

Social Sustainability Reporting Readiness in Software Services: Drivers and Challenges

Outline of Bachelor Thesis

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Chapter 1

INTRODUCTION

1.1 Background and Research Rationale

The Emergence of Social Sustainability Reporting (SSR)

- Social sustainability reporting (SSR) is gaining importance under increasing regulatory and stakeholder pressure.
- However, most research still emphasizes environmental or governance aspects.
- The software sector, despite its rising social impact, lacks tailored SSR frameworks and shows varying degrees of readiness.

1.2 Research Gap

- There is limited research on corporate readiness for social sustainability reporting during the transition to mandatory regulations in the EU.
- Existing SSR models are mostly generic and overlook sector-specific challenges.

1.3 Research Objectives

Aim

To develop and apply a framework for assessing SSR readiness in the European software sector.

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

- Focuses on the “Social” pillar in ESG for 30 European software firms (2022-2023), based on public reports.

Limitations

- Excludes E/G aspects, relies on secondary data, no surveys/interviews, and includes some subjectivity in scoring.

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 Reporting.

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)
- European Sustainability Reporting Standards (ESRS)
- GRI 401–405
- ISO 26000

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.

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.

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.
- Existing standards provide limited industry-specific SSR guidance for digital service firms.

2.2 Theoretical Framework

2.2.1 Institutional Theory (DiMaggio & Powell, 1983)

- Coercive pressures: laws (CSRD, ESRS), DEI policies.

- Normative pressures: expectations from clients/investors.
- Mimetic pressures: copying leaders to gain reputational or HR advantages.

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

- Internal assets like HR systems, ESG teams, and data infrastructure drive readiness.
- SSR capability is strategic, hard to replicate, and linked to performance.

2.2.3 Stakeholder Theory (Freeman, 1984)

- Key actors: investors, employees, clients, and local communities.
- SSR improves trust and strengthens competitive advantage in talent markets.

2.3 Overview of Prior Research

2.3.1 Existing Literature on Social Reporting in Software Sector

Sector-Specific SSR Studies

- Focus has been on manufacturing, construction, and energy.
- Limited attention to software services despite their growing ESG relevance.
- No unified model yet explains SSR readiness across sectors.

ESG in the Technology Sector

- The “S” dimension is often underreported or symbolic.
- Existing ESG reporting lacks specificity for digital service firms.

2.3.2 Existing Readiness Assessment Frameworks

Prior Frameworks

- Multiple models exist (e.g., Siew, El Baz, Barletta), but most:
 - Are generic or industry-neutral.

- Focus on reporting output rather than readiness.
- Do not capture the digital/service-specific context.

Identified Gap

- Lack of software-specific SSR readiness frameworks.
- Need to integrate ESRS, GRI, ISO, and digital economy traits.

2.3.3 Literature-Based Drivers and Challenges

Drivers

- Regulatory compliance (CSRD, GRI, SASB).
- Stakeholder expectations (investors, clients).
- Brand reputation and CSR partnerships.
- Social performance linked to market valuation.

Challenges

- Lack of sector-specific standards.
- Weak ESG infrastructure and data systems.
- Symbolic reporting due to reputational risk.
- High short-term costs and limited capacity in SMEs.

2.3.4 Analytical Orientation Informed by Prior Research

- This thesis builds on:
 - Regulatory and stakeholder drivers.
 - Organizational capacity and digital sector constraints.
 - Theoretical grounding in Institutional Theory, RBV, and Stakeholder Theory.

Chapter 3

RESEARCH METHODOLOGY

3.1 Research Approach and Design

- The study follows an exploratory, mixed-methods approach:
 - 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.

3.2 Research Subjects and Data Collection

- Sampling Criteria: 30 software companies in Europe (2022-2023) with available ESG/social reporting.
- Data sources: ESG/sustainability and financial reports via SRN.
- Data preparation: Each company scored against the 246 criteria using a structured Excel sheet.

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;

Framework Structure

- A total of 246 sub-criteria (reporting items), partially derived from ESRS/GRI standards, and partially adapted to the software sector context.
- 7 main indicator groups based on SRN Framework, each containing 2–3 mid-groups, reflecting specific social dimensions including:
 1. Workforce Characteristics
 2. Collective bargaining and social dialogue
 3. Compensation
 4. Training
 5. Health and Safety
 6. Work Life Balance
 7. Human Rights
- A brief description is given on how the full list of 246 sub-criteria was organized into mid-level thematic groups (mid-groups) for analysis.

