COMPARATIVE ANALYSIS OF THE COMPETITIVE ADVANTAGES OF NEW ENERGY VEHICLES: THE CASE OF BYD

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Thematic Certificate

To

YUNMING ZHANG

This Independent Study has been approved as a Partial Fulfillment of the Requirement of International Master of Business Administration in International Business Management

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Date: 30 / 9 / 2022

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Declaration

I, YUNMING ZHANG, hereby certify that the work embodied in this independent study entitled "COMPARATIVE ANALYSIS OF THE COMPETITIVE ADVANTAGES OF NEW ENERGY VEHICLES:THE CASE OF BYD" is result of original research and has not been submitted for a higher degree to any other university or institution.

(YUNMING ZHANG)

Sept 1, 2022

ABSTRACT

Title: Comparative Analysis of the Competitive Advantages of New Energy Vehicles: The Case of BYD

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Degree: Master of Business Administration

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To save the energy crisis, reduce environmental pollution and realize the vigorous development of China's economy, the transformation of the automobile industry of China needs urgency. In 2001, China implemented the new energy vehicle strategy, Then in 2012, took all-electric vehicles as an important strategy for the transformation of the automobile and new energy automobile industry, establishing the direction of automobile development. The degree of competition in China's new energy vehicle market has reached a Red Sea. On this basis, as a national brand of new energy vehicles, BYD Auto Co., Ltd. has a business philosophy different from traditional automobile brands. Even though the world has seen the notable power of this Chinese automobile brand, laying a good foundation to achieve a comprehensive surpass of traditional strong brands is still a problem for BYD. Moreover, in the current environment, the competitive strategies of new energy vehicle companies need to adapt to change. It is necessary to study the competitive strategy of BYD to maintain a competitive advantage.

This paper described the background and significance of BYD's new energy vehicle competitive strategy research, and then provided a theoretical basis for its research through a review of domestic and international theoretical studies. After that, the paper analyzed the competitive environment of BYD's new energy vehicles and the competitive structure of the industry using PEST analysis and Porter's five forces model, respectively, and analyzed the main competitors. On this basis, the paper proposed a competitive strategy of cost leadership for the development of BYD's new energy vehicles and safeguards for the competitive strategy in terms of strengthening cost management, enhancing human resource construction, improving innovation capability, and developing strategic cooperation.

As a giant in the Chinese automotive industry, BYD has been deeply involved in the industry for a long time. The study of its competitive strategy for new energy

years, and a reference for summarizing, adjusting, and implementing its competitive strategies. At the same time, it also provides a certain basis for the selection and formulation of competitive strategies for new energy vehicle companies nationwide.

Keywords: BYD, new energy vehicles, competitive advantage, competitive strategy

摘要

题目： 全新能源汽车竞争优势比较分析-以比亚迪为例

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30 / 9 / 2022

为了摆脱能源危机、环境污染，实现中国经济的蓬勃发展，作为中国经济支柱的汽车产业转型刻不容缓。自 2001 年中国提出新能源汽车战略以来，2012 年中国将纯电动汽车作为汽车产业转型和新能源汽车产业转型的重要战略，确立了汽车发展的方向。到目前为止，中国新能源汽车市场的竞争已成为红海。比亚迪汽车有限公司作为新能源汽车的民族品牌，有着不同于传统汽车品牌的经营理念。尽管世界已经看到了中国汽车品牌的不俗力量，但如何奠定良好的基础，实现对传统强势汽车品牌的全面超越，已成为比亚迪面临的一个问题。目前，在新能源汽车环境下，新能源汽车企业的竞争战略需要适应调整或变化。有必要对国内知名新能源汽车企业比亚德的竞争战略进行研究，在竞争中继续保持竞争优势。

本论文主要阐述对比亚迪新能源汽车竞争战略研究的背景和意义，对国内外理论研究进行评述，为下一步对比亚迪新能源汽车的战略研究内容提供理论基础，并说明研究的思路和方法。运用 PEST 分析法对比亚迪新能源汽车竞争环境进行分析，运用波特五力模型对新能源汽车产业竞争结构进行分析，并对主要竞争对手进行分析。为比亚迪公司新能源汽车的发展提出了成本领先的竞争战略，从强化成本管理、加强人力资源建设、提高创新能力、开展战略合作几方面提出竞争战略的保障措施。

比亚迪公司作为国内汽车行业巨头，在汽车行业深耕已久。通过对比亚迪新能源汽车的竞争战略研究，能更好的了解近年来比亚迪战略实施的情况，为比亚迪总结竞争战略、调整竞争战略、落实竞争战略提供一定的参考。同时比亚迪汽车作为新能源汽车的典型代表，也为全国的新能源汽车企业竞争战略的选择与制定提供了一定的依据。

关键词： 比亚迪，新能源汽车，竞争优势，竞争战略

ACKNOWLEDGEMENT

At this point, it means that the two-year life of graduate students is coming to an end. Beginning in the warm autumn of 2019, and finally in the midsummer of 2022, we will finally end this journey and rush to the next journey. As the poem said, I left gently, just as I came gently, two years of past events emerged. In front of me, I don't feel a lot of emotion.

