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Electric vehicles in Europe

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Introduction

In the below essay we will write about Electric Vehicles in Europe based on the case study given in the module. As per Munzel *et al.*, (2019) European Union supports the large usage of plug in vehicles in Europe. Also various European government have supported this by various non-financial incentives as well the public subsidies. There are about more than one million plug in electric vehicles that operates in Europe. Through electrifying transport under the program Green Car Initiative. Europe is the second largest country after China who uses electric vehicles. Norway and France were some of the top selling countries in Europe region. There were companies like Renault Zoe that was the top selling electric car in Europe in 2016. Europe in the recent years has increase its usage of electric cars. Although the figures all over the world are low for usage of electric cars but this has increasingly been given importance to make more use of electric vehicles that can help to save the environment in a much more sustainable and environment friendly way (Knez *et al.*, 2019)

Electric Vehicles Project in Europe

According to Christie *et al.*, (2016) it has been seen that various cities in Europe are facing difficulties for their urban transport systems. Thus to solve this problem in many states the government introduced electric vehicles and established various projects known as the e-mobility project that helped the cities in Europe to solve their problems of e-mobility and thus help the European as well as the environment. As a result of this many car companies also invested in the EV sector to gain a substantial amount of market share and thus companies like Toyota entered the market with new models of personal vehicles as well as public vehicles.

PESTEL Analysis

Europe has been dealing with various environmental issues and challenges and therefore the companies in Europe are using responsible production ways of the goods and services and the sustainable development. We be analysing the EV industry below using the PESTEL model to analyse the micro and the macro environmental factors that impacts the business operation of this industry. The PESTEL analysis will help in understanding the factors that are present in political, economic, social, technological, environmental and legal environment.

Political Factors

In this factor we will be describing the factors that are related to the government and it political affairs. This political factor can be said that it has played a very important role in determining the role EV industry (Narins,, 2017) Through huge support and investment in this industry by

the political partners in Europe the EV industry has been able to survive and flourish in the European markets. The government has also provided grants and donations to support and uplift the industry so that the industry can be much more motivated to produce electronic vehicles. The electric vehicles is also supported by funding of Horizon. This has been taken as an initiative under the partnership of public-private contracts that are dedicated towards delivering green vehicles.

As per Inglehart,. (2018) a key factor that is important in the above paragraph is the government's initiative to develop an environmental friendly plan in order support the electric car vehicles. Without the initiatives of the government setting up separate as well as specific plans for initiating and changing the vehicle industry Europe would not have been able to bring about such changes in their policies that takes into consideration the requirements of the e-vehicle industry. With such positive plans that was initiated by the government the car industry in Europe was able to utilize the technology.

Economic Factors

The costs and the energy consumption that is required to run the electric vehicle is an extremely important factor in electric vehicle industry (Casals *et al.*,2016) . The costs that should be considered here are current as well as future costs in order to analyse the impact of the economic factors of operating electronic vehicles. The emerging costs for the installation of new infrastructures like stations that are required for charging the cars should also be considered by the government so that these do not impact the society badly.

As per Cano *et al.*, (2018) the electric vehicles market has seen to be growing at much faster rate than the whole automobile industry in Europe. Thus it has become difficult for the government to provide backups that require heavy investment as well investing into the charging stations in order to support the electric vehicle industry. The purchase price of these vehicles was thus considered to be an important factor in the order to further reach the market

A key aspect that can be considered here is the increasing market shares of the e-vehicle industry and the huge investments made by the different companies and the government in order to meet the requirements of the consumers and to fulfil the goals of a better and greener environment.

Social Factors

Social factors are the factors which impact the demand of the products through the changes in the preferences of the consumers. There is an increase in the need for mobilizing these cars creates an impact on the social factors of the e-vehicle industry (Robins, 2017). The consumers in the European market have a very little knowledge about the electronic vehicles. The European consumers think that the different causes of pollution, travelling costs and congestion on the road can be simplified with the use of electronic cars.

A test was conducted for a period of three months where 340 electric vehicles were tested by the European people. The people who had tested these cars concluded that if charging the cars were included in the daily routines of people then e-vehicles were able to provide an equal amount of satisfaction as any other normal car. With the help of using such cars the users realized the benefits that they were able to receive from such cars was that such type of cars were not dangerous for people walking on the street, one did not need to change their driving styles and trips did not need any additional kind of planning (Thiel *et al.*, 2019)

Thus we can see that in above factor the key point is the social mind set of European citizens regarding the e vehicles they have limited knowledge based on the use of the cars but do not portray a wide knowledge about the further benefits of e-vehicles. However these are extremely important factors also and thus impact the e-vehicle industry in a positive way.

