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Article

Environmental, social, and governance (ESG) practice and company performance: Evidence from telecommunication sector

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Abstract: The sustainable development of the global economy and society necessitates the integration of environmental and socially responsible management, known as ESG (environmental, social, and corporate governance). Despite growing recognition of ESG's importance, the strategic management of ESG factors in Kazakhstan's telecommunications industry remains underexplored. This study bridges this gap by analyzing Kazakh telecom's ESG strategies from 2019 to 2021 through a cross-sectional design and semi-structured interviews with 12 industry experts. Utilizing the National Rating Agency (NRA) methodology, the research evaluates environmental, social, and governance variables. Key findings reveal that Kazakh telecom excels in "Climate Change" and "Human Capital Management" but needs significant improvements in "Environmental Impact" and "Society." The study offers specific recommendations such as enhancing corporate volunteering, responsible marketing, service quality, and integrating sustainable practices. The primary contributions of this research include actionable insights for improving ESG strategies in telecommunications companies and advocating for more systematic and standardized ESG assessment approaches. This study expands the understanding of how ESG principles can enhance competitiveness and sustainable development in the telecommunications industry, providing valuable guidance for industry practitioners and policymakers. It offers insights into effective ESG implementation practices and highlights critical areas requiring attention to drive sustainable development in telecommunications.

Keywords: ESG; environmental; social responsibility; corporate governance; sustainable development; telecommunications; Kazakh telecom; Kazakhstan
JEL Classification: O35; Q55; Q40

1. Introduction

Sustainable development of the global economy and society requires the integration of the modern concept of environmental and socially responsible management (ESG—environmental, social, and corporate governance). This concept began to be widely adopted internationally in the early 21st century following the UN's call to incorporate sustainable development factors into business development strategies. The principles of responsible investing have become a significant driver for the implementation of ESG strategies in the telecommunications industry. Investors, government bodies, and consumers are increasingly focusing on the environmental and social responsibilities of telecommunications companies alongside their financial

performance.

Despite the growing recognition of the importance of ESG, the issue of strategic management with ESG factors in the telecommunications industry of Kazakhstan remains insufficiently explored. In particular, there is a lack of detailed studies analyzing the effectiveness of implementing ESG strategies in this industry and their impact on the competitiveness of companies. The modern market needs unified approaches to the system of assessing ESG projects. ESG ratings are used to evaluate the effectiveness of company management and to predict potential corporate, environmental, and social risks. However, there is currently no unified and unconditional system for assessing ESG standards, allowing domestic companies to independently choose between available metrics and simultaneously participate in several ratings, one of which is the rating of the National Rating Agency (NRA), which includes an assessment of 66 parameters of sustainable development.

Currently, a key issue for the further growth of Kazakhstan's economy is the concentration of power, wealth, and resources in the hands of a narrow circle of people. In Kazakhstan, the state-owned company JSC Kazakh telecom enjoys a monopoly in the market for communication products and services. It holds 100% of the market share for digital labeling of goods, over 80% of the fixed-line market share, 78% of the market share of fiscal data operators, 75% of all radio frequencies, over 60% of the mobile market, 55% of the data center market, and 33% of the paid TV service market. Kazakh telecom was chosen as the object of this study due to its dominant market position and significance in the telecommunications sector of Kazakhstan.

The telecommunications industry is pivotal in modern society as it provides the essential infrastructure for communication and information exchange. Unlike other sectors, the telecommunications industry has unique environmental impacts, such as energy consumption and carbon emissions, alongside significant social responsibilities, including ensuring equitable access to communication services and maintaining high standards of data privacy and security. These factors make it an ideal industry to study the implementation and effects of ESG principles, providing insights that are directly applicable and highly relevant to modern business practices and societal needs.

The purpose of this study is to analyze the ESG performance in the telecommunications sector, specifically focusing on methodologies and outcomes, and to evaluate their impact on sustainable development and competitiveness in the modern market.

The research addresses the following questions:

- How do ESG principles influence the formation of sustainable development strategies in the telecommunications industry?
- What problems and prospects exist for the implementation of ESG strategies in the telecommunications industry?
- What methods and approaches are used to assess ESG factors in the telecommunications industry?

This study is important for understanding how the integration of ESG strategies can enhance the competitiveness of telecommunications companies. The findings can contribute to improving company management, increasing their investment

attractiveness, and strengthening trust from consumers and investors.

The research focuses on the analysis of ESG strategy implementation in the telecommunications sector of Kazakhstan, specifically examining the activities of Kazakh telecom from 2019 to 2021. The main limitations include a narrow time frame and a focus on a single company, which may restrict the generalizability of the results. To conduct an ESG analysis of Kazakh telecom's activities, an expert assessment was carried out with 12 respondents who are clients of the research object.

The study is one of the first to thoroughly analyze the implementation of ESG strategies in the telecommunications industry of Kazakhstan, which is a significant addition to the existing literature primarily focused on other sectors such as manufacturing and finance. The study also employs a unique methodological approach, combining cross-sectional design and semi-structured interviews with industry experts, allowing for deep qualitative insights that are often missing in quantitative ESG analyses.

The selection of Kazakh telecom as the research object is justified by its dominant market position and its importance to the telecommunications industry of Kazakhstan, making the research results particularly significant and applicable to other companies in similar markets. Our study emphasizes specific recommendations for improving the ESG performance of telecommunications companies, such as the need to enhance corporate volunteering, responsible marketing, and service quality, which is a practical contribution useful for industry practitioners and policymakers.

Additionally, our study contributes theoretically to the ESG literature by expanding the theoretical framework with findings specific to the telecommunications industry, which can inform future research and theory development.

The paper is organized as follows:

- The "Literature Review" section discusses the main theories and research in the field of ESG.
- The "Methodology" section describes the methods and approaches used in the study.
- The "Results" section presents the main findings of the research.
- The "Discussion" section analyzes the results and their implications.
- The "Conclusion and Policy Implications" provides a summary of the key findings and recommendations for further research.

2. Literature review

The concept of environmental, social, and corporate governance (ESG) began to develop in the late 20th century and gained widespread adoption in the early 21st century (Thieu, 2023). A significant event was the UN's call to consider sustainable development factors in business strategies, which acted as a catalyst for the implementation of ESG principles at the international level (Clément et al., 2022; Li et al., 2021). Among the international standards aimed at promoting ESG, the Global Reporting Initiative (GRI) and the Principles for Responsible Investment (PRI) stand out. These standards provide recommendations and best practices for companies striving to improve their ESG performance and transparency in reporting.

