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ESG Development Analysis on Renewable Energy Car Industry-Li Auto. Inc

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Abstract: This paper briefly describes the meaning and impact of ESG, and what kind of effect and role it has had on the world and enterprises. After that, this thesis takes Li Auto Company as an instance to analyze the performance of this company in terms of environment, society and regulation. Use the data and measures of Li Auto in terms of environment, society and regulation to analyze the performance of Li Auto's ESG. There is also an analysis based on the comparison of Li Auto's 2021 and 2022 reports and the ESG performance of other renewable car companies in the same industry. In the research, it is found that the performance of Li Auto Company in terms of ESG is relatively upstream among its peers, based on Li Auto's ESG report and ESG-risk rating. This paper will deepen people's understanding of the ESG development of Li Auto Company. Furthermore, the ESG research on Li Auto will serve as a recommendation and reference for the development of ESG for Li Auto and other car companies.

Keywords: ESG, Li Auto, emissions, pollution, development

1. Introduction

1.1. Global

ESG is a truly wide-known term in finance. It stands for environment, social and corporate governance. As the world's economy is developing, it may have led to various problems. Rehman, Ma, Ozturk, Ulucak wrote that long-term population increase, economic expansion, rural population expansion, livestock production, and energy use all interact favorably with CO2 emissions [1]. It made governments of countries and regions consider green development. Regarding ESG, countries that pursue the sustainable development concept have also proposed corresponding rating systems. In the article Research on the impact of ESG ratings on corporate value——Based on the perspective of the new energy vehicle industry chain, the authors wrote in terms of building China's ESG value evaluation system, ICBC Green The financial research group established the first ESG green rating system for domestic commercial banks, forming an into green development index and green investment index [2]. On a global scale, ESG actions can accelerate global development among countries. Lu Lu and Shaoming Xie wrote that increasing international collaboration on environmental, social, and governance issues through ESG practices in international investment can help promote global sustainable development [3].

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1.2. Corporate

Also, corporates undertake some actions to make their ESGs look better because many investors may rely on this index to ensure the investment is comparably feasible. Shuxian He wrote that green innovation is a relatively recent area of business innovation directly correlated with ESG performance. For instance, a company's decision support provided by governance must be inseparable from green innovation if it wishes to elevate it to a strategic goal at the governance level [4]. The ESG importance to the company is an index that creates reliability for the investors. When investors pay more and more attention to the ESG performance of enterprises, many enterprises will also focus more on development when they operate. To give an example of a car company, traditional cars did facilitate people's travel before, but at the same time, they caused much pollution. After that, the emerging new energy vehicle industry attracted the attention of many investors against this background. In China, the government has strongly supported the development of the new energy industry in recent years, especially the new energy vehicle industry. It is reflected in the transformation of increasing charging piles and supporting power grids, and providing different tax exemption policies for consumers who purchase new energy vehicles [5]. Regarding the series of policies from the Chinese government, automobile companies started to appear and thrive. With the government's strong support for new energy, there have also been many renewable car companies that aim at green emission reduction. However, energy saving and emission reduction is not the whole picture of ESG research. Let us use the example of Li Auto Inc. to analyze the ESG development of new energy vehicle companies.

2. Method

The purpose of writing this article is to understand the ESG elements and explain how these aspects reflect in Li Auto. In this article, ESG development analysis of Li Auto will be demonstrated through various data and measures such as environmental, social and Li Auto’s governance. The ESG report of Li Auto Inc. can be found on the website of Li Automobile Company. The report posted measures Li Auto has taken in 2021 regarding the environment, society and governance, and what significant indicators have been improved. Then, compare the data in the 2021 report with the data in the 2022 report to draw some conclusions. Finally, compare the data of Li Auto, Tesla and BYD’s ESG risk rating on the Sustainalytics website.