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:
 - 0 = No information;
 - 1 = Criteria are mentioned but not quantified;
 - 2 = Specific data or bargaining is reported for one dimension (e.g., gender);
 - 3 = Comprehensive reporting, including bargaining across two or more dimensions
- Main groups: average of mid-group scores.
- Total score: average of all 7 main group scores.
- Each company's total score reflects a relative level of SSR readiness.

3.3.2 Data Analysis

Includes descriptive statistics (mean, SD, frequency), thematic comparison, and radar/bar chart visualizations.

3.4 Research Ethics and Methodological Limitations

- Uses only public data, no company is individually criticized.
- Sample may not fully represent the software sector.
- Disclosure depth varies across firms; framework is still exploratory and unvalidated.

Chapter 4

FINDINGS AND ANALYSIS FROM EMPIRICAL RESEARCH

4.1 Overview of SSR Readiness Across the Sample

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 (Appendix A)

Company	Country	Size	Status of ESG & SSR report disclosure
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Table 4.2: Sample Classification by Region and Company Size (Appendix B)

Region/Size	Number of Companies	SSR Readiness Score
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Overall Results

- SSR readiness scores across the sample range (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	Score accounting sub-sectors (0-246)	SSR Readiness Score (0-3)
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Figure 4.1: Histogram/Bar Chart of Readiness Score Distribution

Table 4.4: Average Readiness Score by Country

Country	Average Readiness 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 Framework Categories

Readiness across thematic groups

Table 4.6: Readiness by Main Groups (Appendix C)

Figure 4.3: Bar Chart of 7 Main Group Readiness (Appendix D)

Readiness by Mid-Groups

- Each main group is further divided into mid-groups, which provide more granular insights into specific reporting areas.
- Mid-groups reveal strengths and weaknesses within each thematic category, highlighting areas for improvement.

Table 4.7: Readiness by Mid-Groups (Appendix E)

Figure 4.4: Bar Chart of Mid-Group Readiness (Appendix F)

Top and Bottom Reporting Sub-Criteria

- Identify the top 5 sub-criteria with the highest reporting rates
- Identify the bottom 5 sub-criteria with the lowest reporting rates
- Discuss potential reasons for these patterns, such as ease of measurement, stakeholder demand, or sector norms.

Table 4.8: Top 5 Highest and Lowest Reporting Sub-Criteria

4.4 Empirical Drivers and Challenges

Key Drivers of Reporting Readiness

- High disclosure rates ($\geq 70\%$) in areas for examples compensation, health & safety, and DEI suggest these topics are measurable, familiar, and stakeholder-driven — thus supporting reporting readiness.

Key Challenges Hindering Reporting Readiness

- Low-scoring criteria (e.g., < 30% disclosure rate) signal inherent challenges.

Table 4.9: 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 Drivers and Barriers

5.2.1 Drivers of Social Sustainability Reporting Readiness

Table 5.1: 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

5.2.2 Barriers of Social Sustainability Reporting Readiness

Table 5.2: 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

5.3 Implications for Practices

For Businesses

- SSR should be viewed not merely as compliance but as a strategic investment in long-term

For Policymakers

- Encourage SSR through sector-specific guidance, training, financial incentives, and open data standards (e.g., SRN) to support transparency.

For Standard-Setters and Rating Agencies

- Tailor social indicators to digital industries and clarify materiality thresholds to reduce reporting ambiguity.

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 and Conclusions

- Research Summary
- Key Conclusions: Overall Readiness, Strongest and Weakest Thematic Groups, Key Drivers, Major Challenges
- Unique Sector Traits

6.2 Contributions of the Study

- Academic Contribution: Adds sector-specific insights; uses Institutional, RBV, and Stakeholder theories.
- Practical Contribution: Proposes a usable SSR readiness framework for self-assessment and improvement.

6.3 Recommendations

- **For Companies:**
 - Treat SSR as a strategic capability;
 - Invest in data infrastructure and assign dedicated personnel;
- **For Policymakers and Standard-Setters:**

- Develop SSR standards tailored to the software/services sector;
- Provide support for companies through model reporting tools and open data platforms (e.g., APIs).

6.4 Research Limitations

- **Sample Size:** The study is limited to 30 companies, all based in Europe.
- **Framework Testing:** The SSR readiness framework is preliminary and has not yet been tested widely.
- **Data Sources:** Only publicly available data were used; no interviews or internal data were collected.

6.5 Suggestions for Future Research

- Expand Sample and Coverage
- Cross-Industry Application
- Validation Methods
- Explore links between SSR and business/ESG performance.