Numerous empirical studies and case studies demonstrate the successful

implementation of ESG strategies across various industries, including telecommunications (Eccles et al., 2020; MacNeil and Esser, 2022). For instance, research shows (Fang et al., 2023; Sheehan et al., 2023; Zhang et al., 2023) that companies actively working on improving their ESG performance achieve better financial results and greater long-term sustainability. This is particularly relevant to the telecommunications industry, where ESG strategies can address significant environmental impacts, such as energy consumption and carbon emissions, as well as social responsibilities like data privacy and equitable access to services.

Despite the advantages of ESG, companies face several challenges in implementing these strategies (Becchetti et al., 2022). The main challenges include difficulties in measuring and reporting ESG indicators, managing organizational changes, and resistance from stakeholders who may not be ready for new requirements. These challenges are pertinent to telecommunications companies, which operate in highly regulated environments and must navigate complex stakeholder landscapes.

Multiple studies (Clément et al., 2023; Senadheera et al., 2022; Zumente and Bistrova, 2021) indicate that companies with high ESG performance tend to exhibit better financial results. For example, research shows (Chen et al., 2023; Edmans, 2023) that such companies have higher stock prices, better returns, and reduced risks. This evidence underscores the financial benefits of adopting ESG principles, which is critical for telecommunications companies seeking to enhance their competitiveness and sustainability.

The relevance of reviewing these aspects lies in understanding how the integration of ESG principles can specifically benefit the telecommunications industry in Kazakhstan. The literature provides a foundation for assessing the current state of ESG implementation and identifying best practices that can be adapted to local contexts. By focusing on these aspects, the study aims to contribute to the development of effective ESG strategies that enhance the sustainability and competitiveness of telecommunications companies in Kazakhstan.

There are gaps in the scientific literature regarding the study of ESG performance using Kazakhstan as a case study, particularly within the telecommunications sector. The dominant market position of Kazakh telecom and its significant influence on the telecommunications sector in Kazakhstan make it an ideal case for examining the impact of ESG strategies. Furthermore, Kazakhstan's unique economic, regulatory, and social environment provides a rich context for studying the challenges and opportunities of ESG implementation in an emerging market. Understanding the specific dynamics within Kazakh telecom can offer valuable insights into how similar companies in other developing countries might navigate ESG integration, thereby contributing to broader global discussions on sustainable business practices.

The telecommunications industry plays a key role in modern society by providing the infrastructure for communication and information exchange. In recent years, the integration of ESG principles has become an essential part of the development strategies of telecommunications companies worldwide. ESG principles began to be adopted in the telecommunications sector in the early 21st century. Initially, the focus was on environmental aspects such as energy consumption and carbon emissions. Over time, the focus expanded to include social and corporate aspects, such as human rights, working conditions, and corporate transparency.

Several international standards and initiatives aim to promote ESG in the telecommunications industry (Daugaard, and Ding, 2022). These include the Global Reporting Initiative (GRI), the Principles for Responsible Investment (PRI), and ISO standards. These initiatives provide recommendations and best practices for telecommunications companies seeking to improve their ESG performance.

Research indicates (Aca and Coskun, 2023; Jasni et al., 2020; Vetrova et al., 2022) that the integration of ESG principles can significantly enhance the financial and non-financial performance of telecommunications companies. For example, companies that actively work on reducing their carbon footprint and improving working conditions often demonstrate better reputations, attract more investors, and achieve more sustainable financial results.

Many leading telecommunications companies, such as AT&T, Vodafone, and Deutsche Telekom, actively implement ESG strategies (Grishunin et al., 2022). These companies regularly publish reports on their ESG initiatives, including projects aimed at reducing energy consumption, improving working conditions, and supporting social programs.

Numerous studies (Grishunin et al., 2021; Kwilinski et al., 2023) focus on the impact of ESG on telecommunications companies. For instance, research shows that companies that have implemented ESG programs exhibit improved risk management and increased resilience. Positive impacts on employee and customer satisfaction have also been observed.

Despite successes, telecommunications companies face several challenges in implementing ESG strategies. These include difficulties in measuring and reporting ESG indicators, the need for significant investments in environmental and social projects, and managing changes within the company. The lack of unified ESG assessment standards also complicates the process of comparative analysis and reporting.

Integrating ESG principles into the strategies of telecommunications companies is an important step towards sustainable development. Despite existing challenges, the benefits of implementing ESG initiatives are evident and include improved financial performance, enhanced reputation, and strengthened relationships with stakeholders. Further research and the development of international standards will help telecommunications companies more effectively integrate ESG principles into their operations.

3. Methodology

The study was conducted using a cross-sectional design, which allowed for the integration of various components of the research into a coherent and logical structure. The primary objective was to investigate the impact of ESG principles on the strategic development of Kazakh telecom. The main research method employed was semi-structured interviews with 12 experts from the telecommunications industry in Kazakhstan.

The variables used in the study included environmental, social, and governance factors. These variables were assessed according to the criteria of the National Rating Agency (NRA), which includes 66 parameters of sustainable development.

The study was based on data collected from 12 experts in the telecommunications industry in Kazakhstan. Participants were selected based on their experience and knowledge in the field of telecommunications and ESG principles. The sample included representatives from various demographic groups and organizations, which provided a comprehensive assessment of the company's ESG performance.

Semi-structured interviews were used to collect data, including questions related to the environmental, social, and governance aspects of the company's activities. Interviews were conducted using a pre-prepared guide, ensuring the validity and reliability of the collected data.

The research procedure included the following steps:

- Identifying the sample and recruiting experts.
- Developing the guide for conducting semi-structured interviews.
- Conducting interviews and collecting data.
- Analyzing the collected data using the methods of the National Rating Agency.

The modern market needs unified approaches in the system of assessing ESG projects. ESG ratings are used to assess the effectiveness of a company's management and predict possible corporate, environmental and social risks. However, there is currently no unified and unconditional system for assessing ESG standards. Its absence allows domestic companies to independently choose between available metrics and simultaneously participate in several ratings, one of which is the rating of the National Rating Agency (hereinafter referred to as NRA), which includes an assessment of 66 parameters of sustainable development.

