AN EXTENDED FRAMEWORK OF HIGH-QUALITY ECONOMIC DEVELOPMENT IN CHINA

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ABSTRACT

China is currently in a period of high-quality economic development (HQED), which emphasizes coordination, innovation, sharing, openness, and green development. Despite extensive studies, the definition and measurement of HQED remain unclear. Previous studies have primarily relied on factors to reflect HQED; however, the concept of HQED can be extended to incorporate indicators. Therefore, this studyaims to propose an extended framework of HQED that fully captures its causal factors and outcome indicators. The findings of this study indicate that five causal factors consist of coordination, innovation, sharing, openness, andgreen development. Additionally,two outcome indicators coversustainable developmentand economic growth, which can be obtained from the literature review. By separating causal factors and outcome indicators, the study can enhance the clarity of the concept and make future analysis of the HQED framework more robust. The proposed framework contributes a more rigorous theoretical foundation for the assessment of HQED among Chinese provinces.

Keywords: Causal factors,China, High-quality economic development, Outcome indicators.

1.0 INTRODUCTION

Since 1949, China's economic modernization has gone through four periods of transformation, with different institutional frameworks and global dynamics in each period(Brandt & Rawski, 2019). China has undergone four transformations (Brandt & Rawski, 2019). China has undergone four transformations: from the planned economy era (1949-1978) to the market-oriented reforms and explosive growth (1978-2012) (Lin, 2019), then to the "new normal" transformation (2012-2017), and finally to high-quality economic development (HQED) from 2017 to the present.

The first period of China's economic development, from 1949 to 1978, was achieved through a centrally planned economy with rapid industrialization as its core (Lin, 2019). Concentrating resources to develop heavy industry was to escape the poverty trap, and during this period, coordination was mainly achieved through resource allocation between rural and urban areas (Yifu, 1992). But this will lead to unequal allocation to different places and low efficiency. During this period, there were still many innovative achievements. Overall, it is due to insufficient market incentives and poor technology dissemination that

technological innovation is hindered (Naughton, 2007). Sharing through public ownership and equal distribution policies, such as establishing people's communes and welfare housing. However, due to the low level of productivity and limited sharing, a basic form of social sharing has been formed. The degree of openness to the outside world is very low (Naughton, 2007). During this period, green or environmental sustainability was almost ignored because the rapid industrialization process masked ecological issues (Shapiro, 2001).

The second stage, 1978-2012. During the period of China's transition from a centrally planned economy to a more market-oriented system, the Chinese economy underwent liberalization and rapid development (Lin, 2019). Openness is the pillar of China's development, and China is becoming an important trading and investment country (Liu, 2020), but there are also some issues: high environmental pressure (Pye & Economy, 2004), significant regional disparities (Chen & Fleisher, 1996), and worsening socio-economic inequality (Xie & Zhou, 2014). Innovation has made tremendous progress. However, the country's ability for independent innovation is still very low, and technological innovation is mostly achieved through imitating low-cost production to gain competitive advantages. (Brandt & Thun, 2016) There has been progress in coordination and sharing, particularly in purposeful regional development policies. However, the gap still exists and is widening. The differences between urban and rural areas, as well as between the east and the west, are constantly widening inequality (Kanbur & Zhang, 2005). During this period, green development awareness began to emerge, but when people focus on GDP growth, they tend to overlook environmental priorities. Therefore, China suffers from many ecological degradation phenomena, and the environmental costs are high. The effectiveness of sustainable practices is also poor (Pye & Economy, 2004).

The third stage is the period of China's new normal from 2012 to 2017 (Zhang & Yao, 2014). The new normal is a transitional period for the economy to shift from high-speed growth to medium-speed growth, during which the Chinese economy develops towards a more sustainable direction (Chen & Groenewold, 2019). The policy focus of this period is to establish a modern industrial system, green development, innovation-driven, and multidimensional policy coordination(Gu et al., 2025). The decisive factors of 2025 include technological innovation, improvement of factor productivity, improvement of consumption structure, and the transformation from extensive expansion to optimizing existing resources. These changes have laid the foundation for the subsequent shift towards HQED.

