Strategic Architecture for Driving Sustainable Business Ecosystem through Sixth Industrialization

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ABSTRACT

This study explores the integration of Sixth Industrialization and the Creating Shared Value (CSV) ecosystem to address structural challenges in agriculture, such as labor shortages, income instability, and low value-added products. Through a case study of Blueseeds, a Taiwanese company combining natural farming practices with CSV principles, the research demonstrates how integrating agriculture with manufacturing and services enhances product value, stabilizes income, and fosters local economic revitalization. The study finds that the CSV ecosystem supports innovation and aligns business objectives with societal needs, promoting sustainable development. Key success factors include policy support, technological innovation, and market demand. This research contributes to understanding how the combination of Sixth Industrialization and CSV can drive both economic growth and social value creation, providing a framework for future applications in other industries.

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1. Introduction

1.1. Research Background

Agricultural regions face increasing vulnerability to technological advancements, resulting in a disconnect between traditional practices and evolving market needs. Structural issues such as labor shortages, income instability, and low product value add to these challenges. In response, Sixth Industrialization, introduced by Professor Imamura Naraomi in Japan, integrates secondary and tertiary industries into agriculture. This model aims to increase the value of agricultural products through processing, manufacturing, and services, thereby retaining greater profits within agriculture and stimulating regional economic development and revitalization.

In the global context, businesses must adapt to societal and market demands. The Creating Shared Value (CSV) ecosystem, as proposed by Porter and Kramer (2006, 2011), offers a model where businesses align profit goals with social problem-solving, simultaneously achieving economic value and addressing critical social and environmental issues. This ecosystem fosters collaboration between businesses and stakeholders, driving innovation, sustainable development, and long-term profitability, particularly in industries like agriculture.

This research explores the integration of Sixth Industrialization with the CSV ecosystem, proposing a comprehensive model to address agriculture's structural challenges while promoting sustainable development and

shared value creation. By examining Blueseeds, a Taiwanese company integrating natural farming practices and CSV principles, the study illustrates how this synergy can enhance product value, stabilize markets, and drive local economic revitalization, ensuring long-term environmental sustainability and social benefits.

1.2. Research Questions and Objectives

This study aims to investigate the integration of Sixth Industrialization and the Creating Shared Value (CSV) ecosystem, focusing on how this combination can foster sustainable development and shared value creation for both businesses and society. Specifically, the objectives are to:1).Analyze how businesses can leverage policy support and market demand to combine CSV and Sixth Industrialization, transforming production and service models to meet societal and environmental needs.2).Examine the role of consumer behavior and market demand in shaping the effectiveness of the CSV model within the framework of Sixth Industrialization, and identify the factors that drive success in its implementation.3).Investigate the critical success factors for businesses in successfully applying both CSV and Sixth Industrialization, and propose measurable indicators for evaluating their impact on business performance and sustainable development.

2. Literature Review

2.1. Sixth Industrialization

The concept of "Sixth Industrialization" was introduced in Japan in the mid-1990s through the research of Professor Imamura Naraomi from the University of Tokyo, which focused on the distribution of profits in Japan's agricultural sector. Imamura's study revealed that only 20.7% of profits from agricultural products reached consumers in their raw form, while 53.2% came from processing, and 28.5% from the foodservice industry, indicating that most of the profits were captured by industries outside of agriculture. To address this issue, Imamura suggested integrating secondary and tertiary industries into agriculture to increase the value retained by farmers (Imamura, 1998).

Initially, the term "sixth" referred to the addition of three industries. However, if one of these industries were to disappear, the combined project would also cease to exist. For this reason, the meaning of "sixth" was revised to represent multiplication instead. (The ministry of agriculture, 2010)

2.2. CSV Ecosystem

Porter and Kramer (2006, 2011) propose that businesses can reconnect with society by redefining their purpose to "create shared value", which refers to economic value that also addresses societal challenges. This approach connects corporate success with broader societal advancement. Companies can achieve shared value in three ways: reconceiving products and markets, redefining productivity in the value chain and building supportive industry clusters at the company's locations.