First of all, I would like to thank my tutor Dr. Zhang Li, thank Zhang Li Dean for my help and guidance of the paper. And Thanks to all the teachers who taught me during my two years as a graduate student. In the teaching class, it is you who put in a lot of time and energy to design the teaching plan that we can understand the most, and carefully mark each assignment. The teachers teach us their knowledge in the simplest and most easy to understand language. Even if we don’t understand it well, the teachers will patiently tell us over and over again. Thank you for your selfless dedication and your earnest teaching. I wish the teachers a happy life and smooth work.

Yunming Zhang

2022

CONTENTS

LIST OF FIGURES

Table

1. Introduction

1.1 Research Background

After the "Tenth Five-Year Plan", the Development of new energy vehicles in my country began to enter the national strategic level, and the government attached great importance to the research Development and industrialization of new energy vehicles (Tang, 2017). China's new energy vehicles have gone through a stage in which hybrid vehicles are the mainstay, supplemented by net electric power and fuel cell vehicles. At present, with the increasing maturity of my country's pure electric vehicle manufacturing technology, my country's new energy vehicles have shifted from hybrid vehicles to pure electric vehicles. Steady progress is being made to achieve the goal of zero emissions. My country's new energy vehicles are in the dual role of continuous government support and market orientation, and have entered a mature stage (Pang, 2019).

After entering the 21st century, environmental problems such as global warming and air pollution have become increasingly prominent, making new energy technologies rapidly popularized in all walks of life. According to relevant statistics, the exhaust gas emitted by motor vehicles has accounted for 70% percent of the air pollution, so it is one of the key management directions in my country at present, which has also accelerated the pace of research and Development of new energy vehicles in my country. Countries such as Europe, America, Japan and South Korea are actively deploying new energy vehicles (Guo, 2019). As the world's largest emerging economy, my country is bound to be at the forefront of new energy vehicles. The competition between countries is, in the final analysis, the competition of technology. From the intensifying trade war between China and the United States in recent years, it is not difficult to see that only with leading technology can we calmly deal with trade frictions and complex and multi-faceted international relations without being controlled by others. The history of fuel vehicles in Developed countries such as Europe and the United States has more than 100 years, and the road of independent research and Development in my country is only more than 20 years (Wang, 2020). In the field of traditional fuel vehicles, my country can hardly surpass the Developed countries of traditional fuel vehicles. (Li, 2020) However, in the field of new energy vehicles, the leading advantage of Developed countries is not so great.

Therefore, if China wants to complete the curve overtaking in the field of new energy vehicles and establish a clear competitive advantage, it requires China's new energy vehicle companies to timely revise their original strategies according to the changes in the external environment under the premise of being well acquainted with their own conditions (Lu, 2020). Plan and develop a competitive strategy suitable for the market. Make good use of this opportunity for the transition of new energy vehicles to make China enter the ranks of the world's manufacturing powers as soon as possible (Song, 2020).

1.2 Research Problems

The U.S. market and European market, like BYD's early foothold markets, are particularly special among the countries that BYD has entered. Contrary to the traditional gradual path from developing countries to Developed countries, it directly chooses to enter the new energy vehicle market of top Developed countries. This is a landmark case of BYD as a multinational company in the field of international business, and it is the

application of international business knowledge (Sun, 2012).

The rise of automobile companies in Developed countries is mainly to choose a gradual internationalization path, and gradually accumulate experience and technology to achieve internationalization. The domestic auto industry has no first-mover advantage due to its late start. BYD has achieved phased success by taking a leap-forward internationalization path. It is also the only new energy vehicle company that has successfully entered the world's largest market among many Chinese auto companies (Li & Pang, 2008). There are also rational factors behind the demonstration effect, and these rational factors can provide empirical supplements to the existing theoretical system.

