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Discussion on Sustainable Development Strategy of China's Rehabilitation Assistive Device Industry Based on Diamond Model

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Abstract: The rehabilitation assistive device industry is an important field of innovative development in the health industry and occupies a huge consumer market share worldwide. The rehabilitation assistive device industry in China has developed rapidly in recent years, but there is still a gap between China and developed countries. How to improve the industrial competitiveness and promote the sustainable development of this industry is therefore the subject of this study. This study uses the "diamond model" to analyze the development status and competitiveness of China's rehabilitation assistive device industry from six aspects: "production factors", "demand conditions", "related and supporting industries", "market strategy and peer competition", "opportunities" and "government". It concludes that the industry chain is not perfect, the ability of independent innovation is weak, the vitality of market factors is not mobilized, and that there is a lack of systematic industrial policy support. Additionally, it puts forward the development countermeasures of integrating industrial resources, improving the industrial production chain, stimulating market demand, cultivating industrial talents, improving technological innovation, seizing opportunities, and improving industrial policies, laws and regulations. In this study, through the linkage analysis between the elements, it is believed that the elements affect each other. Therefore, in order to achieve sustainable development of the rehabilitation assistive device industry, all of the elements must be strengthened.

Keywords: rehabilitation assistive device industry; sustainable development; industrial competitive advantage; diamond model

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1. Introduction

1.1. Research Background

Paul Pilzer, a famous economist, called the health industry the "fifth wave of wealth" in the world after the IT industry in his book *The New Health Revolution*, and argued that it had unlimited market prospects, with the health industry growing rapidly from USD 200 billion to USD 500 billion in just five years [1]. The new round of the global scientific and technological revolution is increasingly accelerating industrial transformation, which brings about new opportunities and challenges for enhancing the core competitiveness of the health industry. The rehabilitation assistive device industry is an important field of innovative development in the health industry [2]. On 25 September 2015, the United Nations [3] Summit on Sustainable Development officially adopted 17 Sustainable Development Goals (SDGs). As explicitly stipulated in SDG 3, the goal is to "Ensure healthy lives and promote well-being for all at all ages". Developing the rehabilitation assistive device industry will actively respond to the aging of the population, satisfy the healthy living needs of rural incapable laborers, promote the construction of a healthy China and improve people's happiness.

In October 2016, The State Council [4] (TSC) issued Several Opinions on Accelerating the Development of Rehabilitation Assistive Device Industry (G.F. [2016] No. 60), stating that: "Vigorously developing the rehabilitation assistive device industry is conducive to guiding and stimulating new consumption, cultivating and expanding new kinetic energy, accelerating the new economy development, and promoting economic transformation and upgrading; it is beneficial for actively responding to the aging of population, meeting the disabled's needs for rehabilitation services, promoting the construction of healthy China and enhancing people's well-being".

In recent years, the Chinese government has vigorously promoted the development of the rehabilitation assistive device industry [4]. China's rehabilitation assistive device industry has been significantly improved in terms of scale and quantity (as shown in Figure 1), product types and supply capacity.

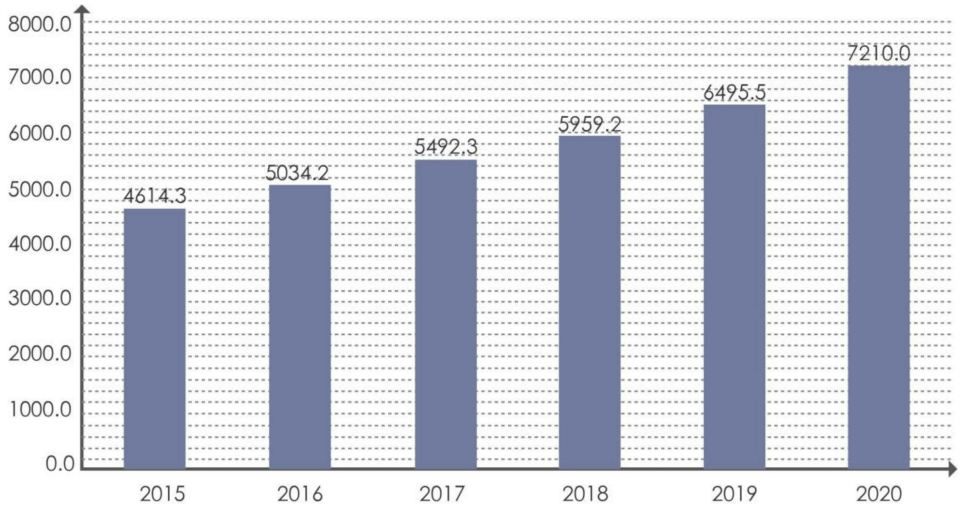

Figure 1. Scale trend of China's rehabilitation assistive device industry from 2015 to 2020. Unit: 100 million Yuan [5].

However, due to the late construction of the industry and the imperfect industrial system, including the weak industrial foundation and weak independent innovation ability, there is still a big gap compared with developed countries; the core technology of some high-end intelligent accessories and key components cannot be mastered, meaning that high-end products are monopolized by foreign enterprises [6].

Facing the challenges of developed countries, China's rehabilitation assistive device industry cannot gain advantages in international competition. Therefore, finding a way to promote the sustainable development of the rehabilitation assistive device industry has become an important topic of the current rehabilitation assistive device industry research.

1.2. Research Purpose

In view of China's vast market as the world's most populous country and the world's second largest economy, there are more opportunities for the rehabilitation aids industry. However, the development of China's rehabilitation aids industry is still at an early stage, and the imperfect industrial model has led to the failure of China's rehabilitation aids industry to form a sustainable development model and gain advantages in international competition.

This study aims to explore the sustainable development strategy of China's rehabilitation aids industry. By reviewing the relevant literature and using the "diamond model", this study analyzed the competitiveness of the development of China's rehabilitation assistive device industry as a whole, found the factors restricting the development of China's rehabilitation assistive device industry, and constructively proposed specific strategies to promote the sustainable development of the rehabilitation assistive device industry.

2. Literature Review

2.1. Concept of the Rehabilitation Assistive Device Industry in China

Rehabilitation assistive devices refer to the products that improve, compensate for and substitute human functions; implement auxiliary treatment; and prevent disability, and include devices, instruments, system equipment and software [7]. Their users include the disabled, the elderly and sick and injured people with dysfunction; their application purposes include (1) enhancing user participation; (2) protecting, supporting, training or substituting the user's physical function, structure and activity; (3) preventing user injury, activity restriction or participation restriction; and (4) enhancing user participation. At present, rehabilitation assistive devices have been widely used in medical institutions, old-age care institutions, families, schools, workplaces and other environments [8].

The rehabilitation assistive device industry is an emerging industry integrating product manufacturing, configuration services, R&D and design [4]. The huge user group has spawned the diversified rehabilitation assistive device industry at a large industrial scale, which covers various aspects such as clothing, food, accommodation and transportation, and intersects with medical care, old-age care, comprehensive health, special education, infrastructure, information exchange and other fields [9]. At present, the common rehabilitation assistive devices in the market include walking aids, rehabilitation and nursing supplies, audio-visual aids, intelligent aids, cultural and entertainment aids for the elderly, etc.

2.2. Current Situation of the Rehabilitation Assistive Device Industry in China

The beginning of China's rehabilitation assistive device industry can be traced back to the provincial artificial limb factories set up by the Ministry of the Interior in the early years after the founding of the People's Republic of China. The related manufacturing industries have gradually developed and grown over 30 years of reform and have opened up. The National Bureau of Statistics [10] issued the Classification of Strategic Emerging Industries (Order No. 23 of the National Bureau of Statistics), which officially included the manufacturing of rehabilitation assistive devices in the classification of strategic emerging industries. The National Development and Reform Commission [11] issued the Catalogue for Guiding Industry Restructuring (2019 Version), which classified rehabilitation assistive device configuration service institutions, wearable devices and intelligent robots as encouraged industries. Under the guidance of Chinese policies, Chinese enterprises related to rehabilitation aids have developed rapidly. As shown in Figure 2, enterprises in the field of prosthetics, wheelchairs, hearing aids, and vision aids have all shown a growth trend. In 2010, there were more than 500 enterprises and fewer than 10 enterprises with an output value of more than CNY 100 million. In 2020, the number of rehabilitation-related enterprises reached more than 50,000.