Previous research has suggested that shared value is often regarded more of a buzzword than a theoretical concept (Dembek et al, 2016). However, it identifies the costs associated with shared benefits, such as policies, operational activities, and choices, indicating that it goes beyond just the benefits. Literature indicates that outcomes of CSV include competitive advantages, social and economic status (Porter & Kramer, 2006, 2011), social value(Shrivastava & Kennelly, 2013; Pirson, 2012), environmental value(Shrivastava & Kennelly, 2013), economic value(Shrivastava & Kennelly, 2013; Brown & Knudsen, 2012), etc. According to previous research by Yang and Yan (2020), The causal feedback loops within the CSV ecosystem not only drive the sustainable development of a company's social performance but also meet market demands through innovative business models and social innovation, while being driven by entrepreneurial spirit in the practice and development of CSV.

3. Methodology

3.1. Case Selection and Overview

This research adopts a case study approach as a qualitative methodology to investigate the underlying causes and mechanisms of phenomena. Its objective is to gain a thorough and systematic understanding of the interactions and relationships between various factors and events within the chosen case (Evert, 2004).

In terms of the criteria for case selection, this study defines the concept of CSV as simultaneously encompassing social responsibility and profitability, and examines the relationship between all value-creating activities and the six-level industrialization. The study also assesses whether the selected case meets the following criteria: (1) A clear observable connection between social value creation and the business model, indicating that the selected company engages in meaningful CSV activities; (2) The social benefits created by the company are visible, with these benefits primarily reflected in non-financial performance (Austin, 2000). (3) The company's activities span the entire spectrum of six-level industrialization (Imamura, 1998; The Ministry of Agriculture, 2010). Based on these criteria, this study selects Blueseeds, a company based in Taiwan, as the focal case. Additionally, personal connections facilitated the collection of research data, making this case study comprehensive and authentic (Miles, 1994).

Since its establishment in 2016, Blueseeds has been dedicated to creating a vanilla value chain that fosters social good. Beginning with the cultivation of vanilla using natural farming methods, Blueseeds integrates contract farming, production, and branding to international markets, making it one of the few companies globally to deeply integrate the "vanilla industry chain." Blueseeds aims to simultaneously regenerate the land, promote local revitalization, and create a business model that generates economic growth, environmental sustainability, and public benefit through social innovation. The company continues to focus on establishing a CSV (Creating Shared Value) ecosystem, applying natural farming practices and contract farming methods in collaboration with smallholder farmers. This not only protects local ecosystems but also ensures the quality and stability of its products, thereby enhancing their trust and value in the market. The pre-payment contract farming model stabilizes smallholder farmers' income, further benefiting local revitalization and promoting a cycle of mutual growth.

4. Causal model of dynamic relationship between Sixth Industrialization and CSV Ecosystem

4.1. Causal loop diagramming of the relationship

The sixth industrialization focuses on cross-industry integration and development, promoting the overall production and sales strategies, including production, processing, and marketing. It helps enhance the added value of agriculture and regional development. The positive feedback mechanism of the CSV ecosystem can create sustainable development for enterprises and enhance the comprehensive benefits across economic, social, and environmental dimensions, helping both businesses and society create value together.

Through in-depth interviews, we verified the relationships among the core elements of the six dimensions of the CSV ecosystem and identify three key variables: a. Brand, b. Investment, and c. Customer satisfaction. These variables will serve as the key drivers linking the primary, secondary, and tertiary industries. When promoting the development of the CSV ecosystem in the sixth industrialization, both government and society should continuously focus on and support the impact of these key industry variables.

In the initial development, they should support the "brand emerge" to enhance the economic performance of the primary industry. They should also focus on "investment in technology and sales channels," thereby strengthening the competitiveness of the secondary industry and improving the quality of products and services in the tertiary industry, increasing "customer satisfaction," and ultimately boosting overall market demand. This will establish a strategy for building a positive feedback loop within the ecosystem.

Table 1

Major Feedback loops in causal diagram of the relationship between Sixth Industrialization and CSV Ecosystem

