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Establishing an Evaluation Indicator System for the Construction of a Common Prosperity Demonstration Zone

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Abstract: *Common prosperity constitutes an essential requirement of socialism and a defining feature of Chinese-style modernisation. This paper conducts an in-depth study of the implementation of common prosperity initiatives in Province Z. By evaluating the progress made across its 11 prefecture-level cities, it analyses the state of common prosperity development from multiple dimensions. The aim is to identify shortcomings in the implementation process and thereby provide recommendations for advancing common prosperity.*
Keywords: *Common prosperity; Grey relational index; Evaluation;*

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I. Introduction

The term ‘common prosperity’ first appeared in official Party documents in 1953. Following the 18th National Congress of the Communist Party of China, General Secretary Xi Jinping provided an in-depth exposition on this crucial theoretical proposition, analysing a series of fundamental and directional issues concerning its advancement. His insights profoundly express the spiritual resolve and intellectual wisdom of remaining true to our founding mission, learning from history to forge ahead into the future. General Secretary Xi Jinping has also provided comprehensive, systematic, and scientific exposition on the fundamental principles that must be upheld in advancing common prosperity and the pathways to its realisation. To promote common prosperity, it is essential to grasp these principles; to enhance the balance, coordination, and inclusiveness of development; to focus on expanding the middle-income group; to advance the equalisation of basic public services; to strengthen regulation of high-income groups; and to foster the enrichment of people's spiritual lives, thereby achieving common prosperity. The report to the 20th CPC National Congress states that ‘common prosperity is an essential requirement of socialism with Chinese characteristics’ and that we must ‘strive to promote common prosperity for all people and resolutely prevent the polarisation of wealth.’

II. Selection of Evaluation Indicators for Building Common Prosperity

The evaluation indicators for common prosperity are analysed across two dimensions: material prosperity and spiritual prosperity. The material prosperity dimension comprises three aspects: enhancing the quality and efficiency of development to consolidate the material foundation for common prosperity (A); deepening reforms in the income distribution system to increase urban and rural residents' income through multiple channels (B); and narrowing the development gap between urban and rural areas and regions to achieve high-quality and equitable access to public services (C). The spiritual prosperity dimension encompasses three aspects: building cultural centres for the new era to enrich people's spiritual and cultural lives (D); practising the principle that ‘lucid waters and lush mountains are invaluable assets’ to create beautiful and liveable environments (E); and upholding and developing the ‘Fengqiao Spirit’ of the new era to foster a society where people feel at ease, secure, and reassured (F). Indicators for material prosperity encompass R&D intensity, economic performance metrics such as income levels, employment status, urban-rural income disparities, regional disparities, healthcare standards, and educational conditions. Spiritual prosperity is measured through indicators including residents' educational attainment, cultural industry development, air quality, ecological environment status, production safety conditions, and public security, as detailed in Table 1.

Table 1: Measurement System for Common Prosperity Development in Province Z

	Dimension Abbreviation	Indicator	Calculation Method
Material Prosperity Level	A	R&D Investment Intensity A1	R&D Expenditure as % of GDP
		Economic Performance A2	Per Capita GDP
	B	Income Level B1	Regional Per Capita Disposable Income

		Employment Situation B2	New Urban Employment / Total Employment
	C	Urban-Rural Income Gap C1	(Regional Urban Per Capita Disposable Income - Regional Rural Per Capita Disposable Income) / Regional Per Capita Disposable Income
		Regional Disparity C2	Regional Per Capita GDP / Provincial Per Capita GDP
		Healthcare Level C3	Life Expectancy
		Education Status C4	Education Expenditure / Total Population
Spiritual Well-being Dimension	D	Resident Educational Attainment D1	Average Years of Education Among Residents
		Cultural Industry Development D2	Cultural Industry Value Added / GDP
	E	Air Quality E1	Percentage of Days with Good Air Quality
		Ecological Environment Status E2	Ecological Environment Status Index
	F	Production Safety Conditions F1	Production Safety Accident Fatalities / Total Population
		Public Safety Conditions F2	Safe Index

III. Application of the Evaluation Indicator System for Common Prosperity Development in Province Z

The sample data for this paper is derived from the 2021 statistical records concerning the advancement of common prosperity development across 11 prefecture-level cities in Province Z.

(1) Determining Indicator Weights

First, an evaluation indicator matrix was established comprising 14 indicators. By integrating quantitative and qualitative indicators, a matrix X was derived for multiple evaluation subjects and indicators (where Xij denotes the value of the i-th indicator for the j-th prefecture-level city):

$$X = \begin{bmatrix} x_{11} & x_{12} & \cdots & x_{1j} \\ x_{21} & x_{22} & \cdots & x_{2j} \\ \cdots & & & \\ x_{i1} & x_{i2} & \cdots & x_{ij} \end{bmatrix}$$

Subsequently, $X = (x_{ij})_{m \times n}$ data standardisation calculations were performed to obtain the following results $R = (r_{ij})_{m \times n}$, where $r_{ij} \in [0,1]$

Detailed standardisation process formulae. Here, the urban-rural income disparity index and production safety status index are minimisation indicators, where lower values are preferable; all other indicators are maximisation indicators, where higher values are preferable. The standardised matrix sequence values are presented in Table 2.

