Research on the Status and Path of Sustainable Urban Development

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Abstract: With the deepening development of industrialization and economic globalization, urban becomes more and more significant nowadays. However, It is incontestable that urban development leads to environmental pollution, the unreasonable use of resources, inappropriate urban spatial layout, as well as unequal livelihood, and various issues, resulting in unsustainable development. Meanwhile, urbanism is under tremendous pressure from the pandemic situation and digital transformation, which further improves the urgency and necessity of sustainable development. To be specific, the article illustrates the sustainable theories recently. It investigates apropos of the paths and strategies worldwide, particularly providing the urban carrying capacity concept, whose researches are in its infancy and lacks agreed explanations. Thus, the thesis explores the relevant analysis and summaries of experience to emphasize the significance and necessity of sustainable development. Besides, Take Shenzhen as an example. It elaborates on the distinct plans and strategies for improving the sustainable development levels of the cities implemented by the different shareholders, including the government, community, and individuals. Also, it recommends the top-down strategy to cooperate in accelerating the sustainable development process. Finally, based on the sustainable theories, the article will provide a blueprint of sustainable development from different angles, containing a Smart city, a Green habitat, a Compact city and an integrated and harmonious developing city, which further expounds on the recommendation for future sustainable development. Therefore, The thesis provides substantial investigations and analysis, which is beneficial for the government comprehensively understand sustainable development and provide recommendations for implementing relevant strategies.

Keywords: sustainable development, smart city, environmental pollution, utilization of resources, urban spatial layout, livelihood issues

1. Introduction

1.1. Research Background

Current Situation of Urbanization Development. With the deepening development of industrialization and economic globalization, urban becomes more and more significant nowadays. Meanwhile, Cities are responsible for the bulk of production and consumption worldwide and are the primary engines of economic growth and development [1]. Indeed, Cities play a crucial role in improving people's living standards, enhancing international intellectual connections, and increasing

economic development. Hence, no one can plead ignorance on the significance of urban development. The World Bank calculated that over 50% of the population has lived in urban areas recently, and the world's population will increase by 1.5 times to 6 billion by 2045 [2]. Also, urbanization is beneficial to increase productivity, allowing innovation and new ideas to emerge. Data show that there are more than 80% of global GDP generated in cities. However, the development of different countries is also distinct to some extent. In order words, existing disparity not only in developed and developing countries but also regions. This phenomenon has a profound influence on the overall development of international urban.

The Context of Technology and Digital Development. Urbanism has been under tremendous pressure from digital transformation recently. On the one hand, as technology develops rapidly, the benefits of the Internet are invaluable. The Smart City can address several challenges we face nowadays, such as reducing pollution and promoting the sustainable development of cities. For instance, by strengthening the research, development, and application of sustainable technologies, the countries can make the best use of new energy resources, improving the progress of green industries and livelihood. By contrast, on the other hand, the existence of online working, shopping and information make cities less necessary, since there is no need to bring people and markets together. This phenomenon presents a challenge to cities and may potentially represent an existential threat to them [3]. In this situation, it is rational to face the challenge of a 'smart' city, simultaneously balancing the benefits and negative impact and allowing advanced technology to contribute to sustainable development.

Issues Brought about by Urban Development. Urban development leads to environmental pollution, the unreasonable use of resources, inappropriate urban spatial layout, and various issues, resulting in unsustainable growth. Industrial civilization motivates people to pursue the creation of more materials, and the change in the way of material utilization and transformation results in the emergence of pollution and garbage problems, leading to an environmental crisis [4]. Also, urban development brings out the irrational, excessive utilization of resources, causing pressure on the whole of humanity. Global material resource use is expected to reach nearly 90 billion tonnes in 2017. It may more than double from 2015 to 2050, with high-income countries currently consuming 10 times more per person than low-income countries and the planetary boundaries being pushed beyond their limits [5]. Besides, the social issue caused by urbanism, such as inequality, the disparity of regions' development, and the livelihood challenges faced, is severe. In China, People are faced with housing, medical, employment, and school difficulties nowadays, and the gap in wealth issue is prominent.

The Challenges of the Pandemic Recently. Cities worldwide have recently been the centers of the epidemic. Undeniably, the pandemic has had a profound influence on cities. Definitely, the COVID-19 pandemic has destroyed almost every aspect of our lives, and it is still far from over [6]. However, COVID-19 is not only a challenge for humanity to reconstruct the cities but also an opportunity to help us systematically shift to a more sustainable economy.The pandemic seems to have severely disrupted the Sustainable Development Agenda 2020 but has not diminished the importance and urgency of sustainable development issues. This context requires us to accelerate the sustainable development process and further emphasize the necessity.

