Global Business Strategy in Electric Car Vehicle Industry: A Comparative Study between Tesla Inc. vs Rivian LLC

Dian Ahmad Pratama Bunayah Sudian
Master Program of Industrial Engineering Department, Faculty of Engineering
Universitas Sebelas Maret Surakarta, Indonesia
dianahmads2@student.uns.ac.id

Wahyudi Sutopo
University Centre of Excellence for Electrical Energy Storage Technology
Research Group Industrial Engineering and Techno-Economic, Industrial Engineering Department, Faculty of Engineering,
Universitas Sebelas Maret, Jl. Ir. Sutami, 36 A, Surakarta, Indonesia
wahyudisutopo@staff.uns.ac.id

Muhammad Hisjam
Laboratory of Logistics System and Business, Department of Industrial Engineering, Faculty of Engineering, Universitas Sebelas Maret, Surakarta, Indonesia
hisjam@staff.uns.ac.id

Abstract

The automotive industry is the most important, the largest manufacturing sector, and had a great impact on the economy. Recently, there is an innovation in this sector called electric vehicles. This research will discuss global business strategy based on a comparative study between the two biggest companies in the world in this sector. The companies studied were Tesla Inc. and Rivian LLC. This paper uses the strategic management concept as a framework to analyze the formulation of their global business strategy. This research highlights the resources, capabilities, and competitive advantage of both companies. Qualitative data had been used by obtaining secondary data from the internet and previous research. The result is Tesla Inc.'s focus on radical innovation and producing premium electric cars to able to provide affordable electric cars. However, Rivian LLC targets offroad "adventure" vehicles and chassis technology named "skateboard". The lesson learned from this study is expected to be useful for managers of companies that want to develop business in the electric vehicle area by analyzing both companies' global strategies in the global market.

Keywords
Electric car vehicle, Comparative analysis, Global business strategy

1. Introduction

The automotive industry is one of the most important (Smerichevskyi et al. 2018) industrial sectors; it has a great impact on the economic (Mohiuddin et al. 2017, Lee and Govindan 2014), and has the largest manufacturing sectors (Mathivathanan et al. 2018). This industry is the key for daily activity and economic activity around the globe (Xia et al. 2015). There are approximately 1.42 billion vehicles available around the globe (Chesterton 2018).

Recently there is much innovation in this sector called electric vehicle, where it is a key technology in the automotive industry to contribute sustainability by lowering gas emission (Gunther et al. 2014). The electric vehicle first comes up in the 19th century then the petrol engine took the market in the early 20th century. But now it's a different story, an electric vehicle much better and affordable. It is exciting to see the battle between electric versus petrol vehicles in the future. It will surely push technology innovation at the commercial level.

This electric vehicle automotive trend was popular after the new company Tesla Motors come to market. It was the only vehicle manufacturer selling zero-emission sports cars (Mangram 2012). But now, the industry is evolving, more company join the to the market, one of the companies named Rivian is the second-largest electric vehicle company next to Tesla Motors (Energy startups 2021). Both of company located in the USA. The purpose of this paper is to look at the two companies' business strategies in obtaining an above-average return.

Tesla was founded in 2003. This company's mission is to design and manufacture all-electric vehicle automobiles. The early product from Tesla Motors, Roadster, and Model S build enthusiasm for people of pure electric vehicles (Urban 2015). Tesla Motors is different from other automotive manufacturers, it is pursuing radical technology and business models (Bohnsack et al. 2014, Hill and Rothaermel 2003). Tesla also stands out by providing radical innovation solutions (Markides 2006).

Rivian is one of the biggest rivals of Tesla. It was founded by Robert “RJ” Scaringe in 2009. It was named Avera Automotive but then changed to Rivian. This company starts to get investment and immediately focus on the electric vehicle. Rivian is backed by several huge companies, Big investment rounds from huge companies like T. Rowe Price Associates Inc, Amazon, Ford Motor Company, and Cox Automotive. Lately, Rivian has released two electric car vehicle products named R1T and R1S SUV. It also releases a patented chassis design called Skateboard. As 2020 company had four locations, Irvine - California, Plymouth – Michigan, Palo Alto – California, and Normal – Illinois.

