

The Enlightenments of Niche Theory to Ecological Poverty Alleviation

Yongling Ye¹, Wei Zhang^{2,*}, Songqin Ye²

¹ Business School, Yulin Normal University, Guangxi Yulin, China

² The College of Finance, Jiangxi Normal University, Jiangxi Nanchang, China

* Corresponding author: Wei Zhang

Abstract: Based on the establish the dynamic mechanism (first trophic level) about voluntary or mandatory transform the role of business entity to the role of corporate citizen, promoting the quantity and quality of the corporate citizen that is ecological value orientation and the positioning of ecological industry chain and the positioning of ecological value chain (second trophic level) of the corporate citizen, which are conducive to the realization of Pareto improvement and until Pareto optimality of the niche corresponding to man and man, the niche corresponding to man and nature (third trophic level). The experiences of ecological project poverty alleviation of ancient Dujiangyan irrigation system and modern “Lishui Experiences” are successful practices of ecological poverty alleviation based on the niche theory.

Keywords: niche; ecological poverty alleviation; corporate citizen; ecological value

Economic poverty alleviation oriented by economic value is deficient in transfer payment and pollution transfer. Ecological value-oriented ecological poverty alleviation is not only in line with the original intention of beautiful China and poverty alleviation, but also can solve the contradiction between economic value and ecological environment evolution.

1. Niche Theory and Ecological Poverty Alleviation

1.1 Niche Theory and Rich and Poor

Niche Theory (also known as Value Chain Law) refers to that each species, natural person or organization has its own role and status in the biological community or ecosystem, that is, occupies a specific living space and has a specific value of existence[1]. Enterprise is the basic cell of market economy and an important carrier to realize social progress and wealth appreciation. By the end of 2018, the total number of Chinese enterprises was 90 million, including 60 million individual businesses, 9 million sole proprietorships, 3 million partnerships, 3 million non-corporate corporations and 15 million corporate corporations[2]. The first three types are natural person enterprises, which are low-grade enterprises. The latter two are corporate enterprises, which are high-grade enterprise types. Different levels of enterprises occupy different ecological niches with their own characteristics and advantages.

In the practice of niche competition, the more the total number of enterprises in a country or region, the larger the proportion of high-grade enterprises, and the niche of that country or region will be relatively superior and richer. On the contrary, relatively inferior and poorer. For example, there are 30 million businesses in the United States (calculated on a population of 320 million, an average of 93.8 per one thousand companies), and 90 million businesses in China (calculated on a population of 1.39 billion, an average of 64.7 per one thousand companies), and compared with China, the proportion of low-grade natural person enterprises in the United States is relatively low, and the proportion of high-grade corporate enterprises is relatively high. The US niche (economic value niche) is thus relatively ahead of China's. Similarly, the number of enterprises per capita and the proportion of high-grade enterprises in Beijing, Shanghai, Zhejiang and other regions are significantly higher than those in Yunnan, Gansu and Guangxi. Beijing, Shanghai, Zhejiang and other regions have evolved into relatively rich regions, while Yunnan, Gansu and Guangxi have evolved into relatively poor regions.

1.2 Economic Poverty Alleviation and Ecological Niche Shortcomings

The essence of economic poverty alleviation is economic value-oriented niche improvement, which means the growth of the economic value of poor areas, including the external transfer of economic value and the internal appreciation of economic value.

1.2.1 The Ecological Niche Disadvantage of Economic Poverty Alleviation by Making up for the Deficiency

There are two shortcomings in the transfer of economic value to make up for shortages in poverty alleviation. First, the increase of economic value of poor areas (or natural persons, hereinafter referred to as poor areas) is premised on the decrease of economic value of rich areas (or natural persons), and the ecological niche Pareto optimality corresponding to people cannot be achieved by making up for deficiency. Second, the longer the principal-agent chain in which the niche makes up for the gap, the higher the dissipative value. The dissipated value of corporate charitable responsibility (CPR) accounts for about 50% of CPR on average, that is, for every 2 yuan of corporate profits used for charity to make

up for the deficiency, only 1 yuan is transferred to the poor end, and the other 1 yuan is channel cost.

