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SUSTAINABLE MICROFINANCE: INTEGRATING ESG STRATEGIES IN KYRGYZ REPUBLIC'S FINANCIAL SECTOR

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Sustainable Microfinance: Integrating ESG Strategies in Kyrgyz Republic's Financial Sector

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Abstract

The growing importance of sustainable finance has intensified the need to assess the integration of environmental, social, and governance (ESG) practices in microfinance institutions (MFIs), particularly in developing economies. This study evaluates the sustainability maturity of Kyrgyz Republic's microfinance sector by examining 14 leading MFIs that represent a substantial share of the country's national market. Using the CORPSUS ESG Maturity Analysis Model—a rule-based framework that measures ESG performance across environmental, social, and governance dimensions—the study assesses institutional sustainability practices through sector-specific indicators and maturity levels.

The results show strong performance in the social and governance dimensions, with average scores of approximately 87% and 83%, respectively, reflecting progress in community engagement, labor practices, governance structures, and risk management. Alternatively, the environmental dimension remains weak, with an average score of approximately 45%, driven by limited environmental risk assessment, low prioritization of resource management, and the perception that financial-sector impacts are largely indirect. Overall, the sector achieves an average ESG score of 70.7%, indicating a developing level of sustainability maturity with solid institutional foundations but clear gaps.

These findings highlight the need to more fully integrate environmental considerations into microfinance operations, including green lending strategies, stronger environmental reporting, and sector-specific sustainability policies. Strengthening these areas would support the transition to sustainable finance and reinforce the role of MFIs in advancing inclusive and environmentally responsible economic development in Kyrgyz Republic.

Keywords: Environmental, social, and governance, Microfinance, Kyrgyz Republic, Sustainability, Greenwashing, Green business model, CORPSUS ESG Maturity Analysis and Scoring Model

1. Introduction

The sustainability of the financial sector and the implementation of environmental, social, and governance (ESG) principles are critical to economic development at the national, regional, and global levels (Smolo, 2023). Financial institutions play a central role in sustaining economic growth (Murad & Idewele, 2017; Buera et al., 2021), particularly by channeling savings into productive investment. In developing economies such as Kyrgyz Republic, the financial sector, especially microfinance institutions (MFIs), is essential for expanding access to finance and employment, thereby reducing poverty (Nair, 2010; Chakrabarty & Bass, 2014; Cull et al., 2014).

Growing emphasis on sustainable finance increasingly requires financial institutions, including MFIs, to report ESG impacts. Ashraf et al. (2022) argued that voluntary ESG adoption is largely driven by institutional pressures to meet social expectations. Accordingly, state-level factors (e.g., socio-economic development, political institutions, and normative frameworks) shape firms' social responsibility (Ashraf et al., 2022; Ioannou & Serafeim, 2012). In this sense, the broader socio-political environment directly influences the quality and effectiveness of ESG implementation.

Investors have increasingly incorporated ESG factors into decision-making; however, concerns remain regarding the reliability of self-reported ESG data. Yu et al. (2020) identified key characteristics associated with reduced greenwashing, including stronger board independence, higher institutional ownership, greater public scrutiny, lower systemic unethical behavior, and cross-listing. Beyond internal governance and Central Bank supervision, broader societal factors, such as low tolerance for corruption and active public oversight, also play a critical role in limiting misleading disclosures.

Ashraf et al. (2022) further showed that financial freedom and social development influence ESG engagement among MFIs. Using a global sample of 2,064 institutions (2007–2018), they found that ESG integration tends to decline at higher levels of financial freedom and social development, while stronger social capital increases participation. MFIs in Asia, characterized by high gross domestic

product (GDP) growth and elevated CO_2 emissions, demonstrate greater ESG engagement than those in other regions. Overall, ESG participation appears closely linked to financial and political incentives.

This study provides strategic policy recommendations based on a comprehensive analysis of ESG strategy formulation and implementation in Kyrgyz Republic's microfinance sector. It examines sector structure and institutional practices using data from MFI management and the broader financial system. The CORPSUS ESG Maturity Scoring Model is applied to evaluate performance, maturity levels, and negative impacts within a standardized sustainability framework.

Given the central role of MFIs in the Kyrgyz economy, aligning their operations with global sustainability goals is essential. Such alignment can attract responsible investment, strengthen long-term social impact, and support inclusive economic development. By prioritizing sustainability, MFIs can expand green lending and finance environmentally responsible activities. This study underscores the importance of strengthening ESG awareness and embedding green business models within Kyrgyz Republic's microfinance sector.

A general overview of Kyrgyz Republic's financial sector reveals a significant gap in research on sustainability. This study addresses this gap by identifying priorities and entry points to accelerate sustainability development in the microfinance sector, with the broader aim of supporting economic growth. It empirically identifies key issues in implementing ESG strategies and developing a green business model for Kyrgyz Republic's microfinance sector, providing a foundation for policy recommendations relevant to both practitioners and researchers.

Within the Kyrgyz financial system, MFIs play a central role in financial inclusion and sustainability by delivering services to low-income groups. While MFIs have begun incorporating ESG principles into operations in line with global standards and Central Bank guidance, further progress is needed to develop a financial structure oriented toward sustainable investment, including renewable energy and clean technologies, within an ESG-based microfinance model.

The sector remains strongly oriented toward the social dimension, with MFIs focused on empowering underserved populations, expanding financial inclusion, and improving livelihoods. Building trust among customers, investors, and regulators requires sustained emphasis on transparency, accountability, and ethical practices, supported by effective governance. Regular ESG measurement, reporting, and continuous improvement are therefore essential. However, ESG implementation in Kyrgyz Republic remains at an early stage, constrained by limited awareness and data availability. As such, this study represents a pioneering effort to systematically assess sustainability practices in the country's microfinance sector.

2. Literature Review

Microfinance comprises financial products and services designed for low-income individuals with limited access to traditional banking. It offers targeted solutions such as microloans for business creation and expansion, savings accounts that promote financial discipline, and insurance products that mitigate financial risks (Hermes & Hudon, 2018; Banerjee et al., 2019; Gupta & Sharma, 2021). The sector primarily serves low-income individuals and entrepreneurs, and these services are particularly vital in developing countries such as Kyrgyz Republic (Hermes & Lensink, 2011; Bayulgen, 2015).