2.1. Environment

First, for the environment aspect, the analysis of the environmental performance of Li Auto, includes the energy effectiveness of its automobiles, the environmental friendliness of its manufacturing process, and its waste reduction and carbon emission reduction plans. From the 2021 ESG report of Li Auto, the company complied with Environmental Protection Law of the People's Republic of China and conducted various ways to reduce emissions. Additionally, they established their own management, such as the ISO 14001-compliant Noise Pollution Control Management Regulations, Air Pollution Control Management Regulations, and Water Pollution Control Management Regulations [6]. Report illustrates that in 2021, Li Auto has not encountered any penalty that is related to environment regulation. The company also implemented diverse actions to lower the effect of air pollution. From the material side, varnish cleaners and water-based paint with low VOC content were used instead of standard, high-VOC oil paints. Kumar, M.M.A., Sinha, D., Basheer, S.M. wrote that these released VOCs and odorous substances have a negative impact on the environment's health and human bodies [7]. This step enhanced the impact on ESG of this company. Another index was found in the report is carbon dioxide emissions. Rehman, Ma, Ahmad, Irfan, Traore, and Chandio in 2021 wrote that due to the release of greenhouse gases like carbon dioxide, global warming has become a serious problem in recent decades [8]. From the Table 1 below, Li ONE type has the lowest carbon

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emissions per kilometer compared to the same class models produced by NIO, BYD, BMW, Volvo, and Mercedes.

Table 1: Carbon emissions comparison.

Vehicle Model	Type	Carbon emissions per kilometer
Li ONE	EREV	236.1
NIO ES6	BEV	239.0
NIO ES8	BEV	250.1
BYD Tang	PHEV	245.7
BMW X1	PHEV	249.2
Volvo XC60	PHEV	256.7
Mercedes-Benz EQC	BEV	243.3

The birth and development of the new energy vehicle industry in China cannot avoid the problem of battery recycling. There are many harmful substances in the battery, such as lead, cadmium, mercury, acid, alkali and other pollutants. These substances are very harmful to the environment and the human immune system. Li Auto illustrated that they do collect and recycle the batteries from their customers, but there is no data shown on the 2021 ESG report of how many batteries they have collected from those customers.

In the process of car production, polluted water is an issue. From 2021 report, Li Auto prioritized choosing low-pollution procedures and raw materials and adhere to the procedure exactly. The overflow of flushing water and excessive wastewater are prevented in accordance with technical rules, and waste solvents, waste solvents, and the waste paint are deposited into the circulation pool through the air spray room grille. Li Auto has developed stringent disposal requirements for the wastewater and sewage that has been produced, and the manufacturing area is outfitted with a full sewage treatment system so that the wastewater is safe for reuse.

Also, from the energy saving prospect, with an actual usage of 0.13 tce Li Auto considerably decreased energy consumption during the car production process. This can prevent the production of 460 tons of CO2 emissions annually, 770,000 kWh of energy, and 200,000 cubic meters of natural gas.

2.2. Social Responsibility

Second is the social part of ESG. The welfare policies and services applied by Li Auto to employees and customers should be analyzed. This may include employee welfare policies, diversity, tolerance, and customer satisfaction. Li Auto has created many related non-salary welfare systems for employees. To name a few examples, they pay pension insurance, medical insurance, social insurance and work injury insurance for employees. Provide free medical examinations before employment for all employees. Provide employees with corresponding mental health counseling to ensure their mental health. The company also has plenty care for women, such as launching women's activities or theme activities for female employees. Provide paid maternity and annual leave for both male and female employees. The Table 2 shown here is the Employee training per capita at Li Auto. The percentage of employee staining by gender showed male employee received the training by 94 percent. The female percentage is 3 percent higher than male training percentage. Even though the percentage of employees training by rank is a little unbalanced here, the middle management and general employee training hours are much higher than the senior management training hours.

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Table 2: Employee training per capita.

Indicators	Categories	Unit	Data in 2021
Employee trained	Total number of employee training	Person times	37,245
Percentage of employee straining by gender	Male	%	94
	Female	%	97
Percentage of employees training by rank	Senior management	%	100
	Middle management	%	99
	General employees	%	94
Total training hours of employees by gender	Male employees	Hours	176,808
	Female employees	Hours	42,075
Total hours of employees training by rank	Senior management	Hours	1,138
	Middle management	Hours	5,769
	General employees	Hours	211,976

For the diversity of the company, the company has a regulation called the Recruitment Management Policies and Li Auto Inc. This system is to ensure a fair, equitable and non-discriminatory working environment. Guarantee employees regardless of race, gender, nationality, and religion differences when applying for employment or working, and strictly prohibit the recruitment of child labor. The data shows that Li Auto's employees come from 14 countries and regions, and there are 29 different ethnic groups. In the Table 3 below, the number of male employees is much higher than female employees. The Table 3 also shows the number of special employees. There are 77 employees with disabilities and 607 minority employees. The policies and data graph indeed demonstrated Li Auto’s emphasis on diversity.