Since 2018, the Ministry of Science and Technology has continuously organized and implemented the key project entitled "Active Health and Aging Science and Technology Response" on a yearly basis, and included the R&D and application demonstration of rehabilitation assistive devices in the scope of support [12]; through basic research and frontier exploration in the field of rehabilitation assistive devices specially funded by the National Natural Science Foundation of China, many technological achievements have been made in basic technologies, key technologies and rehabilitation products. The developed wearable technology, rehabilitation intelligent robots and intelligent equipment have laid a good foundation for the rehabilitation assistive device industry and promoted the great progress in rehabilitation assistive device technology.

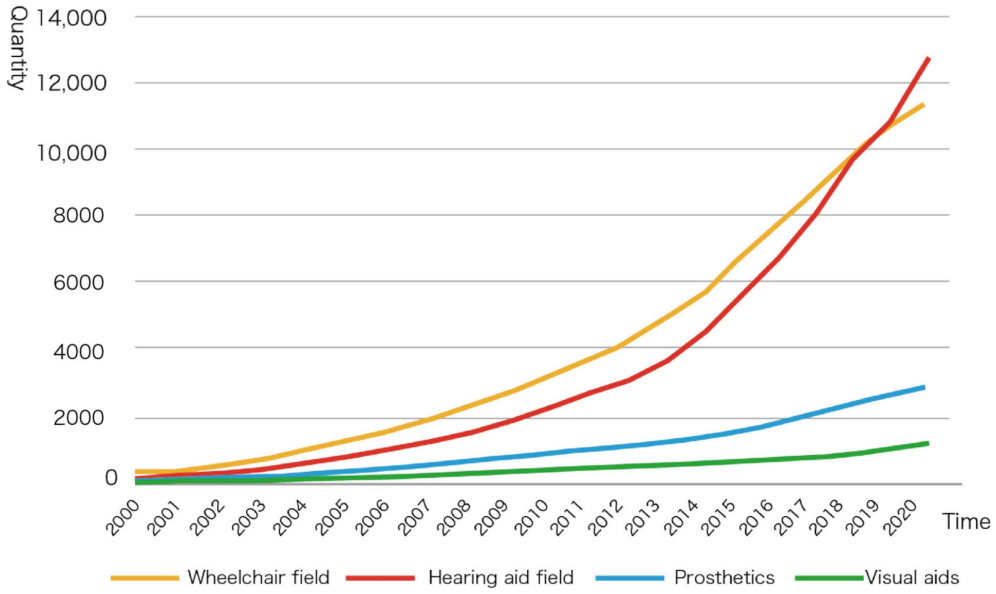

Figure 2. Cumulative number of enterprises in the field of rehabilitation aids [8].

In November 2017, the Ministry of Civil Affairs (MCA), the National Development and Reform Commission and six other Chinese departments selected twelve prefecture-level cities to carry out a two-year pilot project for the comprehensive innovation of the national rehabilitation assistive device industry [13]. In this way, China has gained advanced experience in building industrial parks, innovation platforms, well-known enterprise brands and new service models, and has created a number of distinctive industrial clusters.

2.3. Research Status

The rapid development of the rehabilitation assistive device industry has attracted the attention of many scholars. At present, the research on the rehabilitation assistive device industry mainly focuses on the following three research directions. The first research direction is research on the innovation of rehabilitation aids and the improvement of sustainable technology [14–22]; for example, Esposito, D. et al. [19] proposed the use of 3D printing to create an exoskeleton of a hand for rehabilitation, Tomaž Kosar et al. [17] proposed a platform design for hand rehabilitation, and Marek Zak et al. [18] used virtual reality (VR) technology to provide rehabilitation treatment for the elderly.

The second research direction is the analysis of the development status, existing problems and solutions of the rehabilitation assistive device industry from various perspectives [7,9,23–30]. Zhao et al. [28] reviewed and analyzed the development overview, innovative design and future development trend of rehabilitation aids in China. Cui Baochen [27] pointed out and summarized the problems and shortcomings of the rehabilitation services for the disabled in China by examining the development status of the rehabilitation services for the disabled in China and put forward relevant policy suggestions to improve the rehabilitation services for the disabled in China.

The third research direction is the analysis of the rehabilitation assistive device industry from all aspects of the industrial chain and the exploring of ways to improve its competitiveness [6,12,13,31–34]. Yin [13] put forward suggestions for improving the industrial policy system according to the current situation of China's rehabilitation aid industry but ignored the role of other factors in promoting the rehabilitation aid industry. Lai Qing and Xia Wenlei [33] argued that China's rehabilitation accessory enterprises were generally large but not strong, small but not sophisticated, lacking in scale, short-sighted and disorderly. They put forward suggestions to promote the development of the rehabilitation assistive device industry cluster, ignoring the comprehensive analysis from a macro perspective.

From the perspective of research status, the literature employing the first and second research directions failed to analyze the rehabilitation assistive device industry from the perspective of the overall industry, while the literature utilizing the third research direction failed to comprehensively analyze and examine China's rehabilitation assistive device industry chain with the diamond model, thus failing to improve the competitiveness and sustainability of the rehabilitation assistive device industry. Our literature survey shows that, according to the overall analysis of the diamond model, there is a gap in the academic field aimed at discussing the competitiveness and sustainable development of the rehabilitation assistive device industry.

In order to fill this gap, we use the diamond model to analyze the competitiveness of China's rehabilitation assistive device industry. This model has not been fully studied in the previous research on the rehabilitation assistive device industry. Therefore, this study enriches the theoretical research of the rehabilitation assistive device industry and provides a new perspective for describing China's rehabilitation assistive device industry. Finally, through the linkage analysis between the elements, we believe that the elements affect each other, so the elements need to work together and support each other to establish a virtuous circle of sustainable development.

3. Methodology

3.1. Diamond Model

In different fields of research, researchers try to obtain the optimal solution to a social problem in different ways. Some scholars use mathematical models and principles for discussion. For example, Jin, T. and Yang, X. [35] used the theorem of uncertain fractional differential equation to discuss financial problems, and Li, B. et al. [36] used game parameters to discuss counter-terrorism. However, in the face of the complex industry of rehabilitation aids for the elderly, we cannot only rely on the calculation of mathematical formulas to analyze the advantages of an industry as a whole so as to discuss the competitiveness of this industry. Porter's diamond model provides a reference method.

According to Porter [37], the vigorous development of industries mainly lies in the promotion of core competitiveness, and industries lacking competitiveness are naturally at a disadvantage in the development process. Whether it is a traditional manufacturing industry or a high-tech industry, only by continuously improving its core competitiveness can it ensure its sustainable development in the future [38]. The promotion of core competitiveness is the driving force for sustainable development, and sustainable development in turn drives enterprises to further enhance their core competitiveness; sustainable development is the top priority of the industrial development strategy [39].

Michael Porter put forward the theory of the "diamond model" in his book *The Competitive Advantage of Nations* published in 1990, which is used to analyze the reasons why national industries are leading in international economic competition [40,41]. This theory has become a classic theory in the field of national competitiveness research [42]. Other scholars have also proposed applications similar to Porter's diamond model [20,43].

Although the starting point of Porter's diamond model is to analyze the international competitiveness of a certain industry in a country, in the process of continuous evolution and development, the diamond model has already been used to study the development status and prospects of a certain industry in a country [44–51] and standardize relevant strategies and plans from the macro level to guide the development direction of the industry through the government's institutional design [52].