Given the role of MFIs, sustainability is not only a goal but a prerequisite for long-term economic growth and social well-being in developing economies. MFIs are expected to expand financial inclusion, reduce poverty, and support sustainable development (World Bank, 2022; Henegar et al., 2024; Banerjee & Jackson, 2017). Their services contribute to economic resilience and enable stronger environmental and social policy implementation, reinforcing their role in accountability and sustainable development (Weiss & Montgomery, 2005; Banerjee et al., 2019). However, achieving sustainability is complex and gradual, given sectoral dynamics and institutional constraints (Bayulgen, 2015; OECD, 2018). This is particularly relevant for Kyrgyz Republic's microfinance sector.

Accordingly, this study seeks to assess sustainability maturity and evaluate ESG practices among MFIs operating in Kyrgyz Republic.

2.1. Connection Between Sustainability and MFIs

The World Commission on Environment and Development, chaired by Gro Harlem Brundtland, published *Our Common Future* in 1987, establishing a foundational framework for global sustainability and calling for coordinated international action. The report defined sustainable development and introduced key sustainability indicators that underpin modern climate risk management and policy frameworks (WCED, 1987).

Sustainability in microfinance requires integrating sector-specific indicators within a green business model structured around ESG dimensions. Effective implementation depends on addressing environmental management, social responsibility, and economic sustainability in a coordinated and holistic manner (Al-Amin & Mamun, 2022).

Under U.N. guidance and international policy coordination, ongoing initiatives promote responsible finance and governance by encouraging financial institutions to incorporate sustainability-based key performance indicators alongside profitability metrics. This study evaluates the current state of MFIs in Kyrgyz Republic from this perspective, identifying gaps relative to international standards and assessing opportunities for advancing sustainable financial practices. It also examines institutional challenges and provides policy recommendations to support a more sustainable financial ecosystem.

Microfinance sustainability can be understood across three core dimensions:

- Economic sustainability of MFIs—Institutions must balance profitability with operational costs to ensure long-term viability and continued service provision in competitive environments (Murad, 2017; Churchill et al., 2018; Maeenuddin et al., 2023; Fonseca et al., 2024);
- Social sustainability of MFIs—MFIs contribute to poverty reduction and improved living standards by expanding access to financial services for underserved populations, thereby

supporting inclusive development (Al-Amin & Mamun, 2022; Coronel-Pangol et al., 2023; Banerjee & Jackson, 2017); and

- Environmental sustainability of MFIs—Reducing ecological impact through green financing and environmentally responsible practices is essential for aligning microfinance with sustainable development goals (Churchill et al., 2018).

Achieving sustainability across these dimensions remains challenging and requires coordinated policy development, comprehensive risk assessment, and systematic monitoring. Climate change and natural disasters, for example, pose significant risks to small businesses reliant on microfinance, highlighting the need for robust sustainability frameworks.

2.2. Kyrgyz Republic's Microfinance Sector

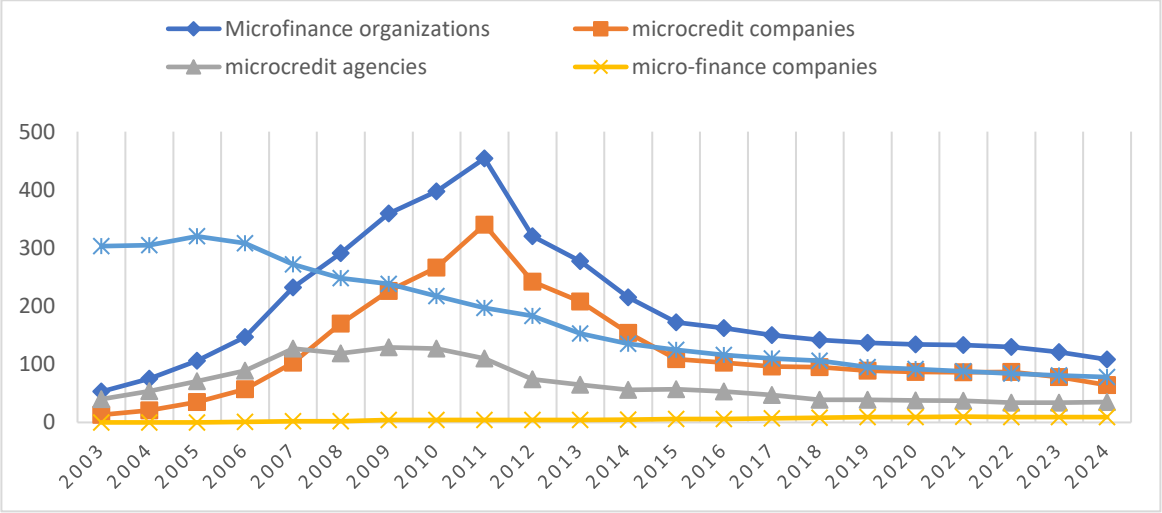
Following the collapse of the Soviet Union, Kyrgyz Republic entered a transitional economic period in the 1990s, during which MFIs emerged rapidly within the evolving financial system. The National Bank of the Kyrgyz Republic (NBKR) serves as the sector's supervisory authority. Early microfinance development was driven by international donors, with organizations such as FINCA (1995) among the first to operate in the country. Kyrgyz Republic was also the first in Central Asia to adopt dedicated legislation, including the laws, *On microfinance organizations in the Kyrgyz Republic* (July 23, 2002) and *On credit unions* (October 28, 1999; Sainazarova, 2014).

Historically, the microfinance sector evolved from donor-dependent initiatives in the 1990s and early 2000s, when widespread poverty and limited financial access shaped demand for microfinance. Donor-funded programs by international and non-government organizations established community-based microcredit systems, particularly in rural areas. The 2002 microfinance law formalized the sector by introducing licensing, NBKR supervision, and institutional standardization. By the 2010s, MFIs expanded rapidly, extending services to small enterprises, women, and rural households while diversifying into savings products and agricultural and remittance-linked lending. Although the sector increasingly aligns with global responsible finance trends, it faces persistent

challenges, including over-indebtedness, climate vulnerability, and limited digital infrastructure (Yang et al., 2025).

The number of microfinance organizations rose from 53 in 2003 (13 microcredit companies, 40 microcredit agencies, and 303 credit unions) to a peak of 454 in 2011 (340 microcredit companies, 110 microcredit agencies, 4 microfinance companies, and 197 credit unions). After 2012, the sector consolidated, declining to 108 organizations by 2024 (see Fig. 1).