1.2. Literature Review

Recently, there have been a large number of researches apropos of the status and approaches of sustainable urban development worldwide. The increasing importance of sustainable development can be explored through the case studies of Britain, Singapore, the United States, Japan, and other countries. For example, Liu put forward the policy of 'garden city' in Singapore in 1973 [7], and Glaesor states that the San Francisco Bay region managed to protect the environment and keep it

sustainable by reducing development, which made a big triumph [8]. Besides, Hall et al. argue that New York attached much importance to smart cities to improve our living and working environment [9]. In 2015, Feng, Kang, Pan, and Yang put forward that the United Nations passed 'Reforming Our World: An Agenda on Sustainable Development by 2030', which established 17 sustainable development goals (SDGs) to supervise global economic, social and environmentally sustainable development programs [10]. This shows that the significance has increasingly improved recently, and more urban countries have contributed to it [10]. As for China, Feng, Kang, Pan, and Yang also states that it actively responded to the call of the United Nations and has published various strategies since 1995 [10]. Also, urbanism is under tremendous pressure from the pandemic situation; According to Jeffrey et al., it can argue that the pandemic has severely disrupted the 2020 Sustainable Development Agenda but has not diminished the importance and urgency of sustainable development issues [6]. Therefore, sustainable development is crucial and will always be one of the important guidelines for the future development of humankind whenever it stands, which requires making specific strategies and plans.

1.3. Research Significance and Contents

As for the significance of the research, first, it is helpful to deepen and utilize the theory of sustainable development. Specifically, the thesis illustrates the sustainable theories recently and investigates apropos of the paths and strategies worldwide, explores the relevant analysis and summaries experience to emphasize the significance and necessity of sustainable development. Besides, with the shock of COVID-19 and digital transformation, the position of sustainable development has become more stable, acquiring countries globally to involve in and redouble to utilize and update the theory of sustainable development. Also, it aims to provide recommendations for improving the levels of sustainable development in urban. The thesis elaborates on the distinct plans and strategies for enhacing the sustainable development levels of the cities implemented by the different shareholders, including the government, community, and individuals. Also, it proposes a top-down strategy for corporates to accelerate the sustainable development process. And then, it puts forward measures and steps to implement the plan according to the needs and possibilities of construction. Finally, based on sustainable theories, the article will provide a blueprint of sustainable development from different angles. It offers complete recommendations combined with current events, considers the perspectives of the other stakeholders in the city, and gives suggestions from each stakeholder, which improves the efficiency of government decision-making and enhances the cooperation from different groups in contributing to sustainable development.

For the contents of research, based on sustainable urban development as the object of the study, this thesis summarizes the theory of the sustainable development of the world and the status quo, combined with the present era background, including environmental pollution, urban construction, and the digital economy, including disease impact. Also, it explores the necessity and importance of sustainable development and analyses the sustainable development in the developed countries in different stages of the measures and path; after that, it takes Shenzhen as an example and summarizes the specific actions that various organizations and stakeholders should take to achieve sustainable development. This strives to build a sustainable city in line with the current situation and provide convenience and help for economic and technological development.

The Theory of Sustainable Development Worldwide. First, to emphasize the crucial position of urban recently, summarize and analyze the needs of urban development in the world, and explore the theories and paths of sustainable development worldwide combined with the requirements of the United Nations. Also, it will focus on the sustainable development philosophy in China, including economic, social, and ecologically sustainable. Moreover, the thesis provides the concept of urban carrying capacity (UCC) to illustrate sustainable development theories further.

The Necessity and Significance of Sustainable Development. This thesis first expounds on the benefits of sustainable development in different aspects and analyses the rationality. Secondly, it further argues the necessity of sustainable development in combination with the current context, including the challenges and issues brought by urbanization, the shock of the pandemic, and digital transformation.

The Specific Recommendations to Different Shareholders. To achieve the goals of sustainable development, it is rational to consider efforts from other groups. Based on the case of Shenzhen, this article provides the specific plans implemented by different shareholders, such as the government and the community, and concentrates on the top-down strategy to collaborate together to achieve the goals.

Exploring the "Look" of the Sustainable Development Urban. Finally, the article will draw a blueprint for sustainable development. To be specific, it will show what future sustainable urban will be like, including a Smart City, a Green habitat, a Compact city, and an integrated and harmonious developing city.