As shown in Figure 3, the "diamond model" includes four key elements, namely (1) factors of production; (2) requirements; (3) related industries and supporting industries; and (4) corporate strategy, enterprise structure and industry competition. These elements constitute the basic environment of industrial competition. In addition, chance and government complement and perfect the "diamond model" as auxiliary factors. The six elements are connected into a network of mutual influence, forming a dynamic competitiveness model.

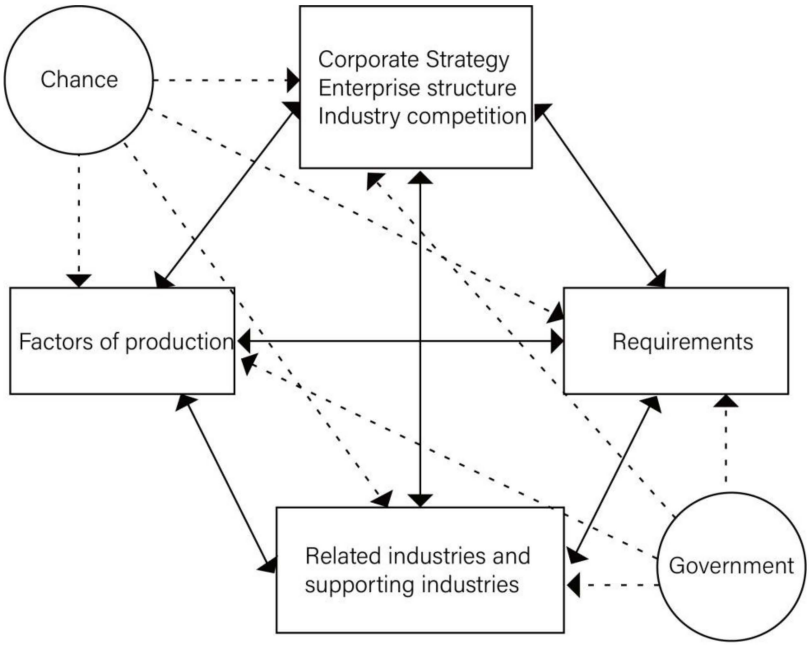

Figure 3. Diamond model [53].

Among them, factors of production refer to the performance of production in the competition of specific industries, such as human factors, natural factors, knowledge factors, capital factors and other basic production conditions. The rehabilitation assistive device industry mainly includes human resources, capital resources and technical resources. Capital resources belong to capital factors, human resources belong to human factors, and technical resources belong to knowledge factors, which are the basis of the sustainable development of industries.

Requirements refer to the market demand of products provided by the industry, which is the key driving force for the development of the industry and the ultimate goal that affects the sustainable development of the industry.

Related industries and supporting industries are upstream and downstream industries of the industry chain, and perfecting the industry chain can effectively promote the sustainable development of the industry.

Corporate strategy refers to the organization, establishment and management of enterprises in the industry, as well as the benign competition and win–win cooperation among enterprises in the industry.

Government and chance come from outside the industry, playing a macro-auxiliary role in the sustainable development of the industry. Chances for industrial development will change with the change in government policies. Macro-control can promote the marketization process of the rehabilitation assistive device industry, and the government can also provide a social environment for the sustainable development of the industry.

3.2. Rationality of Using the Model

From the perspective of purpose fit, the diamond model was put forward to evaluate and enhance the competitiveness of a certain industry in a country or region [54], which is the same as the underlying logic of the maintained competitive advantage and sustainable development of China's rehabilitation assistive device industry; from a functional point of view, the diamond model discusses the impact on the industry from six dimensions of key elements and auxiliary elements, and analyzes the advantages and disadvantages of the industry, which can provide a scientific framework for the internal and external influencing factors of the development of the rehabilitation assistive device industry and the adjustment and formulation of various development plans based on top-level design [55], as shown in

Table 1. Therefore, this paper uses this model as an analytical framework to explore the sustainable development of the rehabilitation assistive device industry in China.

Table 1. Analysis of research content.

Main Factors	Secondary Factors	Analysis Content of This Study	Source
Factors of production	Human resources, natural resources, knowledge resources, capital resources, basic resources, etc.	1. Human resources of the rehabilitation assistive device industry 2. Capital resources of the rehabilitation assistive device industry 3. Technical resources of the rehabilitation assistive device industry, etc.	[53,56]
Requirements	Market demand Service demand quality, etc.	1. Market demand of the domestic rehabilitation assistive device industry 2. Market demand of the international rehabilitation assistive device industry	[53,56]
Related industries and supporting industries	Management level, innovation capability, technical strength, internationalization degree, etc.	1. Upstream industry of rehabilitation assistive devices 2. Midstream industry of rehabilitation assistive devices 3. Downstream industry of rehabilitation assistive devices	[53,56]
Market strategy and industry competition	Market environment, enterprise development strategy, industry development degree, etc.	1. Market environment of rehabilitation assistive devices 2. Development of rehabilitation assistive device enterprises	[53,56]
Chance	Technological changes, policy changes, international environment changes, etc.	1. Impact of the COVID-19 pandemic 2. Changes in the international trade environment	[53,56]
Government	Government policy, government supervision and management, etc.	1. Policies related to rehabilitation assistive device industry 2. Laws and regulations	[53,56]

4. Sustainable Development Strategy of China's Rehabilitation Assistive Device Industry Based on Diamond Theory

4.1. Factors of Production

4.1.1. Human Resources

The quantity and quality of human resources are the main indicators used to measure the scientific and technological strength and technological innovation capability of a country, region or industry [57], and human resources play a basic role in supporting and guaranteeing industrial development.

At present, the training system of rehabilitation assistive talents in China is not perfect, the number of employees is insufficient, and the title system is basically blank. There is an urgent need to strengthen the construction of the talent team and solve the talent bottleneck problem that has restricted career development for a long time [58]. As shown in Figure 4, the total number of rehabilitation practitioners is insufficient. In 2019, there were 14,700 licensed (assistant) doctors in the rehabilitation hospitals, including 12,700 licensed doctors. The innovative research and development of rehabilitation assistive devices requires interdisciplinary talents, while the training of rehabilitation assistive device-related professionals in China is weak. Many first-class universities in the United States, Japan and other developed countries have set up rehabilitation engineering majors to cultivate doctoral-level talents, while only a few universities in China have set up a rehabilitation engineering direction with a major in biomedical engineering.

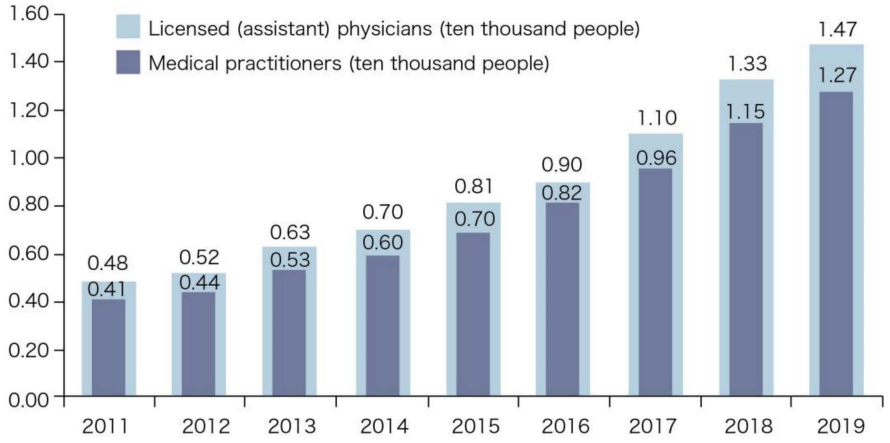

Figure 4. Number of medical practitioners in China's rehabilitation hospitals from 2011 to 2019 [59].