To ensure a comprehensive understanding of the methodology employed, it is essential to compare it with alternative methods and discuss its advantages and drawbacks. Gyönyörová et al. (2023) explored the consistency and convergent validity of well-recognized ESG data providers. Their exploratory factor analysis of the S&P Global 1200 index demonstrated significant uncertainty across extracted latent factors, emphasizing the dependence of ESG data validity on industry type and country of domicile. This suggests that stakeholders must consider the company sector and domicile aspects in their decisions to avoid misleading conclusions.

Another alternative method is the Perceived ESG Scale (P-ESG) developed by Oh et al. (2024). This scale measures public perceptions of an organization's ESG activities and has shown superior predictive validity over traditional corporate social responsibility models. However, this method focuses more on public perception rather than the direct impact on business practices and outcomes.

Li et al. (2023) discussed the effectiveness of ESG ratings in promoting corporate innovation in developing countries. Their findings highlighted the importance of industrial structure, property rights protection, and regional financial development as key external factors. Wang et al. (2024) examined the divergence among ESG rating agencies and its impact on excess stock returns, revealing the complexity and potential inconsistencies in ESG assessments.

Given these alternatives, our study employs the NRA methodology to assess Kazakh telecom's ESG performance. This approach is tailored to the specific context of Kazakhstan's telecommunications industry, considering the local regulatory, economic, and social environment. The NRA's comprehensive evaluation of 66

parameters provides a detailed and structured assessment, capturing the nuances of ESG performance in this unique setting.

The use of semi-structured interviews with industry experts allows for deep qualitative insights, complementing the quantitative assessment. This mixed-method approach ensures a robust and context-specific analysis, addressing the limitations of other methods that may not fully capture the intricacies of the local market and industry dynamics.

In summary, while alternative methods offer valuable perspectives, the NRA methodology combined with expert interviews is well-suited to our research objectives. It provides a detailed and context-specific assessment of ESG performance, contributing to the broader understanding of ESG integration in emerging markets.

The rating assigned in accordance with the NRA methodology is expressed using a rating category on a specific rating scale and is expressed in letters, from "AAA. esg" to "C. esg" (**Table 1**).

Table 1. ESG rating scale according to the national rating agency.

Level	Characteristics	Category	Score value
A (advanced)	The company demonstrates leadership in integrating the ESG agenda into its activities and the quality of compliance with relevant practices	AAA. esg (maximum)	0.9–1.0
		AA. esg (very high)	0.76–0.89
		A. esg (high)	0.6–0.75
B (developing)	The company has largely integrated the ESG agenda into its activities, demonstrates a sufficient level of quality compliance with relevant practices and shows development dynamics	BBB. esg (sufficient)	0.45–0.59
		BB. esg (medium)	0.3–0.44
		B. esg (moderately weak)	0.15–0.29
C (elementary)	The company is at the initial level of integrating the ESG agenda into its activities, and has established compliance with relevant practices	C. esg (weak)	0–0.14

The methodological approach of the National Rating Agency allows us to formally evaluate each of the three blocks as part of a comprehensive ESG, as well as assess their impact on the dynamics of the aggregate indicator. This can be demonstrated by data from one of the leaders in corporate, environmental and social sustainability—Kazakh telecom.

The desire of Kazakh telecom to make a positive contribution to the achievement of sustainable development goals is justified by the fact that the company focuses on transparent activities, trying to interact more effectively with key stakeholders, as well as improving the quality of its services, reducing the negative impact on the environment, and enhancing the positive impact on environmental, social and economic aspects. Kazakh telecom focuses its attention on contributing to the achievement of 9 out of 17 goals that are most relevant to the specifics of the company's activities and for the Kazakh telecommunications industry as a whole, namely:

1) Goal No. 4 in the field of sustainable development—"Quality education";

2) Goal No. 8 in the field of sustainable development—"Decent work and economic growth";
3) Goal No. 9 in the field of sustainable development—"Industrialization, innovation and infrastructure";
4) Goal No. 10 in the field of sustainable development—"Reduce inequality";
5) Goal No. 11 in the field of sustainable development—"Sustainable Cities and Communities";
6) Goal No. 12 in the field of sustainable development—"Responsible consumption and production";
7) Goal No. 15 in the field of sustainable development—"Preservation of terrestrial ecosystems";
8) Goal No. 16 in the field of sustainable development—"Peace, justice and strong institutions";
9) Goal No. 17 in the field of sustainable development—"Partnerships for Sustainable Development".

To conduct the ESG analysis of Kazakh telecom's activities, an expert assessment was carried out involving 12 respondents who are clients of the company under study. The main results of the expert evaluations are presented in Appendix.

The "E" assessment block represents the evaluation of the risks of environmental factors impacting the company's activities. The analysis showed that the rating of the "E" block is 0.66, which corresponds to a high level. The highest score was assigned to the "Climate Change" criterion, while the lowest was given to "Environmental Impact."

The "S" assessment block characterizes the evaluation of social risks in the company's activities and includes groups such as "Society", "Human Capital", "Human Rights" and "Clients". A score of 0.82 represents the rating of the "S" block, characterized as "Very High."

The "G" assessment block represents the evaluation of risks existing in the company's corporate governance systems and practices. The quality of corporate governance is assessed based on a comprehensive analysis of eight groups, such as "Ownership Structure", "Strategy", "Interests and Influence of Shareholders/Participants" and "Interaction with Stakeholders."

Thus, the results of the ESG analysis, which include the study of various management efficiency indicators, are undoubtedly informative and important for a wide range of stakeholders focused on working with companies whose activities comply with the principles of sustainable development.

The main limitations of the methodology include the narrow time frame of the study and the limited sample size, which may restrict the generalizability of the results. Potential biases related to participants' self-reporting and the subjectivity of interviews should also be considered.

Data were collected using semi-structured interviews conducted from January to March 2023. The interviews were held both at the offices and branches of Kazakh telecom and online, providing convenience for the participants.

During the research, all ethical standards were observed. Participants were informed about the objectives of the study, and their consent to participate was obtained before the interviews began. The confidentiality of participants' data was

ensured, and all collected data were used exclusively for research purposes.

The limitations of the methodology include possible biases related to the sample and the subjectivity of the interviews, as well as constraints related to the time frames of the study. These factors were considered when interpreting the results and are described in the discussion section.