And the figure below shows the Mind Map of this thesis.
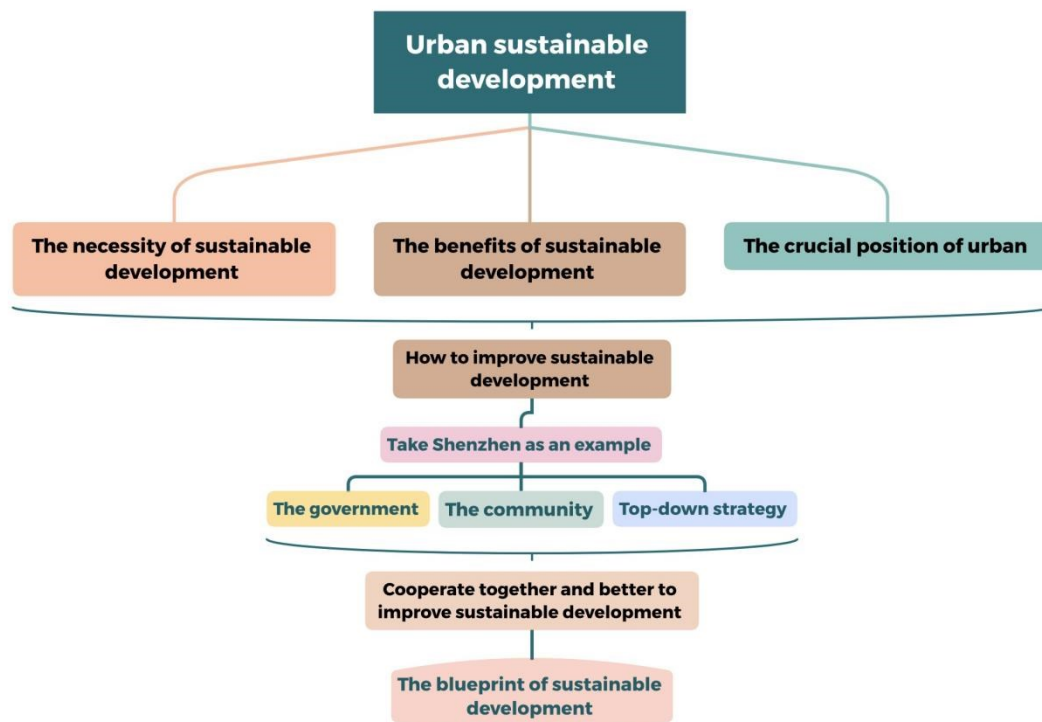

Figure 1: The mind map of this thesis.
(Photo credit: Original)

2. The Theory of Sustainable Development Worldwide

With the development of society and urbanization, city benefits are countless. This perspective can be elaborated from different angles.

2.1. The Crucial Position of Urban

From a macroscopic view, more people prefer to settle in the cities, and the fundamental reason is that rural infrastructure, construction, health care services, and jobs can not meet real needs. To be

specific, employment is a prerequisite for people's livelihood. Only when employment is guaranteed can the economy and society operate smoothly and develop healthily. Urban provides substantial opportunities and adequate infrastructure and increases well-being and happiness. Besides, urbanization has the ability to transform the social and economic fabric of nations. Being a primary engine of economic growth and development, cities are the main bulk of production and consumption worldwide. Urban occupies roughly three-quarters of global economic activity, and as the urban population grows, the urban share of global GDP and investments will also increase. Only by considering the needs of both rural and urban areas can we achieve the right to development for low-income and middle-income countries [1]. Also, urbanization not only increases trade and economic development but provides a free platform for people from different cultural backgrounds to exchange is -- in dense urban spaces, people can communicate, collide and inspire each other face to face, which makes knowledge spread faster and smoother, and also makes it possible for human creativity to burst out, and further increase the innovation, economic progress.

In the context of pandemic shock and digital transformation, urban development has become increasingly important. Particularly, it benefits sustainable development. For the former, technology and innovation facilitate the need for digital transformation and requires us to build a Smart City. The smart city can solve some challenges that we face nowadays. From cities themselves, they are imperative to tackle some issues such as climate change. Broadly speaking, the denser a city, the more efficient it is in terms of utilizing energy and resources [8]. As for Smart City, it is rational to use advanced technology to face environmental issues nowadays. As a new urban development model, the construction of Smart City is of great significance to urban low-carbon development. Research shows that this conclusion is still valid after a series of robustness tests. Also, smart city construction accelerates industrial structure upgrading, enhancing sustainable capacity and improving resource utilization efficiency to promote sustainable development. Besides, with the development of technology, the Smart city is connected through cloud computing, the Internet, and other information technologies so that the intelligent life of the residents can run in the whole ecosystem, so as to promote the sustainable development of the city. For the problematic pandemic situation, It seems that the viral pandemic is undermining the position of cities since people are supposed to keep their distance and reduce gathering, but the benefits cities bring can not be ignored. Thus cities still matter. In other words, COVID-19 is indeed a challenge for humanity to reconstruct the cities. More importantly, it is an opportunity to help us systematically shift to a more sustainable economy.