In this regard, this study holds that the Chinese government should arrange relevant departments to promote the construction of a team of rehabilitation assistive device practitioners and scientifically and technologically innovative professionals, and it should jointly train innovative and highly skilled individuals in assistive devices by relying on universities, research institutions, assistive device manufacturers and service configuration institutions with certain foundations, providing advantages to all parties [6]. In addition, China should cultivate innovative and entrepreneurial individuals in rehabilitation assistive devices, build an innovative and entrepreneurial team, cooperate with human resources and social security departments to improve the occupational classification and professional title evaluation policies of employees engaged in the field of rehabilitation assistive devices, and formulate professional standards, vocational skills and evaluation mechanisms of rehabilitation assistive devices [60]. At the same time, it is important to properly carry out talent introduction, support professionals in rehabilitation assistive devices to apply for talent plans, and support the introduction of entrepreneurial teams with independent property rights or core technologies of rehabilitation assistive devices.

4.1.2. Capital Resources

China's rehabilitation assistive device industry is an emerging industry with enormous growth potential, but it is not favored by venture and capital due to its heavy investment, low income and long cycle. To promote the development of the rehabilitation assistive device industry, special funds and systematic industrial policy support are needed [33]. At present, China's rehabilitation assistive device industry is facing the problem of a shortage of funds, while financial support is the most direct driving force to support the development of the rehabilitation assistive device industry. Therefore, this study argues that the government should systematically provide multi-faceted and multi-level support for rehabilitation assistive device enterprises from three aspects: preferential tax prices, financial fund guidance and corporate financial services.

(1) In terms of preferential tax prices, the government should put forward preferential tax policies for rehabilitation assistive device enterprises to encourage and support their development;
(2) In terms of financial fund guidance, the government should strengthen financial support according to the planning and strategy of the rehabilitation assistive device industry in various regions, and have a certain tendency in policy implementation to support the sustainable development of the rehabilitation assistive device industry;
(3) In terms of corporate financial services, in order to broaden the sources of enterprise funds, the government should establish various measures, such as an investment guarantee system of the rehabilitation assistive device industry to strengthen corporate financial services and adopt various ways to encourage financial institutions

to develop financial products to provide financial guarantees for the development of enterprises.

4.1.3. Technical Resources

The rehabilitation assistive equipment industry emphasizes high levels of technology, and its business relies on high-end talents. It relies on the service industry developed by the cooperation of information technology, life science, material science, ergonomics and other disciplines, and it is technology-intensive [61]. As shown in Figure 5, according to the "Tianyancha" business query platform and online research materials, 138 large-scale rehabilitation assistive enterprises were analyzed in this study. It can be seen from the figure that the largest number of enterprises have 0–10 patents, while those of the second largest number have 50–100 patents. In general, China's auxiliary appliance industry has a weak foundation and lags behind in scientific and technological innovation. There are some problems, such as an incomplete industrial chain, insufficient product categories, low product quality, low market share of domestic medium- and high-end products, lack of independent intellectual property rights in key parts, control chips, core algorithms and other core technologies, and some medium- and low-end auxiliary products are mainly imitations and OEMs for foreign enterprises.

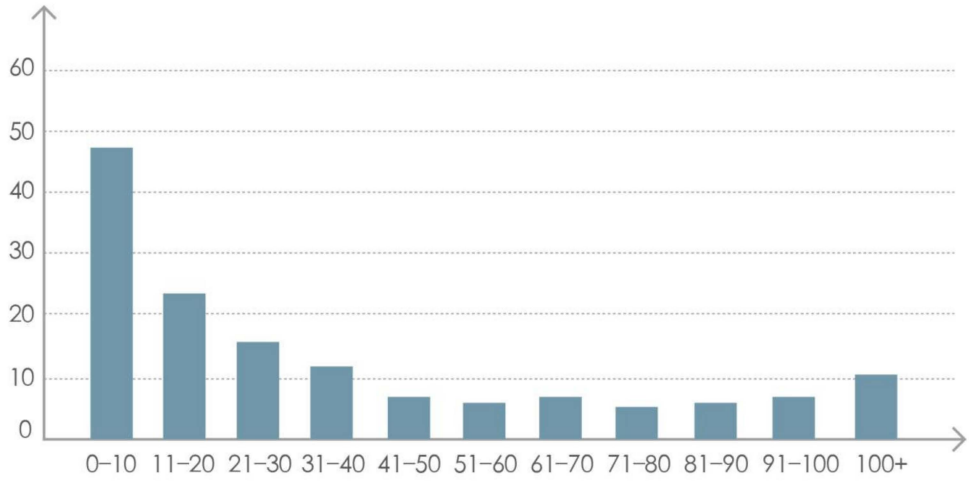

Figure 5. Number of patents of Chinese rehabilitation training equipment enterprises.

In order to speed up technological development, China has comprehensively laid out scientific and technological innovations in rehabilitation assistive devices, focused on supporting rehabilitation and nursing robots, rehabilitation training equipment, digital platforms and other fields, supported enterprises to build technology centers or key laboratories, and promoted R&D and the innovation of basic components, basic materials, key technologies and intelligent products of intelligent rehabilitation assistive devices, laying a good foundation for the innovative development of the rehabilitation assistive device industry. However, on the whole, there are not many practical products transformed from scientific and technological achievements, and the effect of promoting the upgrading of the assistive device industry by science and technology is not obvious; the overall number of related scientific research institutions is small, the signal strength is weak, the effective coordination is lacking, and the overall advantage is not formed [34].

In spite of the incapacity to realize the independent innovation of core technology immediately at present, this study argues that the competitiveness of the technical resources of rehabilitation assistive devices can be enhanced based on the following three aspects:

(1) Integrate advantageous resources: Give full play to China's advantages as the largest manufacturing country and a complete industry chain, form a multidisciplinary and cross-disciplinary collaborative innovation model by innovating the working mecha-

nism of scientific and technological research, and integrate advantageous resources to form a powerful driving force for scientific and technological innovation;

(2) Focus on key areas: Grasp the development trend of cutting-edge science and technology in the world, focus on the key and core technologies of rehabilitation assistive devices, concentrate on technical research, strive to catch up with the core technologies of advanced countries, and achieve original breakthroughs in the field of rehabilitation assistive devices;

(3) People-oriented service orientation: Realize innovation to serve the people, combine the scientific and technological innovation of rehabilitation assistive devices with the improvement of people's well-being, give full play to the service purpose of scientific and technological innovation to improve the quality of life of disabled people, and improve their sense of gain, happiness and satisfaction.

4.2. Requirements

4.2.1. Domestic Market Demand

Porter believes that domestic demand can stimulate and enhance the role of a country's competitive advantage. If the consumers of a country are mature, complex and demanding, it will help the country's enterprises to win an international competitive advantage because mature, complex and demanding consumers will force domestic enterprises to strive to realize high quality standards and product innovation [62].

With the continuous growth of China's economic aggregate and domestic demand, the rehabilitation assistive device industry has entered a period of rapid expansion. With the acceleration of the aging process of China's population, the seventh population census showed that the proportion of the population aged 65 and above in China's total population has reached 13.5%. It is expected to increase to 20% in 2033 [63], entering the stage of severe aging. With the growing scale and proportion of the elderly disabled population in China, the burden of disability is increasing [64]. As shown in Figure 6, it is predicted that the number of elderly people aged 60 and above in need of rehabilitation treatment will be 60.67 million in 2024.