4. Results

To conduct an ESG analysis of the activities of Kazakh telecom, an expert assessment was carried out by 12 respondents who are clients of the research object. The main results of the ranking of expert assessments are presented in Appendix.

The "E" assessment block represents an assessment of the risks of the impact of environmental factors on the company's activities. The assessment includes aspects such as "Environmental Management", "Environmental Impact", "Climate Change" and "Resource Use".

As evidenced by the analysis, the rating of block "E" is 0.66, which corresponds to the "High" level. In terms of each of the assessment blocks, the highest score was assigned to the "Climate Change" criterion, and the lowest to "Environmental Impact" (**Figure 1**).

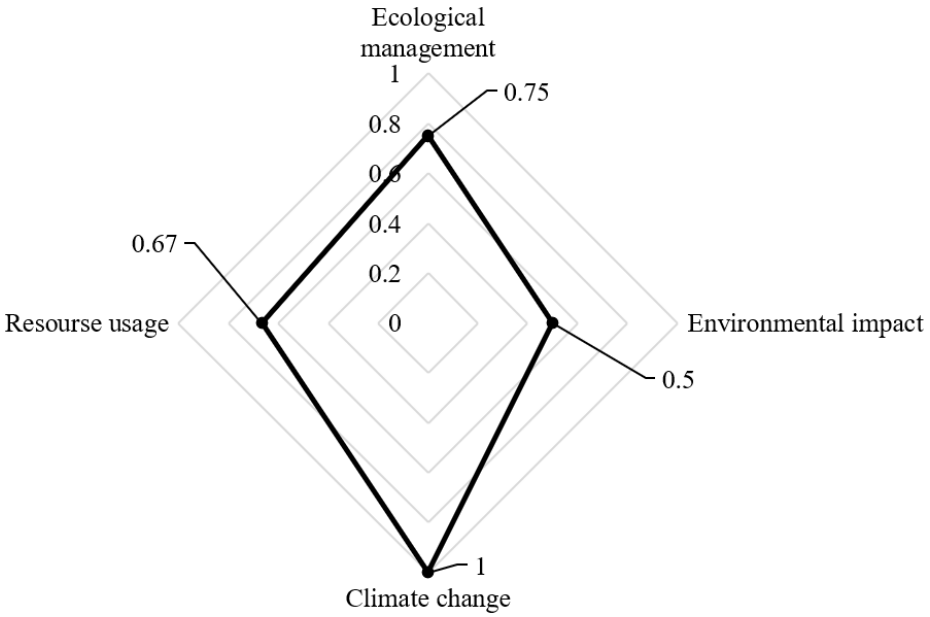

Figure 1. Results of ESG analysis of the activities of Kazakh telecom in accordance with the NRA methodology for block "E".

The basis for assigning a high score the "Climate Change" group is based on the work of Kazakh telecom in managing risks associated with climate change and the company's participation in international voluntary initiatives in the field of sustainable development and combating climate change. The company tries to support the country's participation in global efforts to reduce greenhouse gas emissions into the atmosphere, recognizing the importance of measures to prevent global climate change, and is taking measures to reduce greenhouse gas emissions. In 2021, the company approved an action plan for the transition of Kazakh telecom to low-carbon

development until 2025, which includes principles and initiatives to achieve a strategic goal aimed at reducing energy consumption by 1.5% per year and reducing the company's carbon footprint by 13% until 2030. Along with this, the company implemented several initiatives in the field of low-carbon development, one of which was the transition to the use of low-carbon energy sources—gas. In addition, in 2021, Kazakh telecom joined the greening of Kazakhstan's cities in order to contribute to improving the environment, as well as attracting public attention to climate change issues.

The reasons for the negative trend are the multidirectional dynamics of gross greenhouse gas emissions in CO_2 over the past three years (an increase in the volume of greenhouse gasses over the analyzed period by 15.05% from 24.079 thousand tons in 2019 to 27.702 thousand tons in 2021); lack of clear requirements for logistics operations, weak marketing to promote responsible consumption, as well as an undeveloped program for the separate collection of household waste for recycling.

The "S" assessment block characterizes the assessment of social risks in the company's activities. This block evaluates the organization in four groups: "Society", "Human Capital", "Human Rights", "Customers", during which the company's activities in the field of charity and volunteering are examined; the presence of an effective personnel policy and social support for employees, as well as policies and standards for customer relations.

A value of 0.82 represents an "S" block rating characterized as "Very High." "Human Capital" and "Human Rights" have the maximum score in this block (**Figure 2**)—this is due to the fact that Kazakh telecom has noted positive dynamics in the level of average wages over the past three years (according to the annual report for 2021, wage growth was 23.2% compared to 2019), developed personnel development and employee training program; a formed financial assistance program to support employees in the field of housing, as well as corporate pension insurance programs.

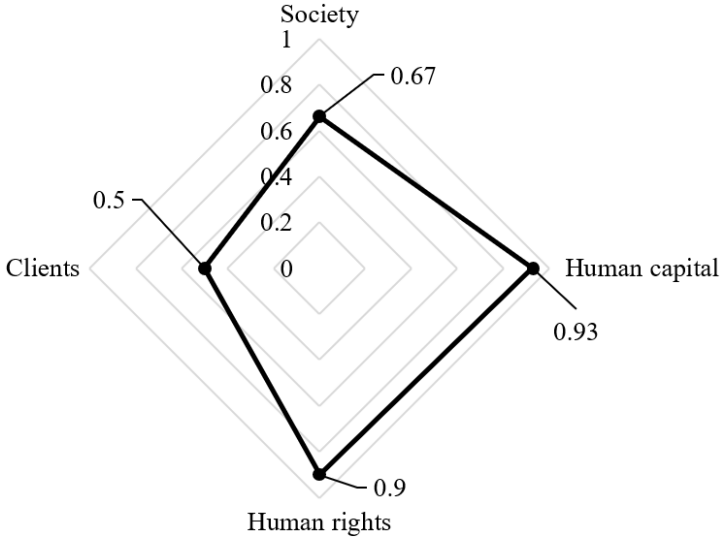

Figure 2. Results of ESG analysis of the activities of Kazakhtelecom in accordance with the NRA methodology for block "S".

