Social Sustainability Reporting Readiness in Software Services: Drivers and Challenges

Outline of Bachelor Thesis

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Study program: Wirtschaftswissenschaften
8. Semester
Matriculation number: 7798555

Frankfurt am Main, July 30, 2025

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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 (Fiechter, Hitz, and Lehmann 2022).
- 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 (Gibbons 2024).
- 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 Literature Review

2.3.1 Overview of Prior Research

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 Models

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 Drivers and Challenges in Prior Research

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

Table 4.2: Sample Classification by Region and Company Size (Appendix B)

Region/Size Number of Companies SSR Readiness Score

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 accounding sub-sectors (0-246)** **SSR Readiness Score (0-3)**

Figure 4.1: Histogram/Bar Chart of Readiness Score Distribution

Table 4.4: Average Readiness Score by Country

Country **Average Readiness Score**

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.**

Figure 4.2: Bar Chart Comparing Readiness by Attribute Groups

4.3 Analysis by the Framework Categories

Readiness across thematic groups: (To be altered by further analysis)

- Workforce Characteristics: Key themes across all categories
- Collective Bargaining and Social Dialogue: Often limited or absent in SMEs

- Compensation: Commonly disclosed and relatively easy to quantify
- Training and Development: Present but rarely detailed with clear metrics
- Health and Safety: Frequently addressed, though metrics vary
- Work-Life Balance: Mentioned, but coverage is often vague
- Human Rights: Unevenly addressed; more prevalent in larger firms

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 (e.g., ¿70%).
- Identify the bottom 5 sub-criteria with the lowest reporting rates (e.g., ¡30%).
- 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

- Sub-criteria and mid-groups with high disclosure rates (e.g., ¿70%) indicate areas where reporting is either well established, easy to quantify, or commonly requested by stakeholders.
- These drivers include elements such as compensation transparency, health and safety incidents, and DEI statements.
- Their structure, familiarity, or measurability contribute to higher readiness.

Key Challenges Hindering Reporting Readiness

- Low-scoring criteria (e.g.,¡30% disclosure rate) signal inherent challenges.
- These include vague or qualitative dimensions (e.g., collective bargaining quality, freedom of expression), lack of existing frameworks (e.g., social dialogue outcomes), or sensitivity of topics (e.g., grievances, wage gaps).
- These challenges hinder readiness not because companies refuse to report, but due to structural complexity, ambiguity, or lack of metrics.

Table 4.9: Summary of Key Drivers and Barriers

Category	Description	Number of Companies

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 $\rightarrow$ 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 competitiveness (Barker 2025)
- There is a need to improve the quality of reporting and avoid symbolic or superficial disclosures (Subramaniam et al. 2023)
- SMEs may consider cost-sharing solutions: industry coalitions, standardized tools, and shared digital resources (Najjar et al. 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 and Conclusions

Research Summary (Proposal)

The primary aim of this research was to develop and apply a Social Sustainability Reporting (SSR) readiness framework tailored to the European software sector. The research process involved:

- Designing a comprehensive framework comprising 246 criteria based on established standards;
- Systematically scoring 30 software companies over the period 2022-2023;
- Analyzing SSR readiness patterns across thematic groups;
- Identifying key drivers and challenges influencing SSR implementation within the sector.

Key Conclusions (Proposal)

- **Overall Readiness:** The analysis revealed that overall SSR readiness among the sampled companies remains moderate, with substantial variation across organizations.
- **Strongest and Weakest Thematic Groups:** The strongest thematic categories were related to workforce characteristics and health and safety, while collective bargaining and social dialogue showed the weakest readiness.

- **Key Drivers:** Key enablers of SSR adoption included regulatory pressure (e.g., CSRD), stakeholder expectations (e.g., from clients or investors), and reputational benefits tied to ESG positioning.
- **Major Challenges:** Primary barriers identified were resource constraints, the absence of standardized social metrics, and a lack of tailored guidance for the software services sector.

Unique Sector Traits

- The software sector exhibits distinct characteristics compared to other industries, including:
  - Rapid innovation cycles;
  - Intangible value creation (e.g., through intellectual capital);
  - Heavy reliance on digital infrastructure.
- These traits significantly influence how SSR practices are implemented and prioritized.

6.2 Contributions of the Study

Academic Contribution

- **New Perspectives:** Provides new insights into SSR readiness within digital service industries, emphasizing sector-specific challenges and opportunities.
- **Theoretical Synthesis:** Applies a multi-theoretical approach (Institutional Theory, Resource-Based View, and Stakeholder Theory) to explain variations in SSR readiness across companies.

Practical Contribution

- **Usable Framework:** Introduces a simplified and practical SSR readiness framework that enables software companies to assess their status and identify improvement areas.

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:** Future studies should include more companies and extend to non-European regions.
- **Cross-Industry Application:** Apply the framework to related service sectors to test generalizability.
- **Validation Methods:** Incorporate surveys or expert interviews to validate the framework's design and scoring logic.
- **Statistical Analysis:** Conduct advanced statistical analyses to explore correlations between SSR readiness and business or ESG performance metrics.

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