

How Digital Transformation Impacts Corporate Shared Wealth

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Abstract. This paper analyses the data of China's A-share listed companies from 2011-2021 to empirically explore the impact and mechanism of corporate digital transformation on corporate shared wealth. It is found that digital transformation has a significant positive impact on the level of corporate shared wealth, and this conclusion still holds after robustness tests using multiple methods. Mechanism analyses show that firms' innovation capabilities play a partly mediating role in the process of digital transformation in promoting firms' shared prosperity. Heterogeneity analysis finds that the positive effect of digital transformation on corporate shared wealth is more significant among listed companies in low-pollution industries and those whose domiciles are located in the eastern region. The research in this paper is instructive and informative for promoting the process of common wealth in China.

Keywords: Digital Transformation, Commonwealth, Corporate Innovation Capacity.

1. Introduction

Digital transformation refers to the process by which enterprises use digital technology to transform their production and operation systems, management models and core business processes, resulting in disruptive innovation and change [1] (Siebel, 2019). The digital transformation of enterprises, as a key part in the process of developing the digital economy, has been highly valued by the government and highly cared for by national policies. The government report clearly states that it is necessary to accelerate the development of the digital economy, promote the deep integration of the digital and real economies, and create an internationally competitive digital industry cluster. Will digital transformation affect the pattern of income distribution within enterprises in the process of empowering their high-quality development? While making the enterprise profit cake bigger, can it ensure a reasonable and even distribution of the cake among employees? Precisely as "eliminating poverty, improving people's livelihoods and gradually realising the common prosperity of all people are the essential requirements of socialism." Therefore, studying the impact of digital transformation on the commonwealth of enterprises has an increasingly important practical significance.

At present, two opposing viewpoints have emerged from academic research on the relationship between digital transformation and the commonwealth of enterprises. From the perspective of the various types of effects brought about by digital transformation and comparing the relative sizes of the various types of effects, the "facilitation theorists" have come to the conclusion that the productivity effect and the market competition effect, as well as the job creation effect, are greater than the labour substitution effect. They believe that digital transformation will improve enterprise performance, narrow the gap in labour income, and have a facilitating effect on the common good [2][3][4] (Verhoef, 2021; Fang, 2022; Chen, Dong and Guo, 2023), but did not consider the impact of the improvement of innovation capacity brought by digital transformation on the commonwealth of enterprises. Looking at both workers and managers, The "inhibition theorists" proposed that digital transformation, on the one hand, reduces the comparative advantage of the labour force and expands the income differentials due to the skill factor[5] (Acemoglu and Restrepo, 2019), and on the other hand, increases the executives' centralised power, which allows them to capture a larger share of the company's profits, thus widening the income gap between executives and employees[6] (Xu Zhaohui and Wang Mansi, 2022), but they didn't establish a direct link between digital transformation and corporate common wealth. In view of this, this paper empirically examines the impact of the degree

of digital transformation on intra-firm commonwealth and its underlying mechanisms using unbalanced panel data of Chinese A-share listed companies from 2011 to 2021.

The marginal contributions of this paper are: (1) Starting from the reality that digital transformation will improve the innovation ability of enterprises, this paper theoretically analyses the internal mechanism and transmission process of this part of the mediating effect, and at the same time empirically tests this effect, and concludes that digital transformation promotes the common wealth of enterprises by empowering enterprises to improve their innovation ability, narrowing the income disparity within the enterprise, and contributing to the common wealth of enterprises. It provides a new theoretical perspective and empirical evidence for the controversial issue of "how digital transformation affects the commonwealth of enterprises". (2) Heterogeneity analysis reveals that digital transformation has a more significant effect on the commonwealth of enterprises in low-pollution industries and enterprises registered in the eastern part of the developed regions. This paper analyses the possible influencing factors and proposes a logical theoretical explanation. At the same time, this finding also provides new theoretical references for the digital transformation of enterprises in various industries and regions in the future.