The last period, after 2017, was the transition to the HQED stage (Lin, 2019), during which the economic growth rate slowed down, indicating that China is moving towards new challenges such as innovation-driven development, supply-side structural reform, and actively addressing population aging and environmental degradation(Miao & Zhou, 2021). The economic structure began to shift from relying on exports to relying more on domestic consumption and technological innovation to drive growth (World Bank & DRC, 2013), actively addressing structural and environmental issues accumulated during the previous growth process, such as high debt ratios and ecological degradation. Among them, the five factors of coordination, innovation, sharing,openness, and green development have been systematically incorporated into the national development strategy to implement (Xi, 2017). Green development and innovation are both important. The "double carbon" goal (carbon peak and carbon neutral) has become the key to guiding China's low-carbon transformation. Made in China 2025 and other initiatives have promoted the upgrading of innovative industries. The State Council (2021) has also paid attention to the policy of coordinating and narrowing the regional urban-rural gap. The National Bureau of Statistics (2022) has increased efforts to redistribute social equity wealth and achieved more inclusive forms of growth with the help of common development. Under the "Belt and Road" initiative, the degree of opening up has continued to the outside world, enabling China to better integrate into the global economic governance trade network (Khan et al., 2018).

These four stages are the dynamic and evolutionary process of economic development. Each stage develops on the basis of the previous ones. China has achieved a change in its growth model from quantity to quality through institutional reform and technological innovation (Xi, 2017). Table 1 lists the development of the four major stages of China's economic transformation and the headquarters' five factors: coordination, innovation, openness,sharing, and green development.

Table 1. Evolution of HQED in China

	Phase			
Factors	Planned economy (1949-1978)	Market-oriented reforms & explosive growth (1978-2012)	New normalphase (2012-2017)	HQED Era (after 2017)
Coordination	Centrally planned resource allocation based on state mandates, focusing on industrialization(Yi fu Lin, 1992).	Economic growth was prioritized over regional balance, leading to growing disparities (Kanbur & Zhang, 2005).	The New Normal focuses on improving the balance between growth quality and efficiency, encouraging regional integration, and enhancing coordinated policies across multiple levels (Sultana, 2019).	Emphasis on coordinated regional and urban–rural development to address inequality (National Bureau of Statistics, 2022).
Innovation	Limited innovation under state-led R&D institutions with low productivity(Naughton, 2007).	Market incentives and reforms led to the rise of tech zones and private-sector innovation (Segal, 2003).	Innovation intensified R&D efforts, accelerated the industrialization of high-tech sectors, and drove the expansion of the digital economy (China Daily, 2023).	Innovation became strategic, with national innovation systems and high-tech development plans (State Council, 2021).
Sharing	Emphasis on equal distribution through public ownership and rationing (Sands & Riskin, 1988).	Rapid economic growth widened income inequality despite poverty reduction(Xie & Zhou, 2014).	Sharing emphasized rural–urban equity, welfare enhancement, and the broad distribution of social benefits(Sultana, 2019).	Policies focus on inclusive growth and common prosperity to reduce social disparities(Jiang, 2023).
Openness	Largely closed economy with minimal external engagement(Naughton, 2007).	Entry into the WTO and subsequent liberalization spurred export-driven growth (Liu, 2020).	Openness shifted from broad economic liberalization to deeper institutional openness and global integration, facilitated by policy frameworks(Sultana, 2019).	Pursuit of balanced and high-quality openness under initiatives like the Belt and Road(Khan et al., 2018).
Green Development	Industrial growth was prioritized at the expense of	Rapid industrialization caused significant	Strengthened environmental regulation propelled	Environmental sustainability has become a key

	environmental concerns (Shapiro, 2001).	environmental degradation (Pye & Economy, 2004).	China's prioritization of renewable energy and clean technologies, fostering the swift expansion of green industries(China Daily, 2023).	development pillar of ecological civilization policies (State Council, 2021).

Source:Authors'compilation.

HQED refers to economic development. In order to achieve coordinated development of society, economy, and environment (Li et al., 2021), the focus is based on five major factors: coordination, innovation, sharing, openness, and green development(Xi, 2017). For example, technological innovation can improve efficiency (Schumpeter, 1934); A good system will reduce corruption and create a favourable business atmosphere (Ren & Wen, 2018).