1.3 Objective of the study

With the continuous development of China's economy and the continuous enhancement of comprehensive strength, the scientific development concept of comprehensive, coordinated, and sustainable development has penetrated into all walks of life, and the concept of green and environmental protection has also been paid more and more attention. Nowadays, the topic of new energy vehicles is always mentioned by everyone. Therefore, the research on new energy vehicles has become a hot topic, too. At present, the new energy vehicles' high energy rate of new energy vehicles and the ability to get rid of oil dependence let it to be a strategic measure to ensure national energy security. The development of new energy vehicles is an effective way to reduce vehicle emissions and pollution. In addition, the development of new energy vehicles is the best choice for cultivating new economic growth points and new industries in the post-financial crisis era.

Therefore, new energy vehicles have great research value. The main purpose of this article is to use BYD as an example to analyze the current development and prospects of new energy vehicles in China, as well as BYD's competitive advantage analysis, so as to provide BYD's market positioning and development. At present, there are not many domestic and foreign related literatures on this kind of research, so this is the main purpose of this research. It is hoped that through the research, we can choose the most suitable competitive strategy based on our own actual situation to improve the core competitiveness of the enterprise and formulate a good long-term plan for ourselves.

1.4 Scope of the study

The research scope is focusing on the development status, development prospects, macro environment of new energy vehicles, as well as the internal and external environment of BYD and using strategic management and competitive strategies to conduct comprehensive and multi-angle research.

1.5 Research Significance

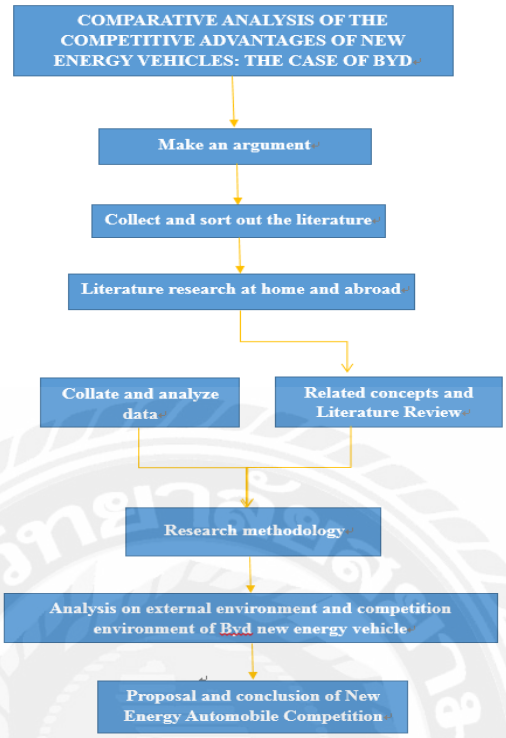
With the continuous changes in politics, economy, and market environment, the impact of new energy vehicles on traditional fuel vehicles is increasing. It is of great significance to systematically and comprehensively study and analyze the development strategy of BYD's new energy vehicles (Zhong, 2019). Based on the actual situation of China's new energy vehicle Development, this paper takes the core competitiveness research as a

breakthrough point, which has certain theoretical significance for the whole research of China's new energy vehicle. At the same time, the delisting schedule of traditional automobiles has been gradually put forward worldwide. New Energy automobiles are the core of the future Development of the automobile industry, and have certain practical significance for global energy conservation, emission reduction, environmental protection and economic sustainable Development (Ge & Xiang, 2009). Therefore, the research on the core competitiveness of new energy vehicles in this paper has certain theoretical reference to the Development system of new energy vehicles.

At present, competition in the vehicle industry is becoming more and more fierce. How to take the lead in future competition, establish advantages, and promote the transformation and upgrading of the vehicle industry is an urgent problem for vehicle companies (Tang & Liu, 2015). Academically, the current research on new energy vehicles is mostly based on the research status, R&D technology, and development mode of new energy vehicles. There are relatively few analytical documents on the competitive advantages of new energy vehicle companies. This article will conduct a comprehensive analysis of the internal and external environment, competitive advantages, and development strategies from BYD's new energy vehicles (Zhen, 2017). It is believed that it can provide some useful references for similar new energy vehicle companies in their future development practices.