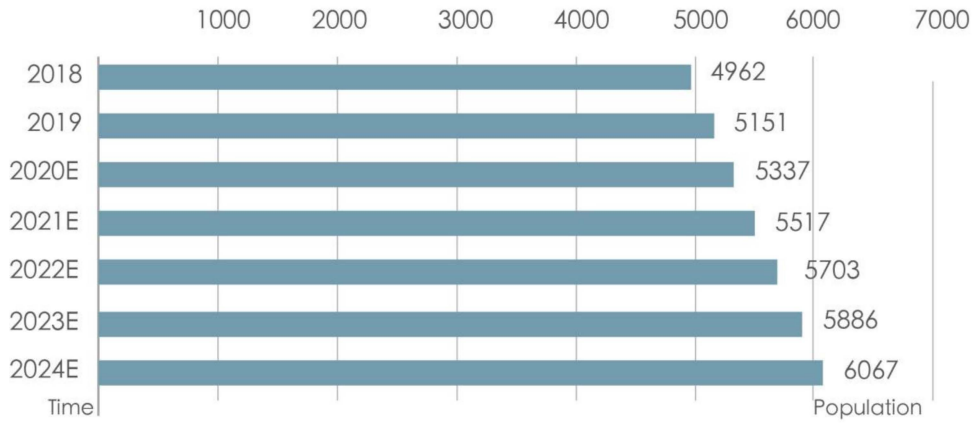

Figure 6. China's demand forecast for rehabilitation treatment of the elderly aged 60 and above (Unit: ten thousand people) [65].

The increasingly serious aging and the huge base of the disabled population bring new opportunities for the industrial development of rehabilitation assistive devices. China is the country with the largest demand and the greatest potential for rehabilitation assistive devices in the world. However, according to statistics, only about 23.3% of the disabled have received rehabilitation services, and 38.56% of the disabled have actively requested the configuration of rehabilitation assistive devices, while only 7.31% of them have actually been configured with rehabilitation assistive devices [66]. At present, there is a large population base of disabled users in China, but the problem of a low utilization rate of rehabilitation assistive devices is more prominent.

In order to stimulate domestic market demand, this study argues that measures can be taken based on three aspects: (1) Improving the professional level of rehabilitation assistive device configuration services; improving the level of informationization; and solving the problems of inadequate popular science propaganda, low social awareness and failure to effectively stimulate huge consumption potential [67]. (2) Improving the payment guarantee system for rehabilitation assistive devices in China; improving the payment system for work-related injury insurance, medical insurance, nursing insurance and public welfare projects; and solving the problem of consumers purchasing assistive devices at their own expense and disabled people not being able to afford them. (3) Strengthening grass-roots services and professional personnel training; promoting the participation of professional and authoritative medical teams; enhancing the guidance of rehabilitation health awareness for disabled people; improving the awareness of the use of rehabilitation assistive devices; and fully realizing the positive role of rehabilitation participation in promoting physical and psychological health.

4.2.2. International Market Demand

The international market has great potential. At present, most of the famous brands of rehabilitation assistive devices around the world have processing and manufacturing plants in China. The Rehabilitation assistive products of China's own brands are of good quality and low price. Compared with European and American markets, China's rehabilitation assistive device industry relies on China's huge industry chain and consumers and has great advantages in comprehensive competition cost and comprehensive competitiveness. China's rehabilitation assistive devices have entered the Southeast Asian market and even been exported to Africa and America. With the Belt and Road Initiative, the pace of China's rehabilitation assistive products going to market is increasingly rapidly [68].

New formats and models represented by cross-border e-commerce are becoming the new driving force of China's foreign trade [69]. With the development of the rehabilitation assistive device industry, China can extend its superior product resources to foreign countries. With the impact of the COVID-19 pandemic on the global supply chain, China's stable production of rehabilitation assistive devices can support the expansion and development of local industries. This study argues that the huge international market demand will provide a strong driving force for the development of the rehabilitation assistive device market and factors of production and supporting industries, and promote the sustainable development of the rehabilitation assistive device industry.

4.3. Related Industries and Supporting Industries

Industrial division is the foundation for forming an industry chain. The progress of biomechanics, engineering, information technology, applied medicine and other related industries provides strong support for the development of the rehabilitation assistive device industry in China. Its competitiveness not only depends on the enterprises leading the rehabilitation assistive device industry, but also is closely related to the support status of the rehabilitation assistive device industry.

The industry chain of rehabilitation assistive devices is mainly divided into three parts: (1) upstream of the industry chain—parts manufacturing and basic material technology; (2) mid-stream of the industry chain—professional equipment and industrial R&D and manufacturing; (3) downstream of the industry chain—product circulation and service application, as shown in Figure 7.

Figure 7. Graph of China's rehabilitation assistive device industry chain.

At present, the upstream system suppliers of the rehabilitation assistive device industry in China vary in scale and are relatively scattered. The upstream industry's own level and development are relatively rapid. However, the supporting facilities of the rehabilitation assistive device industry are not fully mature, the spillover speed of advanced technologies is slow, and the supporting facilities of the rehabilitation assistive device industry remain to be continuously strengthened. Only some rehabilitation assistive device fields have formed a relatively complete regional supporting industry chain.

The midstream of the rehabilitation assistive device industry chain includes related industries of R&D, manufacturing and distribution of rehabilitation assistive devices. Internationally, developed countries and regions of Europe, America and Japan have early industrial development and a high technical level. As an emerging market country, Chinese products have rapidly grown in number in recent years, especially in a variety of low and middle-end rehabilitation assistive devices, and their production ranks first in the world. The overall level of the rehabilitation assistive device industry is at the low and medium level in China, and most production and configuration enterprises of rehabilitation assistive devices have just formed a scale and lack core technical barriers and key competitiveness.

The downstream of the rehabilitation assistive device industry is the circulation and configuration service system of assistive devices. The circulation links include network sales, hospital procurement, the government's centralized procurement, personalized product customization, store sales and so on. The configuration system refers to the personalized evaluation and adaptation service system of rehabilitation assistive devices, which includes rehabilitation centers, the hospital service organization, the sales service department, etc. Due to the unbalanced regional development and the large gap between the rich and the poor in China, the rehabilitation assistive device configuration service system is still imperfect, and users cannot be provided with high-quality services [32].

Therefore, this study holds the view that China's rehabilitation assistive device industry should be upgraded based on three aspects, so as to help it achieve a sustainable development model.

(1) Improve the independent innovation capability of the industry.

The products in the field of rehabilitation assistive devices in China are of a great variety, and many domestic products are attached to the expansion and extension of foreign product systems. However, the overall industry is at the low and middle level, and there are no core technical barriers. China should develop key technologies according to its own needs; improve the level of industrial principle realization technology, engineering design technology, manufacturing technology and application innovation technology; form a continuous innovation matrix of assistive device technology, management, brand and business model; build a sustainable R&D and innovation mechanism of "demand–innovation–

production–use"; build brands with strong influence; improve the overall efficiency of the industrial system; and promote the sound development of capital.

(2) Optimize the industry chain.

Having a relatively complete industry chain and a certain scale of industrial clusters is an important indicator of the level of an industry [33]. The advantage of China's manufacturing industry lies in its complete categories and industry chain. Because of its numerous varieties, the rehabilitation assistive device industry has high dependence on the stability and safety of the industry chain. Facing the challenge of the industry chain, China should (1) optimize and upgrade the supply chain of the rehabilitation assistive device industry system on the basis of promoting industrial upgrading and promote the rapid development and upgrading of electronic components, chips, software information services, motor industries and other-parts industries; (2) integrate advantages, build industrial clusters, enhance industry relevance, and strengthen the supporting capabilities within the cluster for rehabilitation assistive devices [70]; and (3) improve the processing technology level of rehabilitation assistive device manufacturing industry, overcome the core technology, improve the service quality, build the core competitiveness of China's rehabilitation assistive devices, and achieve the goal of sustainable development.

(3) Improve the level of industrial services.