Social protection of the company's employees and pensioners is an indispensable component of its social policy, which includes support within the framework of the

collective agreement, namely: financial assistance for labor leave; social benefits for temporary disability; lump sum benefit for early retirement; payments in connection with the birth of a child; financial assistance for health improvement when providing annual leave; provision of medical care to employees within the framework of voluntary medical insurance. Along with this, the current motivation system ensures a clear relationship between employee remuneration and the results of their work. Today, the company uses the following approaches to material rewards: unified motivation programs in the B2C and B2B segments; unified piece-rate remuneration systems for the installation of telecommunications services in the B2C and B2B segments; uniform rules for compensation payments; reimbursement of expenses for moving and rent; a one-time incentive bonus for the implementation of "Key Projects", taking into account the resulting economic effect.

The Demeu program, launched in December 2022, deserves special attention, which is aimed at resolving issues of social support for employees of Kazakh telecom, taking into account the financial capabilities of the company, namely: reimbursement of expenses associated with the purchase of vouchers to children's health camps; reimbursement of expenses associated with the purchase of vouchers to children's health resorts (for disabled children); financial assistance for the purchase of medicines for children; financial assistance for meals for school students; financial assistance for the beginning of the school year; reimbursement of funds for medical rehabilitation/individual rehabilitation program for a child (for disabled children), etc.

Branch employees in grades A8–B4 are provided with social support in the form of reimbursement of expenses for the final year of education (excluding expenses for accommodation and food) of their children in a secondary specialized educational institution and/or a higher educational institution receiving first secondary/higher education and having high academic results for the previous course of study.

However, based on the analysis of block "S", the company needs to intensify work in the areas of "Customers" and "Society", the average score of which is significantly lower than ideal. In particular, the low score was due to omissions such as the lack of corporate volunteering and responsible marketing, which are an integral part of the company's sustainable development. At the same time, client dissatisfaction with the quality of services provides the basis for low scores in the "Clients" group - as of 1 April 2023, Kazakh telecom has the following ratings on popular platforms:

1) Rating of Kazakh telecom on the 2gis platform (Central Office)—20 ratings, average score—1.9 out of 5 (last review dated 28 February 2023).
2) Rating of Kazakh telecom on the 2gis platform (Retail Business Division—branch of Kazakh telecom)—32 ratings, average score—1.1 out of 5 (last review dated 28 March 2023).
3) Rating of Kazakh telecom on the Google maps platform Central Office)—91 ratings, average score—2.9 out of 5 (last review dated 22 March 2023).
4) Rating of Kazakh telecom on the Google maps platform (Retail Business Division—branch of Kazakh telecom)—451 ratings, average score—3.4 out of 5 (last review dated 20 March 2023).
5) Rating of Kazakh telecom on the Yandex Cards platform Central Office)—26 ratings, average score—1.6 out of 5 (last review dated 11 February 2023).
6) Rating of Kazakh telecom on the Yandex Cards platform (Retail Business

Division—branch of Kazakh telecom)—37 ratings, average score—3.7 out of 5 (last review dated 17 January 2023).

Analyzing the data, it was revealed that most of the negative reviews are associated with the low quality of the services provided, the "attribution" of debts, the inaction of regional directorates to customer requests, as well as annoying calls about the presence of a debt and the need for timely repayment. The observed negative trend directly affects the formation of the Kazakh telecom brand in the telecommunications market, which necessitates the need to optimize work in this direction.

The "G" assessment block represents an assessment of the risks existing in the company's corporate governance systems and practices. The assessment of the quality of corporate governance is based on a comprehensive analysis of eight groups: "Ownership structure", "Strategy", "Interests and influence of shareholders/participants", "Interaction with stakeholders". The analysis takes into account the transparency of the ownership structure, the presence and effectiveness of the board of directors and its committees, the compliance of the content of disclosed financial and non-financial information with national and international requirements, as well as the integration of the ESG agenda into the company's activities.

The "G" block rating is 0.79, which is equivalent to the "High" level. As follows from **Figure 3**, the results of the analysis for block "G" are volatile. Due to the transparency of the ownership structure, the effectiveness of the risk management and internal control system, the maximum value is noted in the criteria "Ownership structure", "Information disclosure", "Risk management and internal control". Thus, the company discloses information in accordance with the laws of the Republic of Kazakhstan "On the Securities Market" and "On Joint Stock Companies", the requirements of Kazakhstan Stock Exchange JSC and the National Bank of the Republic of Kazakhstan. The official platform of Kazakhstan Stock Exchange JSC publishes data on the composition of the company's management body, upcoming corporate events, as well as financial statements and other information in the interests of shareholders and other stakeholders.

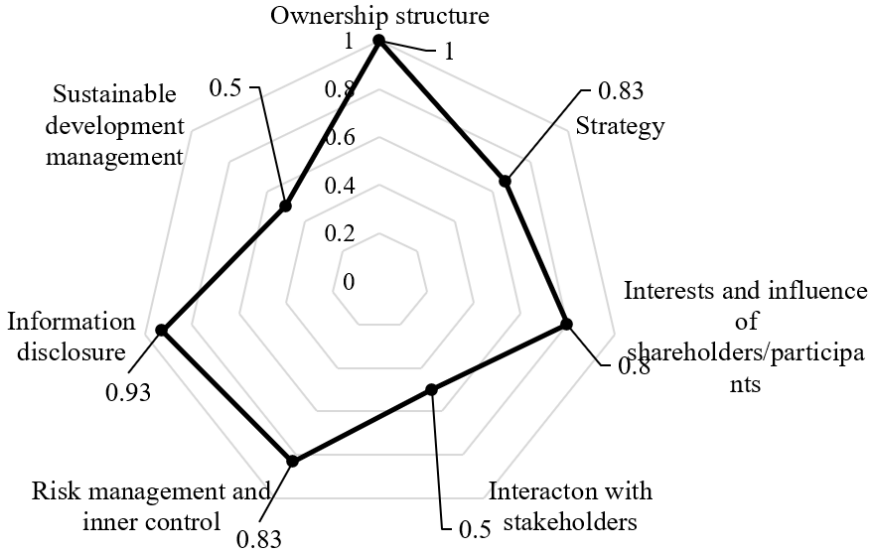

Figure 3. Results of the ESG analysis of the activities of Kazakh telecom in accordance with the NRA methodology for block "G".