Figure 1. Number of microfinance and credit organizations (end of period)



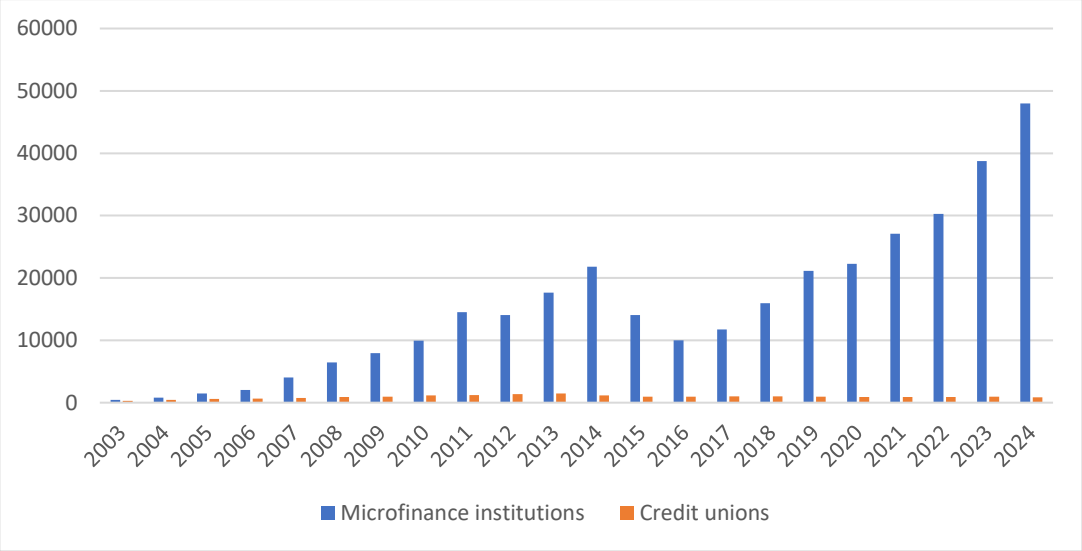
Source: Bulletin of the National Bank of the Kyrgyz Republic 2003–2017; Bulletin of the National Bank of the Kyrgyz Republic, №06/2025, *https://www.nbkr.kg/index1.jsp?item=137&lang=KGZ*

Since 2012, the regulatory framework for microfinance organizations has been strengthened. Kyrgyz Republic first adopted the *Medium-Term Microfinance Development Strategy for 2006–2010*, followed by the *2011–2015 Microfinance Development Strategy* (MDS), developed with support from the NBKR, the government, Association of Microfinance Institutions, and German Agency for International Cooperation and approved in 2012. The MDS aimed to strengthen regulatory frameworks, introduce deposit protection mechanisms, enhance consumer protection, and expand agent banking and remittance services.

As part of this strategy, amendments were made to *On Microfinance Organizations* and *On Credit Unions* laws, along with related NBKR regulations. Despite a decline in the number of MFIs after 2012, lending volumes have increased, exceeding Som 48B in 2024 (see Fig. 2; National Bank of the Kyrgyz Republic, 2018; National Bank of the Kyrgyz Republic, 2025; World Bank Report, 2022).

This shift reflects the sector's transition from micro-lending institutions to deposit-taking MFIs. In 2023, Kyrgyz Republic maintained strong economic activity, driven by services, particularly wholesale and retail trade, including construction and manufacturing. Inflation declined from 14.7% in December 2022 to 7.3% in December 2023, while real GDP growth reached 8.4% in 2024 (National Bank of the Kyrgyz Republic, 2025).

Figure 2. Loan amounts provided by microfinance and credit organizations (end of period)



Source: Bulletin of the National Bank of the Kyrgyz Republic 2003−2017; Bulletin of the National Bank of the Kyrgyz Republic, №06/2025, *https://www.nbkr.kg/index1.jsp?item=137&lang=KGZ*

2.3. Sustainability Experience of Kyrgyz Republic's Finance Sector

The Kyrgyz Republic implements sustainable development policy through a range of national programs and strategic documents. The *Resolution of the Zhogorku Kenesh* (*Parliament*) dated June 28, 2018 approved the *CONCEPT of green economy in the Kyrgyz Republic* document (2018),

which promotes a transition to a closed-loop economy, including increased reuse of municipal waste and restrictions on landfill disposal of recyclable and biodegradable materials.

Subsequent policy frameworks further operationalized these goals. The *2019–2023 Strategy for Sustainable Development of Industry* aimed to increase domestic processing of raw materials (up to 75% in mining and metallurgy), expand environmentally friendly investment, and strengthen recycling systems to reduce industrial waste. Complementing this, the *2019–2023 Program for the Development of a Green Economy* introduced mechanisms to promote closed-loop technologies, formalized classification and processing of secondary raw materials, and strengthened waste management regulations, including requirements for separate municipal waste collection (Strategy for Sustainable Development of Industry of the Kyrgyz Republic for 2019–2023, 2019).

The *Presidential Decree of March 19, 2021,* further advanced environmental policy by promoting the "waste-to-income" principle, encouraging resource efficiency, waste processing industries, low-waste technologies, and the development of secondary resource markets (The Decree of the President of the Kyrgyz Republic, 19.03.2021). In the same year, Kyrgyz Republic approved its *Nationally Determined Contribution* under the Paris Agreement, outlining a low-carbon transition pathway through 2030 aligned with national priorities and the SDGs.

Kyrgyz Republic aims to achieve carbon neutrality by 2050, requiring an estimated USD 10B in investment. By 2025, emissions are targeted to decline by 16.6% (or 36.6% with international support) with renewable energy, particularly hydropower, expected to play a central role (Osmonalieva, 2023). To support this transition, the country is developing a green financial corporation to mobilize climate financing within the banking sector (UNDP, 2023).

Institutionally, the National Bank of Kyrgyz Republic plans to establish a dedicated unit for sustainable and innovative finance, including the development of a green finance taxonomy. Financial sector initiatives are emerging: Dos-Credobank launched the DCB Green program in 2021 to promote environmentally friendly technologies through green lending (DOSCREDOBANK, 2024),

and the Kyrgyz Stock Exchange joined the UN Sustainable Stock Exchanges initiative in 2024, supporting green bond market development.

At the policy level, the National Bank approved a 2024–2026 roadmap for sustainable finance and ESG integration, providing strategic direction aligned with international best practices and national economic conditions (The National Bank of the Kyrgyz Republic, 2024). The State Development Bank is also advancing a *National Green Financing Mechanism*, including projects totaling Som 200M to channel funds into green lending and sustainable development.