Major feedback	Feedback effect	Path
R1: Basic relation, (Reinforcing)	Basic influencing loop of reinforcing between Innovation, New BM, Support, Performance (According to previous study in CSV ecosystem)	Investment on Technology & Sales Channel ↑ → Technological Innovation ↑ → Secondary Industry Competence ↑ → New Product or Service Development, New Business Model ↑ → Government & Social Support ↑ →Economic, Social, Environmental Performance ↑ →Investment on Technology & Sales Channel ↑
R2: Basic relation, (Reinforcing)	Basic influencing loop of reinforcing between Innovation, New BM, Market, Performance (According to previous study in CSV ecosystem)	Investment on Technology & Sales Channel ↑ → Technological Innovation ↑ → Secondary Industry Competence ↑ → New Product or Service Development, New Business Model ↑ → Raw Material Demand ↑ → Primary Industry Market Size ↑ → Brand Emergence ↑ → Economic, Social, Environmental Performance ↑ →Investment on Technology & Sales Channel ↑
R3: Reinforcing	Positive effect of combination of primary & secondary industry	Investment on Technology & Sales Channel ↑ → Technological Innovation ↑ → Secondary Industry Competence ↑ → New Product or Service Development, New Business Model ↑ → Raw Material Demand ↑ → Primary Industry Market Size ↑ → Brand Emergence ↑ →Economic, Social, Environmental Performance ↑ →Investment on Technology & Sales Channel ↑
R4: Reinforcing	Positive effect of combination of primary & tertiary Industry	Investment on Technology & Sales Channel ↑ → Brand Exposure ↑ → Digital Empowerment ↑ → Service Quality & Customer Experience ↑ → Customer Satisfaction ↑ →Tertiary Industry Market Demand ↑→New Product or Service Development, New Business Model ↑ → Raw

		Material Demand ↑ → Primary Industry Market Size ↑ →Economic, Social, Environmental Performance ↑ →Investment on Technology & Sales Channel ↑
R5: Reinforcing	Positive effect of combination of secondary & tertiary Industry	Investment on Technology & Sales Channel ↑ → Brand Exposure ↑ → Digital Empowerment ↑ → Service Quality & Customer Experience ↑ → Customer Satisfaction ↑ →Tertiary Industry Market Demand ↑→New Product or Service Development, New Business Model ↑ →Economic, Social, Environmental Performance ↑ →Investment on Technology & Sales Channel ↑ →Technological Innovation ↑ → Secondary Industry Competence ↑ → New Product or Service Development, New Business Model ↑ → Customer Satisfaction ↑ → Economic, Social, Environmental Performance ↑ →Investment on Technology & Sales Channel ↑
B1: Restricting	Restricting negative effect of excessive production volume	Primary Market Size ↑ → Production Volume ↑→ Market Price ↓→ Raw Material Demand ↑ → Market Size ↑ → Market Price ↑→ Material Demand ↓→ Primary Market Size ↓
B2: Restricting	Restricting negative effect of excessive market competitor	Brand Exposure ↑ → Customer Satisfaction ↑→ Tertiary Industry Market Demand ↑→ Market Competitor ↑→ Brand Exposure ↓