1.2.2 The Niche Disadvantage of Economic Value-added Poverty Alleviation

Economic value-added poverty alleviation has two shortcomings. First, the growth of economic value evolves in the opposite direction with the deterioration of ecological environment, while poverty alleviation evolves in the same direction with pollution. Economic value-added in poor areas is at the cost of pollution transfer, and the ecological niche Pareto optimality corresponding to man and nature cannot be achieved. Second, the realization of human niche harmony through poverty alleviation is at the cost of the disharmony between human and nature, and the negative externality leads to a non-win-win game or even a negative-sum game[3].

1.3 Ecological Poverty Alleviation and Niche Advantages

1.3.1 Corporate Citizenship and Ecological Value

The natural mission and essential goal of a business entity is to maximize corporate value (also known as economic value or corporate profit). As an economic person pursuing the maximization of enterprise value, the enterprise legal person has positive externality to promote the progress of material and spiritual civilization (economic appreciation benefits others' ecological niche) on the one hand, and negative externality to pollutes the environment (environmental pollution damages others' ecological niche) on the other.

Corporate citizen shoulders the dual mission of economic and social person. Its code of conduct is not only to pursue the maximization of corporate value, but also to take into account the maximization of ecological value (ecological civilization). First of all, enterprise citizen is enterprise legal person and has the positive externality of enterprise legal person. At the same time, corporate citizens are also social people and actively avoid negative externalities.

Ecological value refers to the self-economic value, external ethical value and external functional value of economic activities. For example, the ecological value of trees includes the economic value of the tree itself, the (positive) external ethical value of the tree for human beings, such as regulating climate, eliminating noise and living atmosphere, and the (positive) external functional value of the tree for animals and plants, such as conserving water, increasing fertility and providing breeding places. For another example, the ecological value of the battery includes the economic value of the battery itself, the (negative) external ethical value of the battery for human beings that harms health through the biological chain, and the (negative) external functional value of the battery for plants and animals that pollutes water and soil with heavy metals[4].

In the practice of market economy, enterprise legal person only pays attention to the influence of direct and explicit economic value (market value) on its own ecological niche; Corporate citizens not only pay attention to the impact of economic value on their own

ecological niche, but also take into account the impact of indirect and hidden external value (non-market value) on the ecological niche of human beings, animals and plants. In the case of the conflict between the maximization of economic value and the maximization of ecological value, ecological value takes priority.

1.3.2 Ecological Poverty Alleviation and Niche Advantages

Ecological poverty alleviation means to transform corporate roles into corporate citizens, focusing on ecological value, attaching equal importance to ecological value and economic value, positioning ecological industrial chain and ecological value chain, so as to achieve a win-win situation of poverty alleviation and ecological civilization construction.

The essence of ecological poverty alleviation is ecological value-oriented niche improvement, that is, the growth of ecological value in poverty-stricken areas, including the increment of their own economic value, external ethical value and external function value. The author's investigation and literature show that there is a causal relationship (the relationship between rice and cooking) and a positive correlation between ecological value orientation and ecological poverty alleviation. Specifically, they include :(1) Without solving the problem of ecological value orientation, the goal of ecological poverty alleviation is to make bricks without straw; (2) The ecological value orientation is conducive to the effect of ecological poverty alleviation. The greater the ecological value, the higher the effect of ecological poverty alleviation[5].

Ecological poverty alleviation has two significant advantages: first, the economic value increment corresponding to poverty alleviation, that is, the poor groups or individuals realize the economic value increase and ecological niche optimization, rather than the economic value transfer and ecological niche to fill the gap, can achieve the corresponding ecological niche Pareto optimality; The other is ecological value orientation, that is, poverty alleviation is oriented by ecological value rather than economic value. The increment of ecological value means that poverty alleviation and the environment evolve in the same direction, which can realize the ecological niche Pareto optimality corresponding to man and nature.

2. The Enlightenment of Niche Theory on the Person-to-person Niche of Ecological Poverty Alleviation

Ecological poverty alleviation needs to realize the increment of economic value in poor areas rather than the transfer of economic value, that is, to realize the Pareto improvement of ecological niche between people. The role transformation from corporate legal person to corporate citizen, the increase of the number of corporate citizens and the level optimization are the paths to realize the Pareto improvement of the ecological niche between people to Pareto optimality.