At the institutional level, microfinance actors are beginning to adopt ESG practices. Bailyk Finance has implemented ESG initiatives and supports the establishment of the Academy of Sustainable Development, with a focus on staff training and capacity building. Similarly, IFC OKSUS offers green financial products and has adopted environmental and sustainability policies for 2024–2026 aimed at reducing environmental and social impacts.

3. Data and Methodology

Fourteen MFIs were selected as case studies to examine sustainability within Kyrgyz Republic's microfinance sector. ESG data, combined with interviews with MFI managers, provided qualitative insights supported by financial reports, client feedback, and operational metrics. The evaluation focused on environmental impact, social responsibility, and economic viability.

3.1. MFI Data

The selected MFIs, listed in Appendix 1, account for 52.6% of the sector's market share. ESG scores were calculated individually for each MFI and then averaged to represent sector-level performance. The use of voluntary participants is consistent with the literature, though it introduces potential reporting bias. Bauchet and Morduch (2010) showed that voluntary reporting can distort microfinance data; to mitigate this risk, this study incorporates field verification of responses.

ESG score construction remains debated due to data quality issues and reliance on self-reported information (Ferjančič et al., 2024; Yang et al., 2025). Liu et al. (2023) emphasized the importance of third-party verification and robustness checks, which this study addresses through the use of verifiable data. Rouen et al. (2022) noted that adherence to established standards improves the credibility of voluntary ESG disclosures, while Beisland et al. (2023) highlighted the link between green policies and financial and social performance. The data approach adopted here supports a more reliable assessment of these relationships.

3.2. ESG Score Calculation ESG Maturity Level Assessment

This study applied the CORPSUS ESG Maturity Analysis Model, a rule-based framework that measures ESG performance across environmental, social, and governance dimensions in alignment with international standards. The model provides a structured approach for assessing sustainability practices and identifying areas for improvement, extending beyond compliance toward impact-oriented evaluation (Nielson, 2023; CORPSUS, 2025; Lin & Hsu, 2023). Developed by Strateji 360 Technology Company and SEGM—Sustainability Training Development and Excellence Association (Gebze Technopark, Türkiye), it represents a standardized ESG measurement system (CORPSUS, 2025).

The model aligns with a rule-based classification approach for three reasons (CORPSUS, 2025; LSEG, 2023):

- Structured criteria—ESG maturity levels are derived from predefined questions across ESG dimensions, sub-dimensions, and categories, mapping responses directly to classifications such as “Initial,” “Developing,” or “Mature;”
- Score-based logic—Predefined scores and weights determine outcomes through rule-based decision structures analogous to decision trees; and

- Non-machine-learning (ML) framework: Unlike ML methods (e.g., support vector machines, random forests, and neural networks), the model operates as an expert system based on predefined rules rather than trained data.

The model was integrated into the AnalyzeWare platform, a multi-layered ESG decision-support system, with technical specifications provided in Appendices 2 and 3 (CORPSUS, 2025; LSEG, 2023). Environmental metrics assess the ecological footprint of organizational activities, including biodiversity protection, greenhouse gas reduction, climate resilience, and the identification of sector-specific improvement actions. Governance metrics focus on ethical leadership and transparency in decision-making, ensuring alignment with stakeholder interests and regulatory requirements while promoting accountability.

Social metrics emphasize social responsibility within organizational and sectoral contexts, encouraging fair labor practices, inclusion, and broader social participation (Al-Amin & Mamun, 2022; Fonseca et al., 2024; CORPSUS, 2025; LSEG, 2023). LSEG's ESG scoring methodology applies a percentile ranking approach (0–100) to normalize indicators. Environmental (E), social (S), and controversy scores are benchmarked within the Refinitiv Business Classification industry group, while governance (G) scores are benchmarked by country of incorporation. As a rank-based system, it counts the proportion of firms with equal or worse performance and is relatively insensitive to outliers.

Controversies are tracked across 23 topics; firms without controversies receive a score of 100. Severity coefficients adjust for visibility differences by firm size (0.33 for large, 0.67 for mid-sized, and 1.00 for small firms). This framework aligns with materiality-based standards. Sustainability Accounting Standards Board (SASB) and International Financial Reporting Standards (IFRS) define materiality in terms of financial relevance, while the Global Reporting Initiative (GRI, 2021) emphasizes an organization's most significant economic, environmental, and social impacts. The E.U.'s Corporate Sustainability Reporting Directive and European Sustainability Reporting Standards

(ESRS) framework adopt “dual materiality,” which integrates both financial and impact perspectives through an impact–risk–opportunity (IRO) approach (EFRAG, 2024).

The literature highlights the importance of ESG weighting schemes and their predictive value. Khan et al. (2016) showed that firms with strong performance in materially relevant areas tend to achieve superior financial outcomes, supporting LSEG’s sector-specific weighting approach. However, ESG ratings vary significantly across providers due to differences in coverage, measurement, and weighting (Berg et al., 2022), focusing the need for methodological transparency and consistent benchmarking. Earlier work (Chatterji et al., 2009) also questioned whether ESG indicators reliably capture actual performance.

Overall, LSEG’s framework integrates industry and country benchmarking, data availability thresholds, and magnitude-based weighting to ensure comparability across firms. It accommodates both financial (SASB/IFRS) and impact (GRI/ESRS) materiality perspectives. These considerations highlight the importance of clearly reporting data sources, coverage, and weighting assumptions, as well as testing robustness through sensitivity analyses using alternative classifications and weighting schemes (Ehiemere & Whelan, 2023; CORPSUS, 2025; LESG, 2023).

3.3. ESG Analysis Findings and Future Sustainability Strategies

The scoring methodology, detailed explanations, and technical structure of the CORPSUS ESG Maturity Analysis Model are presented in Appendices 2 and 3. ESG performance analysis of MFIs revealed clear variation across the three dimensions, each composed of sector-specific subcategories and weighted indicators (Appendices 4 and 5).

The social dimension demonstrates the strongest performance. With a 50% weight, it achieved a dimension score of 87.6% and a weighted score of 87.4%, reflecting MFIs’ core focus on financial inclusion, poverty reduction, and community development. Several indicators performed exceptionally well: safety management (95%), employee participation (93%), and combating discrimination, violence and harassment (93%). occupational health and safety and human rights

both scored 91%, indicating strong protection of employee rights and working conditions. Other indicators, such as ownership and usufruct (88%), organization (83%), and resource and supply management (80%), also performed well. Lower scores in disadvantaged and specially qualified employees (73%) and employment (90%) suggest scope to strengthen inclusive employment policies. Overall, the results confirm that social responsibility remains central to MFI operations.