These two vehicle manufacturer is considered a success in the global market. They use their business strategy to compete in the global market to get an above-average return. To understand their business strategy we need to capture their strategic formulation. This paper aims to capture their global strategy to give insight for vehicle manufacturer managers or researchers. With this insight, managers can pick or develop the best method to enter the global market. And researchers can create a university’s spin-offs (Iqbal et al. 2018), or technology incubation (Wicaksana et al. 2014) to accelerate the electric vehicle industry.

2. Literature Review

2.1 Comparative Study

Global business strategy is essential for an organization to achieve its international expansion objective. It provides companies with benefits such as economic of scale, brand recognition, and lower cost as well as the emergence of a new market (Lynch, 2018). Global business strategy can be achieved by arranging a strategic management concept. To determine global business strategy, the understanding competitor is a must. One way to develop a global management concept is to conduct a comparative study. A comparative study between two companies had been done by several researchers. Aqidawati et al (2020) use comparative analysis of battery swap technology between Gogoro and Kymco. The result of the study is to give insight into resources, capabilities, and above-average results for both companies and lessons learned for companies in Indonesia to commercialize their innovation. Khofiyah et al. (2020) compare two drones company. DJI and Parrot to analyze their global business strategy. The result of this research is that DJI focus on commercial innovation and Parrot focuses on the latest innovation. Istiqomah et al. (2020) conduct a comparative study for the commercialization of an e-motor cycle technology from two companies Gogoro and Bajaj. The study compares products and markets from both companies to identify each competitive advantage and strategic formulation. The study also provides a SWOT analysis for Indonesia as one of the new players in making electric vehicles.

Shahri and Sarvestani (2020) conducted a comparative study to analyze business model innovations a turnaround strategy by comparing four case study namely firm A, firm B, firm C and Firm D in different businesses through semistructured interviews with an expert. Firm A is an automotive company, Firm B is an E-business platform company, Firm C is a Telecommunication company, and Firm D is a Petrochemical Company. One of the challenges any firm experiences is a decline in its life cycle. All firms should implement their turnaround strategies by using business model innovation with different weights on different dimensions of the business model.

2.2 Strategic Management Concept

The strategic management concept consists of two actions, strategic formulation, and strategic implementation. If the strategy is well formulated the outcome will be in the form of strategic competitiveness called above-average returns. This strategic management can give feedback for the initial stages of the company (Hitt et al. 2007). The company can use two factors in developing strategic management. First, a company can analyze internal factors with

three main components namely resource, capabilities, and core competencies. Understanding what company capabilities are is important to prosper amid global uncertainty (Zamborsky 2020). By understanding internal factors, the company will be able to identify its strength and limitation to determine what to do and not to do, so a company can perform a strategy to maximize its core competencies to gain competitive advantage (Lynch 2006, Lynch 2018). Then, the company should employ external factor analysis with three main components namely general environment, industrial environment, and competitor environment. By understanding external factors, the company will be able to identify opportunities and threats, so the company can exploit the opportunity and avoid threats as soon as possible thus business could perform well (Lynch, 2006, Lynch, 2018).

3. Method

To achieve data for this study qualitative method has been conducted. The qualitative method is used when the findings cannot be achieved through statistical data (Hamelink and Opdenakker 2019). This study employs the strategic management concept. There are 5 stages approach to analyzing company competitiveness strategies. First is resources, to identify companies' strengths and weaknesses. Second is the capability to understand companies' capability among others. The third is a competitive advantage to understand the ability of the company to outperform its rivals. Fourth is to locate an attractive industry for both companies and lastly, is to analyze what is the strategic action taken to earn above-average returns by both companies. The framework can be seen in Figure 1.