The purpose of the study is: First, to facilitate the company's new energy vehicle business to achieve short-term tasks and long-term goals, to achieve sustainable Development; Second, to help the company's new energy vehicle to clearly position itself in the fierce competition; Choose and implement more effective competitive strategy from the reality to enhance the competitiveness; third, help enterprises to obtain higher profits and promote the long-term Development of enterprises. It is of great significance for the Development of new energy automobile industry to choose and implement correct competitive strategy in the process of Development (Yang & Yi, 2011). The purpose of this paper is to help the enterprise new energy automobile industry in the implementation of cost leadership strategy on the road to obtain more competitive advantages, more Development prospects. At the same time, it is expected that this research can provide reference and reference for other enterprises' New Energy Automobile Industry, and have certain influence on China's automobile industry (Ji, 2017).

1.6 Research Ideas



2. Literatures Review

2.1 New energy vehicles

On the definition of new energy vehicle, because of the late development of new energy vehicle industry, domestic and foreign scholars have not formed a unified definition of new energy vehicle, this paper will use the definition given by China's Ministry of Industry and Information Technology (Pang, 2019).

In 2009, China's Ministry of Industry and Information Technology defined a new-energy vehicle as a vehicle fuel different from a traditional vehicle, or the vehicle fuel is the same as a traditional vehicle, but the vehicle uses a new power device, and in the power drive and control of advanced technology, there are advanced technical principles and a new structure of the car (Li & Pang, 2008). New Energy vehicles can be divided into pure electric vehicles, hybrid vehicles and fuel vehicles and hydrogen-powered vehicles.

2.2 Competitive advantage

Since Mikell. After Baud published his book competitive advantage, the theoretical research on competitive advantage has attracted worldwide attention. The theoretical research on competitive advantage has been deeply developed over the years, however, there is still no uniform definition of competitive advantage (Xia, 2014). This paper defines competitive advantage on the basis of resource capability.

The resource capability view of competitive advantage, which holds that the competitive advantage of an enterprise is the resource and capability that the enterprise has, and that the resource of the enterprise has value and scarcity, enterprises have certain capabilities that other enterprises can not replicate or quickly imitate (xiang, 2016).

In this view, the competitive advantage of the enterprise is mainly affected by the resources and capabilities owned by the enterprise itself.

2.3 Strategic management

Strategic management refers to the decision-making and implementation of the overall and long-term Development plans, mission objectives, policies and resource allocations of enterprises or organizations in the future. In the transition period of today's era, the challenges and threats faced by enterprises are becoming more and more diverse, which puts forward higher requirements for management concepts (Tang, 2020). We should keep pace with the times and form a series of new viewpoints. This is mainly reflected in that internal management is gradually replaced by external management; strategic management gradually replaces process management; cultural management gradually replaces behavior management; value management gradually replaces product market management (Zhang, 2008). At the same time, the enterprise at the center of change is undoubtedly the strategic management of the enterprise, many new ideas will emerge, and the enterprise that grasps the opportunity of change will be at the forefront of the trend of the times.

The enterprise Development strategy is formulated to realize one's own wishes and has the following characteristics:

Global. Enterprise strategic management is the process of implementing and controlling strategic plans and specific measures from a national perspective and based on overall Development needs. Generally speaking, the implementation of the strategy is mainly driven by the senior management of the enterprise, but all employees are involved (Zhu, 2012).

Comprehensive. The objects of strategic management include not only R&D, production, human resources, finance and marketing, but also various functional strategies dominated by competitive strategy and corporate strategy (Zhang, 2008). This is the management activity of all management departments, business units and all related factors of the enterprise.

Long-term. Strategic management is the Development direction of future management. Enterprise strategic management focuses on the long-term, stable and rapid Development of the enterprise (Zhu, 2012). In a rapidly changing market environment, we can only succeed if we have a long-term strategic plan and act according to future trends.

Stability essentially, a strategy is a plan for an enterprise's production and business activities within a certain period of time in the future. It can only be effective if there is a certain implementation cycle. In the process of strategy implementation, a lot of human and material resources need to be invested, and strategy implementation requires a stable environment and the continuous advancement of policies (Li, 2021).

2.4 Competitive strategy

The theory of competitive advantage can be divided into three types: exogenous competitive advantage theory, endogenous competitive advantage theory and dynamic competitive advantage theory. The exogenous theory of competitive advantage is classical in Porter’s five-force model, and the exogenous theory holds that the