There is an imbalance between the supply and demand of the rehabilitation assistive device industry in China. For example, on the supply side, China has problems such as an insufficient effective supply of rehabilitation assistive products, blocked channels, low social recognition, relative saturation of low-end products, and a shortage of high-end products [71]; on the demand side, China faces uneven regional economy development and an unbalanced configuration level and standards. It is difficult for disabled users to effectively have their personalized needs for rehabilitation assistive devices met. At the same time, in addition to the existing demand in the market, new technologies such as 3D printing, VR visualization and AI, and the improvement of people's requirements for quality of life have also cultivated a new potential demand for the rehabilitation assistive device industry [25]. The imbalance between supply and demand has hindered the sustainable development of the rehabilitation assistive device industry. Therefore, China's rehabilitation assistive device industry should realize the top-level design of multi-level, diversified and personalized services, carry out supply-side reform according to the needs of users, and improve the industrial service level.

4.4. Corporate Strategy, Enterprise Structure and Industry Competition

Corporate strategy, enterprise structure and industry competition refer to the conditions that dominate the establishment, organization and management of enterprises in China, as well as the competition among domestic enterprises in the same industry.

At present, China's rehabilitation assistive device industry is still in its infancy. There is a lack of special financial support for industrial development, and the capital investment in key areas, important work and core technologies is still relatively small. The enthusiasm and initiative of various market players to actively participate in industrial development have not been fully stimulated, and the support policies of various departments to promote industrial development remain to be unknown.

Domestic rehabilitation assistive device enterprises are generally big but not strong, small but not specialized, lacking in scale, short-sighted and disorderly. The market and leading industries of the rehabilitation assistive device industry are scattered. Although some enterprises have a certain industrial scale, there are some problems such as clustered enterprises, the low added value of products, fierce homogenization competition and poor competitiveness [29]. At the same time, assistive device configuration terminal services are scattered and attached to various hospitals and administrative institutions. Many small enterprises lack core and stable customer sources and business value models.

Amid the low level of rehabilitation assistive device enterprises and a chaotic market, the extension of the industry chain is insufficient, and a complete industry chain cannot be formed. On the contrary, because of the large number of shoddy low-end assistive devices, the enterprises that carry out customized and personalized services lose their profit margins, and they cannot continuously provide services featuring efficiency and technology and gradually withdraw from the market [33].

This study holds that China's rehabilitation assistive device industry should be planned based on three aspects:

(1) Supporting strategic cooperation, M&A and the reorganization of enterprises, and building an industrial cluster of rehabilitation assistive devices with leading enterprises as the leaders that drive the development of related enterprises;
(2) Cultivating enterprises with local characteristics and competitive advantages according to the development status of rehabilitation assistive devices in the region and local talent characteristics and industrial characteristics [72];
(3) Encouraging small enterprises to take the road of "specialized, refined, special and new" models and large enterprises to cooperate with each other.

4.5. Chance

4.5.1. COVID-19 Pandemic Brings Opportunities for the Development of the Rehabilitation Assistive Device Industry

Since the outbreak of the COVID-19 pandemic, it has brought about a great negative impact on some sectors and industries around the world. However, in the medium and long term, it also will provide opportunities for the transformation and upgrading of the Chinese rehabilitation assistive device industry. The policy and market dividends brought about by the pandemic have brought Internet plus industry into a brand-new stage of development, and its business has ushered in rapid growth. Wang et al. [73] argued that the newly stimulated demand for network consumption and intelligent manufacturing will further accelerate the development of big data and IoT technology in rehabilitation assistive devices, rehabilitation AI technology, the information technology manufacturing industry and the information technology service industry for rehabilitation assistive devices. The deep integration of the new generation of information technology and the rehabilitation assistive device industry promotes industrial upgrading, expands effective demand and profoundly promotes the development of the service mode of the rehabilitation assistive device industry.

During the pandemic, a large number of "Internet plus assistive devices" and "intelligent remote diagnosis and treatment" methods for the elderly at home, in communities and in nursing institutions emerged. Relying on the sensor network system and the information platform, fast, efficient, low-cost, IoT-based, Internet-based and intelligent rehabilitation services were provided to the disabled and the elderly [74]. Innovative applications of old-age service models such as "Internet plus old-age care" and "smart old-age care" can organically combine potential needs such as offline living habits and home services with online information, accurately output services to users in a targeted manner, effectively match offline rehabilitation service needs with the online supply of assistive products and services, and finally realize seamless connection between the supply and demand of rehabilitation assistive products and services [75]. The disabled and the elderly can enjoy all-round services including life care, rehabilitation care, medical first aid and health consultation without leaving home. Through the information processing and analysis function of big data, these methods can effectively release the consumption potential and create new profit growth points for the rehabilitation assistive device industry [76], which will play an important role in promoting the development of the rehabilitation assistive device industry. This study argues that the COVID-19 pandemic will provide opportunities for the transformation and upgrading of China's rehabilitation assistive device industry; promote the development of the rehabilitation service mode, technology upgrading and

new service demand; improve the competitiveness of the rehabilitation assistive device industry; and promote the sustainable development of the industry.

4.5.2. Changes in the International Trade Environment

With the rise of protectionism, foreign countries have strengthened their technological blockade against China, and high-tech enterprises have been suppressed. Although economic globalization is an irreversible trend, the international environment facing China's economic development is becoming increasingly severe [77].

Currently, the core technologies, key components and important materials of the rehabilitation assistive device industry in China are encountering a "bottleneck", and there is a risk of a "broken chain" in the supply chain. Basic research determines the depth and breadth of a country's scientific and technological innovation, and the root of the "bottleneck" problem lies in the weakness of basic research. The blockade by foreign countries forces China to strengthen the research and development of key technologies and basic research, and China urgently needs to take the road of independent innovation and development, promote innovation breakthroughs in key areas, and establish and improve the scientific and technological innovation system [78].

This study holds that the bottleneck caused by foreign technology frees up a broad market for domestic technology, and that new development opportunities are gestated in the crisis. With the advantage of China's super-large-scale market, China should take domestic circulation as the main body, connect the domestic and international markets, create suitable soil for the development of the rehabilitation assistive device industry [77], and promote the sustainable development of the industry.

4.6. Government

Porter holds the opinion that government and chance are exogenous factors of industrial development. Exogenous factors can have an effect on endogenous factors and then affect the competitiveness of the industries. The government's influence on industrial competitiveness is mainly reflected in policy guidance and economic support. The government can not only issue policy documents to regulate the resource allocation market needed for industrial development at the macro level, but also restrict the industry through strict control. Therefore, when evaluating the role of government in industry, we should look at the influence of government public policies and financial support on the industrial diamond system [79].

In recent years, the Chinese government has been paying attention to and proposing requirements for the rehabilitation assistive device industry, as shown in Table 2. The State Council [4] issued Several Opinions on Accelerating the Development of Rehabilitation Assistive Device Industry (G.F. [2016] No. 60), which mentioned that the rehabilitation assistive device industry is an important breakthrough to realize the development of science and technology in medicine and promote the old-care service industry. Fan [6], the Director of the National Research Center for Rehabilitation Technical Aids, believes that it is the first time that China has promoted the development of rehabilitation assistive devices as a separate industry and that this is the best development opportunity for this industry.

Under the current political system of China, systematic policy making and policy implementation are particularly important in the practice of rehabilitation assistive devices. At present, China is clearly defined as "market-oriented and government-guided" in Several Opinions on Accelerating the Development of Rehabilitation Assistive Device Industry. Without the support of the current nursing insurance system, the roles of government and market in the development of the rehabilitation assistive device industry are not clearly defined, so it is difficult to implement the policies and regulations. At the same time, there is no systematic support policy for the rehabilitation assistive device industry, which increases the difficulty of industrial development.

Table 2. Related documents and policies.