4.2. Major influencing loops in the causal model

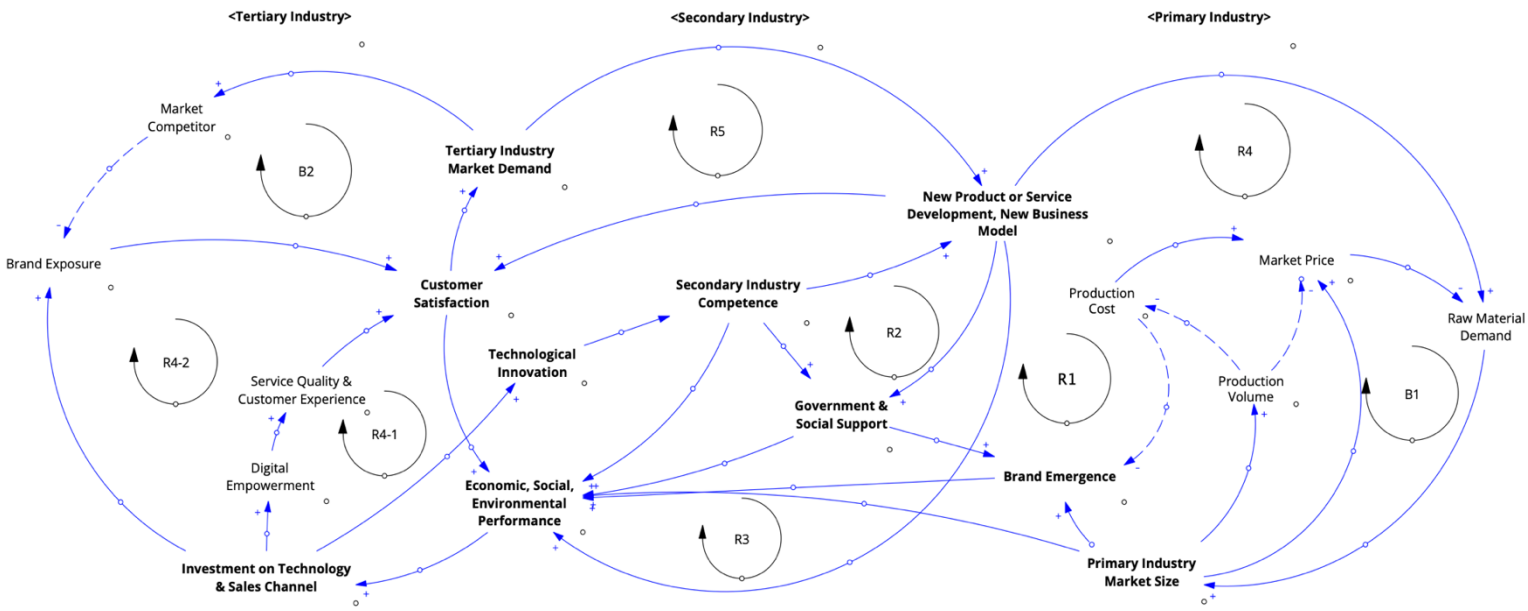

Fig.1. Causal model of dynamic relationship between Sixth Industrialization and CSV Ecosystem

4.2.1. The Basic CSV Ecosystem Loop

Technological innovation fosters the development of new business models, which in turn drives overall market demand growth. Enterprises reinvest the sales profits from the market into technological innovation, thus establishing a reinforcing cycle. Additionally, support from the government or society can improve overall economic, social, and environmental performance. This fundamental relationship has been identified in previous studies and established as the core reinforcing cycle within the CSV ecosystem (Yang & Yan, 2020). Through a review of the literature and the results from the interviews conducted in this study, we validate this basic reinforcing cycle, as

demonstrated by R1, R2 (Table 1), and the "Basic Loop". This basic loop illustrates the strong dynamic and mutually reinforcing relationships between technological innovation, business models, market demand, performance outcomes, and social support.

4.2.2. Reinforcing loop between primary and secondary industries

In R3, a positive reinforcing loop emerges from the interaction between primary and secondary industries, which is driven by the acceleration of the reinforcing effects in R1. In the early stages of primary industry development, government or societal support in establishing local brands contributes to improved agricultural economic performance. Simultaneously, investments in technological innovation enhance the competitiveness of secondary industries, improving key indicators such as capacity, efficiency, and quality. These improvements facilitate the development of new products, which in turn drive the growth of market demand in the primary industry. For example, the Fast-Moving Consumer Goods (FMCG) industry serves as a typical case, where research and development of new products drive overall market demand growth.

In the past, agricultural development heavily relied on chemical fertilizers to increase yields, which led to the overexploitation of land. The economic benefits came at the cost of losing natural ecosystems and compromising public health. Blueseeds is dedicated to promoting three core principles: eco-friendly farming, natural extraction, and natural maturation. In recent years, Taiwan's policies have actively encouraged large enterprises to focus on social entrepreneurship. Blueseeds, seizing this opportunity, has entered the social enterprise cluster, a development hub for social enterprises that integrates functions such as entrepreneurial incubation, investment matchmaking, educational outreach, and industry collaboration. This strategic positioning has enabled Blueseeds to access numerous opportunities, resources, and investment connections.

Blueseeds has also made significant investments in technological innovation, incorporating blockchain technology into its operations. This led to the development of Blueseeds Token (BST), a system where farmers can upload raw material information to establish a traceable record and accumulate BST. These tokens can, in turn, be used for product exchanges.

Furthermore, Blueseeds is actively investing in research and development of extraction technologies. By establishing the "Vanilla Extract Laboratory," the company has significantly enhanced the variety of formulations, the quality of products, and the efficiency of manufacturing processes.

4.2.3. Reinforcing loop between primary and tertiary industries

As market demand continues to grow, the positive effects of investments in technology and sales channels begin to manifest in R4. The tertiary industry can enhance brand visibility and improve consumer experiences and service quality through digital empowerment (e.g., by leveraging digital tools and platforms to enhance operational

efficiency) and the expansion of sales channels, which will make a positive interaction with primary industry. This strengthens consumer satisfaction and further increases overall market demand. In response to changing market demand trends, the tertiary industry also develops new business models or product services. These innovations, in turn, stimulate further growth in the demand for raw materials. In the context of the rapidly advancing technological landscape and the accelerated dissemination of information, strategic investments in digital empowerment and brand recognition can serve as critical enablers for the expedited growth and development of enterprises.