Table 3: Employee composition.

Indicators	Categories	Unit	Data in 2021
Total number of employees (100% full-time)	/	person	11,901
Number of employees by gender	Male	Person	9,622
	Female	person	2,279
Number and proportion of employees by rank and gender	Senior management	Person	26
	Proportion of male employees in senior management	%	88
	Proportion of female employees in senior management	%	12
	Middle management	Person	132
	Proportion of male employees in middle management	%	85
	Proportion of female employees in middle management	%	15
	Total number of general employees	Person	11,743
Number of special employees	Employees with disabilities	Person	77
	Minorities	Person	607

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The customer service is another element in social. Starting from the perspective of customer service, Li Auto has formed a comparably complete customer service system of understanding, experience, delivery and after-sales. In terms of customer experience, Li Auto will allow customers to sign a test drive waiver agreement and impart safety knowledge during the test drive. In addition to these, the Li Auto head office and regional head office will also send sales teams to verify the authenticity of retail store data and the accuracy of service links. In July 2021, at the first moment of the heavy rain disaster in Henan Province, Li Auto Headquarters organized many experts and rescue organizations to rush to the scene in order to implement the Henan User Care Plan. A total of 208 Li ONE search and rescue were completed in three days, and a comprehensive circuit inspection and repair of the car was provided. This shows Li Auto's implement of social aspect of ESG. Li Auto has also taken some measures in dealing with customer satisfaction. Li Auto uses the customer complaint process applied by its own company and gives back to users with high efficiency and high quality. The following Figure 1 is the customer complaint process and customer satisfaction management progress applied by the Li Auto company. In terms of user experience, Li Auto also launched an NPS survey in September 2021 to understand user satisfaction with the product. The author Lewis and Mehmet in 2020 wrote that the NPS measures individuals' attitudes toward a brand and individuals who gave the brand a higher score showed appreciation for it and indicated a very optimistic outlook [9]. This demonstrated the NPS survey has a positive effect on developing customer experience inside a company.