Although HQED has received increasing attention, there are still some challenges that hinder its proper evaluation and implementation. At present, there is no clear definition or measurement standard for the factors of HQED, which makes the evaluation comprehensive or biased and ignores the main driving factors of HQED development. This may lead to imbalanced or ineffective development strategies. Secondly, previous studies have generally treated all factorsassociated with HQED as causal variables (Bei, 2018; Ren & Wen, 2018), overlooking the possibility that some may serve as outcome indicators of HQED rather than causes. Accordingly, this study presents an extended HQED framework that systematically extracts causal factors and outcome indicators from the existing literature. Integrating both dimensions allows for a more accurate reflection of real-world economic conditions in China.

2.0 REVIEW OF EXISTING HIGH QUALITY ECONOMIC DEVELOPMENT STUDIES

HQED is the core goal of China's economic transformation, and its theory includes the factors of coordination, innovation, sharing,openness, and green development(Xi, 2017). To date, most studies measuring HQED rely on five fundamental elements. This development integrates neoclassical growth theory,sustainable development theory, and inclusive growth theory.Existing studies generally conceptualize HQED as a multidimensional construct that extends beyond traditional GDP-based measures(Zhang et al., 2025).HQED is an organic unity of efficiency improvement, structural optimization, risk control, and social well-being enhancement(Han et al., 2024).

HQED aims to achieve a higher standard of quality, greater efficiency, fairness, and sustainability (Xi, 2019). Similarly, Wang and Yu(2024)define HQED as a development process that moves beyond mere economic growth to meet people's increasingly diverse material and cultural needs. This process particularly emphasizes the supply side, and thereafter, HQED is a continuation of sustainable development, mainly focusing on how much benefit the public can obtain.

Alternatively, Ma and Xu (2022) and Zhang et al. (2023)suggested that economic development requires a favourable environment and foundation for growth. In particular, the ecological environment is widely regarded as a foundational condition for HQED, highlighting the importance of harmonizing economic progress with environmental quality.They suggest that economic development requires a favourable environmental and social foundation, and that harmonizing economic progress with ecological sustainability is central to achieving HQED.

On the other hand, Liu (2023), Ding et al.(2022),and Xie et al. (2021) proposed that promoting innovation is the driving force behind HQED. Xie et al. (2021) concluded from a

green perspective that technological innovation has greatly improved the quality of Japan's economic development, but this impact has significant regional heterogeneity. In the mediation effect test, it was found that technological innovation and industrial structure upgrading have a positive impact on HQED, and the higher the degree of industrial agglomeration, the greater the positive impact of technological innovation and industrial structure upgrading on HQED(Liu, 2023).

In addition, openness, green development, and innovation have a greater impact on HQED(Liu & Li, 2024; Wen & Zhou, 2025). They enhance economic efficiency, promote sustainable practices, and facilitate technological and institutional advancements.These factors can promote the improvement of foreign trade efficiency, the growth of market resources, environmental sustainability, and technological progress.

Gao and Li (2019)and Z. Zhang et al. (2021) believe that population factors, as well as factors related to capital and government policies, should be taken into account. Human capital is the main driving force of HQED, as evidenced by the interaction between human capital accumulation and fiscal decentralization.

Human capital plays an important role in achieving HQED and sustainable economic growth (Prasetyo & Kistanti, 2020), but other aspects, such as social capital, institutional quality, and entrepreneurial spirit, also play important roles in achieving HQED.

Kong et al.(2021) and Zhang et al.(2024)believe that openness has been widely regarded as a crucial channel through which economies enhance the quality of economic growth. Foreign investment is a form of international capital flow that promotes the quality of economic growth. The coordinated development of two-way FDI has promoted HQED through channels such as technology spillover and diffusion, industrial structure upgrading, and human capital enhancement.Focusing on China, Kong et al.(2021) examine the relationship between HQED and trade opennessusing an ARDL framework. Their empirical results indicate that greater trade openness significantly improves the HQED in both the short and long run.