Low indicators in the areas of "Interaction with stakeholders", "Strategy", "Sustainability Management", "Interests and influence of shareholders" determine the need to stimulate activities in the context of sustainable development through the use of stakeholder management, integration of the ESG agenda into the company's long-term strategy, optimization board composition and organizational structure, as well as identifying and managing sustainability risks.

ESG principles establish new rules for doing business, including in terms of the composition of the board of directors. Thus, in order to fulfill Sustainable Development Goal No. 5—"Gender Equality", ESG metrics require a gender-balanced board of directors. Whereas the current composition of the board of directors of Kazakh telecom consists exclusively of men, which does not correspond to the parameters of sustainable development. At the same time, the absence of a structural unit and manager for sustainable development necessitates optimization of the company's organizational structure.

The result of a comprehensive analysis is the determination of the final ESG rating. The calculated ESG rating showed that the sustainable development indicator of Kazakh telecom is 0.75, falling into category "A" (Advanced) and level "A. esg" (High). This assessment reflects good ESG performance and the level of transparency in the presentation of ESG data in public non-financial reporting.

Thus, the results of ESG analysis, which involves the study of various indicators of management efficiency, are certainly informative and important for a wide range of stakeholders focused on working with those companies whose activities comply with the principles of sustainable development. Based on the results of the analysis, using the NRA methodology, it was revealed that Kazakh telecom needs to integrate the areas "Customers", "Environmental Impact", "Society", "Interests and influence of shareholders/participants", "Interaction with stakeholders" into long-term strategy. It should be noted that the transparency of corporate non-financial reporting in relation to ESG indicators is a positive characteristic of the business image and investment attractiveness of Kazakh telecom. Standardizing ESG analysis allows for a clear and systematic approach to taking into account the ESG agenda when conducting investment analysis and justifying investment direction, and also helps the company's board of directors, based on basic provisions and framework recommendations, determine optimal approaches to integrating ESG factors into its innovation strategy policy in the long term.

Today, a number of factors contribute to the formation of ESG strategies by domestic companies. Firstly, the requirements of regulators, which create additional incentives for the implementation of sustainable development principles. Secondly, the introduction of mandatory ESG reporting for listed companies. Thirdly, the request of consumers who pay close attention to the environmental friendliness and ethics of manufactured goods and services.

The term "ESG" gained widespread currency thanks to the Principles of Responsible Investment (PRI) initiative. Investors who accept the PRI pledge to consider companies' ESG practices, recognizing that greater consideration of environmental, social and governance factors will strengthen their contribution to sustainable society.

The ESG ratings of Kazakh telecom provide significant insights into the

company's sustainability performance, aligning with international standards and contributing to its overall market competitiveness. The high scores in the "Climate Change" and "Human Capital Management" blocks indicate effective management of environmental and social responsibilities, which are critical for long-term sustainability and attractiveness to investors. However, the lower scores in "Environmental Impact" and "Society" highlight areas needing improvement, particularly in reducing environmental footprint and enhancing corporate social responsibility initiatives.

Comparing Kazakh telecom's ESG performance with existing ESG ratings by other vendors such as S&P Global, MSCI, and Sustainalytics reveals both consistencies and divergences. For example, while Kazakh telecom demonstrates strong performance in specific areas like climate change mitigation and employee welfare, the company's lower performance in broader environmental impact metrics suggests a need for more comprehensive environmental management strategies.

This divergence is consistent with findings by Gyönyörová et al. (2023), who identified significant variability in ESG scores depending on the data provider, industry type, and country of domicile. This variability underscores the importance of contextualized ESG assessments that consider local regulatory and economic environments. The NRA methodology's detailed parameters provide a tailored approach that captures these nuances, offering a more relevant evaluation for stakeholders within Kazakhstan's unique market context.

Additionally, studies like those by Li et al. (2023) and Wang et al. (2024), emphasize the impact of ESG ratings on financial performance and innovation. High ESG ratings are associated with better financial outcomes and enhanced corporate innovation, reinforcing the economic benefits of strong ESG practices. Kazakh telecom's performance in the "Climate Change" and "Human Capital Management" blocks likely contributes to its financial stability and potential for innovation, providing a competitive edge in the telecommunications sector.

In conclusion, the detailed and context-specific ESG assessment of Kazakh telecom not only highlights the company's strengths and areas for improvement but also aligns with broader economic insights on the significance of robust ESG practices. This comprehensive evaluation offers valuable guidance for Kazakh telecom and other companies in similar markets to enhance their ESG strategies and contribute to sustainable economic growth.

To summarize, we can draw the conclusion that the modern trend of global sustainable development, including the triune concept of environmental, social and corporate aspects, is gaining increasing recognition in the international field, including Kazakhstani businesses. Moreover, for most large national companies, the formation of a strategy through the prism of ESG becomes a key principle of their activities, since, in light of the global trend towards a responsible attitude towards nature and its resources, respect for people, ethics and transparency in the management of the organization, any business that ignores these requests, risks narrowing not only the circle of potential investors, but also losing customer loyalty.

5. Discussion

The results of the conducted ESG analysis of Kazakh telecom's activities indicate that the company demonstrates high performance in sustainable development, particularly in the "Climate Change" and "Human Capital Management" blocks. These findings underscore Kazakh telecom's significant efforts in reducing its carbon footprint and ensuring the social well-being of its employees. Such performance highlights the company's proactive approach in integrating ESG principles into its operations, thereby positively impacting its sustainable development and competitiveness.

However, the analysis also revealed several areas needing improvement. Notably, the lower scores in the "Environmental Impact" and "Society" blocks suggest a need for Kazakh telecom to enhance its involvement in corporate volunteering programs and responsible marketing initiatives. Additionally, customer feedback points to the necessity of improving service quality and customer interactions, areas critical for maintaining a positive corporate image and customer satisfaction.

The methodology employed by the National Rating Agency for evaluating ESG performance offers a systematic and objective assessment of various factors influencing the company's sustainable development. While this approach provides a detailed analysis, it also has limitations, such as the narrow timeframe of the study and the limited sample size. These constraints might affect the generalizability of the results, but the insights gained are nonetheless valuable for further enhancement of ESG strategies within the telecommunications sector in Kazakhstan.