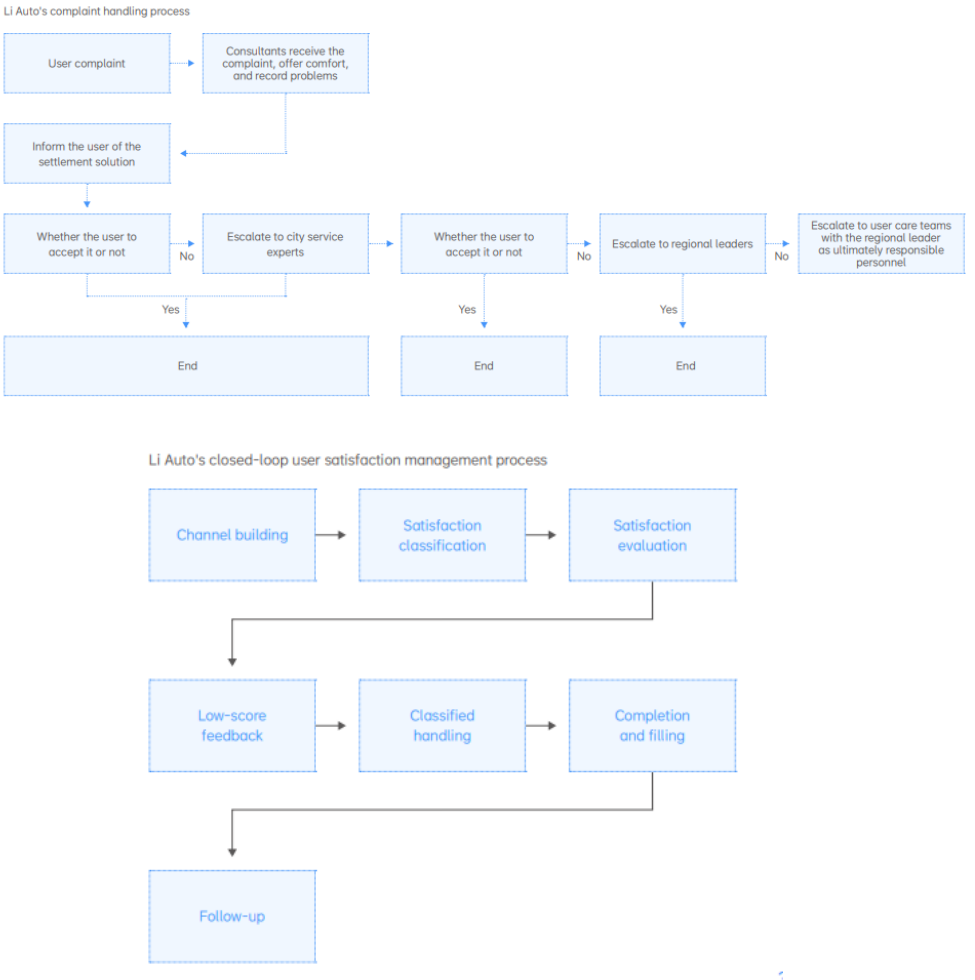

Figure 1: Complaint and satisfaction progress.

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2.3. Governance

Third, analyze the governance structure and policies of Li Auto, such as the composition of the board of directors, transparency and accountability system, anti-corruption policy. The board structure of Li Auto's directors is showed below in Figure 2.

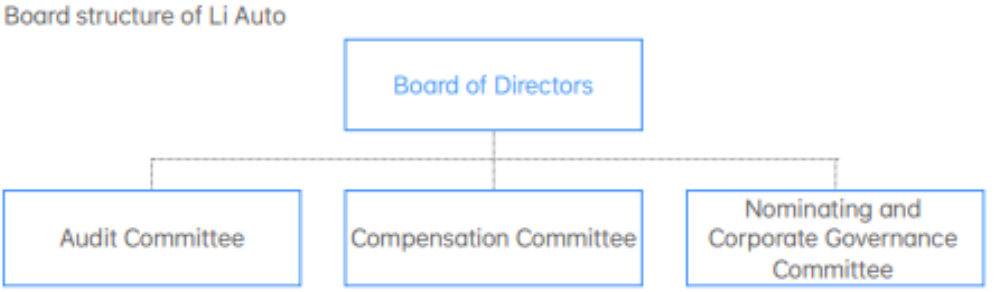

Figure 2: Governance.

After complying with the company law formulated by the state, as shown in Figure 3, Li Auto formulated an internal Li Automobile Risk Management System and established three lines of defense. These three lines of defense are managed by different functional departments to complete monitoring, identification and evaluation. The role of design risk management is that after a major risk occurs, the functional department can report the situation to the board of directors in a timely manner and take corresponding measures faster.

The ESG structure of Li Auto also can be found in 2021 report. The role of the board of directors is to be responsible for ESG strategies, review and approve ESG strategies, and disclose ESG-related information to the world. The role of the audit committee is to review ESG implementation and practices for compliance with national requirements and to monitor ESG performance. The ESG working group is responsible for setting ESG objectives, identifying risks and reporting to the Audit Committee. ESG related modules is responsible for all the ESG strategies that the working group was assigned.

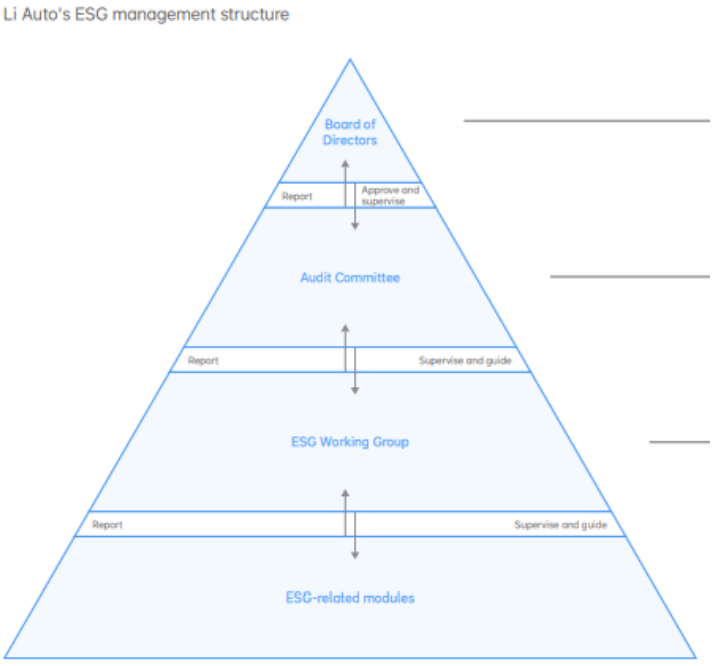

Figure 3: ESG management structure.