In addition to trade openness, foreign investment plays a pivotal role in advancing China’s HQED. Zhang et al.(2024)explicitly incorporate foreign direct investment (FDI) into their analytical framework and provide empirical evidence that FDI significantly promotes HQED in China. Their findings suggest that FDI not only exerts a direct positive effect on HQED but also contributes indirectly through channels such as foreign trade expansion, technological innovation, green development, and shared development.

Similarly, green development is important for HQED in various fields (Peng & Zhu, 2020; Yang et al., 2023).They embed ecological civilization concepts and green ecologywithin frameworks of HQED. Peng and Zhu (2020) pointed out that the main driving forces for the development of the HQED include people's livelihood sharing, economic improvement, green ecology, innovation promotion, and economic coordination.Yang et al. (2023)incorporate ecological economy development into an empirical panel analysis, demonstrating thatecological civilization construction is essential to understanding the broader processes of HQED in China.

In addition to focusing on several aspects of HQED, some studies have taken a more comprehensive approach, taking into account many variables to measure it.M. Wei and Li (2018) proposed a multidimensional approach to achieve HQED: structural optimization, growth sustainability, innovation ecosystem, market efficiency, infrastructure, spatial coordination, inclusive outcomes, and ecological modernization. Ren and Wen (2018) began to pay attention to factors such as population quality and structure, resource and environmental quality, capital accumulation quality, technological progress quality, foreign

trade quality, and government policies for HQED research. They also progressively expanded the analysis to include industrial innovation, institutional innovation, strategic innovation, and comprehensive humanistic development.

Along with coordination, innovation, sharing, and openness,Wang and Kuang (2023)extended that effectiveness and sustainability are equally important in HQED. Su and Chen (2019)defined HQED as encompassing structural optimization, enhancement of quality and efficiency, transformation of growth drivers, risk prevention and control, promotion of green and low-carbon development(Zhang et al., 2021), improvement of people's livelihood, and so on.Liu et al. (2021)argue that HQED should not focus solely on economic expansion, but must also incorporate ecological and resource considerations, requiring lower resource and environmental costs and higher resource allocation efficiency. This further emphasizes that resources and the environment are crucial for achieving long-term balanced development.

Table 2.Summary of the existing HQED factors

Factors	Sub-factors	Sign	Source
Coordination	Economic coordination	+	Peng et al. (2020)
	Resource allocation	+	Peng et al. (2020)
Innovation	Technological advancement	+	Ding et al.(2022)
	Technological innovation	+	M. Liu (2023)
	Industrial innovation	+	M. Liu (2023)
	Industrial structure upgrading	+	M. Liu (2023)
Sharing	People's livelihood	+	Su et al. (2019)
	Livelihood sharing	+	Peng et al. (2020)
Openness	Trade openness	+	Kong et al.(2021)
	Foreign investment	+	S. Zhang et al.(2024)
Green development	Green ecology	+	D. Peng and Zhu (2020)
	Ecological civilization construction	+	Yang et al.(2023)
Policy	Policy coordination	+	Zhang et al. (2024)
	Innovation-oriented policy support	+	Zhang et al. (2024)
	Government effectiveness	+	Ren et al.(2018)
Sustainable development	Resource and environment	+	Y. Liu et al. (2021)
	Low-carbon development	+	J. Zhang et al.(2021)
	Population structure and quality	+	Miao et al. (2021)
	Social welfare	+	Liu et al. (2020)
	Human capital	+	Z. Zhang et al. (2021)
	Infrastructure	+	Wei et al. (2018)
Economic growth	Economic optimization	+	Peng et al. (2020)
	Stable economic growth	+	Peng et al. (2020)

Source:Authors'compilation.

In sum, each factor can directly or indirectly affect the speed at which HQED is achieved. HQED can be reflected in multiple aspects. It may manifest in improvements in living standards and material well-being, enhancements in innovation capacity, and the accumulation of human capital. Subsequently, Table 2 summarizes the key factors and associated sub-factors. All underlying factors are treated as causal. Nevertheless, a major limitation of previous studies is failed to account for both causal factors and outcome indicators. This is because failing to distinguish between causal factors and outcome indicators will lead to biased estimates and incorrect conclusions (Bollen&Bauldry, 2011).