The governance dimension, weighted at 36%, also showed strong performance, with a dimension score of 83.2% and a weighted score of 83.0%. Corporate performance management and risk management both scored 90%, indicating effective oversight and control systems. Corporate governance (84%) and policies and principles (83%) further reflect structured decision-making and formalized ethical frameworks. Fighting against corruption scored 81%, suggesting moderate but solid transparency efforts. Products, services, and processes comprised the weakest area (70%), indicating that ESG principles are not yet fully embedded in financial offerings and operations, revealing a key area for development.

Overall ESG performance indicated moderate-to-strong sustainability maturity. The unweighted ESG score was 70.73%, while the weighted score reached 81.55%, driven by strong social and governance outcomes. Notably, the comparatively weak environmental dimension creates a structural imbalance, indicating the need for greater strategic emphasis on environmental integration.

As summarized in Table 1, the average ESG score of 70.73% places the sector at the second stage of sustainability maturity, suggesting solid institutional foundations with clear room for advancement. Using LSEG (2023) finance-sector weighting increases the score to 81.55% (Appendices 4 and 5), reflecting industry characteristics in which governance carries greater weight due to regulatory intensity. Consistent with the literature, environmental impacts in financial services are typically indirect, while social responsibility, ethical practices, employee rights, and governance structures remain critical for reputation and market trust (Scholtens, 2009; Weber, 2014).

Table 1: Average ESG MFI maturity scores

Number of MFIs		**14**		
Industry		Finance and Banking		
	General ESG Performance Indicators			
ESG		Environmental	Social	Governance
Multiplier		14%	50%	36%
Dimension Score		18.75	36.78	25.80
Dimension Performance		**44.6%**	**87.6%**	**83.2%**
Weighted Dimension Performance		**56.9%**	**87.4%**	**83.0%**
Total ESG Score		**81**		
Total ESG Performance		**70.73%**		
Weighted ESG Performance		**81.55%**		

Source: CORPSUS, 2025; Ehiemere and Whelan, 2023; LSEG,

The environmental dimension accounted for 14% of total ESG weight and showed the weakest performance. The overall environmental score was 44.6%, with a weighted score of 56.9%, indicating that environmental practices remain underdeveloped in MFIs. Among the indicators, technology management performed strongest at 76%, reflecting increased adoption of digital systems that indirectly support environmental efficiency. Environmental management scored 63%, suggesting partial implementation of policies and procedures. However, key areas remained weak: Greenhouse gas management (38%) indicates limited measurement and control of emissions, while biodiversity (31%) reflects minimal attention to ecosystem impacts. Other indicators, such as waste management (50%), circular economy (51%), and energy use (51%), suggest moderate but fragmented engagement. These findings align with the literature, which notes that the financial sector's environmental impact is largely indirect but can be improved through sustainable financing (Jeucken, 2001). Overall, environmental integration remains limited, partly due to weak regulatory pressure and the perception of indirect impact.

In contrast, the social dimension demonstrated the strongest performance. With a 50% weight, it achieved a score of 87.6% and a weighted score of 87.4%, reflecting MFIs' focus on financial inclusion, poverty reduction, and community development. High-performing indicators included safety management (95%), employee participation (93%), and combating discrimination, violence and harassment (93%). Occupational health and safety and human rights both scored 91%, indicating strong protection of employee rights. Additional indicators, such as ownership and usufruct (88%), organization (83%), and resource and supply management (80%), also performed well. Lower scores in disadvantaged and specially qualified employees (73%) and employment (90%) suggest room to strengthen inclusive employment practices. Overall, the results confirm that social responsibility is central to MFI operations, consistent with literature emphasizing its role in building trust and reputation in the financial sector (Scholtens, 2009).

Within the social dimension, labor and community-related subcategories dominated, while human rights and product responsibility were closely tied to reputational risk. In the governance dimension, management received the highest emphasis, whereas shareholders and corporate social responsibility (CSR) strategies carried less weight, indicating that governance is primarily assessed through management quality and regulatory compliance (Laeven, 2013).

The governance dimension, weighed at 36%, also showed strong performance, with a score of 83.2% and a weighted score of 83.03%. Corporate performance management and risk management both scored 90%, indicating effective oversight and control. Corporate governance (84%) and policies and principles (83%) reflected structured decision-making and formalized ethical frameworks, while fighting against corruption (81%) indicated solid transparency efforts. The weakest area, products, services and processes (70%), suggests that ESG principles are not yet fully embedded in financial offerings, highlighting a key area for improvement.

Overall ESG performance indicates moderate-to-strong sustainability maturity. The unweighted score was 70.73%, while the weighted score reached 81.55%, driven by strong social and governance outcomes. However, the comparatively weak environmental dimension creates a structural imbalance, indicating the need for greater strategic emphasis on environmental integration.

The microfinance sector demonstrated strong performance in community engagement and innovative lending. However, environmental impact assessment and resource management require further development, supported by a green business model. Such models embed “green, sustainable, and responsible” practices into workflows, roles, and key performance indicators, enabling integration without added bureaucracy or workload (Antal & Burrows, 2018).

Analysis of the Kyrgyz financial sector showed that ESG performance reflects a structural interplay among social, governance, and environmental factors. These dimensions shape prioritization and implementation, influencing corporate strategy and financial outcomes. The assessment indicates that MFIs perform strongest in corporate strategy, a pattern typical of early-stage development

where clear strategic direction and stakeholder involvement are critical. Leveraging these strengths while addressing gaps can enhance sustainability, efficiency, and cost-effectiveness across the sector.

Findings also showed strong performance in organizational culture, communication, and reporting. Sustained impact depends on embedding sustainability within institutional culture, and current progress suggests that MFIs are advancing in this direction. Institutions are increasingly formalizing policies, communicating sustainability efforts, and integrating related processes. This foundation supports continued sectoral improvement and alignment with sustainability objectives.