Table 2 Standardised Matrix R Sequence Values

	H	N	W	X	H	S	J	Q	Z	T	L
A1	1.0000	0.4598	0.2549	0.7785	0.6592	0.5244	0.1567	0.0000	0.0135	0.2552	0.0125
A2	1.0000	0.8292	0.2829	0.7012	0.4760	0.4753	0.2107	0.0687	0.5510	0.2640	0.0000
B1	1.0000	0.9114	0.6836	0.7015	0.6021	0.7974	0.5391	0.0240	0.7327	0.5243	0.0000
B2	1.0000	0.3434	0.1235	0.3942	0.2889	0.4140	0.3038	0.1218	0.2828	0.2942	0.0000
C1	0.7953	0.7961	0.3411	0.9660	0.8369	0.7254	0.1755	0.2190	1.0000	0.2445	0.0000
C2	1.0000	0.8292	0.2829	0.7012	0.4760	0.4753	0.2107	0.0687	0.5510	0.2640	0.0000
C3	1.0000	0.5343	0.5921	0.8375	0.6931	0.7292	0.0108	0.0000	0.1191	0.4765	0.3105
C4	1.0000	0.4610	0.2608	0.5227	0.3956	0.2093	0.1000	0.0000	0.2720	0.1475	0.1313
D1	1.0000	0.4817	0.0471	0.2984	0.2461	0.4136	0.2932	0.0209	0.4188	0.0000	0.0576
D2	1.0000	0.4717	0.1618	0.0839	0.3170	0.0265	0.1780	0.0000	0.3181	0.0605	0.3428
E1	0.2288	0.7516	0.9477	0.3725	0.0000	0.5882	0.6993	0.7320	0.8954	0.9673	1.0000
E2	1.0000	0.5000	1.0000	0.0000	0.5000	0.5000	0.5000	1.0000	1.0000	1.0000	1.0000
F1	0.8796	0.8996	0.9363	0.7496	0.7180	0.9889	0.9118	0.8671	0.0000	1.0000	0.8563
F2	0.4617	0.0844	0.0211	0.8707	1.0000	0.7995	0.8100	0.3404	0.9446	0.3826	0.0000

Subsequently, the entropy weights for each evaluation indicator were calculated according to the formula W_i, as presented in Table 3 below. Analysis clearly reveals that the indicators with higher entropy weights are the state of the cultural industry and the educational attainment of residents, while those with lower entropy weights are production safety conditions and the ecological environment. Across the six dimensions, the C-type dimension exhibits higher entropy weights, whereas the E-type dimension demonstrates lower entropy weights.

Table 3 Entropy Weights for Evaluation Indicators in the Construction of Common Prosperity

	Indicator	W_i	Total
A	A1	0.1099	0.1784
	A2	0.0685	
B	B1	0.0524	0.1212
	B2	0.0688	
C	C1	0.0612	0.2873
	C2	0.0685	
	C3	0.0753	
	C4	0.0823	
D	D1	0.1110	0.2278
	D2	0.1167	
E	E1	0.0413	0.0782
	E2	0.0369	
F	F1	0.0255	0.1071
	F2	0.0817	
Total		1	1

(2) Comprehensive Evaluation Using Grey Relational Analysis Model

Through data analysis, the grey relational values for common prosperity development across 11 prefecture-level cities in Province Z were calculated, as shown in Table 4 below. Analysis indicates that City H demonstrates relatively strong progress in common prosperity development, ranking among the top performers, while City L exhibits comparatively weaker development with significant room for improvement.

Table 4: Grey Relational Values for Common Prosperity Development Across Prefecture-Level Cities in Province Z

	H	N	W	X	H	S	J	Q	Z	T	L
A	0.1784	0.1089	0.0723	0.1191	0.0988	0.0898	0.0675	0.0606	0.0731	0.0719	0.0598
B	0.1212	0.0742	0.0571	0.0639	0.0576	0.0660	0.0560	0.0427	0.0624	0.0554	0.0404
C	0.2497	0.1533	0.1392	0.1627	0.1403	0.1391	0.1265	0.1190	0.1173	0.1360	0.1457
D	0.2278	0.1113	0.0818	0.0874	0.0936	0.0907	0.0901	0.0764	0.1007	0.0776	0.0889
E	0.0531	0.0461	0.0743	0.0806	0.0822	0.0411	0.0443	0.0638	0.0711	0.0757	0.0782
F	0.0486	0.0379	0.0365	0.0751	0.0921	0.0668	0.0682	0.0445	0.0990	0.0450	0.0366
Total	0.8788	0.5267	0.4612	0.5388	0.5146	0.4965	0.4526	0.4070	0.5235	0.4615	0.4497

As shown in Table 4 above, the districts of Province Z are ranked from best to worst in terms of common prosperity development as follows: City H, City X, City N, City Z, City H, City S, City T, City W, City J,City L, City Q. Detailed analysis of each district is provided below:

