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Discussion on the Impact of the Green Innovation Strategy on Corporate Financial Performance in The Automotive Sector

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Abstract

The editorial aims to enhance patent application practice among academician by illustrating content structure based on a published Indian patent with application no. 202421099022 dated on 17/01/2025 on name of Dr. Krunal Soni, Dr. Anjay Kumar Mishra, Dr. Shilpy Jindal, Dr. Balaji Survase, Mr.Shruti Balaji Survase, Mr. Shreyash Balaji Survase, Dr. V.Kannan, Dr. Sivaranjanee R, Dr. Jayashree Patil Dake, Dr. K. Karpagambigai, Ms. M. Sindhu and Mrs. D. Divya could be verified from https://iprsearch.ipindia.gov.in/PublicSearch Status titled Discussion on the Impact of the Green Innovation Strategy on Corporate Financial performance in the Automotive Sector The Green Innovation Strategy can improve corporate financial performance in the automotive industry via cost savings, new revenue streams, stakeholder engagement, and strategic partnerships. Implementing sustainable initiatives and investing in futuristic technologies positively impact both corporate financial and environmental health.

Keywords: green innovation strategy, corporate financial, environmental health, automotive industry, futuristic

Scientific Involvement Evidence from Publication

The scientific involvement and expertise in the field of green development, particularly in the context of urban planning, construction, and sustainable practices in Nepal demonstrated his involvement in the area. His research emphasizes the development and improvement of building byelaws to promote more sustainable urban growth, addressing issues like environmental degradation, overcrowding, and poor ventilation in buildings (Mishra,2019; Mishra & Aithal, 2021; Mishra & Rai, 2017; Mishra & Joshi, 2021).

Furthermore, Mishra has worked on the intersection of green financing and sustainable development, highlighting the necessity of financial mechanisms to support green initiatives in Nepal. He underlines the importance of linking financial resources to environmentally sustainable projects, encouraging investment in projects that reduce environmental impact (Mishra & Aithal, 2022a; Mishra & Aithal, 2022b; Mishra & Aithal, 2023; Mishra, 2025; Mishra et al., 2022)

Additionally, Mishra's work extends to novel applications such as Industry 4.0 for virtual farming, which can contribute to sustainable agricultural practices and reduce environmental footprints in Nepal by leveraging technological advancements for green industrial operations.

These contributions position him as a key academic and researcher advancing the agenda of green development in Nepal, combining regulatory, financial, technological, and practical construction approaches.

Background problem for the Innovation

The automotive industry is a dynamic, complex, and influential sector in the global economy. This sector covers different sub-industries within it, such as people/businesses that manufacture vehicles, vehicle component and parts manufacturers, design and R&D firms, and service companies such as those that perform vehicle maintenance and repair. Though the sector has witnessed quite a few technological developments and advancements over the years, it still needs to overcome numerous technical background problems that still need to overcome countless technical background problems that remain a big challenge for the industry. Emission control is one of the key technical issues in the automotive industry. Regulators are becoming stricter about enforcement of emissions standards for vehicles, which has become a growing concern with climate change and air pollution. Manufacturers face demands to lower the emissions of their cars and to create cleaner, more efficient engines. As a result, new technologies, including electric and hybrid vehicles and alternative fuels, are being adopted. Yet, these technologies also pose their technical hurdles, including a range of electric cars and the same infrastructure for alternative fuel options. A further challenge to the automotive industry is the growing complexity of vehicle systems. Modern cars have numerous electronic systems, including GPS, infotainment, safety systems, etc. Modern systems utilize complex hardware and software and are thus inherently more challenging to diagnose and repair. as automobiles and motorcycles improve their connectivity, cyber attacks and security breaches are becoming serious threats that both manufacturers and consumers must deal with. This challenge is compounded by the fast-paced evolution of technology in the car industry. When new technologies are introduced, vehicles themselves become more developed, and the manufacturing processes become more complicated. Manufacturers must continually update equipment and methods, which is expensive and time–consuming. due to the need for manufacturers to balance innovation with cost-efficiency, it can take time to keep up with shifting consumer preferences and demand. There are a few technical background problems that concern the automotive sector that shape and transform the industry in various ways. Some examples are emissions control, the complexity of vehicles, and technological advancements; manufacturers have no other option but to change them or come up with the latest solutions in order to remain competitive in this market. With the rapid pace of technological advancements, it is expected that new issues will arise in the future that will require the automotive industry to adapt in order to be sustainable and prosperous.