2. Theoretical analysis and research hypotheses

Digital transformation is the process by which enterprises use digital technologies and platforms to transform traditional business processes, organisational structures and management models to improve efficiency, innovation and competitiveness. This paper proposes that the facilitating effect of digital transformation on the commonwealth of enterprises is implemented through the following two main impacts.

For one thing, digital transformation improves the business performance of enterprises, which is conducive to making the enterprise cake bigger and promoting the improvement of employees' income and security level. On the one hand, the use of digital technology to improve product production efficiency, optimise the production process, which is conducive to reducing the waste of resources, reduce production costs and increase business profits. On the other hand, the digital network brings new business models and income-generating channels. Enterprises can achieve on-line and off-line integration of business through the network platform, expanding enterprise visibility, broadening the market and sales channels; they can also be based on the blockchain, big data, cloud computing and data analysis, to better understand the needs of customers, and to achieve customised production and accurate product promotion. Better corporate performance and higher corporate profits increase the income and security level of employees and promote the common prosperity of enterprises.

Secondly, digital transformation optimises the pattern of income distribution within the enterprise, which is conducive to the reasonable distribution of the profit cake and the promotion of common prosperity. In one aspect, digital management improves the transparency of the enterprise, reduces information asymmetry, and strengthens the internal supervision of the enterprise. Transparent management helps to prevent excessive concentration of power among managers, thus preventing them from seizing too much of the company's profit share, which can narrow the income gap between managers and employees. In the other aspect, digital management helps enterprises to pay attention to the significant contribution of employees to the enterprise, focusing on the enthusiasm and creativity of employees, so that employees become direct participants in enterprise management. The implementation of the quantitative management system, the openness of the rewards and punishments, the implementation of the responsibility and promotion system, so that each employee can be able to understand and grasp the enterprise information at any time, through fair competition to get the opportunity to promote or reward, in mobilising the enthusiasm of the staff to work at the same time reduce the income gap between the staff, the formation of a reasonable and balanced pattern of income distribution.

Based on the above analyses, this paper develops hypotheses:

H1: Ceteris paribus, digital transformation will significantly increase firms' level of shared prosperity.

Existing studies have shown that digital transformation helps to enhance the innovation capacity of enterprises and improve their innovation output and innovation efficiency (Tingting Zhao, 2020; Xin Zhang and Zhu Dong, 2023), and its impact paths are mainly as follows: the extensive use of digital technology is gradually improving the structural efficiency^[7] (Jeongeun Byun, 2018) and operational efficiency^[8] (Qi Yudong and Cai Chenwei, 2019); the increased level of digitization makes the flow of information between and within participating enterprises more scalable, efficient and integrated, thus having a profound impact on the value of corporate innovation^[9] (Kwith H, 2019); digital technology itself is an effective component of corporate innovation value creation, and the current use of technologies such as big data, cloud computing and other technologies further enhances the importance of this component. importance of this component^[10] (Hu Q, 2020). Improvement of enterprise innovation ability empowers enterprises to enhance their competitiveness, improves their income-generating ability, broadens their income-generating path, and has a positive impact on the commonwealth of enterprises.

Accordingly, this paper proposes the hypothesis:

H2: Digital transformation can increase the commonwealth of firms by enhancing their ability to innovate.

3. Research design

3.1. Sample selection and data sources

3.1.1 Sample selection

In this paper, the observed data of A-share listed companies from 31 provinces and nearly 80 industries from 2011 to 2021 are selected as the research object. The data on digital transformation of enterprises, the data on commonwealth score of enterprises and the data on other control variables of enterprises are matched according to the stock code and year. The initial samples are screened as follows: (1) excluding all samples of companies that have been ST, *ST and compulsorily delisted during the sample period; (2) excluding samples with missing data or obvious anomalies in the financial indicators; (3) all continuous variables were subjected to 1% and 99% quartile shrinkage treatment to attenuate the adverse effects of extreme values on the empirical conclusions. The final firm-annual unbalanced panel dataset consisting of 3,465 firms with a total of 22,335 observations is obtained.