2.1 The Enlightenment of the Transformation of Corporate Legal Person to Corporate Citizen

The Matthew effect of market economy will cause the polarization of economic niche between people. Eco-values-oriented corporate citizens retain the positive externalities of corporate economic growth while avoiding the negative externalities such as polarization and environmental pollution.

According to the authors research, contract theory, stakeholder theory and the human nature assumption theory, first of all, from the perspective of contract, this paper constructs the dynamic mechanism of the role transformation from corporate legal person to corporate citizen: (1) The dynamic mechanism of contract perspective can be constructed according to different human nature assumptions, that is, the external and internal rigid dynamic mechanism of enterprises (citizens) corresponding to written contracts is constructed, such as ecological poverty alleviation enterprises (citizens) external poverty alleviation planning and internal docking system; (2) To construct the external and internal flexible dynamic mechanism corresponding to the psychological contract, such as ecological poverty alleviation enterprises (citizens) external honor incentive and internal poverty alleviation mission[6].

Secondly, the dynamic mechanism can be constructed from the perspective of stakeholders: (1) Constructing the rigid dynamic mechanism of government, the flexible dynamic mechanism of society and the flexible dynamic mechanism of customers corresponding to external stakeholders. For example, the government's poverty alleviation policy, public opinion and guidance, and customers voting with their feet; (2) Establishing rigid and flexible dynamic mechanisms corresponding to internal stakeholders, as well as rigid and flexible dynamic mechanisms for management and employees. For example, shareholders will make decisions and ideas on poverty alleviation, and management and employees will vote with their hands, mouths and feet[7].

It has realized the role transformation from the enterprise legal person oriented by economic value to the enterprise citizen oriented by ecological value, which is mandatory (rigid motive force) and voluntary (flexible motive force), and established the carrier and subject of enterprise citizen for ecological poverty alleviation. The greater and more thorough the transformation of corporate legal person to corporate citizen, and the higher the efficiency of economic value increment without pollution transfer, the greater the probability that the ecological niche corresponding to harmony between people in poor areas will be improved to Pareto optimality.

2.2 Enlightenment from the Improvement of the Number and Level of Corporate Citizens

The higher the number of corporate legal persons and the higher the proportion of corporate legal persons in a region, the better the ecological niche corresponding to the economic value of the region, but it is not conducive to the ecological niche corresponding to the external value (ethical and functional). The larger the number of corporate citizens and the proportion of high-ranking

corporate citizens in a region, the better the ecological niche corresponding to economic value in the region, and the better the ecological niche corresponding to external value (ethical and functional).

On the basis of the transformation from corporate legal person to corporate citizen, the rural revitalization strategy, industrial poverty alleviation in the Qinghai-Tibet Plateau and the northwest desert area, and mountain ecological projects are conducive to the increase of the number of corporate citizens in poor areas. The reform of corporate system of (state-owned and private) enterprises, the transformation of (low-grade) enterprise governance mode to (high-grade) corporate governance mode, and simplifying the five types of registration certificates to a single business license and a unified social credit code for commercial subjects are the deep reform measures to optimize the level of corporate citizenship.

As the biological chain of nature (the interdependence of material transformation and energy transformation between living things), deep change corporate citizens in poverty-stricken areas of macro environment, industry environment, competition environment (the first trophic level, optimizing corporate citizenship, especially the high-grade corporate citizen of niche (the second trophic level), and to improve ecological niche in the poor areas (the third trophic level). With the improvement of the number and level of corporate citizens in poor areas, the economic and environmental ecological niche in poor areas will get a healthy cycle and positive feedback[8].

3. The Enlightenment of Niche Theory to the Human and Natural Niche of Ecological Poverty Alleviation

Michael E. Porter (1996), the father of competitive strategy, first proposed that inter-industry positioning and industry positioning determines the long-term competitive position of enterprises[9]. The positioning of corporate citizens' ecological industrial chain and ecological value chain is conducive to the positive evolution of poor areas' (economic and environmental) ecological niche while winning their own (economic) ecological niche advantages.