Innovation Model

In recent years, the term “green innovation” has achieved prominence, as environmental sustainability has become a major concern and businesses are expected to play a role in stopping climate change. The implications of this are that it has created a pattern for new technologies to evolve in a specific way and it explores multi-dimensional green innovation by balancing factors of moderation, corporate financing, and gender diversity. The first component of this model is the Green Innovation Strategy. It has been about creating and executing a decentralized plan over time to infuse sustainability into everything we do. This may involve utilizing renewable energy sources, minimizing waste & emissions, and utilizing sustainable materials & processes. For successful integration of the green innovation strategy within the broader company strategy, clearly defining targets and measurable metrics to track the company’s progress will result in an aligned strategic process through the reduction of eco-impact. Doing so will help sustainability become a foundational principle of the company rather than an afterthought. Moderation the second

building block of the model – is the moderation that is necessary in the pursuit of green innovation. That said, there is increasing pressure to adopt more sustainable methods, but businesses also have to think about the necessary changes and potential costs involved. The role of moderation is essential to decide what answered customers and business needs can be done using green innovation, considering the possible danger and mitigation costs. Fig 1: Shows the Innovation Model.

This may include developing extensive research, analysing possible alternatives and their influence on the business, and establishing practical goals and deadlines for execution. Another critical component of the deep technology innovation model is corporate financing. This stunts the growth of green innovation as it requires an abundant amount of money to integrate that system. Hence, alternative means of financing green projects must be considered, such as sustainable investment, green bonds, and public-private partnerships. Corporate financing is important in saving green innovation from environmental benefits, and corporate finance is a friend of the ecological environment. Last but not least, gender diversity is a key ingredient in any model of innovation. Having women in the team has been correlated with a company's performance in innovation and different types of thinking which is imperative to move towards sustainable practices. Diverse representation in decision-making can yield more creative and diverse solutions that address a variety of stakeholders and their needs. Promoting gender diversity and inclusion is also important for sustainability, as it helps to address social and economic inequalities, leading to more forward-thinking inclusive, and equitable societies.

Discussion

The Green Innovation Strategy is a concept used by corporations to reduce environmental degradation by making the company more green. This strategy encourages the implementation of sustainable practices, technologies, and products to minimize carbon footprints, minimize waste generation, and preserve natural resources. In the automotive industry, where the problem with carbon emissions is a big deal, adaptation of green innovation strategies could be very helpful in protecting the environment and improving corporate financial performance. This analysis deals with the correlation between the Green Innovation Strategy and corporate financial performance in the automotive sector.

It will do so by studying the dominant features of the Green Innovation Strategy and discovering how those features will influence financial performance as well. The adoption of sustainable technologies is a central component of the Green Innovation Strategy. For example, in the automotive sector, it would mean investing in the research & development and production of electric & hybrid vehicles. Switching to these alternative fuel vehicles helps companies wean themselves off expensive, often volatile fossil fuels and can help reduce their global warming emissions. Such transitions can save companies costs through fuel and maintenance, which in turn enhances corporate performance. The second pillar in these Green Innovation Strategy priorities is for sustainability to be infused throughout the entire value chain. This encompasses everything from producing environmentally friendly products to sourcing sustainable materials to embedding sustainable practices in the manufacturing facilities. Working on ensuring that every aspect of your value chain is sustainable will help improve efficiency, costs, and financial performance overall. The Green Innovation Strategy not only helps lower costs but also offers new revenue opportunities for companies in the automotive sector. The increasing demand for sustainable products allows companies to benefit from these strategies; they can provide innovative products that are also environmentally friendly and expand their customer bases. This, in turn, can lead to more sales, which ultimately drives better financial performance. The Green Innovation Strategy also highlights the need to work closely with customers and investors as