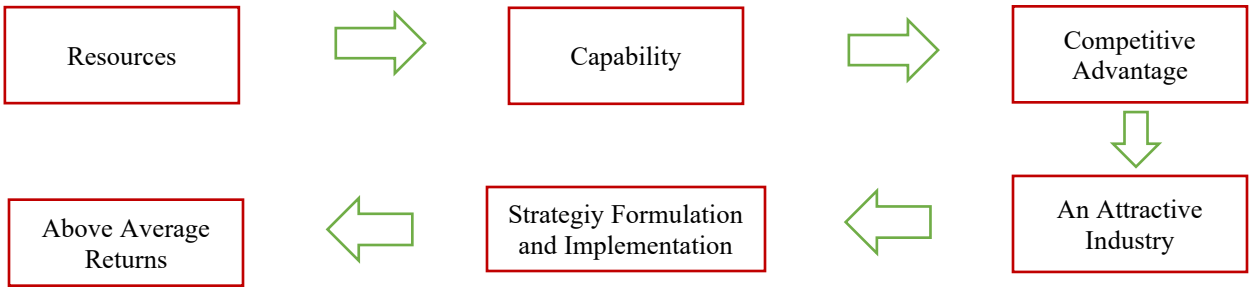


Figure 1 Comparative Study Framework

4. Data Collection

This study used the Google search engine and type keywords "Tesla Motors" and "Rivian" to collect data. Based on search results on Google search, the "Tesla Motors" keyword shows 168 million results and "Rivian" shows 6.92 million results. And then we choose relevant literature based on the result of this study. And then we summarize the collected data to compare both companies. The results are shown in Table 1.

Table 1 Company Comparison

Aspect	**Tesla**	**Rivian**
Global strategy	Build and high-end sports car and use the profit to build an affordable car Innovative battery pack high-performance charging station (Chen 2018) (Tesla n.d)	Make outdoor electric vehicle license their chassis technology named "skateboard"
Above-average return	Sales and technology use	Sales and technology use
Company form	Incorporation (Inc)	Private (LLC)
Urgency	Can be used for Indonesia entrepreneurs to make global strategy in the electric vehicles sector	
Formulation	Using 6 steps from (Aqidawati et al 2020)	
State of the art	No previous research that compares two Evs company especially between Tesla and Rivian	

Aspect	Tesla	Rivian
Comparative advantage	Pioneer and the biggest company in the electric vehicle sector	The challenger of Tesla Motors with the second biggest company specializes in outdoor Evs and its skateboard chassis innovation. Backed by Ford and Amazon

Table 2 Strategic Comparison

Aspect	Tesla	Rivian
Resource	Employees: 70757 (2020) Revenue: Increase US$31.536 billion (2020) Operating income: Increase US$1,994 million (2020) Net income: Increase US$721 million (2020) Total assets: Increase US$52.148 billion (2020) Total equity: Increase US$22.225 billion (2020) $16 billion funding (Wikipedia, Form 10-K)	Employee: 3000 8.3 billion funding Revenue: $65 million (owler)
Capabilities	Build vehicle models: Roadster, Model S, 3, X, Y, semi, cybertruck Provide vehicle service: charging network, software, remote diagnosis, mobile technician, service center, insurance provide battery product Provide solar panel	EV models: R1T, R1S Design models: Skateboard chassis EV charging station
Competitive advantage	The biggest and the most popular company in the sector	Backed by huge companies, top score CEO in the automotive sector
An attractive industry	The automotive industry has a great impact on the economic (Mohiuddin et al. 2017, Lee and Govindan 2014), the most important (Smerichevskyi et al. 2018), and the largest manufacturing sectors (Mathivathanan et al. 2018) The global electric vehicle fleet expanded significantly over the last decade, underpinned by supportive policies and technology advances (iea) Policies continue to support electric vehicle deployment and are evolving to a more holistic policy portfolio	
Strategy formulation and implementation	Build sports car Use that money to build an affordable car Use that money to build an even more affordable car While doing the above, also provide zero-emission electric power generation options	Focused on producing Adventure vehicles and B2B with its chassis technology "skateboard"
Superior returns	The first auto manufacturer to achieve 1 millionth electric car The strongest EV company in terms of resources and capability	Big investment round from huge company $2.5 billion by T. Rowe Price Associates Inc $700 million by Amazon $500 million by Ford Motor Company $350 million by Cox Automotive

