

Creating User Value: A Study on the Marketing Effectiveness and Mechanism of ESG "Social Design" in New Energy Vehicles

Shuyan Zhao

School of Management, University of Bath, Bath, the United Kingdom

Abstract: Under the global "dual carbon" and sustainable concepts, the new energy vehicle industry is the core carrier for practicing ESG concepts, which is in line with the "14th Five Year Plan" for the new energy vehicle industry and the "core focus of green and low-carbon transformation". ESG "social design" is an innovative model that integrates sustainable concepts into product development, operation, and user interaction. Its core is to create diverse user value through environmental friendliness, social inclusiveness, and transparent governance. It has been included in the ESG strategy by Lantu and NIO. This article uses literature research, case analysis, and logical deduction methods to explore the connotation, path, marketing effectiveness, and mechanism of ESG "social design" based on Lantu's "2024 Sustainable Development Report" and NIO's "2024 ESG Practice White Paper". Research has found that it creates user value through environmental responsibility, social empowerment, and governance optimization. The Kearney report shows that it can increase user purchase intention by 15% -35% and price acceptance by 30% -80%. The marketing effect relies on brand trust, emotional resonance, and word-of-mouth amplification, confirming the China Association of Automobile Manufacturers' "72% user purchase reference brand ESG performance". Based on this, a marketing mechanism framework of "value recognition value transmission value enhancement" is constructed to provide reference for automotive companies to enhance competitiveness and promote sustainable development through ESG "social design", which is in line with the "ESG Practice Linked User Value" in the "Guidelines for Sustainable Information Disclosure of New Energy Vehicles".

Keywords: New energy vehicles; ESG; Social design; User value; Marketing mechanism.

1. Introduction

The global energy transition and climate change are driving the new energy vehicle industry into a stage of high-quality development. As the world's largest market for new energy vehicles, China's production and sales in 2024 have increased by over 30% year-on-year. By 2025, the total market value of related sectors will reach 20.37 trillion yuan, and the industry scale and technological innovation will be among the world's top.

At the policy level, in April 2024, the three major stock exchanges of Shanghai, Shenzhen, and North China jointly issued the "Guidelines for Sustainable Development Reports of Listed Companies", which clarifies that sample companies of the Shanghai Stock Exchange 180 and Shenzhen Stock Exchange 100 are required to disclose sustainable development reports, marking the standardization stage of ESG information disclosure in China. The current market competition has shifted from technology and price to value and responsibility. Simply upgrading product functions is difficult to meet consumer needs, and ESG "social design" has become the key to differentiated competition for enterprises.

The core of ESG "social design" is to embed environmental, social, and governance requirements into the entire product lifecycle and user interaction, achieving symbiosis between enterprises and households through perceptible value. According to Wande data, although the disclosure rate of ESG reports in the new energy vehicle industry has reached 77.97%, most companies only focus on compliance disclosure, and nearly 90% have not linked ESG performance with assessment, making it difficult to convert into user value.

According to a study by Kearney, over 70% of consumers are willing to change their habits for environmentally friendly products and pay a premium for ESG leading products, but companies lack systematic conversion design.

Based on this, this article focuses on three core issues: how can ESG "social design" create user value through multidimensional practice? What dimensions do marketing effects manifest in? How to construct the mechanism of action? Intended to fill the theoretical gap between ESG practices and user value creation, and provide reference for enterprises to optimize strategies and industry standards [1].

2. The Core Connotation and User Value Dimension of ESG "Social Design" In New Energy Vehicles

2.1. The Core Connotation of ESG "Social Design"

ESG "social design" is a systematic design that deeply integrates the three-dimensional concepts of environment, society, and governance into corporate strategy and operation, with "creating shared value" as the core. Its essence is to transform the sustainability of corporate behavior into tangible value that users can perceive. According to the "Guidelines for Sustainable Information Disclosure of New Energy Vehicle Enterprises", ESG "social design" needs to follow core principles such as importance, reliability, and integrity, covering the entire chain of research and development, manufacturing, and sales. Unlike traditional CSR (Corporate Social Responsibility), ESG "social design" emphasizes the core participation of users, combines user needs with sustainable development goals, and achieves a

synergistic upgrade of corporate responsibility and user value.

The environmental dimension focuses on low-carbon design throughout the product lifecycle, including core aspects such as green production, energy conservation, and waste recycling; The social dimension focuses on balancing the values of stakeholders, covering topics such as user safety, employee rights, and community building; The governance dimension focuses on transparency and standardization, and ensures the implementation of ESG practices through a sound governance framework. The three are interrelated and organically unified, together forming the core framework of ESG "social design" for new energy vehicles [2].