Blueseeds has traditionally relied on online e-commerce channels for its sales, but in recent years, the company has expanded into physical retail spaces. Notably, Blueseeds has partnered with the Taitung Government to establish the Blueseeds Herbal Village, a multifunctional destination designed to serve a variety of purposes. This Herbal Village will feature a local aromatic plant area, a traditional landmark, an ecological education base, and a globally competitive aromatic feast tourist attraction. The Village is expected to play a pivotal role in the creation of a vanilla museum and will regularly host cultural festivals focused on aromatherapy, music therapy, and meditation.

In addition, Blueseeds anticipates collaborating with artists and local communities to offer a diverse range of products and experiences, fostering local cultural innovation while also promoting tourism development. The Village will also include a dedicated space for personalized, handcrafted essential oil workshops, thereby enhancing customer engagement and deepening awareness of the brand. These offerings not only provide consumers with unique products but also reflect the Village’s commitment to sustainability. Visitors will be invited to explore the organic vanilla ecosystem, the plant extraction process, and the historical significance of spices, further reinforcing Blueseeds' dedication to environmental and cultural preservation.

Moreover, Blueseeds employs digital finance solutions to enhance value delivery and improve the customer experience. By implementing blockchain technology, the company has introduced Blueseeds Token (BST), which facilitates transparent information flow between producers and consumers. Through a mobile app, consumers can easily access detailed product histories and production information, promoting greater consumer trust. BST also contributes to customer retention and loyalty, strengthening long-term partnerships with producers and ensuring sustainable growth for the business.

4.2.4. Reinforcing loop between secondary and tertiary industries

In R5, the positive interaction between the secondary and tertiary industries is clearly demonstrated. Whether market demand drives product development or new products are introduced to create market demand, both approaches are feasible and effective in improving overall economic, social, and environmental performance. Technological innovation plays a crucial role in this process, strengthening the competitiveness of the secondary industry, enhancing customer satisfaction through the development of new products and services, and thereby stimulating market demand growth. At the same time, changes in market demand can also drive the tertiary industry to invest in corresponding technological innovations. This reciprocal cycle not only contributes to enhancing market

competitiveness but also improves the overall economic, social, and environmental outcomes.

Blueseeds, as a social enterprise, transcends the traditional model of merely selling products to consumers. It plays a pivotal role in fostering meaningful connections among suppliers, consumers, and corporations, while simultaneously contributing to sustainable development and social responsibility. Through its innovative subscription model, Blueseeds offers consumers the unique opportunity to directly support vanilla farming, thereby ensuring a stable and sustainable income for the farmers involved. This model not only empowers local agricultural communities but also strengthens the supply chain by promoting ethical and sustainable farming practices.

In addition to its efforts in product development and commitment to quality, Blueseeds collaborates with various organizations to launch co-branded products. One notable example of this collaboration is GOLDEN FORMOSA, developed in partnership with the National Museum of History. This product, renowned for its representation of Taiwan's distinctive features, was selected by the Republic of China as a gift for the diplomatic dinner in Washington, D.C. Furthermore, Blueseeds has partnered with the Parents' Association for the Visually Impaired (PAVI) to launch products designed by visually impaired perfumers, demonstrating the company's dedication to inclusivity and innovation.

Beyond co-branded products, Blueseeds strives to incorporate perfume into everyday consumer items. Its subsidiary, DIMOKOS, specializes in wastewater recycling, reuse, and the production of perfume-infused water. DIMOKOS sources its bottled water from Chishang, located downstream of Yushan National Park, and has achieved carbon neutrality in its production processes. By blending Chishang water with essential oils, DIMOKOS creates aroma-infused beverages, contributing to regional revitalization through the creation of high-value products.

4.2.5. Balancing loops

In B1, a negative limiting effect is observed between market price and demand. When the primary industry develops independently, its growth rate is slower, which suppresses the expansion of market size. This makes the primary industry more vulnerable to fluctuations in production costs and volume, which in turn directly impacts market price and demand. Due to a lack of technological innovation and value-added product improvements, the development of the primary industry often faces relatively low competitiveness, hindering its ability to effectively enhance market attractiveness and consumer demand. This also limits the potential of the market.