3.1 The Enlightenment of inter-industry positioning on ecological poverty alleviation

Positioning among Business refers to the Positioning among many industries or businesses, the enterprise (legal person) to determine the most (economic) value of the Business. The inter-industry positioning requires qualitative analysis of environment, mission and strength, and quantitative analysis of the value structure of the Industry Chain (referring to the sum of different business activities in the upstream and downstream of the Industry), so as to find the most (economic) valuable businesses in the Industry Chain. The essence of inter-industry positioning is industrial chain positioning, which is mainly used to analyze the competitive position of enterprises (legal persons) among industries.

The inter-industry positioning of corporate citizens is the ecological industry chain positioning, that is, corporate citizens determine the business with the most

ecological value among many industries or businesses. The orientation of corporate citizens' ecological industry chain first determines the direction of ecological niche evolution in poor areas, that is, positive evolution (ecological value is positive and ecological niche tends to optimize) or reverse evolution (ecological value is negative and ecological niche tends to deteriorate). Secondly, it determines the efficiency or inefficiency of the forward evolution[10].

3.1.1 The Reverse Evolution of Negative-sum Industry and Ecological Poverty Alleviation

Negative-sum Industry refers to the industry with negative ecological value caused by negative externalities, which corresponds to the reverse evolution of ecological niche in poor areas. When corporate citizens are positioned as negative-sum industries, the optimization of ecological poverty alleviation among people is not enough to offset the deterioration of the ecological niche between man and nature, and the ecological niche in poor areas evolves in reverse. Negative-sum industries include: (1) Negative-sum industries due to technical standards, such as some chemical and smelting industries; (2) Negative-sum industries for customer health reasons, such as some GM food and tobacco industries; (3) Negative-sum industries for consumption ethics, such as some renters, online games and other industries; (4) Negative-sum industries for legal standard reasons, such as pornography, pyramid selling and other industries.

3.1.2 Efficiency of Positive Evolution of Positive-sum Industry and Ecological Poverty Alleviation

Positive-sum Industry refers to the industry with positive ecological value caused by positive externalities, which corresponds to the positive evolution of ecological niche in poor areas. In March 2019, the Green Industry Guidance Catalogue (2019 Edition) issued by the National Development and Reform Commission and other seven ministries and commissions defined the green industries as positive-sum industries, including: (1) Positive-sum industries with positive ecological value and economic value, such as ecological agriculture; (2) Positive-sum industries with positive ecological value and negative economic value, such as solar energy industry.

In the case of positive-sum industries with the same economic input, factors such as carbon emission and dissipation value (here refers to the efficiency loss that economic input is not converted into ecological value) will reduce the ecological output, which determines the level of the positive evolutionary efficiency of ecological poverty alleviation. This can be divided into two situations: (1) The level of industrial carbon emissions and the level of ecological poverty alleviation efficiency. For example, compared with agriculture, forestry and smelting, the efficiency of ecological poverty alleviation is higher due to low pollution. Compared with the traditional energy industry, the new energy has a higher efficiency of ecological poverty alleviation due to its low energy consumption. (2) The level of industrial

dissipation value and the level of ecological poverty alleviation efficiency. For example, compared with traditional industries, ecological industry has a higher efficiency for poverty alleviation due to its low dissipation value[11].

In the practice of ecological poverty alleviation, positioning among business oriented by ecological value mainly depends on the positioning of exogenous ecological industry chain, that is, the rigid correction of positioning between industries is implemented. Among many industries, enterprise legal persons in poor areas (converted into corporate citizens) are forced to choose positive-sum industries with rich ecological value to avoid negative-sum industries. To realize the positive evolution of the ecological niche of the poor areas (efficiently) from the source of the industrial chain.

3.2 The Enlightenment of Industry Positioning on Ecological Poverty Alleviation

The positioning internal business refers to becoming the most valuable enterprise (legal person) in the industry or business. The positioning internal business needs to analyze the comprehensive ability of research and development, production, sales and brand of the enterprise, and then through the value chain each link to complement or foster strengths and circumvent weaknesses, under the same business conditions to become the most valuable enterprise (legal person). The essence of industry positioning is value chain positioning, which is mainly used to analyze the competitive position of enterprises (legal persons) in the industry.