2.2. The Three Core Dimensions of User Value

ESG "social design" presents multiple dimensions of value created for users, and all have clear practical support. In terms of environmental value, users can achieve their personal environmental protection demands by choosing low-carbon travel tools. For example, the NIO ET5 series optimizes the wind resistance coefficient to below 0.23Cd, effectively reducing carbon emissions from bicycles. The social value is reflected in product safety assurance and opportunities to participate in public welfare. Lantu Automobile's comprehensive quality management system and NIO's "driving as a public welfare" user interaction model meet the dual needs of users for safety and social identity.

Economic value is achieved through long-term cost reduction, such as Lantu's self built photovoltaic power generation system empowering the supercharging network and reducing user charging costs; NIO's silicon carbide modules have increased the electric drive efficiency to over 95%, significantly extending the range and reducing energy replenishment expenses. Kearney's "2024 Global Sustainable Consumption Trends Report" confirms that these value dimensions work together to increase consumer price acceptance of ESG leading products by 30% -80%, resulting in a significant user value premium.

3. Theoretical Support and Logical Framework for ESG "Social Design" Marketing

3.1. Core Theoretical Basis

The marketing practice of ESG "social design" is supported by three major theories. The stakeholder theory suggests that companies need to take into account the interests of consumers, employees, communities, and other stakeholders. By building an employee welfare system that covers paid exam leave and health protection, as well as providing caring exam assistance community services for four consecutive years, Lantu Auto aims to enhance brand recognition by meeting the value of stakeholders. The theory of sustainable marketing emphasizes that companies should meet current needs without harming the interests of future generations. The green production and battery recycling practices of new energy vehicles are its concrete manifestation, such as BYD's blade battery recycling system achieving over 95% material reuse.

The signal transmission theory explains the marketing logic of ESG "social design": companies communicate responsible brand signals to consumers by publicly disclosing their ESG practices. As the carbon footprint data disclosed in Geely Automobile's 2021 ESG report aligns with the SBTi standard, as the first domestic passenger car company to

commit to meeting this standard, it provides users with verifiable environmental value signals and reduces decision uncertainty. These theories together form the theoretical foundation for ESG "social design" to create user value.

3.2. Construction of Marketing Logic Framework

The marketing logic of ESG "social design" follows the core path of "demand identification value creation effect transformation". In the demand identification stage, companies grasp consumers' ESG demands through market research. According to a study conducted by Kearney on 1200 respondents from 3 countries and 5 industries, product related attributes account for 60% of the ESG attributes that consumers are most concerned about, such as environmentally friendly materials and data security. In the value creation stage, companies integrate ESG concepts into product design and service scenarios, such as the use of 28% bio based polyamide materials in the interior of NIO's new models. This material is derived from castor oil and can be completely degraded, which not only meets environmental protection needs but also enhances product experience.

In the stage of effect conversion, marketing value is realized through user perception and word-of-mouth communication. According to industry research, such practices can increase user recommendation rates by more than 20% [3]. This framework emphasizes the direct correlation between ESG practices and user value, avoiding the problem of "responsibility and value disconnect" in traditional CSR marketing, and creating a positive cycle between corporate sustainable development goals and user needs.

4. Practice Path and Typical Cases of ESG "Social Design" for New Energy Vehicles

The practice of ESG "social design" revolves around the three dimensions of environment, society, and governance, and the measures are all based on publicly available sustainable development data from enterprises, which are authentic and traceable. At the level of environmental responsibility, top enterprises have formed a low-carbon system throughout the entire chain: Lantu's "2024 Sustainable Development Report" mentions that environmental responsibility runs through the entire process of "research and development, manufacturing, and sales". The factory adopts intelligent lighting and central air conditioning intelligent control system, which improves energy efficiency by 18%. The self built supercharging network partially uses electricity from photovoltaic power generation in the factory area, which complies with the "Green Development Guidelines for New Energy Vehicle Industry"; NIO's "2024 ESG Practice White Paper" reveals that the wind resistance coefficient of the 2025 ET5 series has been reduced to 0.208Cd, reducing electricity consumption by 0.8kWh per 100 kilometers. The cobalt content of the high nickel low cobalt battery, which cooperates with CATL, is less than 5%. The technical parameters are publicly disclosed in CATL's official documents to reduce the pressure of rare metal mining. These practices are guided by users' low-carbon needs and allow consumers to intuitively perceive the value of environmental protection.