The telecommunications industry was chosen for this study due to its critical role in modern society as an essential infrastructure provider enabling communication and information exchange. The sector's operations are heavily regulated, ensuring adherence to stringent policies, which makes it an ideal setting for studying ESG practices. Moreover, the unique environmental impacts of telecommunications companies, such as high energy consumption and carbon emissions, necessitate an investigation into how these companies manage these aspects under ESG principles. Additionally, the industry's responsibility for ensuring equitable access to communication services and maintaining high standards of data privacy and security is a significant component of the social dimension of ESG.

Kazakh telecom's monopoly in the market presents certain challenges for the generalizability of the study's results. Nonetheless, the conclusions drawn from this research can offer valuable insights for other companies both within and beyond the telecommunications industry. The specific recommendations, such as enhancing corporate volunteering, responsible marketing, and improving service quality, are broadly applicable across various sectors. Other companies can adapt these recommendations to fit their unique contexts, thereby improving their own ESG performance.

Furthermore, the methodological approach used in this study, which combines a cross-sectional design with semi-structured interviews with industry experts, provides a replicable framework for other companies seeking to evaluate and enhance their ESG strategies. This approach's focus on qualitative insights allows for a deeper understanding of the specific challenges and opportunities associated with ESG

implementation, which can be tailored to different organizational settings.

The transparency of Kazakh telecom's non-financial reporting on ESG indicators is a positive characteristic that enhances its business image and investment attractiveness. Standardizing ESG analysis enables the company to better consider the needs of stakeholders and effectively integrate ESG factors into its long-term strategy.

To address the identified areas for improvement, Kazakh telecom should develop and implement corporate volunteering programs aimed at supporting local communities and environmental initiatives. Additionally, the company should conduct educational campaigns on responsible consumption among its clients and employees. Improving service quality is also crucial, which can be achieved by introducing systematic customer surveys to gather feedback and respond promptly to their needs, as well as developing and implementing new technologies to enhance communication quality and internet speed.

Investing in renewable energy sources and enhancing the energy efficiency of the company's infrastructure are important steps towards integrating sustainable practices and technologies. Implementing waste management programs and recycling of materials used in operational activities will further support these efforts. Continuous training and professional development for employees in sustainable development and ESG principles are also essential for the development and integration of effective ESG strategies.

Future research should include a broader analysis involving a larger number of telecommunications companies to obtain more generalized results. Studying the impact of specific ESG initiatives on the financial performance of companies will help determine the most effective strategies. Additionally, analyzing the influence of government policies and regulatory initiatives on the adoption of ESG principles in the telecommunications industry and investigating the experience of international telecommunications companies in the field of ESG will provide valuable insights and best practices that can be adapted to Kazakhstan's context.

In conclusion, the results of this study underscore the importance of integrating ESG principles into the activities of telecommunications companies to achieve sustainable development and enhance competitiveness. Kazakh telecom demonstrates significant success in managing climate risks and ensuring the social well-being of its employees, which positively affects its reputation and investment attractiveness. To further improve its ESG performance, Kazakh telecom should enhance corporate volunteering and responsible marketing programs, improve service quality, and continue developing and integrating ESG strategies into its long-term strategy, considering international standards and best practices.

6. Conclusions and policy implications

The results of this study confirm the importance of integrating ESG principles into the activities of telecommunications companies to achieve sustainable development and enhance competitiveness. Kazakh telecom demonstrates significant success in managing climate risks and ensuring the social well-being of its employees, which positively affects its reputation and investment attractiveness. However, there are several areas where improvements are necessary, particularly in environmental

impact and corporate social responsibility.

This study has several limitations that should be acknowledged. Firstly, the narrow timeframe of the study and the limited sample size may restrict the generalizability of the results. Future research should include a broader analysis involving a larger number of telecommunications companies over an extended period to obtain more comprehensive insights. Secondly, potential biases related to participants' self-reporting and the subjectivity of semi-structured interviews should be considered. Using a mixed-method approach that combines qualitative and quantitative data could mitigate these biases and provide a more holistic view of ESG performance.

Future research directions include studying the impact of specific ESG initiatives on the financial performance of telecommunications companies to determine the most effective strategies. Additionally, analyzing the influence of government policies and regulatory initiatives on the adoption of ESG principles in the telecommunications industry and investigating the experience of international telecommunications companies in the field of ESG could provide valuable insights and best practices that can be adapted to Kazakhstan's context.

To further improve Kazakh telecom's ESG performance, several practical recommendations are provided:

1) Enhancement of Corporate Volunteering and Responsible Marketing Programs:
   - Develop and implement corporate volunteering programs aimed at supporting local communities and environmental initiatives.
   - Conduct educational campaigns on responsible consumption among the company's clients and employees.
2) Improvement of Service Quality:
   - Introduce systematic customer surveys to gather feedback and respond promptly to their needs.
   - Develop and implement new technologies to improve communication quality and internet speed.
3) Integration of Sustainable Practices and Technologies:
   - Invest in renewable energy sources and enhance the energy efficiency of the company's infrastructure.
   - Implement waste management programs and recycling of materials used in operational activities.
4) Development and Integration of ESG Strategies:
   - Conduct continuous training and professional development for employees in sustainable development and ESG principles.
   - Develop a long-term sustainable development strategy with clear goals and indicators to monitor progress.

Implementing these practical implications may encounter several challenges and difficulties. Enhancing corporate volunteering and responsible marketing requires a cultural shift within the organization, as well as the allocation of resources and time. Improving service quality necessitates significant investment in new technologies and infrastructure, which may face budget constraints and technical challenges. Integrating sustainable practices and technologies involves not only financial investment but also

changes in operational procedures and staff training. Developing and integrating comprehensive ESG strategies require ongoing commitment from top management and the alignment of these strategies with the overall corporate objectives.

In conclusion, the study underscores the importance of integrating ESG principles into the activities of telecommunications companies to achieve sustainable development and enhance competitiveness. Kazakh telecom's success in managing climate risks and ensuring the social well-being of its employees positively impacts its reputation and investment attractiveness. By addressing the identified areas for improvement and overcoming the associated challenges, Kazakh telecom can further enhance its ESG performance and contribute to the broader goal of sustainable development in the telecommunications sector.

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Appendix

Table A1. Data for analysis.