The industry positioning of corporate citizens is the ecological value chain positioning, that is, within the industry or business, become the most ecological corporate citizens. The ecological value chain orientation of corporate citizens determines the high or low efficiency in the positive evolution of ecological niche in poor areas[12].

3.2.1 Research and Development Link and the Efficiency of Ecological Poverty Alleviation

Dark green and light green technological innovation, as well as virtual R&D (including research and development outsourcing and virtual research and development consortium) mode can help corporate citizens to strengthen the research and development link of the ecological value chain, realize the leading ecological value of corporate citizens in the industry, and thus improve the efficiency of ecological poverty alleviation.

3.2.2 Production Link and the Efficiency of Ecological Poverty Alleviation

Cleaner production, green production and virtual production (including production outsourcing and virtual production combination) can help corporate citizens to strengthen the production link of the ecological value chain, realize the niche leadership of corporate citizens in the industry, and then improve the efficiency of niche optimization in poor areas[13].

3.2.3 Sales Link and the Efficiency of Ecological Poverty Alleviation

The mode of green logistics, green warehousing, online direct selling and virtual sales (including sales outsourcing and virtual sales combination) can help corporate citizens to strengthen the sales link of the ecological value chain, realize the leading ecological value of corporate citizens in the industry and improve the efficiency of ecological poverty alleviation.

3.2.4 Brand Link and the Efficiency of Ecological Poverty Alleviation

The combination mode of ISO14001 environmental management system certification, low-carbon product certification, green brand and virtual brand can help corporate citizens to strengthen the brand link of the ecological value chain, and in the same way, the biological chain nutrition is transferred step by step to improve the efficiency of ecological poverty alleviation.

In the practice of ecological poverty alleviation, the industry orientation of ecological value orientation includes endogenous and exogenous ecological value chain orientation, that is, flexible guidance and rigid correction of industry orientation are carried out, and within the industry, corporate legal persons (transformed into corporate citizens) in poor areas are guided or forced to pursue the leading role in the ecological value chain. To realize the efficiency of positive evolution of ecological niche in poor areas from the source of value chain.

4. The Practical Enlightenment of Ecological Niche Theory to Ecological Poverty Alleviation

4.1 Li Bing's Ecological Poverty Alleviation Based on Ecological Niche in Ancient Times

Fan Zhongyan, an economic poverty alleviation artist in ancient times, used many innovative methods to reduce the dissipation value of disaster relief and improve the effectiveness of transfer payment in the face of poverty caused by floods. However, Fan Zhongyan's decades-long effort of "caring for the whole world" did not realize the long-cherished wish of "happy for the whole world", and the ecological position of victims and flooded areas was still fragile.

Li Bing was a model of ecological poverty alleviation in the Warring States Period. In the face of poverty caused by floods, Li Bing organized a series of ecological projects, such as beach risks, dredging waterways, repairing cable bridges and opening salt wells, among which Dujiangyan is the most famous ecological project. The positive externality of Dujiangyan ecological project (second trophic level) optimized the ecological niche of victims in Chengdu plain (third trophic level), and the fragile ecological niche in flooded area was transformed into the superior ecological niche of "the land of abundance".

Li Bing aims to optimize the ecological niche between people and nature and between people in flooded areas, which is the ecological poverty alleviation style of

"giving the human by the fishing", while Fan Zhongyan is the economic poverty alleviation style of "giving the human by the fish".

4.2 Modern Ecological Poverty Alleviation Based on Ecological Niche in Lishui

The per capita GDP of Lishui City ranks the last place in Zhejiang Province for a long time because of its mountainous area. The "Lishui Experience" of the value realization mechanism of ecological products (products or services corresponding to ecological industrial chain or ecological value chain) not only promoted the ecological environment status index (EEI) of Lishui to rank first in the province, but also showed a trend of catching up with per capita GDP. It is a typical successful practice of ecological poverty alleviation based on the ecological niche theory[14].