Social responsibility focuses on value co creation, and all

cases are publicly supported. At the user level, NIO's official website announced in 2024 that the car system Banyan 3.0 supports barrier free voice interaction, benefiting special groups; Lantu has established a quality management system in accordance with the "Regulations on the Access Management of New Energy Vehicle Production Enterprises and Products", and the pass rate of the national municipal supervision bureau's sampling inspection will be 100% in 2024. At the employee level, Lantu's "2024 Sustainable Development Report" proposes a comprehensive welfare system, including health management and vocational training; The digital transformation report of NIO's Hefei manufacturing base shows that the transformation of flexible production lines has reduced labor intensity by 40% and increased efficiency by 25%. At the community level, the NIO App's public welfare section shows that "driving is public welfare" has been implemented, and car owners can donate mileage to exchange for public welfare funds; Lantu's 2024 Social Responsibility Report reveals community projects, including the renovation of charging piles in old residential areas, and the multi-dimensional construction of brand and user emotional connections.

The governance dimension is centered on transparency and standardization, with mechanisms and data sourced from compliance documents: Lantu follows the "Company Law" and "Guidelines for ESG Work of Central Enterprises", and discloses a three-tier decision-making mechanism of "Board of Directors ESG Committee Executive Department" in the "2024 Sustainable Development Report". The report has been released for two consecutive years, covering 12 core indicators and complying with the exchange's guidelines; NIO's "2024 ESG Practice White Paper" explains the establishment of a Sustainable Development Committee, the establishment of a full chain ESG indicator system, carbon footprint tracking in compliance with ISO 14064 standards, and a 92% domestication rate for key components. The data will be publicly disclosed at the supplier conference. Practice of governance transparency, such as patent disclosure and third-party verification of ESG data, enhances user trust and provides support for marketing conversion [4].

5. Evaluation of Marketing Effectiveness of ESG "Social Design": Based on User Value Perspective

ESG "social design" significantly enhances brand favorability and trust through substantive practice. According to a survey by Xinhua News Agency, Lantu Automobile has been awarded the "2025 Corporate ESG Practice Case" for its systematic ESG practices, and its brand reputation ranks among the top among state-owned new energy vehicle companies; MSCI rating data shows that the proportion of Chinese listed new energy vehicle companies with A-level or above ratings reaches 58.33%, far exceeding the average level of 19% for listed companies. The rating advantage directly translates into user trust. Kearney's research confirms that consumers' brand favorability towards ESG leading companies has increased by over 40%. The core is that ESG practices meet users' psychological demands for "responsible brands" and form emotional identification beyond product functionality.

ESG "social design" has clear quantitative support for strengthening user purchase intention and loyalty. Kearney's

research in the United States, United Kingdom, and Australia shows that at the same price, consumers' willingness to purchase ESG leading products increases by 15% -35%. If the product has significant ESG advantages, consumers are willing to pay a premium of 30% -80%; NIO's 2025 ET5 series, upgraded with ESG related technology, saw a 68% year-on-year increase in sales after its launch, confirming users' preference for sustainable products. In terms of loyalty, the emotional connection built by ESG practices promotes the increase of repurchase rate. NIO transforms users into sustainable concept disseminators through user public welfare participation and ESG achievement sharing, with a repurchase rate 2.3 times higher than the industry average, forming a stable user ecosystem [5].

ESG "social design" has become the core barrier for differentiated competition among enterprises. Against the backdrop of increasing homogenization in the new energy vehicle market, distinctive ESG practices such as Lantu's green production system and NIO's user welfare ecology have formed competitive advantages that are difficult to replicate. Data from 2025 shows that the market share growth rate of top ESG leading car companies is 7.2 percentage points higher than the industry average, highlighting their market value. In addition, ESG practices also help expand international markets. After the implementation of the EU Carbon Border Adjustment Mechanism (CBAM), new energy vehicle companies with a complete carbon footprint tracing system have taken the initiative in export trade, further expanding their market space.

6. Construction of Marketing Mechanism for Creating User Value Through ESG "Social Design"

6.1. Value Recognition Mechanism: Accurately Anchoring User ESG Needs

Value recognition is the starting point of marketing mechanisms, and the core lies in accurately grasping the priority of users' ESG demands. According to the "2024 New Energy Vehicle User Demand Survey" conducted by the China Association of Automobile Manufacturers, there are significant differences in consumers' attention to ESG attributes. Low carbon attributes in the environmental dimension, product safety and data privacy in the social dimension, and information transparency in the governance dimension are the three core points that users are most concerned about. New energy vehicle companies establish ESG demand profiles through user research, big data analysis, and other methods. NIO collects demands through the NIO App's publicly available user feedback channels, clarifying that the use of environmentally friendly materials and participation in public welfare are core needs of high potential users, and then optimizing product design and interactive scenarios accordingly; Lantu Automobile, based on the concerns of the central enterprise user group about compliance and safety, disclosed in the "2024 Sustainable Development Report" that it will strengthen low-carbon practices and product safety guarantees at the production end, and achieve precise matching between demand and supply.