Technological Factors

The technologies are not very well designed. The challenge lies here with sustainability along with innovation of these cars. According to Weaver *et al.*, (2017) this factor also states about the current and the future innovations. New inventions like the lithium ion accumulator can also stimulate the e vehicle market. The battery through which the car is operated has been a problematic area of the e-vehicles can be solved by this new technology. Thus any technology cannot be used for a long time by people and thus needs continuous amount of improvement until it reaches a 100 percent sustainability level.

When tested the e-cars can be used to drive on a single time charge is a distance of 100-120 km but in comparison a conventional car can travel up to a distance of 600 km.

As per Schilling and Shankar, (2019) there the key factor here is that e- cars need to improve in their construction areas and should be constructed in a way so that it is lightweight. Carbon can be used by the industries while constructing these cars due to its light weight characteristic.

To battery energy saver mode can also be introduced in these cars as an additional technology. The e-cars can also be driven with limited engine output.

Environmental Factors

Ahn *et al.*, (2018) the environmental factors considers the amount of waste generated by these cars. The electric car cars can decrease the air pollution. The government should pay attention to the local area pollution caused by the activities of human beings. It is important the environmental can determine the type of pollution that can be controlled by these e-cars. The e cars can bring down the NOx, Cox, and SOx emissions at a much lower level. The renewable energy sources be used for producing sources of energy in these cars. If such steps are not taken then these e- cars can cause pollution from the energy sources it derives its energy from. The change of climate in the future will have an impact on the people and society in a way that will make the use of electronic vehicles mandatory for the people.

Legal Factors

The regulations and laws in the e-vehicle industry is another factor that impacts this industry. The regulations that are relevant in Europe and different countries and regions impacts the e-vehicle industry in different ways. The environmental legislations should be followed by the industry makers so that they are do not create any harm to the environment and are made in a sustainable way (Carlini *et al.*, 2019).

As per European rules and regulations the use of conventional cars can be brought down by 50 percent by the year 2030. This will give boom to the e-vehicle industry and has a huge positive impact on the industry. As per Ruiz *et al.*, (2018) by successfully implementing the e-cars in the large cities of Europe based on the changes in regulations on a national basis can help develop the e- car industry further more.

The key point lies here that there should be strict rules and regulations regarding the e car industry also so that these do not harm the environment and abide by the legal rules. There should be laws framed for use of these cars also about where can it be operated. All these rules should come under the legal factors (Gnap *et al.*, 2020)

Porter's Five Forces Model

Bargaining power of Suppliers- With the increase in demands for EV in the European markets the suppliers have a great opportunity in the e-vehicle industry. The conventional and

the e-vehicles require some similar kinds of parts and thus in this industry the bargaining power of suppliers is low (Moreno-Izquierdo *et al.*, 2016).

Bargaining power of Buyers- This sections tell us that in Europe there are only few buyers of the e-vehicles who are impacted by the environmental benefits provided by the e-vehicles and sensitive to these issues. As per Frincu *et al.*, (2017) the buyers do not consider issues in high prices of these cars. The key concern for buyers are the future value provided by the cars and their limited range. Thus we can say that the power of buyers is high in this industry.

Threat of Substitutes- The threat in this industry is due to the ICEs in the industry. The ICEs provide a better value for money to the consumers. The Electric Vehicles also provide a huge costs and this increases the gasoline rise of costs in the industry. Consumers of the products thus have a much cheaper option in the industry (Majeed and Rupasinghe,, 2017).

Threat of New Entrants- The poet initial of the electric vehicle industry to grow has attracted a lot more ne investors and opened up a lot of opportunities for large companies who are already in the automobile sector will expand to the increasing demand of the industries. Also new companies are specifically targeting the industries due to the new opportunities presented by the industry. As per Andoni *et al.*, (2019) the industry in different countries are at different stages, in Europe this is at a very advanced stage while in a country like India it is at a very early stage. The unexplored markets will also impact the new entrants in the industry.

Rivalry among competitors- The rivalry in this sector among the companies is high right now in Europe due to few competitors in the industry. With the increase in competition there will be much more rivalry in the industry and much more new inventions hat will affect the industry (Oz,, 2019).

Conclusion

In the above essay we studied about the various factors of e-vehicle industry and the emerging market in Europe. With increase in need to develop a sustainability for the environment there are various new technologies that are being invented in the World today. E-cars are a result of these needs. The e-cars are being more and more famous in the world today with major market share being in Europe. Due to this many automobile companies are also investing in this industry today. Thus we analysed the use and impact of the macro and mini environmental factors of the industry by using Porter's five forces model and PESTEL analysis and how these affect the environment.

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