part of an open multi- stakeholder approach. Companies can strengthen their brand reputation and appeal to socially responsible investors by showcasing their sustainability efforts. These benefits can lead to reduced cost of capital and enhanced availability of financing, thereby enhancing financial performance. This can include partnerships with research institutions and other companies to develop cutting-edge technologies or business models that minimize environmental impact. This allows for significant cost savings and added efficiencies, resulting in a better bottom line. Adoption of the Green Innovation Strategy incurs up-front costs and is, therefore, initially more expensive for businesses, so it is important to emphasize it. However, in the long term, they can lead to meaningful cost savings and better financial results. By lobbying for the Green Innovation Strategy, companies can benefit from global environmental changes as companies that are more environmentally sustainable can be eligible for several government grants and tax breaks. The Green Innovation Strategy can improve corporate financial performance in the automotive industry via cost savings, new revenue streams, stakeholder engagement, and strategic partnerships. Implementing sustainable initiatives and investing in futuristic technologies positively impact both corporate financial and environmental health. It is a well-known fact that as we gradually transition into the age of sustainability, organizations implementing the Green Innovation Strategy will have a competitive edge in the market and pave the way for a better future.

Claims

Claim 1: It will also explain how to introduce a green innovation strategy in the automotive field to enhance corporate financial performance.

Claim 2: This paper develops a model for assessing the impact of the Green Innovation Strategy on Corporate Financial Performance in the automotive industry.

Claim 3: A computerized tool for automotive data analysis and Green Innovation Strategy direction opportunities in order to manage financial engagement.

Claim 4: Identifying and implementing sustainable automotive practices to improve corporate financial performance: a Framework for a Green Innovation Strategy.

Claim 5: The last approach provides a mechanism for assessing and calculating financial profitability from the application of the Green Innovation Strategy to the automotive sector.

Claim 6: A model to appraise the cost-effective analysis of the Green Innovation Strategy in the automobile sector.

Claim 7: Integrating Industries Society, Environment into Financial Performance Measurement in Automotive with Green Innovation Strategy

Claim 8: A tool that could analyse the component effectiveness of different Green Innovation Strategies in the automotive sector on organizational financial performance

Claim 9: A framework combining Green Innovation Strategy with existing business strategies: benefiting automotive sector financial performance.

Claim 10: A model of predicting and forecasting the financial impact of Green Innovation Strategy on the automotive industry.

Conclusion

The automotive industry is one of the most essential polluting industries in the world, as it is responsible for a large percentage of greenhouse gas emissions. Green innovation means creating green products, processes, and technologies. Researchers and industry experts have debated the influence of green innovation on corporate financial performance in the automotive sector.

While some believe that green innovation can only lead to positive economic performance, they point as evidence at businesses that have decreased their carbon footprint and also cut costs through eco-friendly practices. Research also indicated a rising demand for sustainable vehicles, and it creates a potential upside for innovators. There are at least counterarguments on the economic growth relevance of green innovation in the auto sector. Critics also suggest that the upfront investment needed for establishing sustainable practices and technologies can adversely affect a firm's financial performance in the short run. Consumer adoption and acceptance of green vehicles also have their own set of challenges that could impact sales and profitability. The story of green innovation strategy and corporate financial performance in the automotive sector is multifaceted. It should be seen in more qualitative and human terms, one that takes into account factors like the type of innovation introduced, consumer sentiment and behavior, and market conditions, among others. Companies must make a clear assessment of the potential financial benefits of these strategies and the accompanying risks, as well as a long-term plan that aligns with their business goals and values. Research and continued conversation have provided companies with the necessary insight to find a directive, implement meaningful policy, and steer the industry toward a more sustainable future.

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