6.2. Value Transmission Mechanism: Scenario Based Presentation and Transparent Disclosure

The core of the value transfer mechanism is to transform abstract ESG practices into tangible value that users can perceive [6]. In terms of scenario based presentation, companies integrate ESG values through product usage scenarios, such as the photovoltaic supercharging station project publicly announced by Lantu, where users can intuitively perceive the use of clean energy while charging; The public welfare donation function in NIO's in car system allows users to participate in public welfare while driving and directly experience ESG value. Transparent disclosure enhances the credibility of value. Through ESG reports, product carbon footprint labels, and other public practices, companies can embed carbon footprint data in their official product manuals, allowing users to clearly understand the vehicle's full lifecycle emissions; Lantu has released sustainable development reports for two consecutive years, detailing key information such as energy consumption and employee rights, in compliance with the reliability and verifiability requirements of the "Guidelines for Sustainable Information Disclosure of New Energy Vehicle Enterprises".

Enterprises also encourage user participation by building ESG interactive platforms, such as the NIO Charity Donation Project and the Lantu Community Co construction Activity, transforming users from value receivers to creators and significantly enhancing user stickiness. According to the "2024 New Energy Vehicle User Behavior Report" by the China Association of Automobile Manufacturers, ESG related content has a prominent proportion in user social sharing, and its credibility is much higher than that of official corporate promotion, becoming a key channel for marketing effect diffusion.

7. Conclusion

This article focuses on the user value creation goal of ESG "social design" for new energy vehicles, exploring its marketing effectiveness and mechanism. The core conclusion is as follows: ESG "social design" creates diverse user values in the environment, society, and economy through a three-dimensional systematic practice of environment, society, and governance. Essentially, it is the deep integration of corporate sustainable strategies and user needs; The marketing effect is reflected in the improvement of brand favorability, strengthened purchase intention, and enhanced market competitiveness, supported by empirical data from institutions such as Kearney. For example, consumers' willingness to pay a premium for ESG leading products reaches 30% -80%, and the market share growth rate of top

enterprises is higher than the industry average; The internal marketing mechanism is a closed loop of "value recognition value transmission value reinforcement", which achieves the transformation of ESG practices into marketing value through precise anchoring of needs, scenario based transmission, and user participation.

There is currently an imbalance in ESG practices in the industry, and most small and medium-sized car companies have not formed a systematic "social design" system. The ESG credibility and quality need to be improved. Future enterprises should optimize from three aspects: first, deepen technological innovation and integrate ESG concepts into the entire product lifecycle, such as increasing the use of environmentally friendly materials; The second is to improve the information disclosure system, follow the principle of importance, and enhance the transparency of ESG practices; The third is to strengthen user participation, build interactive platforms, and enable users to deeply participate in ESG value creation.

The theoretical contribution of this study is to construct a user value marketing mechanism framework for ESG "social design" and enrich the application of sustainable marketing theory; The practical value lies in providing actionable ESG marketing pathways to assist enterprises in compliance and competition. In the future, we can explore the differences in ESG needs among segmented market users and the application of digital technology, providing more targeted theoretical support.

References

- [1] Crifo P, Forget V D, Teyssier S. The price of environmental, social and governance practice disclosure: An experiment with professional private equity investors [J]. *Journal of Corporate Finance*, 2015, 30: 168-194.
- [2] Ray S, Kumar D, Roy S, et al. ESG and firm value linkage: A case study in the automotive industry [J]. *Indatu Journal of Management and Accounting*, 2024, 2(1): 19-28.
- [3] Lee M T, Raschke R L, Krishen A S. Signaling green! firm ESG signals in an interconnected environment that promote brand valuation [J]. *Journal of Business Research*, 2022, 138: 1-11.
- [4] Lyu S O, Kim C. What Drives Consumer Willingness to Pay for Environmental, Social, and Governance Initiatives? A Choice Experiment [J]. *Corporate Social Responsibility and Environmental Management*, 2025, 32(3): 3454-3470.
- [5] Bian X, Panyagometh A. The influence of perceived ESG and policy incentives on consumers' intention to purchase new energy vehicles: Empirical evidence from China [J]. *Innov. Mark*, 2023, 19(4): 187-198.
- [6] Vlad V C, Luca F A. Esg Marketing Model: A New Paradigm To Understand The Impact [J]. *SEA-Practical Application of Science*, 2020, 22: 85-89.