Therefore, an extended framework is necessary to capture the concept of HQED comprehensively.

3.0 THEORETICAL FOUNDATIONS

HQED is theoretically rooted in the evolution of economic growth theory from factor-driven expansion toward efficiency and quality-oriented development. Traditional neoclassical growth theory, represented by the Solow growth theory, emphasizes capital accumulation, labour input, and exogenous technological progress as the primary drivers of long-run economic growth(Solow, 1956). Although the Solow growth model treats technological progress as an exogenous factor, it provides the foundational structure for understanding HQED. In the Solow framework, long-run growth in output per capita depends primarily on improvements in total factor productivity, since capital accumulation alone is subject to diminishing returns. HQED can be interpreted as an extension of this logic. Rather than focusing solely on the scale of capital and labour inputs, it emphasizes the qualitative mechanisms that enhance total factor productivity, optimize factor allocation, and ensure sustainable growth.

The five factors of HQED correspond to different channels through which productivity and growth quality are enhanced. Coordination improves structural balance and interregional allocation efficiency, reducing resource misallocation and raising effective productivity.Innovation directly promotes technological progress, effectively endogenizing the TFP term in the Solow model. Sharing enhances human capital formation, social inclusion, and equal access to opportunities, strengthening the labour quality component that underpins long-term productivity growth. Openness facilitates knowledge spillovers, technology diffusion, and capital inflows, accelerating technological upgrading beyond domestic factor accumulation. Green development addresses environmental constraints and resource efficiency, ensuring that growth does not rely on unsustainable input expansion but instead improves ecological productivity. These factors transform the Solow model's exogenous technology term into a multidimensional system of productivity-enhancing mechanisms, thereby providing a theoretical bridge between neoclassical growth theory and the concept of HQED.

4.0 FINDINGS AND DISCUSSION

4.1 Causal Factors

Causal factors represent the driving forces of HQED. These factors are conceptualized as exogenous variables that influence the formation and evolution of HQED but are not themselves direct manifestations of development outcomes.They include factors such as coordination, innovation, sharing, openness, and green development,each of which contributes to creating the structural and qualitative conditions necessary for HQED.

4.1.1 Coordination

Coordination plays an important supervisory role in China's HQED, and furthersolves the long-standing regional economic imbalance (Qiu & Hu, 2023). To promote coordination, China has implemented various policies, including the Beijing-Tianjin-Hebei integration(Liu et al., 2023), urban-rural mobility mechanisms, and the household registration reform(Chen et al., 2024), which demonstrate efforts to develop underdeveloped areas and narrow regional disparities. The coordinated development of society increasingly depends on a comprehensive urban approach, which fosters economic growth, enhances social equity and stability, and promotes social cohesion(Yi et al., 2025).

Subsequently, the coordination can be decomposed into two sub-causal factors, namely economic coordination and resource allocation.Economic coordination captures provincial-level interactions and collaboration, while resource allocation reflects the efficiency of market mechanisms. Therefore, coordination plays a central role in aligning provincial strategies, promoting interregional collaboration, and supporting sustainable and inclusive development. Coordination helps a country create the structural and institutional conditions necessary for HQED by ensuring that policies and resources are effectively coordinated across provinces.

4.1.2 Innovation

Innovation acts as a key driving force of HQED(Chen & Huo, 2022; Xu et al., 2023) for improving economic efficiency and development quality. China has adopted a series of policies to promote innovation and technological progress in response to issues such as labor reduction and material resource shortages (Cai, 2020). Technologicaland industrial innovation significantly promotes HQED by improving total factor productivity, facilitating industrial structure upgrading, and supporting green and sustainable development.Innovation interacts with other causal factors of HQED, such as openness and green development.It promotes HQED by enabling cleaner production technologies, enhancing absorptive capacity for foreign investment, and strengthening provincial competitiveness.

Technological innovation is identified as the most representative sub-causal factor.The scope of technological innovation is broad, including R&D investment, GDP contribution, and the share of the tertiary industry, which ensures both empirical feasibility and consistency with the multidimensional concept of HQED. Lastly, to achieve HQED, innovation is necessary through promoting research and development, facilitating industrial upgrading, and enhancing the capacity to adopt and diffuse advanced technologies across provinces.