4.2.1 The Subject of Corporate Citizens Realizes the Growth of GEP

The "Lishui Experience" has transformed the main body of poverty alleviation from a single government to a large number of corporate citizens. For example, the brand of "Lishui Mountain Cultivation" has more than 900 members and the Ecological Agriculture Association has more than 600 members. The realization of the maximization of the ecological value of corporate citizens means the optimization of the main ecological niche of corporate citizens (the second nutritional level) drives the improvement of the ecological niche of Lishui City (the third nutritional level). Under the background that economic growth in many areas is evolving in the opposite direction to the ecological environment, from 2006 to 2018, Lishui's GEP (Gross Ecosystem Product) increased by 120% at comparable prices.

4.2.2 The Ecological Industry Chain Enhances the Value of Ecological Products

The ecological tourism industry chain is the strategic pillar industry of Lishui City. By developing Lishui City into a major scenic spot, promoting the integration of agriculture and tourism industries, and developing ecological industry chain projects such as agricultural sightseeing, home stay and agricultural experience tourism, Lishui City will build ecological product brands and maximize the value of ecological products. For example, the brand value of "Lishui Mountain Cultivation", which ranked the top of China's regional agricultural brand influence in 2018, reached 2.66 billion yuan.

4.2.3 Ecological Value Chain Realizes the Win-win of Ecological Niche

The Lishui rural e-commerce model integrating training and guidance construction not only improves the ecological niche of Lishui farmers, but also exports the ecological niche to the whole country and benefits hundreds of millions of farmers. In order to realize the ecological value of mountains, Lishui actively explore the ecological public welfare forest compensation expected

return on the pledge loans, and establish "river right to the household" ecological project and water conservancy model. Lishui city makes use of the positive externality of ecological forestry tourism and ecological fish tourism to strengthen multiple links of ecological value chain, so as to realize "living trees become living money, water flow becomes capital flow", and finally realize the win-win ecological niche of "getting rich" for poor farmers and "becoming beautiful" for Lishui mountain area.

5. Summary of Enlightenment of Niche Theory to Ecological Poverty Alleviation

The economic value-oriented corporate economic poverty alleviation has the disadvantage of not realizing the Pareto optimality of the ecological niche of man to man (the economic poverty alleviation by making up for the deficiency) and man to nature (the economic poverty alleviation by economic value added). The ecological value-oriented enterprise citizen ecological poverty alleviation has the advantages of realizing the Pareto optimality ecological niche of man to man (increasing economic value in poor areas) and man to nature (poverty alleviation and environment evolve in the same direction).

The enlightenment of niche theory on the person-to-person niche of ecological poverty alleviation include two aspects: first, the greater the motivation of the transformation from corporate legal person to corporate citizen, the greater the probability of the person-to-person niche Pareto optimality in poor areas; second, with the improvement of the quantity and quality of corporate citizens, the ecological niche of people in poor areas will be optimized and positive feedback.

The enlightenment of niche theory to the ecological poverty alleviation of human and natural niche includes two aspects: first, the enlightenment of the positioning among business to ecological poverty alleviation, that is, the eco-value-oriented positioning among business of corporate citizens realizes the positive evolution of the ecological niche in poor areas (efficiently) from the source of the ecological industry chain; the second is the enlightenment of the industry orientation to ecological poverty alleviation, that is, the industry orientation of corporate citizens oriented by ecological value can realize the efficiency of the positive evolution of ecological niche in poor areas from the source of ecological value chain.

In ancient times, the practice of ecological niche-based poverty alleviation proved that in the face of flood, the relief of Fan Zhongyan in the Northern Song Dynasty was quite different from that of Li Bing in Dujiangyan in the Warring States Period. Li Bing's poverty alleviation from the perspective of optimizing the ecological niche between people and nature and between people in flood victims and flooded areas is the ecological poverty alleviation style of "teaching fishing". "Lishui Experience" is a successful practice of modern ecological poverty alleviation based on the ecological niche theory. The per capita GDP of Lishui City has been the last one in Zhejiang Province for a long time due to its mountainous area. However, Lishui City guides a large

number of enterprise citizens to implement the orientation of ecological industrial chain and ecological value chain, promote the coordinated growth of GEP and GDP, and finally realize the win-win ecological niche of "green, rich and beautiful" in Lishui Mountain Area.

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