factors that affect the competitive advantage of an enterprise come from the industry environment in which the enterprise is located, specifically from the existing competitors and buyers, bargaining power with suppliers and the threat of alternatives and potential intruders determine the attractiveness of an industry by five forces (Michael, 1998). Only by choosing attractive industries can enterprises gain competitive advantages (Zhao, 2010). This kind of competitive advantage theory attributes the competitive advantage of the enterprise to the external conditions of the enterprise completely, but it can not explain why the profit level of each enterprise is different under the same industry environment, from this comes the endogenous theory of competitive advantage. The endogenous theory of competitive advantage includes resource theory and capability theory. The endogenous theory holds that the competitive advantage of enterprise comes from the inside of enterprise and is determined by the resource and capability of enterprise. Resource is a valuable and scarce resource, and capability is an action on resource. ENDOGENESIS combines resource and capability to study the competitive advantage of enterprise (Barney, 1991). The enterprise can initially form the competitive advantage of the enterprise after having the resources and the ability, but the external environment is constantly changing, the competitive advantage of the enterprise may disappear or become the disadvantage of the enterprise with the change of the environment, therefore, there is a need for a theory to explain the issue of sustainable competitive advantage of enterprises, resulting in a dynamic capability theory.

The dynamic capability theory emphasizes how to enhance the advantages of enterprises to cope with the changes of external environment, such as changing environment, technological life cycle, market competition and so on, that is, to enhance their competitive advantage to adapt to external changes (Teece & Pisano, 1997).The theory of competitive advantage has gone through the process from external to internal and then to dynamic, each theory is not a complete negation of the previous theory, but complementary.

Michael Porter's theoretical model of competitive advantage believes that enterprises should take the initiative to take measures to face challenges in competitive activities, so as to occupy active advantages and gain more market advantages (Liu, 2016). Competitive advantages are mainly reflected in the following points: the first is to improve product quality and reduce costs; the second is the special resources owned by the enterprise itself, such as strong capital or policy advantages; the third is that the enterprise sets up barriers to hinder other competitors Divide up market share; the fourth is that enterprises gain an advantage in the market by investing more resources. Cost leadership strategy, differentiation strategy and concentration strategy constitute the main content of a competitive strategy (Zhu, 2012).

2.5 Related research progress

Regarding the concept of competitive advantage, different scholars have put forward different definitions due to different research perspectives. (Ma, 2000) believes that competitive advantage is the profitability of a company that exceeds the average level of the industry during competition.

On the theory of competitive advantage: According to the development context, the theory of competitive advantage is divided into the exogenous theory of competitive advantage, the endogenous theory of competitive advantage, and the theory of dynamic capability. Porter introduced Bain's paradigm into the strategic field and

proposed the Porter Five Forces Model. He believes that competitive analysis is the analysis of market structure, and the exogenous theory of competitive advantage studies the competitive advantage of a company entirely from the external market environment of the company. However, this view cannot explain the problem of different profits among enterprises in the same industry. Therefore, this view has been questioned by many scholars, from which the endogenous theory of competitive advantage is developed. (Amit & Schoemaker, 1993) pointed out that the resources of an enterprise are the elements owned and for use by the enterprise, and the ability of the enterprise is the behavior that acts on the resources and can allocate resources. (Makadok, 2014) believes that resources and capabilities are different. The ability of an enterprise can only be cultivated by itself without trading and can be used to improve resource utilization, which is rooted in the dedicated resources within the enterprise. (Teece & Pisano, 1997) proposed the concept of dynamic capabilities to explain the problems that endogeneity cannot solve. (Katkalo, Pitelis, & Teece, 2010) explained how companies continue to maintain their competitive advantage in a changing environment.

Research on the new energy vehicle industry: Foreign research scholars mainly focus on technology research and development, industrial development, and policies. Regarding competition, they also focus on the competitiveness of the vehicle industry and rarely involve the competitive advantages of new energy vehicle companies.

Domestic scholars' research on competitive advantage mainly analyzes from the following aspects: from the concept related to competitive advantage, Chinese scholars (Zhou & Xiang, 2003) put forward the conceptual analysis framework of competitive advantage by analyzing the viewpoints of competitive advantage. They believe that competitive advantage is a combination of factors such as cost, service, and quality. Competitive advantage is the market performance of a company's competitiveness, and resources and capabilities are the intrinsic attributes of competitiveness.

From the theory of competitive advantage, for example, (Yu, 2002) explored the source of competitive advantage, discussed the endogenous theory and exogenous theory of competitive advantage, and concluded that competitive advantage is neither exogenous by market structure factors nor corporate resources and capabilities. He believes competitive advantage stems from the knowledge of the enterprise.

Based on the influencing factors of competitive advantage, (Shi & Liu, 2014) studied the influence of knowledge innovation on the competitive advantage of enterprises and concluded that knowledge innovation has a positive effect on the competitive advantage of enterprises. (Zhao & Wang, 2013) constructed a model between the scale of R&D alliance network and the competitive advantages of high-tech enterprises. Taking high-tech enterprises as R&D objects, they concluded that R&D alliances contribute to the improvement of corporate competitive advantages.