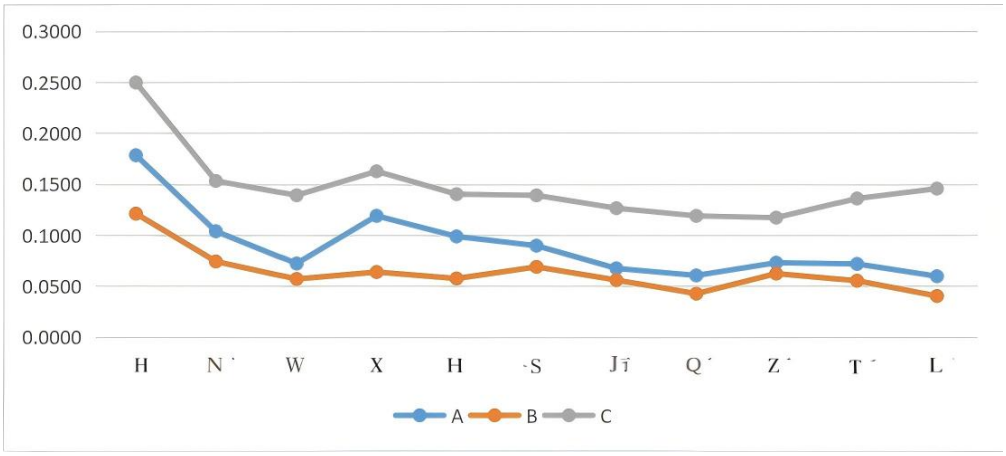

Figure 1: Line Chart of Grey Correlation Values for Material Prosperity Levels Across Prefecture-Level Cities in Province Z, 2021

As illustrated in Figure 1, the trend lines for Dimensions A, B, and C across all prefecture-level cities in Province Z exhibit broadly consistent trajectories. Notably, the evaluation outcomes for Dimensions HA, B, and C significantly outperform those of other prefecture-level cities, indicating that H has made outstanding contributions to establishing a model zone for common prosperity in Province Z across all three dimensions. The XA, B, and C dimensions scored lower than H but outperformed other districts. The QA dimension received the lowest evaluation, indicating weaker development in enhancing quality and efficiency to consolidate the material foundation for common prosperity. The LB dimension scored the lowest, reflecting poorer performance in deepening income distribution system reforms to increase urban and rural residents' income through multiple channels. The ZC dimension received the lowest evaluation, indicating inadequate progress in narrowing urban-rural and regional development gaps to achieve equitable access to high-quality public services.

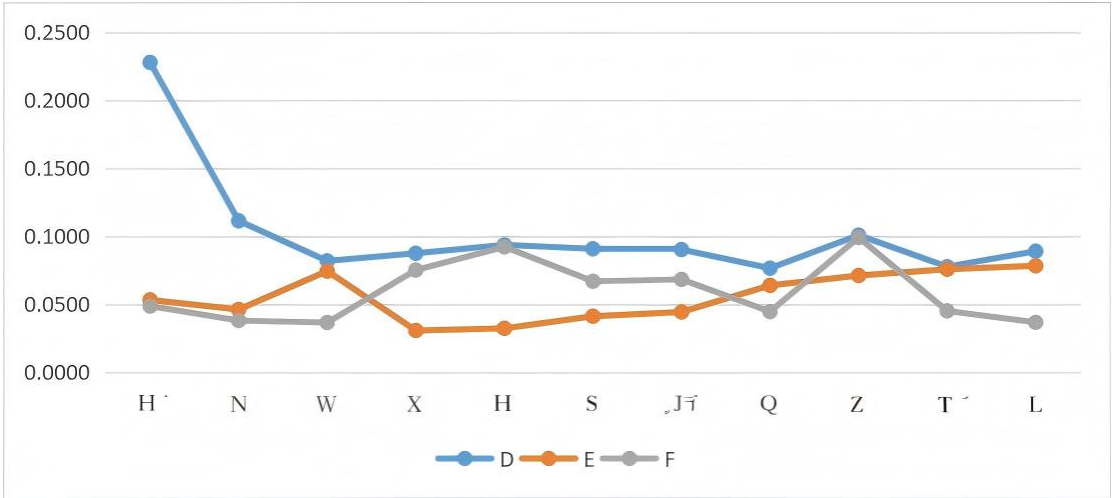

Figure 2: Line Chart of Grey Correlation Values for Spiritual Prosperity Across Prefecture-Level Cities in Province Z, 2021

As illustrated in Figure 2, H significantly outperforms other prefecture-level cities in the development of Dimension D, while Q lags most notably in this aspect. L demonstrates the most effective development in Dimension E, with X performing the poorest. Z achieves the highest standards in Dimension F, whereas W ranks lowest.

IV. Conclusion

In advancing socialist modernisation, we must consistently uphold the people-centred development philosophy. While pursuing high-quality development, we must simultaneously advance common prosperity, ultimately realising the vision of shared prosperity for all. Achieving common prosperity is a protracted process that cannot be expected overnight nor pursued with undue haste. It requires concerted efforts from governments and the people alike, alongside comprehensive development.

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