Table 3 Product Example

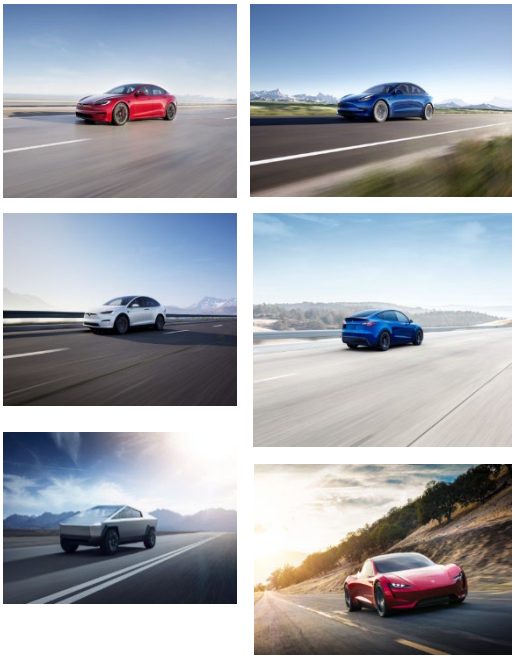
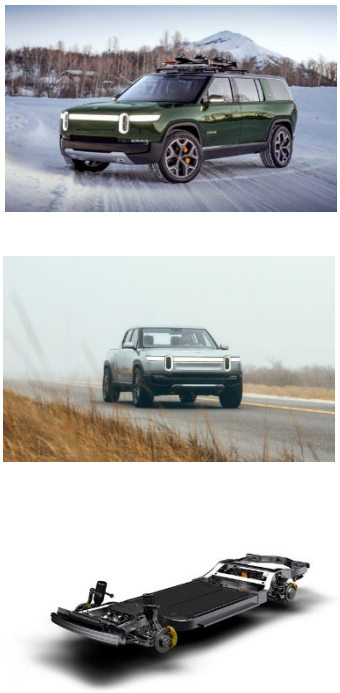
Tesla	Rivian
 Roadster, Model S, Model 3, Model X, Model Y, Semi, Cybertruck	 R1T, R1S, “Skateboard” chassis

Table 4 Leader Comparison

Tesla	Rivian
Elon Musk • Visioner and contribute radical innovation companies such as Zip2, PayPal, Tesla Motors, Solar City, Hyperloop, OpenAI, Neuralink, Boring Company, and SpaceX • Rank 2 world billionaire in 2021 • Rank 1 innovative leader in 2019 • Bachelor of Science (BS) degree in economics from the Wharton School and a Bachelor of Arts (BA) degree in physics from UPenn School of Arts and Sciences. (Forbes), (Wikipedia)	Robert “RJ” Scaringe • Doctorate in mechanical engineering from MIT’s prestigious Sloan Automotive Lab. • Founded Rivian in 2019 • Recruit solid team including, Mark Vinnels from Executive Director of Engineering McLaren and Jeff Hammoud Vice President Design for JEEP • Rank 891 world billionaire 2021 (Forbes)

5. Results and Discussion

From Table 1, we can see that Tesla is already Incorporation from when Rivian is still a Limited Liability Company. As a result, Tesla’s capital is higher than Rivian’s. Understand that, Rivian avoids direct competition and chooses to fill what Tesla lacks off. From Table 2 and Table 3 we can see that Tesla is outperforming Rivian. But it's normal considering Tesla is come first in this industry and Rivian comes later.

From Table 4, we can see Tesla's leader Elon Musk had an outstanding footprint in his business journey, meanwhile, Rivians's leader Robert "RJ" Scaringe had a solid background and team. But the gap between the two is too high, Tesla is already too big to challenge. On the other hand, RJ is aware of his situation but still pursues his passion. He tries to offer what Tesla lacks off, and adventure vehicle with pre-order system and selling chassis technology named "skateboard" to help new businesses interested in electric vehicle eliminate their RnD cost and use Rivian's chassis technology.

Tesla is currently at the top of the market but it should aware of its competitor. A top-notch mobile company like Nokia and Blackberry is an example of the negative effect of not being aware of the competitor. But there is no dangerous threat in the meantime for its industry. Rivian is the second-highest value company in the electric car industry. But the gap with the highest, Tesla is too high. Fortunately, it can find a way to complete what Tesla lacks, so it still stands in the market. Unlike Elon Musk who is a businessman, Rivian's leader Robert "RJ" Scaringe is the engineer himself. He has the potential to beat Tesla in the new radical technology he can make in the future.

Electric vehicle competition in America is heating but is found nowhere in Indonesia. Indonesia's manufacture had an opportunity to adopt Americas' electric vehicle manufacturers like Tesla, to become the pioneer and leading market in this country.