Through the above analysis, it is found that domestic scholars' analysis of competitive advantage mostly focuses on the definition of the concept of competitive advantage and the research on the theoretical basis. There are fewer documents analyzing the competitive advantages of individual specific companies. Also, research on new energy vehicles is mostly based on analysis at the industry level, or analysis of the development model and development strategy of a single company, and there is very little analysis of the competitive advantages of new

energy vehicle companies.

3. Finding and Conclusion

My analysis of BYD's competitive advantage is based on two aspects: 1. Analysis of the external environment of BYD's new energy vehicles. 2. Analysis of the competitive environment of BYD's new energy vehicle industry.

About BYD new energy vehicle external environment analysis I separately from the political, economic, social, technical four angles to carry on the analysis; First, Analysis of Political Factors, In order to speed up the process of industrialization of new energy vehicles and promote the rapid introduction of new energy vehicle products into the market, the central government is aiming at the current high cost of research and Development and low market acceptance, a series of fiscal and non-fiscal tax incentive policies have been adopted and put forward to protect the new energy vehicle (Zhang, 2008).

Passenger car			Passenger car				Special purpose vehicle	
Types	Range (Km)	Subsidy (Ten thousand)	Types	Maximum subsidy for different drivers			Subsidy ceiling	
Pure electricity	100-150	2		6-8m	8-10m	> 12m	Charge subsidy only	15
	150-250	3.6	Non-fast charge	9	20	30		
	Over 250	4.4	fast charge	6	12	20		
Plug-in mixing	Over 50	2.4	Plug-in mixing	4.5	9	15		

Table 1 subsidies for new energy vehicles

Among them, the purchase subsidy policy to the pure electric vehicle tendency is obvious. The maximum subsidy for the purchase of pure electric passenger cars is $44,000, and that for plug-in passenger cars is only $24,000. The maximum subsidy for the purchase of pure electric passenger cars is $300,000, and that for plug-in passenger cars is $150,000, as a result, in fact at this stage of the launch of enterprises are pure electric vehicles. This further shows that the national strategy of focusing on the Development of pure electric vehicles, at the same time, the amount of subsidies gradually declined and the technical threshold of subsidies raised higher requirements for products, reducing the cost and improving the technology have become the common task of the new energy automobile industry.

Looking at the Development of China's new energy vehicle industry in the past 20 years, it is not difficult to see that its Development has changed from a government-led market to a model controlled by both the government and the market. Through the support, promotion and supervision of national policies, the market competition of new energy vehicles in my country is full, and the situation of survival of the fittest has begun to take shape (Li, 2021).

Second, analysis of economic factors, Since the beginning of the 21st century, China's economic growth situation has broad prospects. China overtook Germany to become the world's third largest economy at the beginning of the 21st century and surpassed Japan to become the world's second largest economy in 2010, the gap with the US, the largest economy, is narrowing year by year (Xia, 2014). The economic boom represents a

good run for the country's markets. GDP can not only reflect the overall economic strength of our country, but also reflect the economic situation of the new energy automobile market. Here are the statistics of China's GDP, global GDP share and growth rate from 2008 to 2020.

Year	China's GDP (US $/trillion)	of the world's total(%)	Percentage increase(%)
2008	4. 59	7. 21	29.30
2009	5. 1	8. 45	11 .11
2010	6. 09	9. 21	19. 41
2011	7. 55	10. 28	23.97
2012	8. 53	11. 35	12. 98
2013	9. 57	12. 38	12. 19
2014	10. 48	13. 18	9 .51
2015	11. 06	14. 71	5. 53
2016	11. 23	14. 71	1 .54
2017	12. 31	15. 14	9 .62
2018	13. 89	16. 08	12. 84
2019	14. 34	16. 34	3 .24
2020	14. 7	17	2 .51

Table2 GDP of China, share of world total and growth rate

In 2020, China will not only be the only country with economic growth, but sales of new energy vehicles will be 161,000 more than in 2019, on the premise that the global economy will be affected by the epidemic, this shows that China's new energy vehicle market still has a deep market potential. It has been nearly 20 years since most Chinese families bought their first private car, and the replacement and purchase of new cars have become the demand of most families at this stage. China has become the world's largest consumer of luxury cars, with 3.6 m units sold in 2020, double the number in the US, as per capita consumption rises and sales of high-end cars rise year after year. With the Development of new energy automobile industry, the market share of high-end new energy automobile will be considerable in the future.