2.2. The Theory of Sustainable Development Worldwide

Looking through the path of sustainable development, at the 1992 United Nations Earth Summit in Rio de Janeiro, sustainable development emerged as one of the most urgent subjects for international policy. One hundred and fifty participating nations endorsed U.N. Agenda 21 and recommended sustainable development as part of the policy agenda. This development criterion was introduced by us in 1976 in the Bariloche Model' and given further impetus in 1987 when the Brundtland Commission proposed that "sustainable development is a development that satisfies the need without compromising the needs of the future [11]. Besides, countries worldwide actively responded to the call of the United Nations. Take China as an example. It contributed to sustainable development by implementing specific strategies and dividing the sustainable theories into economic, social, and ecologically sustainable. To be specific, As for sustainable economic theory, it requires that China's overall national strength, the people's material living standards, and quality of life should greatly improve, the mode of economic growth is supposed to change from extensive to intensive, as well as the economic structure is gradually improved. Socially sustainable development requires reducing inequality to the maximum extent and guaranteeing the future generation's social security needs. For

ecologically sustainable development, China has been striving to go 'green road of development' recently, which gives priority to ecological and environmental protection and accelerates the implementation of the green urban development exhibition strategy, actively promoting the ecological city, garden city, environmental protection model city and low-carbon city [12]. Definitely, 'sustainable' is not simply about the environment; there are social and economic dimensions, too [13]. Housing problems, city planning, and economic transformation should also be considered in the sustainable plan. Furthermore, For the U.K. and America, they have both contributed to sustainable development. The U.K. has proposed several schemes and legislations recently, making it clear that they are committed to promoting sustainable development rather than development at all costs [12]. Besides, The U.K. and America made great efforts from the angle of the regional planning system to achieve this goal. Sustainable development can be interpreted in different ways, which represents distinct development paths [14]. The discussion on the interpretation of sustainability can be divided into two categories: one is the 'risk society' approach, and another is the 'ecological modernization approach. For the U.K., it prefers the former since this approach believes the contradiction between ecological requirements and production mode can not be adjusted. Based on the continuously changing world with great uncertainty, it advocates wider democratic participation in decision-making. By contrast, ecological modernization states that sustainable development can be realized without impeding economic prosperity, which implies that the government should take the meritocratic method and make the best use of market forces. This theory is more coordinated with regional planning for sustainable development for America. What's more, Tokyo is another city that has strived for sustainable development for an extended period. To be specific, It primarily focuses on the utilization of energy and the insurance of livelihood issues. Research proves that much of the energy for Tokyo 2020 comes from renewable sources, including solar arrays and wood biomass power, which uses construction waste and tree clippings in Japan to produce electricity [15]. Also, the government attaches importance to environmental protection and continues to utilize renewable energy to halve greenhouse gas emissions. It can be said that such behavior plays a vital role in ecological protection and accelerates the city's sustainable development. Moreover, the urban carrying capacity concept is also a method to evaluate the sustainable development level, being a critical barometer and yardstick of sustainable urban development , which has been widely researched and developed recently [16]. The Carrying Capacity Concept has significant practical implications for a balanced relationship between human development and the environment, which benefits city planners for future sustainable development.

2.3. The Status of Sustainable Urban Development

As can be seen from the above, sustainable development has been increasingly paid attention to and put into practice by various countries recently. Take Shenzhen, China, as an example. The thesis will show the status of sustainable urban development. Shenzhen Sustainable Development Assessment report (2016-2021) shows that based on the European Union standards, Shenzhen's sustainable development status in the past six years has been at a medium-high level and is continuously developing to a higher level. To be specific, Various dimensions, such as health, education, economic development, and innovation, as well as the ecological environment, have reached the sustainable development goals [17]. It is worth mentioning that for technology and innovation, Shenzhen has become the demonstration and leading capital of innovation and entrepreneurship in China, which contributes to the goals of sustainable development in industry, innovation, and infrastructure. It always adheres to innovation as the dominant strategy of the city, constructs ecological system innovation actively, and improves the system of innovation to drive mechanism and policy measures to serve technological innovation, management innovation, organizational innovation, and business model innovation. Besides, for the objectives of livelihood issues such as the increase of well-being,

health level, and education level, including compulsory and higher education, the performance of Shenzhen is splendid. It not only persists in rapid economic development but has continuously increased investment in people's livelihood and focuses on improving people's living standards. To be specific, The government increased the subsistence allowance and minimum wage standard. Also, it strived to promote healthy levels, reducing mortality gradually and reaching the level of developed countries. Shenzhen placed considerable value on the fundamental infrastructure as well, and the quantities of the public library, medical organizations, and educational institutions are continuously increasing these years [17]. However, for the environmental protection aim, although the proportion of new energy vehicles in Shenzhen has climbed from 2.51% to 14.35%, the carbon dioxide emissions per unit of GDP decreased from 0.34 tons per 10,000 yuan to 0.28 tons per 10,000 yuan in the past six years, it still has a distance with the sustainable development goals proposed by the United Nations which should be continuously endeavored [17].

Therefore, it is true that the city takes sustainable development seriously, but there is still a development space.