Based on the ESG analysis, several strategic recommendations can be developed to improve MFI sustainability performance, particularly by strengthening the environmental dimension while consolidating gains in social and governance areas:

- MFIs should strengthen environmental management systems. Low scores in greenhouse gas management, biodiversity, and monitoring indicate weak environmental integration. Institutions should adopt formal policies, embed environmental risk assessments, measure emissions and energy use, and establish reporting mechanisms aligned with international standards.
- MFIs should expand green financial products. Weak performance in products, services, and processes suggests limited ESG integration. MFIs can introduce green microfinance offerings (e.g., loans for renewable energy, energy-efficient equipment, climate-resilient agriculture, and sustainable small businesses) to enhance environmental impact while supporting development goals. Capacity-building initiatives can reinforce adoption of responsible practices (Fonseca et al., 2024; OECD, 2018).
- MFIs should improve energy efficiency and resource management. Moderate scores in waste, circular economy, and energy use indicate inefficiencies. Institutions can adopt energy-saving technologies, digitize operations to reduce paper use, implement recycling programs, and apply sustainable procurement policies to lower costs and environmental impact.

- MFIs should strengthen inclusive employment practices. Despite strong social performance, lower scores for disadvantaged and specially qualified employees suggest gaps. Targeted recruitment, training for vulnerable groups, and diversity-focused policies can enhance workforce inclusiveness.
- Governance frameworks should reinforce transparency and accountability. Although governance performance is strong, continuous improvement is essential. MFIs should strengthen internal controls, enhance disclosure, and expand sustainability reporting to support accountability and trust.
- Financial literacy programs should be expanded. Public education on budgeting, savings, borrowing, and investment can improve financial decision-making and empower individuals and entrepreneurs (Arsyianti & Kassim, 2017; Lusardi & Messy, 2023; Khan et al., 2024).
- Support women and youth entrepreneurship. Tailored credit products, mentoring, and networking can help overcome barriers to business development, generating broader community benefits (Nilakantan et al., 2013; Akhter & Cheng, 2020; Khursheed et al., 2021).
- Implement a green business model. Embedding sustainability across processes, services, and stakeholder engagement can transform microfinance into a driver of sustainable development while addressing environmental and social challenges (Nogueira et al., 2020; Al-Amin & Mamun, 2022; Antal & Burrows, 2018).
- Integrate ESG into strategy and performance management. ESG metrics should be embedded in strategic planning, risk management, and performance evaluation, supported by clear targets and KPIs to track progress.
- Strengthen collaboration with stakeholders. Partnerships with regulators, development organizations, and international institutions can support capacity building, technical assistance, and knowledge sharing to advance ESG adoption.

In summary, the findings indicate that MFIs demonstrate strong social and governance performance and have reached a relatively high level of maturity in these areas. Although unweighted scores

provide a general overview, sectoral weightings offer a more accurate reflection of strategic priorities by aligning performance with material significance. This supports Khan et al. (2016), who showed that firms focusing on material ESG factors tend to achieve stronger corporate and financial outcomes. In the MFI context, strong social and governance performance reflects alignment with sector-specific risks and opportunities, confirming that sustainability maturity can be meaningfully assessed at the sector level. This structural alignment also reinforces short-term financial stability through improved operational resilience and governance effectiveness.

However, environmental sustainability remains underdeveloped and requires greater strategic focus. Long-term progress depends on integrating environmental considerations into financial decision-making and addressing climate-related risks more systematically. Weak performance stems from two primary factors: the perception that environmental impacts are indirect and the difficulty of measuring indicators such as Scope 3 emissions. As a result, environmental metrics are often treated as reporting tools rather than strategic inputs.

Strengthening environmental management systems, expanding green financial products, improving resource efficiency, enhancing inclusive employment practices, and embedding ESG into strategic decision-making would enable MFIs to achieve a more balanced sustainability framework. These improvements would enhance institutional resilience while contributing to broader sustainable development goals.

4. Conclusions

Based on data from the sampled MFIs, Kyrgyz Republic's financial sector remains in the early stages of ESG adoption. Only a limited number of institutions have begun implementing or voluntarily reporting ESG practices. However, the sector shows emerging leadership, with 14 MFIs actively advancing sustainable and socially responsible lending, setting potential regional benchmarks. Social progress is evident in gender equality and financial inclusion for women, youth, and rural households, which are becoming key sustainability drivers. Nonetheless, progress is constrained by

weak governance, climate risks, high indebtedness, limited ESG awareness, and the largely voluntary nature of ESG adoption.

ESG standards present clear opportunities to enhance institutional resilience, build customer trust, and align with national and donor priorities. A *National Sustainable Finance Roadmap* aligned with international examples would support systematic implementation, improve transparency, and standardize ESG classification, disclosure, and risk management practices. Complementary measures include simplified ESG reporting tailored to MFIs (e.g., governance scorecards, green loan shares, and inclusion metrics) and incentive mechanisms such as partial guarantees or ESG-linked funds tied to key performance indicators.

Reforms should also address the customer dimension. Strengthening consumer protection, compliance monitoring, grievance mechanisms, and transparency would reinforce trust. The government should play a coordinating role by enhancing oversight, developing board-level ESG checklists, and supporting training programs to build institutional capacity. Promoting green products (e.g., solar pumps, energy-efficient stoves, and cold storage) can further advance environmental awareness and adoption.

At the institutional level, priority should be given to the environmental dimension, which lags behind social and governance performance. MFIs should strengthen environmental management systems by formalizing policies, integrating environmental risk assessments into lending decisions, and monitoring energy use and emissions in line with international standards. Expanding green financial products (e.g., targeting renewable energy, energy efficiency, climate-resilient agriculture, and sustainable enterprises) will further enhance environmental impact. Operational improvements, including digitalization, waste reduction, and sustainable procurement, can simultaneously reduce costs and improve performance.

While social outcomes are strong, further gains can be achieved through more inclusive employment practices for vulnerable groups. Governance should continue to emphasize transparency,

accountability, and anti-corruption through stronger internal controls and enhanced sustainability reporting. Embedding ESG metrics into strategic planning, performance evaluation, and risk management will enable systematic progress tracking, while collaboration with regulators and international partners can accelerate adoption through technical assistance and knowledge sharing.

ESG integration in the microfinance sector is therefore a strategic imperative rather than a voluntary choice. Embedding sustainability can strengthen resilience, improve competitiveness, and position MFIs as drivers of inclusive growth. The experience of the 14 MFIs demonstrates that sustainable finance is both feasible and scalable, particularly for underserved populations. With stronger leadership, governance, and regulatory support, Kyrgyz has the potential to become a regional benchmark for sustainable, socially responsible, and climate-resilient finance in Central Asia.