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Table 4: ESG risk-rating of Li Auto.

Company	ESG Risk Rating	Exposure	Management	Ranking (Automobile)
Li Auto	21.4	Medium	Strong	29 out of 91
BYD	24.2	Medium	Avg.	/
Tesla	25.2	Medium	Avg.	/

2.4. ESG Comparison with Tesla and BYD

The ESG risk rating comparison of renewable energy companies is displayed. Li Auto Inc is higher than both companies. Both companies are the leaders of the renewable energy car industry. From the Table 4, Li Auto has a 21.4 ESG risk rating. The rank in automobiles is 29 [10].

2.5. Comparison of 2021 and 2022 ESG Report

After demonstrating the data of 2021 and the comparison of BYD and Tesla's ESG risk rating, the 2021- and 2022-year ESG report need to be compared in Table 5. Because the indicator of environment, social, and governance has too much to make comparison, the data of environment is the only part that has compared. Through the data, the indicators of Methane and Non-hazardous waste are the only two decreased from 2021.

Table 5: 2021 and 2022 ESG Report Comparison.

Indicators		Unit	Data in 2022	Data in 2021
Emissions				
Atmospheric pollutant	VOC	Tonne	10.39	8.56
	Methane	Tonne	1.87	2.05
	Soot and dust	Tonne	2.27	1.79
Water pollutant	COD	Tonne	24.07	19.72
	Ammonia nitrogen	Tonne	1.01	0.86
	Total phosphorus	Tonne	0.07	0.06
Non-hazardous waste	Total Non-hazardous waste	tonne	22871.50	17131.49
	Non-hazardous waste intensity	Tonne/RMB 10,000	0.0051	0.0063
	Kitchen waste discharge	Tonne	639.47	320.50
	Domestic waste discharge	Tonne	2211.61	1334.00
	Recyclable waste discharge	Tonne	20020.42	15476.99
Hazardous waste	Total hazardous waste	Tonne	1414.72	668.35
	Hazardous waste intensity	Tonne/RMB 10,000	0.00031	0.00025
GHG emissions	Total GHG emissions	tCO2e	104733.87	54882.87
	GHG emission intensity	tCO2e/RMB 10,000	0.023	0.020
	Scope 1 GHG emissions	tCO2e	20548.98	11038.60
	Scope 2 GHG emissions	tCO2e	84184.89	43844.27
	Total GHG emissions (production and manufacturing)	tCO2e	75510.18	54882.87

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3. Conclusion

After analyzing the ESG status of Li Auto, the company has achieved very significant results in ESG and has matured in many fields. Li Auto reduces its own ESG risk rating through the development of ESG, thereby enhancing its corporate value. As a relatively young company that was established in 2015. It's a surprise that they could perform a such job in renewable energy car industry. In terms of ESG rankings, Li Auto is already higher than BYD and Tesla, which were established earlier. In this regard, Li Auto Company is very trustworthy for consumers and investors. There are also a lot of ESG data and ESG implementation measures for Li Auto. However, when comparing the gas emissions of Li Auto in 2021 and 2022, all indicators have increased. On the one hand, it shows that the company is developing, but on the other hand, it also causes more pollution to the environment than the previous year. Even so, factors affected by the epidemic in 2021 need to be taken into consideration. On social aspect, regarding employees, the company should recruit more female employees. It is worth noting that the ideal ratio of male to female employees is extremely uncoordinated. On the other hand, in China's high-pressure working environment, especially in private companies like Li Auto, there will be very unreasonable overtime working, which is a very influential aspect of ESG. In terms of ESG governance, the company may have concealed or undisclosed data and other information, because all the data are external data that have been reviewed and published by the board of directors. Not only that, it may also be some loophole. It is recommended that Li Auto should increase external monitoring and review of the company when improving ESG performance, expand the ESG team, recruit more female employees, disabilities and ethnic minorities, and more importantly, improve technology to make emissions less polluting.

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