3. The Necessity and Significance of the Sustainable Development

3.1. The Significance

The significance of sustainable development is countless. From a broad sense, Implementing a sustainable development strategy is conducive to integrating ecological, economic, and social benefits. It seeks to guarantee the future generation's interest rather than pursuing development at any price. Also, it is beneficial to the sustained, stable and healthy development of the national economy, as well as improve people's living standards and equality. Based on the finite resources and the growing pollution, sustainable development is an effective way to allocate resources rationally and curb population growth, forming a virtuous circle of economy and society. Besides, In terms of individual's livelihood, it helps to promote equality and ensure citizens' rights at the maximum level. To be specific, it requires strengthening the social security system, including housing, fundamental infrastructure, employment and insurance issues, and so on.

3.2. The Necessity

When analyzing the necessity of sustainable development, it is appropriate to consider the current context. Undeniably, urban development leads to environmental pollution, unreasonable use of resources, inappropriate urban spatial layout, unequal livelihood, and various issues, resulting in unsustainable growth. To be specific, industrial civilization motivates people to pursue the creation of more materials, and the change in the way of material utilization and transformation results in the emergence of pollution and garbage problems, leading to an environmental crisis [4]. Also, urban development brings out the irrational, excessive utilization of resources, causing pressure on the whole of humanity. For example, the problem of resource and energy security in Shenzhen is becoming increasingly prominent. The development space resources are insufficient, while the demand gap is huge. Also, the self-sufficiency of energy, especially water resources, is weak, and the cost is high. To make things worse, the water resources in Shenzhen are polluted severely due to urban development. Besides, the social issue caused by urbanism, such as inequality, the disparity of regions' development, and the livelihood challenges faced, is severe. Although the livelihood issues have recently improved in Shenzhen, the distance from the sustainable goals still exists. Housing, medical, employment, and school difficulties nowadays and the gap in wealth issues are still prominently caused by urban development. To be specific, the supply of quality public service resources in Shenzhen is insufficient, and the foundation of education and medical services is weak. Moreover, there are many hidden dangers in social governance in Shenzhen. The city's managed

population has reached 20 million, and the population density exceeds 10,000 people/square kilometer [18]. Also, problems such as "urban villages" and illegal buildings bring tremendous pressure and hidden dangers to urban security and social governance [18]. In this situation, the urban governance system and capacity lag behind the needs of urban development, which shows the urgency of sustainable development.

Moreover, considering the pressure of digital transformation and severe COIVD-19, the necessity of sustainable development seems more prominent, which is regarded as a road map out of the city [6]. With the development of innovation and technology, cities face the challenge of upgrading digital; city planners proposed the concept of 'Smart City' to assist sustainable development. Over the past two years, the COVID-19 pandemic has wreaked havoc on almost every aspect of our lives, and it is still far from over, involving the disruption of essential health services, the aggravation of extreme poverty, a rise in death and the destruction of the economy, as well as the damage of the ecological system [6]. In this situation, the only solution is to require concerted action on a global scale to devote ourselves to sustainable development. Thus it is supposed to adopt low-carbon, resilient and inclusive development connected with strengthening the social protection system and pursuing the utilization of new energy. According to this, it is clear that the map for survival after a pandemic is coordinated with the development of a sustainable and 'smart city', required to take advantage of technology and follow the path of sustainable development unswervingly.

4. The Specific Recommendations to Different Shareholders

Constructing a sustainable City requires different levels to work in tandem with each other. This thesis takes Shenzhen as an example to give specific guidance to various shareholders.

4.1. The Government

Leadership, such as the government, plays an important role. One of the critical differences between sustainable city initiatives that take off and those that stagnate in planning or implementation is that successful programs include an executive who demonstrates belief in the idea and takes leadership to move the program ahead. Currently, the most common sustainable city construction mode is government-led construction and operation. However, the too single and unchanged construction mode will cause different degrees of inefficiency after a long period. The consensus on city planning should avoid convergence and highlight characteristics. Some successful foreign cases like Toronto's smart commuting and Copenhagen's clean technology innovation offer the reference scheme. The government should put an end to political achievements and avoids the profit-seeking of enterprises. Rather than blindly focusing on developing Smart industries to promote economic growth, it needs to emphasize the environment and sustainable development. Besides, it's necessary to establish the evaluation mechanism of the top-level design scheme, which should have the ability of self-optimization and must be adapted to the trend of sustainable city construction. For example, Shenzhen, regarded as a Sustainable Development Agenda Innovation Demonstration Zone, is highly paid attention to by the government. In August 2019, the "Opinions of the CPC Central Committee and The State Council on Supporting Shenzhen to Build a Pilot Demonstration Zone of Socialism with Chinese Characteristics" was officially issued, giving Shenzhen "five strategic positions," among which "sustainable development pioneer" is the crucial dimension [19]. In this situation, the government does not simply require sustainable development but actually makes a phased plan to implement strategies suitable for Shenzhen based on the development status of Shenzhen. Also, Shenzhen devotes itself to a global sustainability benchmark city, and preliminary results were achieved. For instance, Shenzhen has been exploring new ways to control and improve air quality and water pollution with remarkable results. Significant progress has been made in comprehensively

eliminating sewage and improving water quality, reaching the standard of PM2.5, as well as reducing energy consumption [20].