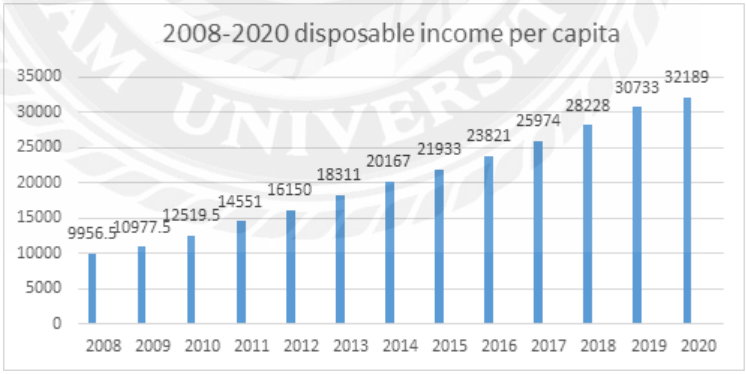


Table 3 2008-2020 disposable income per capita

Third, the analysis of social factors, Now that China's new energy vehicle industry is coming to the forefront again, BYD New Energy Vehicle Company, social and environmental factors have a decisive impact on the direction and speed of its growth (Li, 2021). Combined with the research enterprises in this paper, it is concluded that the following two social factors have a greater impact on the new energy vehicle industry.

The rapid Development of China's real economy is accompanied by demand and consumption of energy. In 2016, China become the world's largest oil importer. The traditional automobile industry relies heavily on fossil energy, which not only restricts the overall improvement of my country's economy (Wang, 2017). Development is also contrary to the sustainable Development path pursued by our country. Since new energy

vehicles hardly use traditional energy for driving, the promotion of the new energy vehicle industry will help alleviate the current energy shortage and ensure the energy reserves and safety of my country and other countries around the world (Lu, 2017).

Another major disadvantage brought by the use of traditional energy is pollution and damage to the environment. The carbon dioxide, carbon monoxide and nitrogen oxides produced by combustion are discharged into the atmosphere, resulting in air quality degradation, frequent meteorological disasters, and the greenhouse effect (Guo, 2014). It is not conducive to global ecological balance and human Development. At present, countries all over the world, including China, are actively advocating and using new energy sources. It is only a matter of time before traditional vehicles are replaced by new energy vehicles (Zheng, 2016). Keeping up with the pace of technological progress of new energy vehicles in a timely manner, early layout and reasonable planning can make my country's ecological The environment has been greatly improved, avoiding the old path of Developed countries that develop first and then govern.

Fourth, technical factor analysis, According to “New Energy Automobile Industry Development Plan (2021-2035)”to the new energy automobile industry “Three vertical and three horizontal” put forward the technical requirements, it is not difficult to find that its industrial technology center has shifted: “Three Vertical”, replaced by PHEV to HEV (Lu, 2017); “Three horizontal” aspect, the network connection and the intelligent technology are emphasized separately.

1. Battery Technology continues to improve

Since the launch of the fifteen plan, the country has seen a rapid growth in new energy vehicles and a growing demand for batteries, especially in urban taxis and buses. With the 2015 release of “Automotive battery industry specifications,” the so-called “White list (Yang, 2018). As the Japanese and Korean battery enterprises can not get financial subsidies, domestic power batteries in this period of rapid Development, rise. At present, the level of automotive power battery technology continues to improve, the local power battery manufacturers have been in the world’s first camp. The battery industry is becoming increasingly competitive and the concentration of the industry is increasing rapidly, with the number of power battery companies decreasing from 135 in 2017 to 90. In June, the Ministry of Industry and Information Technology scrapped the “White list’’ of power batteries, and Japanese and South Korean battery manufacturers will hit the market for new energy vehicle batteries (Wang, 2017).

According to the Chinese statistics of the 2021, CATL ranked No. 1 with 32.31 GWH, accounting for 59% , BYD ranked no. 2 with 10.78 GWH, accounting for 20% , and GUO XUAN GAO KE ranked No. 3 with 3.22 GWH accounting for 6% (Chen, 2021).

2. The replacement of the electric machine made in China is basically completed

The power source-motor of the new energy vehicle drive system is equivalent to the core system engine of the fuel vehicle (Wang, 2020). The motor is connected to the wheel through the reducer. It also reduces the energy loss and noise caused by friction between mechanical parts, as of 2021, at present, there are 160,000 electric motors used in new energy vehicles, mainly permanent magnet synchronous motor, alternating current asynchronous motor and switched reluctance motor, permanent magnet synchronous motor has accounted for

more than 90% of the total.