4.1.3 Sharing

Sharing is the fundamental principle of HQED. It contributes to HQED by improving social welfare, enhancing access to public services, and ensuring that development benefits are equitably distributed across all provinces.Moreover, it ensures that development benefits are evenly distributed among all people and increases opportunities for people to access resources such as healthcare, education, and culture (Wang & Cao, 2020).

The sub-causal factor of sharing is people’s livelihood, which encompasses education and healthcare. It represents the ultimate goal of inclusive development, reflecting the equitable distribution of development benefits across society.Therefore, sharing helps a country to achieve HQED by improving people’s livelihood, ensuring equitable access to education and healthcare, and promoting the fair distribution of development benefits across society.

4.1.4 Openness

Openness serves as a major driving force for HQED. Openness directly improves economic efficiency and productivity, while also enhancing the capacity of innovation to drive HQED.As evidenced by previous studies(Kong et al., 2021), openness contributes to HQED by facilitating foreign trade, attracting foreign direct investment, and enabling knowledge and technology spillovers.

Openness can be further broken into two sub-causal factors, namely foreign direct investment and trade openness. Foreign investment promotes cross-border capital flows and integrates technology into the global economy, while trade openness represents the transactions of goods. Openness is necessary for HQED by promoting foreign investment,

facilitating international trade, and enhancing the integration of domestic markets with the global economy.

4.1.5 Green Development

Green development plays a pivotal role inHQED(Wu et al., 2025).It contributes to HQED by increasing per capita public green areas, enhancing forest coverage, and expanding green-covered areas, thereby improving environmental quality and liveability. Undoubtedly, green development improves HQED by fostering healthier ecosystems and providing public environmental resources, thereby enhancing a country's sustainability and resilience.Greendevelopment emphasizes the transformation and upgrading of traditional industries, high-energy consumption and high-pollution industries, as well as the expansion of green industries and ecological spaces, while protecting the environment and ecosystems together (Li et al., 2023).

Sub-causal factors of green development include green ecology and ecological civilization, which reflect a society's commitment to environmental stewardship and long-term ecological sustainability.Green ecology and ecological civilization can be assessed through per capita public green areas, forest coverage rate, and green-covered area as a percentage of completed forest coverage. The two sub-causal factors not only capture the extent of urban and rural greening efforts but also provide insight into the effectiveness of policies promoting ecological civilization and environmental governance.Greendevelopment is important for HQED by promoting green habitats and a healthy living environment. Green development contributes to HQED by incorporating ecological factors into development planning, maintaining ecological balance, and ensuring sustainable protection of living environments.

4.2 Outcome Indicators

Outcome indicators reflect the observable results of HQED, frequently captured by economic growth and sustainable development.

4.2.1 Sustainable Development

Sustainable development is widely recognized as a long-term development paradigm that balances economic growth, social equity, and environmental protection(African Union, 2023).HQED can have a significant impact on sustainable development by making development more effective and high-quality, and improving human well-being (Zhan et al., 2022). For example, HQED promotes resource and environmental management by fostering more efficient resource use, reducing pollution, and enhancing ecological protection.Furthermore,HQED enhances social welfare by increasing access to healthcare, education, and social services, thereby ensuring that development benefits are equitably distributed.

Resource and environmental conditions, together with low-carbon development, are two sub-outcome indicators in evaluating sustainable development.Resource and environmentalconditions can be assessed through power consumption, Sulphur dioxide emissions, and per capita water resources. Similarly, low-carbon development is not merely an adjunct environmental concern but a core pathway to achieving long-term socioeconomic and ecological balance.Therefore, sustainable development is considered an outcome indicator of HQED, reflecting the effects of HQED on environmental and social development.It provides a long-term measurement target for assessing the subsequent outcomes of HQED.

4.2.2 Economic Growth

HQED condition can contribute to the advancement of economic growth. Key outcome indicators include GDP growth rate and per capita disposable income. Countries that have not fully internalized the HQED principle may encounter some initial difficulties when attempting to move in this direction, but over time and progress, high-quality growth will produce more stable and resilient results.To achieve long-term sustainable economic development, it is necessary to aim for quality and achieve results. Economic growth serves as the ultimate indicatorfor assessing the effectiveness of HQED.