4.2. The Society

For the greater good of the community, market forces must be shaped. A well-considered policy framework needs to be built at the national and local levels to guarantee that we can harness the power of new technologies for the broadest possible advantage. Such a strategy would center its primary goal on the idea of open access to ordinary people, enterprises, and the larger community. The overriding point is to break down the barriers of information communication among different spheres and enhance the ability of information collaborative sharing. The rapid circulation of information resources can give full play to market advantages and improve urban governance's efficiency. For some enterprises and social organizations, projects with high governance costs and a lack of government resources can be transferred to them to give full play to the advantages of solid government supervision and efficient market governance. Besides, Enterprises will not spontaneously pay attention to sustainable development because they will face great input pressure. For example, Shenzhen built an international low-carbon city with hundreds of high-tech enterprises to contribute to sustainable development. Working as volunteers to construct urban is a good choice for ordinary residents. Volunteer service has become a common trend in Shenzhen recently, which helped Shenzhen win the title of "National Civilized City" for the sixth time [21]. In this situation, It is rational to actively share data on the platform and propose the feelings of project operation so that the government can adjust in time. The attention of all sectors of society to urban development can improve the enthusiasm of multiple subjects for cooperation, achieving comprehensive data coverage. This can make the forecast more accurate, and the potential risks can be monitored in advance. As for the residents in Shenzhen, they are supposed to follow the concept of sustainable development to keep it in mind profoundly and apply it to daily life. Meanwhile, Shenzhen citizens also make use of the right of participation and supervision in the process of sustainable development. Given the increasing difficulty of social management, mass appeal channels of expression, and interest coordination mechanism need to be perfect, Shenzhen comprehensive makes use of big data, cloud computing, and mobile Internet technology to promote social management modernization and build a city with more humanistic care. Based on this, it constantly enhances citizens' sense of identity, belonging, and happiness, and strives to make Shenzhen take the lead in social governance in China [22]. What's more, the media should play a crucial role in setting up correct values and guiding right public opinions. To be specific, Due to the weakness of NGOs in China, the media of Shenzhen, as the method of propaganda, must take on the important task of establishing the correct and sustainable development concept for the people, which requires adapting to the development background of the scientific development road in our country. Thus the media should intensify efforts to fulfill the mission of social values, spread the correct concept of development, in addition, to cooperate with the government propaganda and supervision of work, as well as pass the voice of the social elite and experts to make series or manuscripts, Continuously, spare no effort to make their own contribution to the sustainable development of the economy [21].

4.3. Top-down Strategy

Top leaders' crucial role in advancing sustainable city initiatives shows that top-down strategies are successful. Also, local or micro-level individuals have the ingenuity and drive to contribute to sustainable development. Therefore, getting the top and bottom to cooperate is the answer. In general, decision-making should include people from all levels of society. To make the sustainable development concept successful, there needs to be an organic relationship between technological,

organizational, and human elements. Specifically, the government has led the establishment of the sustainable City development department, which is mainly responsible for organizing and coordinating with the public authorities on sustainable city construction and providing relevant legislation and proposals. Not only environmental issues, housing, fundamental infrastructure, employment issues, and various livelihood problems should be highly valued by the government. Publicizing relevant governance decisions and establishing a reward mechanism can improve the public's participation in governance and the sense of belonging in cities. For instance, Shenzhen proposed a Net welfare indicator system to address livelihood issues better and served sustainable development [23]. To be specific, The index system is divided into income distribution, equity and security level, social security level, public service level, and people's overall development level. These are regarded as five first-level indicators, among which include 21 second-level indicators. The perfect and comprehensive system is conducive to making livelihood issues concreted. What's more, the technology service providers and other enterprises also play an essential role, constantly updating the infrastructure and accelerating the transformation and upgrading of the industry with more low-carbon and green energy. To achieve this, Shenzhen adheres to the "two-wheel drive" of scientific and technological and institutional innovation, focuses on basic research, technological breakthroughs, and industrialization of achievements, as well as enhances scientific and technological innovation continuously [22].

5. Exploring the "Look" of the Sustainable Development of Urban

5.1. A Smart City

The "Look" of sustainable urban development should be complete and combined with current events. Also, the blueprint needs to be specific and intuitive.