Time	Document	Issued by
December 2021	Plan for the Development of Medical Equipment Industry under "14th Five-Year Plan"	Ministry of Industry and Information Technology and other nine ministries and commissions
July 2021	Plan for the Protection and Development of Disabled Persons under "14th Five-Year Plan"	TSC
June 2021	Notice on Printing and Distributing Opinions on Accelerating the Development of Rehabilitation Medical Work	National Health Commission
March 2021	Notice on Printing and Distributing the List of Policies and Measures to Support the National Comprehensive Innovation Pilot of the rehabilitation assistive device industry	MCA
December 2020	Notice on Launching the Second Batch of National Comprehensive Innovation Pilots of the rehabilitation assistive device industry	MCA and other six ministries and commissions
June 2019	Notice on Determining the Pilot Area of Community Rental Service for Rehabilitation Assistive Devices	MCA and other three ministries and commissions
March 2017	Plan for the Development of the National Aging Cause and the Construction of the Pension System under "13rd Five-Year Plan"	TSC
October 2016	Guiding Opinions on Promoting the Construction of Livable Environment for the Elderly	Office of National Working Committee on Aging and other 24 ministries and commissions
October 2016	Several Opinions on Accelerating the Development of Rehabilitation Assistive Device Industry	TSC
April 2016	Classification and Terminology of Rehabilitation Assistive Devices	State General Administration of Quality Supervision, Inspection and Quarantine and State Standardization Administration
June 2014	Catalogue of Rehabilitation Assistive Devices in China	MCA

Source: Sorted and organized from government websites by the author.

In view of the current lack of systematic policy and system support for the rehabilitation assistive device industry, the government should play a macro-control role of supervision and support at the same time. This study argues that the government should provide comprehensive support to the rehabilitation assistive device industry based on two aspects, namely industrial policy and the legal system, so as to help this industry achieve a sustainable development model.

4.6.1. Industrial Policy

Industrial policy is the integration of various policies that the government implements to intervene in the formation and development of industries to achieve some economic and social goals. Industrial support policy is the direct driving force of the rapid development of the rehabilitation assistive device industry. It has important practical significance and policy significance for the sustainable development of the industry. The policies on the rehabilitation assistive device industry can be divided into three aspects: industry support policy, industry supervision policy and pilot demonstration policy [13].

(1) Industrial support policy

The Chinese government should formulate a complete policy support system covering the upstream, midstream and downstream of the industry chain.

In the upstream of the industry chain, the government should pay attention to the scientific and technological research and development of parts manufacturing and basic material technology, and incorporate the key components and basic technologies of rehabilitation assistive devices into the support scope of relevant key special funds. The government should also formulate policies to deduct or reduce the R&D expenses of eligible rehabilitation assistive device enterprises, encourage enterprises to carry out scientific and technological innovation, tackle key technical problems, and reduce the risk of technology "bottleneck".

In the midstream of the industry chain, the government should formulate preferential tax policies for professional rehabilitation equipment and industrial R&D and manufacturing enterprises, and list intelligent rehabilitation assistive devices as the key support direction of relevant industrial policies. In terms of the strengthening of financial support, the government should actively strive to set up an industrial development guidance fund and cultivate a development financing market. Financial institutions can be utilized to develop financial products and provide financial guarantees for the development of rehabilitation assistive device enterprises. At the same time, the government should improve the government procurement mechanism, incorporate eligible products into the government procurement plan, reward domestic products providing a breakthrough in science and technology, and enhance the sustainable development capability of the rehabilitation assistive device industry.

In the downstream of the industry chain, the government should improve the subsidy system for the configuration of rehabilitation assistive devices, actively promote market consumption, attract and support social forces to set up relevant configuration institutions, and explore and establish a payment guarantee system combining social insurance, welfare subsidies and commercial insurance. The government should also improve the professional service of rehabilitation assistive devices, upgrade the service quality, strengthen the grass-roots service and professional personnel training, promote the information-based service level, intensify the popular science propaganda, and effectively stimulate the huge consumption potential.

(2) Industry supervision policy

Strengthening the quality management of the rehabilitation assistive device industry is of great significance for safeguarding the rights and interests of consumers such as the disabled [26]. The Chinese government should standardize the order of the rehabilitation assistive device industry by establishing a supervision system, carrying out quality spot checks, perfecting the standard system and strengthening industry self-discipline, and intervening in the production, sales, configuration and use of rehabilitation assistive devices so as to further create a good market environment.

(3) Pilot demonstration policy

On the basis of promoting the innovation of rehabilitation assistive devices, it is necessary to explore innovative development models of the rehabilitation assistive device industry. In order to promote the systematic innovation of rehabilitation assistive products, services, brands, platforms and business models, the Chinese government selected 12 regions, including Shijiazhuang City in November 2017, to carry out national comprehensive innovation pilot projects to build industrial clusters with local characteristics and also to find difficulties and problems encountered in the development process and accumulate experience. In December 2018, the relevant departments of China launched a two-year pilot project of a community rental service for rehabilitation assistive devices, and explored innovative service models for the configuration of rehabilitation assistive devices. The pilot demonstration policy can spread the beneficial experience and successful practices gained in the pilot project process nationwide and explore more industrial development models for the development of the rehabilitation assistive device industry.

4.6.2. Laws and Regulations

Improving the rehabilitation laws and regulation system for the disabled plays a very important role in promoting the sustainable development of the rehabilitation assistive device industry [27]. At present, China's rehabilitation legislation for the disabled lags behind, and the relevant laws and regulations to protect the rehabilitation rights and interests of the disabled still need to be improved. China should strengthen international exchanges in rehabilitation laws and regulations and learn from international beneficial experiences. China should also sort out the contents of existing rehabilitation laws and regulations; design a top-level system; form coordinated and unified laws and regulations covering medical care, occupation and education; and refine relevant laws and regulations to provide a path for safeguarding the rights and interests of disabled people [32]. Laws and regulations should make more detailed arrangements for rehabilitation and protection measures for disabled people. Relevant provisions should be made on the raising of rehabilitation funds, the construction of rehabilitation institutions and personnel training, and the rehabilitation assistive device industry. At the same time, laws and regulations should promote the incorporation of rehabilitation service projects into social insurance and the improvement of the social security system as soon as possible, so as to reduce the phenomenon of disabled people returning to poverty due to their disability and not being able to afford rehabilitation assistive devices.

4.7. Linkage Analysis among Elements

Porter [53] believes that each element in the diamond model is a two-way strengthened whole, with components having a strong correlation with each other. The development of any element will inevitably affect the state of other elements. The six elements are connected as a network of mutual influence, forming a dynamic competitiveness model. Zhao et al. [45] believed that the interaction between elements constitutes a joint force to improve the competitiveness of the industry and established a gear model. Lin et al. [80] used the diamond model to establish a linkage analysis framework between the four elements in the article "Analysis of the sustainable development of Guangdong traditional furniture industry based on the diamond model", and analyzed the impact of two auxiliary elements on the four elements from the interaction between the four elements. Based on the research of many scholars [45,53,80,81], this study establishes an analysis framework for the factors of the rehabilitation assistive device industry, as shown in Figure 8. These factors interact with each other. The demand for rehabilitation accessories is the power source triggering the development of the rehabilitation accessories market, production factors and supporting industries. Intense market competition, perfect supporting industries and high-quality production factors will stimulate the increase in demand and the improvement of demand level.

The fierce competition in the rehabilitation assistive device market will drive the development of factors of production such as manpower, technology and capital, promote the upgrading of the industry chain, and create products and services needed by the industry.

The technological innovation of rehabilitation assistive devices has spillover benefits, which will benefit related industries and drive the rapid development of supporting industries [82]; the capital resources of rehabilitation assistive devices will attract new market actors to enter the rehabilitation assistive device industry and promote market prosperity; and the factors of production of rehabilitation assistive devices will drive the market demand at home and abroad and produce specialized factors of production.

