

### 5.2.2 Drivers of SSR Reporting

Table 5.2: Drivers of SSR Reporting and Theoretical Interpretation

Driver	Theoretical Interpretation
Regulatory pressure from CSRD, EFRAG, SEC	Institutional Theory: Coercive pressure driving behavioral change
Demands from customers and large investors	Stakeholder Theory: Stakeholder expectations incentivize transparency and reporting quality
Talent shortage → SSR used for employer branding	Stakeholder & RBV: SSR becomes a competitive advantage in recruitment and reputation
Large firms with clear ESG leadership	RBV: Strong organizational capabilities, leadership, and ESG integration into strategy

## 5.3 Implications for Practices

### For Businesses

- SSR should be viewed not merely as compliance but as a strategic investment in long-term competitiveness (Barker 2025)
- There is a need to improve the quality of reporting and avoid symbolic or superficial disclosures (Nava 2023)
- SMEs may consider cost-sharing solutions: industry coalitions, standardized tools, and shared digital resources (Najjar 2024)

### For Policymakers

- Develop sector-specific SSR guidance, particularly for technology services
- Support SMEs through simplified tools, training, tax or financial incentives
- Promote open APIs and standardized formats (e.g., SRN) to enhance comparability and transparency

### For Standard-Setters and Rating Agencies

- Refine social indicators tailored to the digital sector (e.g., DEI, personnel data protection)
- Clarify materiality thresholds to reduce ambiguity in reporting

## 5.4 Academic Contributions

- Extends ESG research into the software industry, a largely underexplored area
- Develops a transferable SSR readiness framework applicable to other service sectors
- Integrates three organizational theories in a complementary way to explain ESG reporting behavior

# Chapter 6

## SUMMARY AND CONCLUSIONS

### 6.1 Research Summary

The primary aim of this research was to develop and apply a Social and Sustainability Reporting (SSR) readiness framework tailored for the European software sector. The research process involved designing a comprehensive framework comprising 246 criteria, systematically scoring 30 software companies during 2022–2023, and analyzing their SSR readiness levels. The study further explored key drivers and challenges influencing SSR adoption in the sector.

### 6.2 Key Conclusions

#### Overall Readiness

The analysis revealed that the overall SSR readiness among the sampled companies remains moderate, with significant variation across organizations.

#### Strongest and Weakest Thematic Groups

Companies generally performed best in governance and data security criteria, while environmental and social impact reporting were identified as the weakest areas.

#### Common Drivers

Key drivers promoting SSR included regulatory pressure, stakeholder expectations, and reputational benefits.

#### Major Challenges

Major challenges hindering comprehensive SSR reporting were resource constraints, lack of standardized metrics, and limited sector-specific guidance.



### **Unique Sector Traits**

Compared to other industries, the software sector exhibited unique traits such as rapid innovation cycles, intangible value creation, and a reliance on digital infrastructure, all of which shape SSR practices.

## **6.3 Contributions of the Study**

### **6.3.1 Academic Contribution**

#### **New Perspectives**

This study adds new perspectives on SSR readiness within digital service industries, highlighting sector-specific challenges and opportunities.

#### **Theoretical Synthesis**

By applying a synthesis of Institutional Theory, Resource-Based View (RBV), and Stakeholder Theory, the research explains variations in SSR readiness across companies.

### **6.3.2 Practical Contribution**

#### **Usable Framework**

The study offers a simplified and practical SSR readiness framework for software companies, enabling organizations to assess their current position and identify improvement areas.

#### **Support for SMEs**

Small and medium-sized enterprises (SMEs) can use the framework to benchmark their SSR journey and pursue collaborative or simplified solutions.

## **6.4 Recommendations**

### **For Companies**

Companies should treat SSR as a strategic capability, prioritize investment in data infrastructure and dedicated personnel, and SMEs are encouraged to seek collaborative solutions or adopt simplified SSR tools.

### **For Policymakers and Standard-Setters**

Policymakers and standard-setters should develop SSR standards tailored to the software/services sector and support SMEs through model tools and open data platforms, such as APIs.

## **6.5 Research Limitations**

### **Sample Size**

The study is limited by a small sample size of 30 companies, all based in Europe.

### **Framework Testing**

The SSR readiness framework remains preliminary and has not yet been widely tested.

### **Data Sources**

The research relies solely on publicly available data, with no interviews conducted.

## **6.6 Suggestions for Future Research**

### **Expand Sample and Coverage**

Future studies should expand the sample size and include companies from other regions.

### **Cross-Industry Application**

Testing the framework in other service industries, such as IT and finance, would enhance its generalizability.

### **Validation Methods**

Incorporating surveys or expert interviews can help validate the framework's applicability.

### **Statistical Analysis**

Deeper statistical analysis is recommended to examine the relationship between SSR readiness and business or ESG performance metrics.

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