The vision of Smart City requires comprehensively promoting urban innovation in science and technology, systems, management, and brands, accelerating the pace of comprehensive and supporting urban reform, and paying more attention to strengthening the capacity for independent innovation Construction. Also, Building a Smart city needs to improve the ability of original innovation, integrated innovation, and the introduction of digestion, so as to enhance the independent innovation ability to prompt the city gradually took to the track of development by innovation [12]. For example, Shenzhen has always taken innovation-driven development as the leading strategy of urban development, and initial results have been achieved recently [22]. The blueprint of "Smart Cities" is the urban center of the future. All structures, including power, water, transportation, etc., are designed, constructed, and maintained, making use of advanced, integrated materials, which are interfaced with computerized systems comprised of databases, tracking, and decision-making algorithms. This makes a safe, secure, environmentally green, and efficient urban area [9].

5.2. A Green Habitat

The construction of a green city requires taking sustainable development as the core task of urban development and constructing an ecologically sustainable development economy, in addition to building a sustainable development environment, as well as creating a healthy economic, social and ecological environment. Also, we are required to prioritize ecological and environmental protection and accelerate the implementation of the green urban development strategy. Actively promoting ecological cities, garden cities, environmental protection model cities, and low-carbon cities construction are also considered [12]. Besides, the international low-carbon city in Shenzhen is an excellent model for building green habitats [24]. On the one hand, Shenzhen actively undertakes the due obligations of environmental protection and meets the requirements of national energy conservation. On the other hand, It benefits to adjust the economic structure, improve the efficiency

of energy utilization, and build an ecological civilization. Thus, building a green habitat also requires promoting energy conservation and environmental protection technology, raising the proportion of urban renewable energy use to advocate green production, living and consumption patterns, guide public science and green consumption.

5.3. An Integrated and Harmonious Developing City

Sustainable development is not only apropos of environmental protection but social and economic issues. In this situation, Shenzhen should continuously pay more attention to ensuring and improving the livelihood of the city's people. To be specific, speeding up urban distribution and further improving the social security system. In particular, Inequality issues should be emphasized, including 'difficulties in living, seeing a doctor, finding a job, and going to school' faced by low-income people. And finally, building a new pattern of harmonious and orderly urban development [12]. For example, Shenzhen built a net welfare indicator system [23]. Moreover, the Shenzhen government should also promote the integration of urban and rural areas and strive to build a new type of relations between urban and rural, further encouraging sustainable development [12].

5.4. A Compact City

The demand for urban development for urban space, sprawl, and expansion seriously influence the convenience of urban residents' life profoundly and increase the cost pressure of various production activities. The vision of a Compact City requires designing a rational spatial layout of urban space, improving the convenience of an urban area, urban development, and construction density, in addition to optimizing urban structure scale and urban functions [25]. Shenzhen has faced relevant issues. For example, the construction land has expanded to the limit, reserve land resources are seriously insufficient, and the overall spatial is not well coordinated. In this situation, Shenzhen designed a special scheme based on its current circumstance, which requires fine-tuning the regional layout and highlighting the regional layout to better plan a Compact city and pursue sustainable development comprehensively [26].

6. Conclusion

6.1. Key Findings

This thesis summarizes the theory of sustainable development worldwide and the status quo and explores the necessity and importance of sustainable development; after that, it takes Shenzhen as an example and summarizes the specific actions that various organizations and stakeholders should take to achieve sustainable development. Finally, it provides a particular blueprint for sustainable development planning. The conclusion is as follows:

The Importance and Necessity of Sustainable Development Theory Are Increasing Day by Day. As analyzed above, the significance of sustainable development is countless, which is more obvious in the context of the pandemic and the challenge of technology transformation. The only solution is to require concerted action on a global scale to devote ourselves to sustainable development. Thus it is supposed to adopt low-carbon, resilient and inclusive development connected with strengthening social protection systems and pursuing the utilization of new energy. The map for survival after a pandemic is coordinated with the development of a sustainable and 'smart city,' required to take advantage of technology and follow the path of sustainable development unswervingly.

Sustainable Development Requires Every Shareholder to Take Action and Cooperate Actively. To strive for sustainable development, top leaders' crucial role in advancing sustainable city

initiatives shows that top-down strategies are successful. Meanwhile, local or micro-level individuals have the ingenuity and drive to contribute to sustainable development. Therefore, getting the top and bottom to cooperate is the answer. The government is committed to legislation and supervision, whereas people devote themselves to providing advice. Companies are supposed to perform their duties and strengthen industry transformation and upgrading.

The Blueprint of a Sustainable City Is Comprehensive and Involves Different Aspects. Sustainable development is not only apropos of environmental protection, healthy economy, high-quality living level, and integration development should also be considered. In this situation, we are supposed to draw a clear blueprint, including the Smart city, the Green habitat, and an integrated and harmonious developing city.