Economicoptimization and stable economic growth are two major sub-outcome indicators of economic growth. Economic optimization encompasses structural, efficiency, and quality improvements to show the highest explanatory power for overall economic performance. Similarly, stable economic growth is also an indicator of sustainable development. Therefore, economic growth reflects the outcomes of HQED, as higher levels of HQED can enhance the overall performance and stability of the economy, which drives economic growth.

In summary, coordination, innovation, sharing, openness, and green development are consideredcausal factors of HQED.These causal factors collectively drive HQED by enhancing efficiency, promoting technological innovation, fostering equitable and inclusive growth, facilitating international integration, and improving environmental quality.Sustainable development and economic growth are treated as outcome indicators because they capture the long-term results and societal impacts of HQED, reflecting the ultimate economic outcomes of development.

4.3 Proposing an Extended Framework of HQED in China

HQED has become a key supporting force for China's contemporary development strategy, emphasizing both quantitative growth and the improvement of structure, efficiency, sustainability, and the quality of human well-being. To comprehensively evaluate the level of HQED, this study has selected five causal factors and two outcome indicators. These five causal factors reflect the driving force behind HQED, while the outcome indicators reflect the achievable results of HQED. Coordination, innovation, sharing, openness, and green development are seen as key causal variables, which also reflect the strategic focus and structural promotion elements. Sustainable development and economic growth have become outcome indicators. Collectively, they contribute to the construction of an extended HQED framework in China (as shown in Figure 1).

Based on the analysis of the causal factors and outcome indicators described above, Figure 1 presentsthe HQED extension table and framework in China, as well as sub-causal factors, measurements, and data sources. Sub-causal factors and outcome indicators are introduced to provide a more comprehensive understanding of each causal factor and outcome indicator.The study decomposes causal factors into multiple sub-causal factors to identify a richer set of measurements, thereby facilitating the selection of more informative and appropriate data for subsequent empirical analysis. The extended HQED framework not only enables a more accurate and nuanced analysis of how China achieves HQED.