Since the Development of the new energy industry, China's new energy automobile motor suppliers, at present, motor enterprises are mainly divided into two categories, one is represented by BYD, BEIQI new energy, YUTONG, etc. , the other is to JINGJIN Electric, Suzhou Green Control, represented by professional motor enterprises for the host plant to do supporting (Yang, 2021). At the Beijing Auto Show, BYD unveiled a new 33111 e platform three in one drive system, which will increase torque density by 17% , increase power density by 20% , reduce weight by 25% , reduce volume by 30% and reduce total cost by 33% (Teng, 2014).

These changes have established the direction and goal of technology research and Development in the next stage of China's new energy industry: (1) Pure electric drive becomes inevitable (Gan, 2021). As a transition vehicle from traditional automobile to BEV, HEV will gradually fade out of the strategic layout during the adjustment period after experiencing the growth period of the industry, which is also a sign of the maturity of industrial technology. (2) Continue to improve battery performance (Gan, 2021). On the premise that pure electrification is irreversible, the future of the power battery industry is bright, and the competition between domestic and foreign battery giants such as NINGDE Times, BYD Company and LG Chem will enter the white-hot state. The technical competition will focus on the battery's safety, economy and consistency. (3) Overcoming the problem of electric control (Rong, 2018). China's new energy vehicle electronic control part of the core components of insulated gate bipolar junction transistor chip (IGBT), technology level is far less than Japan and Germany, 90% dependent on imports. However, due to the strength of IGBT research and Development in China, domestic IGBT components can not substitute for imports, so the self-breakthrough of core components in China still has a long way to go (Li, 2012). (4) Delving into networking smart technologies (Wang, 2017). The plan emphasizes the network intelligent technology as the core technology separately, which means that the new energy vehicle will be a new carrier with network and intelligence. Automobile Manufacturers should pay attention to the safety of the whole vehicle while emphasizing the networking and intelligent technology. To ensure the network intelligent technology "Sharp, fine, specialized" (Yang, 2021).

About BYD new energy automobile industry competition environment analysis aspect I mainly from competitor analysis, Supplier Bargaining Power Analysis, Buyer's Bargaining Power Analysis, Alternative Threat Analysis, Potential competitor threat analysis.

Through the analysis and research on BYD's competitive strategy, the following conclusions are drawn: First of all, the industrial environment for new energy vehicles is fiercely competitive, which is not only reflected in the competition in the same industry, but also in the competition between traditional vehicles and new energy vehicles, and even shared vehicles. In addition, competition is reflected in the advancement of product prices and product technologies. Therefore, new energy vehicle companies need to pay attention to cost control and technology research and development (Li, 2021). Secondly, China's new energy vehicle industry has strong market demand, rich lithium resources, strong government support and other advantages (Zhu, 2012). However, there are still certain shortcomings in the research and development technology and the supporting infrastructure of new energy vehicles. Third, the competitive advantages of BYD's new energy vehicles mainly include its huge resource advantages, powerful capabilities and industrial chain integration advantages. Finally, the shortcomings

of BYD's new energy vehicles are that its investment in technology research and development is not high, the level of technology research and development is not yet mature, and its customers are too concentrated in China and few from foreign countries (Chen, 2021). Moreover, the investment in advertising costs is relatively small compared to that of large international companies.

4. Recommendation

First of all, the government should strengthen its supporting and guiding role, improve infrastructure, and relieve buyers of new energy vehicles from worries (Tang, 2017). Second, strengthen the training of talents. The new energy vehicle industry is a high-tech industry that requires a high level of research and development to support it, so it requires continuous training of professional talents. Third, continue to increase investment in research and development. The new energy vehicle industry is a high-tech industry, and the current level of technology research and development is not enough, mainly reflected in the problems of long charging time and short cruising range of new energy vehicles. By comparison with Tesla's new energy vehicles, it is found that BYD's new energy vehicles' R&D expenses are not high, and the patent intensity index of R&D is only slightly ahead of other brands. Facing the fierce competition in the new energy vehicle industry, it should know that only by increasing its R&D strength and improving its technological advantages can BYD's new energy vehicles continue to develop and progress and occupy a larger market share in the global new energy vehicle market (Xu, 2020). Fourth, expand international marketing channels, do more brand promotion, and seize international market share.

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