6. Conclusions

A comparative study between Tesla Inc and Rivian LLC has been conducted by referring strategy management approach to achieve above-average returns. Tesla dominates the market because it is the pioneer and the biggest company in this sector, also the leader of the company Elon Musk had an awesome track record in the business world. Meanwhile, Rivian come as a challenger know how to avoid direct competition by a focus on its adventure vehicle and chassis technology named "skateboard", also the leader had an awesome education background in the automotive industry. The lesson learned from this study for Indonesian manufacturers is to adopt or create their strategy based on Tesla and Rivian's business strategy. Until now, there is no pioneer in this sector, so choosing Tesla's strategy or creating by its business strategy would suit best.

The limitation of the study is data used is still secondary data from the internet. For further research, it suggests using primary data to achieve more in-depth information regarding global business strategy especially the information that is not available on the internet.

References

Aqidawati, E. F., Sutopo, W., and Pujiyanto, E. Lesson learned in developing and implementing global business strategy to commercialize battery swap technology: a comparative study, *Proceedings of the 5th NA International Conference on Industrial Engineering and Operations Management Detroit,* Michigan, USA, August 10 - 14, 2020.

Ahmad, S., and Khan, M., Tesla: disruptor or sustaining innovator, *Journal of Case Research*, vol. 10, no.1, 2019.

Chen, Y., and Perez, Y, Business model design: lessons learned from Tesla Motors, *Towards a Sustainable Economy*, Springer, Cham, pp. 53-69, 2018.

EnergyStartups, Top 72 Electric Cars Startups, Available: https://www.energystartups.org/top/electric-cars/, May 29, 2021.

Franco, M., and Rodrigues, M., Sustainable practices in SMEs: reducing the ecological footprint, *Journal of Business Strategy*, vol. 42, no. 2, pp. 137-142, 2021.

Forbes, #2 Elon Musk, Available: https://www.forbes.com/profile/elon-musk/?sh=12b287c67999, May 30, 2021.

Forbes, #891 RJ Scaringe, Available: https://www.forbes.com/profile/rj-scaringe/?sh=7602c45752ac, May 30, 2021.

Gear Primer, Tesla donates 5 million yuan to Chinese CDC in fight against coronavirus, Available: https://www.gearprimer.com/automotive/tesla-donates-5-million-yuan-to-chinese-cdc-in-fight-against-coronavirus/, May 28, 2021.

Günther, H. O., Kannegiesser, M., and Autenrieb, N., The role of electric vehicles for supply chain sustainability in the automotive industry, *Journal of Cleaner Production*, vol. 90, pp. 220-233, 2015.

Hamelink, M., and Opdenakker, R., How business model innovation affects firm performance in the energy storage market, *Renewable energy*, vol. 131, pp. 120-127, 2019.

Hitt, M. A., Ireland, R. D., and Hoskisson, R. E., *Strategic Management Competitiveness and Globalization: Concept and Cases*, Mason, USA, 2007.

Istiqomah, S., Sutopo, W., and Astuti, R. W, Lesson learned of business strategy for commercializing an e-motor cycle technology: a comparative study, *Proceedings of the 5th NA International Conference on Industrial Engineering and Operations Management Detroit,* Michigan, USA, August 10 - 14, 2020.

Khofiyah, N. A., Sutopo, W., and Ardiansyah, R, Global business strategy for commercializing a technology of drone: a lesson learned from DJI Drones and Parrot Drones, *Proceedings of the 5th NA International Conference on Industrial Engineering and Operations Management Detroit,* Michigan, USA, August 10 - 14, 2020.

Lee, T.W. and Govindan, S., Emerging issues in car purchasing decision, *Academic Research International*, vol. 5, no. 5, pp. 169-179, 2014.

Lynch, R., *Corporate Strategy (4th Edition)*, New Jersey: Prentice-Hall, ISBN: 978-027370178, 2006.

Lynch, R., *Strategic Management 8th New edition*. London: Pearson Education, ISBN: 978-1292211404, 2018.

Mathivathanan, D., Kannan, D. and Haq, A.N., Sustainable supply chain management practices in Indian automotive industry: a multi-stakeholder view, *Resources, Conservation and Recycling*, vol. 128, no. 1, pp. 284-305, 2018.