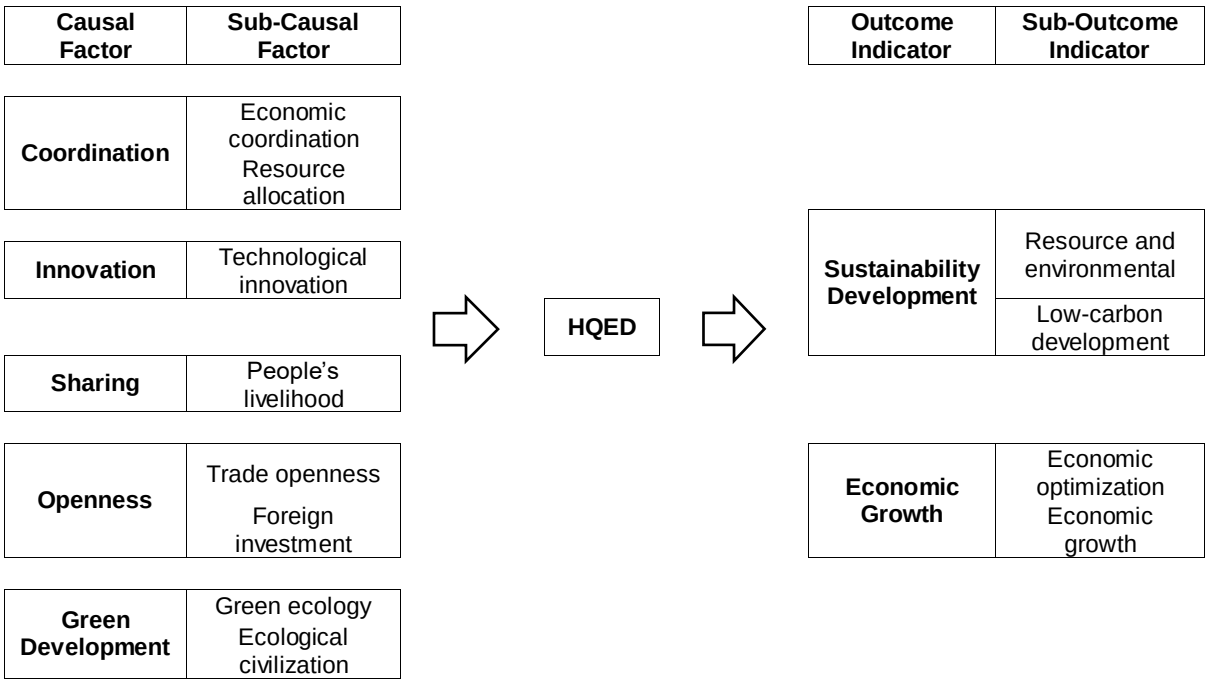


Fig. 1*An extended framework with causal factors and outcome indicators for HQED in China (Bye et al., 1985; Finch & French, 2011)*

In sum, this studyproposes a comprehensive framework for measuringHQED. Each causal factor or outcome indicator captures a distinct yet complementary aspect of HQED (as shown in Figure 1). Specifically, coordination emphasizes economic coordination and efficient resource allocation, ensuring balanced regional, industrial, and sectoral development.Meanwhile, innovation measures technological progress, R&D investment, and human capital development, driving productivity improvement and long-term competitiveness.In addition, sharing captures social inclusiveness, equity, and access to welfare, reflecting the distributive quality of growth.Openness reflects the degree of integration with global markets, international trade, and investment, facilitating knowledge transfer and resource allocation efficiency.Green development emphasizes ecological civilization and urban-rural greening. Sustainable development focuses on environmental performance, resource efficiency, and ecological protection. Finally, economic growth represents the outcome of development and is measured through GDP growth, income levels, and investment ratios.

5.0 CONCLUSION

The development of the Chinese economy can be roughly divided into four periods: the planned economy era, the rapidly growing market-oriented reform stage, the new normal of slowing economic growth, and the current focus on high-quality economic development (HQED). Although people are paying increasing attention to HQED, much ofthe existing literature does not clearly define it, especially regarding the specific scope and measurement standards of HQED. Due to the lack of clarity, people have some fragmented views on HQED, and sometimes there are biased evaluation results towards it.

A major flaw in previous research was that all HQED-related variables were treated as causal factors, while in fact, many variables were only outcome indicators rather than direct

drivers of development. This neglect leads to model misalignment and a decrease in explanatory power.

To bridge this gap, this article constructs an extended HQED framework based on an extensive literature review to distinguish causal factors and outcome indicators. Select coordination, innovation, sharing, openness, and green development as the driving factors of HQED strategy among these five main causal variables, and regards sustainable developmentand economic growth as the outcome Indicators for measuring the achievements of high-quality economic development.

This study aims to propose an extended HQED framework that explicitly distinguishes causal factors from outcome indicators, clarifying HQED as a process-oriented concept rather than a purely outcome-based measure. This conceptual separation enhances the clarity, accuracy, and interpretability of HQED assessment, reduces the risk of causal inversion, and improves the robustness of empirical models. Moreover, the extended framework adopts a more comprehensive perspective and provides a reliable basis for future research aimed at accelerating HQED across Chinese provinces.

The framework allows for richer data utilization and facilitates more accurate identification of heterogeneous effects across provinces by categorizing each causal factor and outcome indicator into measurable sub-causal factors and sub-outcome indicators.By filling a key gap in the literature, this study is beneficial for a better, more balanced, and theoretically complete understanding of China's HQED situation, thereby providing a more accurate foundation for policy evaluation and academic analysis.

CO-AUTHOR CONTRIBUTION

Huang Yi carried out the research, collected data, used software to do visual analysis, and wrote and revised the article. Both Yan-Ling Tan and Roslina Mohamad Shafi reviewed and edited the article. The final manuscript was read and approved by all authors.

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DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors declare that generative AI and AI-assisted technologies were only used to improve the clarity and readability of the language during the writing process. The intellectual content, research design, analysis, and conclusions are entirely the authors' own work. All suggestions provided by the AI tools were carefully reviewed and edited by the authors before inclusion in the final manuscript.

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