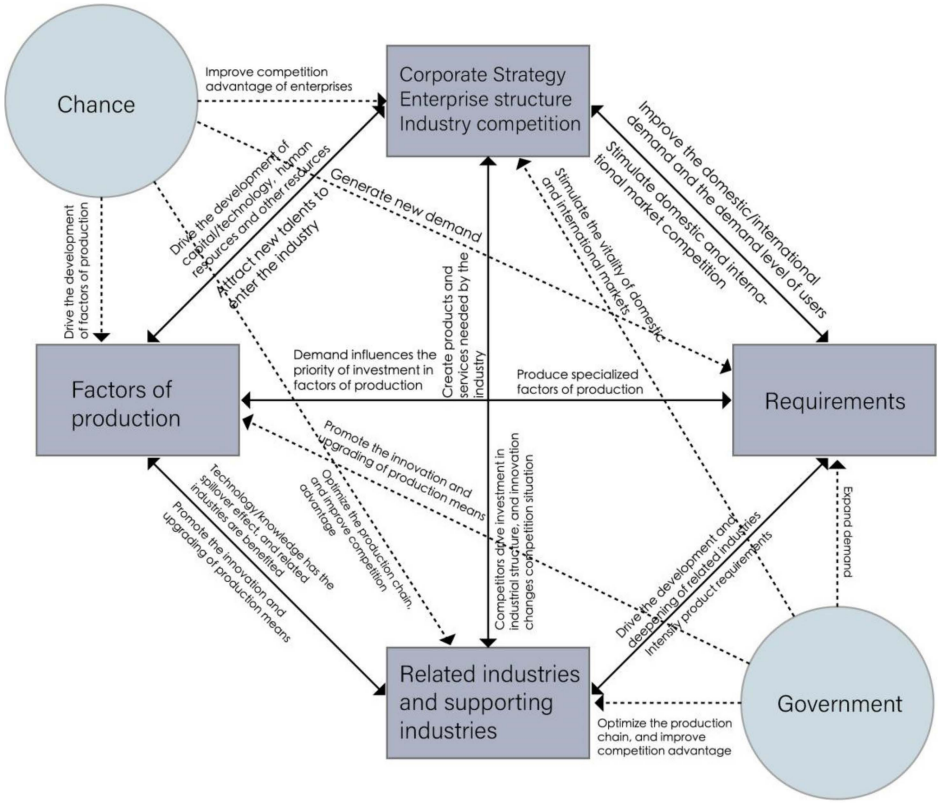

Figure 8. Interaction between elements [45,53,80,81].

The creation or stimulation of supporting industries can be converted into the innovated and upgraded factors of production of rehabilitation assistive devices and can also provide high-quality products and services available for sale. Meanwhile, it can attract more domestic and foreign users and provide targeted products [81].

Exogenous factors such as government and chance will have an effect on endogenous factors [53]. Among them, the government can use industrial policies to optimize the production chain of the rehabilitation assistive device industry and improve the competitive advantage of the industry; enact laws and regulations, activate user needs and expand user groups; promote the training of rehabilitation assistive device professionals, promote the innovation and upgrading of production means, and improve the technological competitiveness of the industry; and promote competition between domestic and foreign industries and stimulate the vitality of domestic and foreign markets. In terms of chance, due to factors such as the COVID-19 pandemic and bottlenecks, the development of talent, technology, capital and other resources will be necessary, which will promote industrial competition, generate new service models and provide opportunities for the development of related industries.

5. Conclusions

Based on the development status of the rehabilitation assistive device industry in China and the development strategy requirements of China for the rehabilitation assistive device industry, this paper expands the diamond model according to the industrial characteristics. In view of the obstacles and challenges in the "healthy, virtuous circle and sustainable" development road taken by China's rehabilitation assistive device industry, this study puts forward strategies and suggestions based on six aspects: factors of production, requirements, related industries and supporting industries, corporate strategy, enterprise structure and industry competition, and chance and government.

In terms of factors of production, China's rehabilitation assistive device industry should fully integrate the powerful resources available, including human resources, capital

resources and scientific and technological resources; enhance its independent innovation capability; form a comprehensive innovation pattern that is based on innovative individuals in rehabilitation assistive devices, is market-oriented, capital-supported and takes science and technology as the core; and improve the innovation capability of its key links and important fields.

In terms of requirements, China should be guided by domestic market demand and international market demand, and gradually form a new development pattern with the major cycle of the domestic rehabilitation assistive device industry as the main body and the domestic and international double cycles promoting each other [83]. In addition, China should expand market supply, promote the innovation of rehabilitation assistive products and the professional level of configuration services, and adapt to the upgrading of consumer demand on the basis of meeting the basic needs of people.

In terms of related industries and supporting industries targeting the shortcomings and deficiencies in the upstream, midstream and downstream of the rehabilitation assistive device industry chain, China should improve the independent innovation capability of key industrial technologies, optimize the industry chain, improve the service level of rehabilitation assistive devices, promote industrial optimization and upgrading, optimize industrial spatial layout, enhance the overall quality of industrial development, and promote the industry towards the middle and high end.

In terms of corporate strategy, enterprise structure and industry competition, facing the problems of low development level and insufficient extension of the industry chain in China's rehabilitation assistive device industry, China must make good plans, encourage the development of small and medium-sized enterprises, cultivate leading enterprises with competitive advantages and promote the development of industrial clusters.

In terms of chance, amid the outbreak of the COVID-19 pandemic and great changes in the international trade environment, China's rehabilitation assistive device industry should look for opportunity from the crisis, be guided by market demand, and further accelerate the development of rehabilitation AI technology, the information technology manufacturing industry and the information technology service industry for rehabilitation assistive devices [73]. The industry should also overcome key technical barriers with the advantages of a large market and large industry chain, and promote its technological innovation and service model development.

In terms of government, the Chinese government should introduce industrial policies and improve laws and regulations to jointly promote the development of the rehabilitation assistive device industry in China. Industrial policies include (1) a complete policy support system covering the upstream, midstream and downstream of the industry chain; (2) establishing a regulatory system and improving the standard system; and (3) improving the rehabilitation laws and regulation system for the disabled. Regarding laws and regulations, the Chinese government should improve the rehabilitation laws and regulation system for the disabled, create a favorable market environment, and deepen the reform of the rehabilitation assistive device industry.

The six elements of the diamond model do not exist in isolation, but interact and reinforce each other, forming a dynamic competitive system [79]. This study argues that in order to establish an industrial ecology with a virtuous cycle and sustainable development in the rehabilitation assistive device industry, all elements should work together, complementing and supporting each other. Only with independent innovation technology, diversified industrial talents, sufficient capital, a favorable market environment and a complete industry chain can enterprises grow rapidly and competitive industrial clusters be formed. At the same time, the industry needs to seize the opportunity, look for vitality from the crisis against the background of the COVID-19 pandemic and changes in the international trade environment, be demand-oriented, vigorously develop information technology and AI technology, overcome key technical barriers, and promote technological innovation and the development of rehabilitation assistive devices service models.

The contributions of this study are as follows. First of all, this paper comprehensively analyzes the emerging industry of rehabilitation assistive devices from the perspective of improving competitiveness. Most of the research focuses on technology development, but the research from the competitiveness perspective is very insufficient. Therefore, this study provides academic value for improving the competitiveness of the rehabilitation assistive appliance industry from a macro perspective. Second, this study is helpful for understanding the current industrial structure and development status of the rehabilitation assistive appliance industry in China, which can be used as a reference for formulating policies from the national perspective so as to introduce more reasonable and accurate policies to promote industrial development. Third, the research conclusion provides a development strategy to enhance the competitiveness of rehabilitation aids, which can contribute to the sustainable development of China's rehabilitation aids industry.

6. Future Directions

It is a complex and systematic problem to study the industry of rehabilitation assistive devices. This study uses qualitative methods to analyze the competitiveness of the industry from a macro perspective and draws valuable development suggestions. In future research, we can try to combine quantitative methods, supplement the limitations of qualitative research, establish an index system for the industry of rehabilitation aids, accurately determine the priorities of competitiveness, and formulate strategies from a short-term and long-term perspective to better improve the competitiveness of the industry of rehabilitation aids in China.

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