Mohiuddin, A., Julia, H.A.J., Khan, A.A. and Karim, A.N.M., Adoption of JMM practices – a key to performance improvement of a local automotive industry, *International Conference on Mechanical, Automotive and Aerospace Engineering 2016*, pp. 1-12, 2017.

Owler, Rivian, Available: https://www.owler.com/company/rivian, May 21, 2021

Saputra, I. W., Sutopo, W., and Zakaria, R., A business strategy formulation for commercializing university-created technology: A university spin-offs. *AIP Conference Proceedings*, vol. 1931, no. 1, pp. 030020, 2018.

Shahri, M. H., and Sarvestani, M. N., Business model innovation as a turnaround strategy. *Journal of Strategy and Management*, vol. 13, no. 2, pp. 241-253, 2020.

Smerichevskyi, S., Kryvoviaziuk, I. and Raicheva, L., Economic consequences of financial stability violation of world automotive corporations, *Baltic Journal of Economic Studies*, vol. 4, no. 2, pp. 229-234, 2018.

Tannert, Chuck, Meet R.J. Scaringe, Founder Of Rivian Automotive—And Tesla's Worst Nightmare. Available: https://www.forbes.com/wheels/news/meet-r-j-scaringe-founder-of-rivian-automotive-and-teslas-worst-nightmare/, May 30, 2021.

Wikipedia, Tesla Inc., Available: https://en.wikipedia.org/wiki/Tesla,_Inc, May 29, 2021.

Xia, X., Govindan, K., Zhu, Q., Analyzing internal barriers for automotive parts remanufacturers in China using the grey-DEMATEL approach. *J. Clean. Prod*, vol. 87, pp. 811–825, 2015.

Wicaksana, D. E. P., Sutopo, W., and Nizam, M., Proposed business process technology commercialization: A case study of electric car technology incubation, *2014 International Conference on Electrical Engineering and Computer Science (ICEECS)*, pp. 254-259, 2014.

Zámborský, P., A blueprint for succeeding despite uncertain global markets, *Journal of Business Strategy*, vol. 42, no. 3, pp. 168-176, 2020.

Acknowledgment

The research is supported by the Institution of Research and Community Services – Universitas Sebelas Maret with the program "penelitian kolaborasi internasional" (Contract 260/UN27.22/HK.07.00/2021, March 18, 2021).

Biographies

Dian Ahmad Pratama Bunayah Sudian is a student in Master's Program in Industrial Engineering Department, Universitas Sebelas Maret, Surakarta, Indonesia. He obtained his Bachelor of Economic degree in Economic Development from Universitas Sebelas Maret in 2019. His research interest is global business strategy and supply chain management.

Wahyudi Sutopo is a Professor of Industrial Engineering and Head of Industrial Engineering and Techno-Economics Research Group (RG-RITE) of Faculty Engineering, Universitas Sebelas Maret (UNS), Indonesia. He earned his Ph.D. in Industrial Engineering & Management from Institut Teknologi Bandung in 2011. He has done projects with the Indonesia endowment fund for education (LPDP), sustainable higher education research alliances (SHERA), MIT-Indonesia research alliance (MIRA), PT Pertamina (Persero), PT Toyota Motor Manufacturing Indonesia, and various other companies. He has published more than 160 articles indexed in Scopus, and his research interests include logistics & supply chain management, engineering economy, cost analysis & estimation, and technology commercialization. He is a member of the board of industrial engineering chapter - the institute of Indonesian engineers (BKTI-PII), Indonesian Supply Chain & Logistics Institute (ISLI), Society of Industrial Engineering, and Operations Management (IEOM), and Institute of Industrial & Systems Engineers (IISE).

Muhammad Hisjam is a Lecturer in the Department of Industrial Engineering, Faculty of Engineering, Universitas Sebelas Maret since 1998. He earned Bachelor in Agroindustrial Technology from Universitas Gadjah Mada, a Master in Industrial Engineering & Management from Institut Teknologi Bandung, and a Ph. D in Environmental Science from Universitas Gadjah Mada. His research interests are supply chain, logistics, business, and sustainable development. He published some papers in journals and proceeded with his research area. He holds an Accredited Supply Chain Analyst from the American Academy of Project Management. He is the Head of Logistics System and Business Laboratory, Faculty of Engineering, Universitas Sebelas Maret. He is a member of IISE, AAPM and IEOM.