Assessment block	Key elements	Assessment criteria	Respondents score		Average score
			0	1	
E	E1 Ecological management	E1.1 Environmental Management System	2	10	1
		E1.2 Environmental strategy or policy	2	10	1
		E1.3 Availability of environmental requirements for contractors and suppliers	6	6	0.5
		E1.4 Educational environmental programs	6	6	0.5
	E2 Environmental impact	E2.1 Specific gross greenhouse gas emissions in CO2 equivalent	6	6	0.5
		E2.2 Logistics management	9	3	0
		E2.3 Use of alternative fuels during transportation	2	10	1
		E2.4 Availability of activities to promote responsible consumption	8	4	0
		E2.5 Having a program/policy aimed at reducing the amount of plastic used	6	6	0.5
		E2.6 Availability of a program for collecting household waste for recycling (paper, glass, plastic, etc.)	6	6	0.5
		E2.7 Existence of a program/policy aimed at minimizing waste generation	3	9	1
	E3 Climate change	E3.1 The presence of risks associated with climate change among the list of current risks for the company	2	10	1
		E3.2 Participation in international voluntary initiatives in the field of sustainable development / climate change / voluntary certification	1	11	1
	E4 Resource usage	E4.1 Water consumption	6	6	0.5
		E4.2 Availability of a program to improve energy efficiency	3	9	1
		E4.3 Specific energy intensity	6	6	0.5
Mean value					0.66
S	S1 Society	S1.1 Social investments and development of present regions	2	10	1
		S1.2 Charity	1	11	1
		S1.3 Corporate volunteering	9	3	0
	S2 Human capital	S2.1 Average salary (excluding top management)	2	10	1
		S2.2 Availability of personnel development/employee training programs	-	12	1
		S2.3 Staff turnover rate	6	6	0.5
		S2.4 Availability of support programs / financial assistance for employees / families of employees	-	12	1
		S2.5 Availability of a voluntary health insurance program and other forms of medical care for employees	-	12	1
		S2.6 Availability of measures to support employees in the field of housing provision	-	12	1
		S2.7 Availability of corporate pension insurance programs	-	12	1
	S3 Human rights	S3.1 Availability of a feedback mechanism	1	11	1
		S3.2 Inclusion	6	6	0.5
		S3.3 Gender balance: proportion of women in leadership positions	3	9	1
		S3.4 Gender balance: ratio of men and women by employee categories	3	9	1
		S3.5 Requirements for contractors in the field of human rights/ethical business practices	1	11	1
	S4 Clients	S4.1 Quality and safety of products/services	2	10	1
		S4.2 Responsible marketing	8	4	0

Table A1. (*Continued*).

Assessment block	Key elements	Assessment criteria	Respondents score		Average score
			0	1	
Mean value					0.82
G	G1 Ownership structure	G1.1 Transparency of ownership structure and beneficial owners	1	11	1
		G1.2 Transparency of ownership structure	1	11	1
		G1.3 Goodwill of Beneficial Owners	1	11	1
	G2 Strategy	G2.1 Availability of a published long-term strategy	3	9	1
		G2.2 Have a description of key impacts, risks and opportunities	4	8	1
		G2.3 Integrating ESG factors into long-term strategy	6	6	0.5
	G3 Interests and influence of shareholders /Members	G3.1 Presence of a controlling shareholder/participant	3	9	1
		G3.2 Balancing the influence of different groups of shareholders/participants	6	6	0.5
		G3.3 Presence of conflicts, significant contradictions between groups of shareholders/participants	6	6	0.5
		G3.4 Procedures for holding general meetings of shareholders/participants	-	12	1
		G3.5 Dividend policy and practice of dividend payments	1	11	1
		G3.6 Corporate Secretary	-	12	1
		G3.7 Role and activity of the Board of Directors, key functions of the board	2	10	1
		G3.8 Composition of the Board of Directors	12	-	0
		G3.9 Availability and effectiveness of key committees of the board of directors	4	8	1
		G3.10 System of assessment and remuneration of the board of directors and executive bodies	2	10	1
	G4 Interaction with stakeholders	G4.1 Using the stakeholder approach (SMM)	6	6	0.5
		G4.2 State of the stakeholder management system	6	6	0.5
		G4.3 Disclosure of information within the framework of the SMM	6	6	0.5
		G4.4 Stakeholder communications/levels of engagement	6	6	0.5
	G5 Risk management and internal control	G5.1 Availability and effectiveness of a risk management and internal control system	6	6	0.5
		G5.2 Assignment of responsibilities and tasks of internal audit	2	10	1
		G5.3 Availability of internal regulations regarding internal audit	3	9	1
	G6 Information disclosure	G6.1 Non-financial information: compliance of the content of disclosed information with national and international requirements and best practices	1	11	1
		G6.2 Non-financial information: timeliness of disclosure and availability of information	1	11	1
		G6.3 Non-financial information: external assurances	1	11	1
		G6.4 Financial information: frequency of disclosure	6	6	0.5
		G6.5 Financial information: compliance of the content of disclosed information with national and international requirements and best practices	4	8	1
		G6.6 Financial information: timeliness of disclosure and availability of information	4	8	1
		G6.7 Financial Information: Auditor's Goodwill	4	8	1
	G7 Sustainability management	G7.1 Integration of the ESG agenda through the Board of Directors	6	6	0.5
		G7.2 Availability of a department or director/top manager for sustainable development	6	6	0.5
		G7.3 Identifying and managing sustainability risks	6	6	0.5
Mean value					0.79

This appendix presents a detailed assessment framework used for analyzing various environmental, social, and governance (ESG) factors within the company. The following sections describe each assessment block, the key elements, and the criteria used to evaluate performance.

Each key element is assessed based on specific criteria, with scores provided by respondents. The average score for each criterion and overall assessment block is calculated to determine the company's performance in each area.

- Mean Value: The mean score across all criteria within an assessment block.
- ESG Composite Score: A composite score derived from the weighted average of environmental, social, and governance scores, used to provide an overall assessment of the company's ESG performance.

$$\text{ESG} = \frac{1}{3} \times \left(\frac{1}{0.16} \times 0.16 \times 0.66 + \frac{1}{17} \times 17 \times 0.82 + \frac{1}{33} \times 33 \times 0.78 \right) = 0.75 \text{ (A.esg, high)}$$

Model for assessing a group of ESG indicators developed by the National Rating Agency (NRA) in relation to Kazakhtelecom.