6.2. Future Studies

Due to the limitation of research practice, this thesis chose Shenzhen to discuss the suggestions for the sustainable development of a city. In this situation, only a single object of study makes the conclusion less extensive and representative, and being a lack of thought of different types of cities at home and abroad advice. However, the conclusion may be more convincing if considering other regions of cities. Also, by doing so, it can adjust measures to local conditions according to the development requirements of different cities, thus providing countermeasures and suggestions to realize the city's sustainable development.

References

[1] United Nations.: Why this world needs an urban sustainable development goal. https://sdgs.un.org/documents/why-world-needs-urban-sustainable-goal-19999, last accessed at 2022/08/26.
[2] The World Bank: Urban development, https://www.worldbank.org/en/topic/urbandevelopment/overview, last accessed at 2022/09/09.
[3] Nathan, M.: The city and the Virus. Urban Studies Journal Limited, U.K. (2021).
[4] Tian，S.: The environmental crisis can not be effectively solved within the framework of industrial civilization. Green Leaf, The sixth issues of 2011, P19-26, (2011).
[5] Bringezu.S. et al.: Assessing Global Resources. United Nations Environment Programme (2017).
[6] Jeffrey.S.et.al: The Sustainable Development Goals Report 2022. T.J. Books Limited, Padstow Cornwall, United Kingdom (2022).
[7] Liu, M.: The summary of Experience with eco-city planning and construction in Singapore. Proceedings of the 9th Conference on Urban Development and Planning. Guangzhou (2014).
[8] Glaeser, E. Triumph of the City. The PENGUIN PRESS, New York (2011).
[9] Hall, R. E. et al.. The vision of a smart city (No. BNL-67902; 04042). Brookhaven National Lab.(BNL), Upton, NY (United States) (2000).
[10] Feng, T., Kang, Q., Pan, B., Yang, Y.: Synergies of sustainable development goals between China and countries along the Belt and Road initiative. Current Opinion in Environmental Sustainability. Volume 39, Pages 167-186 (2019).
[11] Chichilnsky, G.: What is sustainable development? Land Economics, Vol. 73, No. 4, Defining Sustainability (Nov. 1997), pp. 467-491 (2022).
[12] Li, P.: Research on the status and management of urban Sustainable Development in China. Science &Technology information 15 (2012).
[13] Allmendinger, P.: The Forgotten City: Rethinking Digital Living for Our People and the Planet. Bristol University Press 2021, Policy Press, an imprint of Bristol University Press, University of Bristol 1-9 Old Park Hill Bristol BS2 8BB U.K. (2021).
[14] Davoudi. S.: Sustainability: A new vision for the British planning system. Planning perspective,15, 123-137 (2010).
[15] International Olympic Committee. All you need to know about Tokyo 2020 sustainability. https://olympics.com/ioc/news/all-you-need-to-know-about-tokyo-2020-sustainability, Last accessed at 2022/08/26.

[16] Wei, Y., Huang, C., Lam, P., Yuan, Z.: Sustainable Urban Development： A review on urban carrying capacity assessment. Volume 46, pages 64-71, Habitat International (2015).

[17] Sznews, https://www.sznews.com/news/content/2022-04-26/content_25088595.htm, last accessed at 2022/09/09.

[18] Yin, P.: Shenzhen's 'innovation leadership' focuses on solving 'megacity disease'. http://www.jjckb.cn/2018-05/04/c_137154845.htm, last accessed at 2022/09/09.

[19] Du, J.: Shenzhen moves forward Again: Promotion of the National Sustainable Development Agenda Innovation Demonstration Zone. Economics and Management Science Economic system reform; Economic Guide for Sustainable Development, 2019. Z1 period, pages 73-75 (2019).

[20] Commentator of Shenzhen Special Zone Newspaper: Innovation Leads to create "Shenzhen Sample" of Sustainable Development. Shenzhen Special Zone report local level. A01 (2021).

[21] Zhou, Z.: Economic sustainable development and media responsibility. The Modernization of Shopping Malls, 384 (2009).

[22] Science and Technology Commission of Shenzhen Municipality, Shenzhen: Striving to become a sustainable development priority. Economic Guide for Sustainable Development. Wang, Q. China (2021).

[23] MA, X., Zou, Y.: Shenzhen Net Livelihood Welfare Index System: An effective policy tool for solving people's livelihood problems. Journal of Lingnan, 1003-7462（2010）05-0126-04 (2010).

[24] Harbin Institute of Technology Shenzhen Graduate School DTZ Real Estate Consulting Co., LTD. Shenzhen Urban Planning and Design Institute: The overall development planning outlines building an international low Carbon City in China, Shenzhen. The Open Herald, 2012. S1 period (2012).

[25] Wang. Y.: Research on Evaluation of Urban Sustainable Development Level. Huazhou University of Science and Technology, Wuhan 430074, P.R. China. (2019).

[26] Peng, F.: Current situation and optimization of Shenzhen urban spatial layout. Housing and Real Estate, 2016, 29 issue (2016).