In B2, when companies expand sales channels, increase brand visibility, and improve consumer satisfaction, these factors directly drive the growth of market demand for their products. As demand increases, the market becomes more attractive, potentially drawing more competitors into the market. However, upon entering, competitors may not immediately be able to compete with companies that have already established market advantages. In the long term, however, market competition will compel firms to continually invest in digital tools, technological innovations, and marketing strategies. This not only increases the cost pressure on firms but may also drive them to further enhance the value-added aspects of their products or services in order to maintain a competitive edge.

5. Discussion and Conclusions

This study explored the integration of **Sixth Industrialization** and the **Creating Shared Value (CSV) ecosystem** and proposed a comprehensive model to address the structural challenges within traditional agriculture while promoting sustainable development in the agricultural sector. The findings indicate that Sixth Industrialization not only enhances the added value of agricultural products but also facilitates regional economic revitalization and rural regeneration through the integration of manufacturing and service industries. This model presents emerging opportunities for economic development in agricultural regions, especially in addressing labor shortages and income instability.

Furthermore, the integration of the **CSV ecosystem** enables businesses to combine social responsibility with economic gains, creating dual value. The study highlights that when businesses face the challenges of market demand and social responsibility, integrating CSV with Sixth Industrialization allows for business model innovation and sustainable development. Policy support and market demand play crucial roles in driving this transformation, demonstrating significant synergies in enhancing product quality, stabilizing income, and improving market competitiveness.

The conclusion of this study not only contributes to understanding how the integration of Sixth Industrialization and CSV ecosystem fosters business innovation and social development but also provides empirical support for policymakers. It suggests that by formulating policies that promote this integration, governments can drive local economic development and the achievement of sustainable development goals. Future research could further explore the application of this comprehensive model in other industries and validate its universality and practical value across different cultural contexts.

References

Austin, J.E. (2000) Strategic collaboration between nonprofits and businesses. *Nonprofit Volunt. Sect. Q. 29*, 69–97. [CrossRef]

Brown, D., & Knudsen, J. S. (2012). Managing corporate responsibility globally and locally: Lessons from a CR leader. Business and Politics, 14(3), 1–29. doi:10.1515/bap-2012-0021

Dembek, K., Singh, P. & Bhakoo, V. (2016) Literature Review of Shared Value: A Theoretical Concept or a Management Buzzword?. J Bus Ethics 137, 231–267. [CrossRef]

Evert, S. (2004) The Statistics of Word Co-Occurrences: Word Pairs and Collocations. Ph.D. Thesis, University of Stuttgart, Stuttgart, Germany.

Imamura, Naraomi (1998) "Aratanakachiwoyobu, nougyouno 6 jisangyouka : Ugokihajimeta, nougyounosougousangyousenryaku （Sixth industrialization for aquiculture to create additional values）" 21 seiki murazukurijyuku, Chiikinikaturyokuwoumu, nougyouno 6 jisangyouka : Power up surunougyou/nouson, pp. 1―28.

Miles, M.B.; Huberman, A.M. (1994) Qualitative Data Analysis: An Expanded Sourcebook; SAGE Publishing: Thousand Oaks, CA, USA.

Ministry of Agriculture, Forestry and Fisheries of Japan （2010）"Nougyouninaite mail magazine No. 145 （Mail magazine for agriculture successors）."

Pirson, M. (2012). Social entrepreneurs as the paragons of shared value creation? A critical perspective. Social Enterprise Journal, 8(1), 31-48. [CrossRef]

Porter, M.; Kramer, M. (2006) Strategy and society: The link between competitive advantage and corporate social responsibility. Harv. Bus. Rev. 84, 78–92.

Porter, M.; Kramer, M. (2011) Creating shared value. Harv. Bus. Rev. 89, 62–77.

Shrivastava, P., & Kennelly, J. J. (2013). Sustainability and Place-Based Enterprise. Organization & Environment, 26(1), 83-101. [CrossRef]

Yang, T.-K., & Yan, M.-R. (2020). The Corporate Shared Value for Sustainable Development: An Ecosystem Perspective. Sustainability, 12(6), 2348. https://doi.org/10.3390/su12062348