A key limitation of this study was the aggregation of ESG performance across 14 MFIs, which may have masked institution-level variation. Future research should conduct in-depth analyses of individual MFIs or comparative case studies to better identify performance drivers and develop targeted strategies for improving weaker ESG dimensions.

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Appendix 1. **Publicly Available Corporate Profiles and MFI Information**

No.	Original Name of MFI	English Name of MFI	Number of Employees	Market Share	Balance Sheet Size (KGZ Som)
1	ОсОО МКК БИР ТОП	Bir Top Limited Liability Corporation (LLC), Microcredit Company (MCC),	152	1.3%	627,872,431.00
2	Открытое акционерное общество Микрофинансовая компания АБН	ABN Open Joint Stock Company (OJSC), Microfinance Company (MFC)	130	3.5%	1,889,522,434.26
3	ОсОО микркредит компания Аманат Кредит	Amanat Credit LLC, MCC	154	2.9%	1,550,498 361.00
4	ЗАО Микрокредитная Компания Байлык Финанс	CJSC Baylyk Finance Closed Joint Stock Company (CJSC), MCC	631	11.7%	6 104 517 819.00

5	ЗАО Микрофинансовая Компания ОКСУС	OXUS CJSC, MFC	127	2.4%	1,253,585 070.00
6	Микрокредитная компания Универсал Кредит	Universal Credit, MCC	62	2.0%	960,891,866.00
7	ОсОО МКК Элфинанс	Elfinance LLC, MCC	44	2.1%	993,913,324.00
8	ЗАО МКК Райффайзен.кейджи	Raiffeisen.KG CJSC, MCC	10	0.2%	100,107,130.00
9	ОАО МФК Салым Финанс	Salym Finance OJSC, MFC		16.0%	8,635,485 000.00
10	ЗАО МФК Элет-Капитал	Elet-Capital CJSC, MFC	238	7.2%	3,789,683 661.00
11	ОсОО МКК МикроФайненс	MicroFinance LLC, MCC	25	0.3%	158,945,181.99
12	ОсОО МКК Фронтиэрс	Frontiers LLC, MCC	14	2.7%	2,388,747 237.00
13	ОАО Дос-Кредобанк	Dos-Credobank OJSC	1,125	2.4%	12,783,120,000.00
14	ОсОО МККАгро Финанс	Agro Finance LLC, MCC	25	0.2%	158,945,181.99

Source: Compiled by the authors

Appendix 2. CORPSUS ESG Maturity Analysis Model (AnalyzeWare Platform)

The CORPSUS ESG Maturity Analysis Model consists of four integrated layers:

1. Input Layer: Corporate ESG Data Set

The input layer is structured as a questionnaire comprising 115 ESG-related questions across three dimensions (Environmental, Social, Governance), 10 sub-dimensions, and 24 categories. Each item is evaluated using: (1) industry-specific weighting, (2) a five-level scenario-based maturity scale, and (3) an LSEG-aligned, impact-based ESG scoring methodology.

2. Processing Layer: Sectoral Weighting and Maturity Score Calculation

This layer applies the AnalyzeWare decision engine to process responses using predefined matrices. ESG scores are calculated based on (1) industry weight coefficients, (2) sub-dimension relevance scores, and (3) maturity levels (1–5). The output is a set of normalized ESG scores for each category, representing overall maturity and performance.

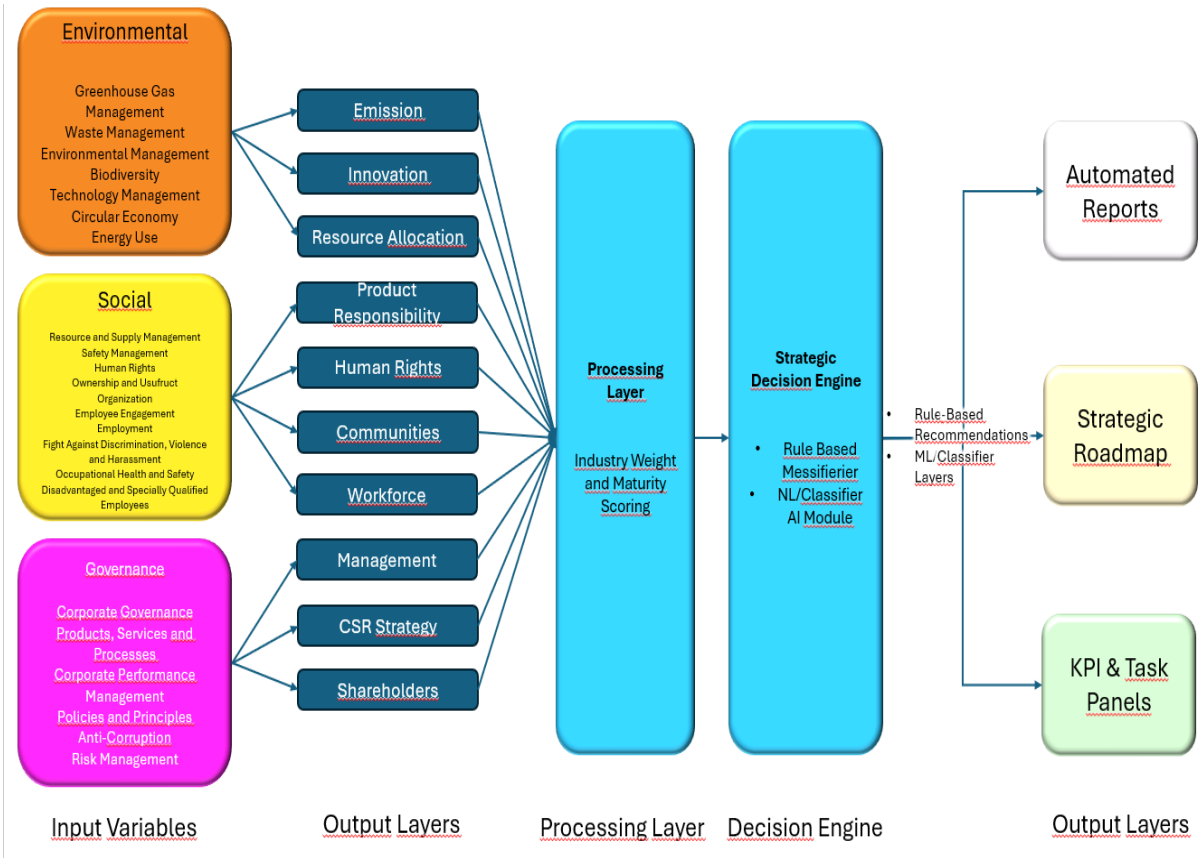
3. AI-Supported Analytical Layer: Diagnostic and Prescriptive Engine

This layer combines descriptive, diagnostic, and prescriptive analytics. It identifies strengths and weaknesses (descriptive), establishes cause–effect relationships (diagnostic), and recommends targeted improvement actions (prescriptive). The system also models potential ESG development paths using regression-like decision-tree algorithms aligned with LSEG methodology.

4. Output Layer: Report Card, Roadmap, and Development Set

The output layer generates: (1) detailed ESG report cards with percentage-based scores across all dimensions and categories, (2) priority action areas based on sector benchmarks, and (3) a tailored sustainability development roadmap aligned with corporate strategy and industry characteristics. Outputs are delivered via PDF reports and interactive dashboards customized for stakeholders.

Appendix 3. CORPSUS ESG Calculation Framework



Source: CORPSUS, 2025.

Appendix 4. Average ESG MFI Scores (Kyrgyz Republic)

ESG Performance Category		Multiplier	Score	Weighted Score	Reference Score	%	Dimension Performance	Weighted Dimension Performance
ENVIRONMENT %14	Greenhouse Gas Management	0.17	2.27	0.38	1.01	38%	**44.6%**	**56.9%**
	Waste Management	0.17	2.98	0.50	1.01	50%		
	Environmental Management	0.17	3.79	0.64	1.01	63%		
	Biodiversity	0.17	1.55	0.26	0.84	31%		
	Technology Management	0.66	3.05	2.03	2.65	76%		
	Circular Economy	0.17	2.57	0.43	0.84	51%		
	Energy Use	0.17	2.54	0.43	0.84	51%		
SOCIAL %50	Resource and Supply Management	0.18	3.2	0.58	0.72	80%	**87.6%**	**87.4%**

	Occupational Health and Safety	0.39	4.55	1.78	1.95	91%		
	Safety Management	0.18	3.79	0.68	0.72	95%		
	Ownership and Usufruct	0.24	3.54	0.85	0.96	88%		
	Human Rights	0.19	3.63	0.69	0.76	91%		
	Employee Participation	0.24	4.63	1.11	1.20	93%		
	Employment	0.39	2.7	1.05	1.17	90%		
	Combating Discrimination. Violence. and Harassment	0.39	3.73	1.46	1.56	93%		
	Organization	0.24	4.13	0.99	1.20	83%		
	Disadvantaged and Specially Qualified Employees	0.39	2.91	1.14	1.56	73%		
GOVERNANCE	Corporate Governance	0.67	5.91	3.96	4.69	84%	**83.2%**	**83.0%**
	Risk Management	0.20	2.71	0.54	0.60	90%		

	Policies and Principles	0.13	3.32	0.43	0.52	83%		
	Corporate Performance Management	0.67	5.38	3.60	4.02	90%		
	Products. Services and Processes	0.67	2.79	1.86	2.68	70%		
	Fighting Against Corruption	0.13	5.7	0.74	0.91	81%		
General ESG MFI Performance							**70.73%**	**81.55%**

Source: CORPSUS 2025

Appendix 5. ESG MFI Scores with Sub-Dimension Multiplier and Performance Figures (Kyrgyz Republic)

Overall	Weighted	Dimension	Dimension	Dimension	Weighted	Sub-	Sub-	Sub-	Category	MIN	MAKS	MEAN	MEDIAN
71.53%	**80.81%**	**Environmental**	14.00%	44.64%	51.58%	**Emissions**	16.83%	46.04%	Greenhouse Gas Management	4.17%	100.00%	41.96%	50.00%
									Waste Management	0.00%	100.00%	53.57%	50.00%
									Environmental Management	12.50%	100.00%	63.99%	68.75%
									Biodiversity	0.00%	100.00%	32.86%	25.00%
						Innovation	66.34%	76.34%	Technology Management	0.00%	100.00%	77.23%	93.75%

Overall	Weighted	Dimension	Dimension	Dimension	Weighted	Sub-	Sub-	Sub-	Category	MIN	MAKS	MEAN	MEDIAN
						Resource Use	16.83%	34.05%	Circular Economy	0.00%	100.00%	50.00%	42.50%
									Energy	0.00%	100.00%	55.36%	60.00%
		Social	50.00%	87.59%	87.39%	Product Responsibility	18.00%	87.28%	Resource And Supply Management	12.50%	100.00%	82.59%	96.88%
									Safety Management	75.00%	100.00%	94.64%	100.00%
						Human Rights	19.00%	90.63%	Human Rights	50.00%	100.00%	92.41%	100.00%
						Community	24.00%	87.76%	Ownership And Usufruct Rights	56.25%	100.00%	90.63%	96.88%

Overall	Weighted	Dimension	Dimension	Dimension	Weighted	Sub-	Sub-	Sub-	Category	MIN	MAKS	MEAN	MEDIAN
									Organization (Worker Representation And Collective Bargaining)	60.00%	100.00%	85.00%	85.00%
									Employee Participation	80.00%	100.00%	92.50%	97.50%
						Workforce	3 9.00%	86.83%	Employment	66.67%	100.00%	89.88%	100.00%
									Combating Discrimination. Violence. And	75.00%	100.00%	92.41%	100.00%

Overall	Weighted	Dimension	Dimension	Dimension	Weighted	Sub-	Sub-	Sub-	Category	MIN	MAKS	MEAN	MEDIAN
									Harassment				
									Occupational Health and Safety	60.00%	100.00%	90.71%	100.00%
									Disadvantaged And Special-Needs Employees	43.75%	100.00%	74.11%	75.00%
		Governance	36.00%	83.24%	83.03%	**Management**	67.00%	82.77%	Corporative Management	57.14%	100.00%	85.46%	87.50%
									Products. Services. And	25.00%	100.00%	73.21%	75.00%

Overall	Weighted	Dimension	Dimension	Dimension	Weighted	Sub-	Sub-	Sub-	Category	MIN	MAKS	MEAN	MEDIAN
									Processes				
									Corporate Performance Management	41.67%	100.00%	88.99%	91.67%
						CSR Strategy	13.00%	81.98%	Policies And Principles	37.50%	100.00%	83.04%	84.38%
									Anti-Corruption	28.57%	100.00%	81.38%	89.29%
						Shareholders	20.00%	90.48%	Risk Management	25.00%	100.00%	86.31%	100.00%

Source: CORPSUS, 2025

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