3.1.2 Data sources

Data in this paper is from several sources, including the CSMAR database, Wind database, annual reports of listed companies, and other avenues. The data sources are reliable.

3.2. Model design and description of variables

3.2.1 Model design

Firstly, this paper constructs the following panel data multiple regression model to explore the static impact of digital transformation on firms' level of shared prosperity:

$$COMP_{i,t} = \beta_0 + \beta_1 DIGT_{i,t} + \lambda X_{i,t} + Year_t + Industry_i + Province_i + \varepsilon_{i,t} \quad (1)$$

In equation (1), $COMP_{i,t}$ denotes the commonwealth score of firms i in year t . It has nine ratings. $DIGT_{i,t}$ represents the degree of digital transformation of firm i in year t . $X_{i,t}$ represents the firm-level control variables. $Year_t$, $Industry_i$ and $Province_i$ represent year, industry and province fixed effects respectively. β_0 is the constant term. β_1 is the regression coefficient. λ is the regression coefficient of each control variable. $\varepsilon_{i,t}$ is the error term of the model. If the model holds, the regression coefficient β_1 will be significantly positive.

Secondly, in order to test that the degree of digital transformation may increase the level of corporate commonwealth through the indirect transmission path of promoting the improvement of corporate innovation capacity, this paper adopts the mediation effect test model to verify this impact mechanism. For the innovation capacity of enterprises, this paper refers to the studies of Hall et al. (2001), Bradley et al. (2016), and Meng Qingbin et al. (2019), and measures the number of patent other citations by listed companies. Counting $LnCit$ as the natural logarithm of the total number of other citations of patent applications by enterprises in the following year plus one, the larger $LnCit$ is, the stronger the innovation ability of the enterprise. The mediation effect test model constructed in this paper is as follows:

$$COMP_{i,t} = \rho_0 + \rho_1 DIGT_{i,t-1} + \eta X_{i,t} + Year_t + Industry_i + Province_i + \varepsilon_{i,t} \quad (2)$$

$$LnCit_{i,t} = \theta_0 + \theta_1 DIGT_{i,t-1} + \tau X_{i,t} + Year_t + Industry_i + Province_i + \varepsilon_{i,t} \quad (3) \quad (3)$$

$$COMP_{i,t} = \delta_0 + \delta_1 DIGT_{i,t-1} + \delta_2 LnCit_{i,t} + \gamma X_{i,t} + Year_t + Industry_i + Province_i + \varepsilon_{i,t} \quad (4)$$

The mediating variable $LnCit_{i,t-1}$ represents the innovative capacity of firm i in year $t-1$. ρ_0 , θ_0 and δ_0 are constant terms. ρ_1 , θ_1 , δ_1 and δ_2 are regression coefficients. η , τ , and γ are regression coefficients for each control variable. the rest of the variables are explained as in equation (1). ρ_1 denotes the total effect of the impact of digital transformation on firms' commonwealth. δ_1 denotes the direct effect of the impact of digital transformation on the commonwealth of enterprises, and $\theta_1 \times \delta_2$ denotes the indirect effect.

3.2.2 Description of variables

(1) Explained variable: Corporate Common Wealth Score (COMP)

The enterprise commonwealth score data used in this paper comes from the CSMAR co-operative database, which is a comprehensive evaluation index that combines factors such as employee employment, remuneration and protection levels. The higher the overall income level of the enterprise, the lower the income gap, and the higher the degree of employee protection, the higher the level of commonwealth. The rating is divided into nine levels from 1-9, with the higher the level of shared prosperity of the enterprise, the greater the rating.

(2) Explanatory variable: Degree of Digital Transformation (DIGT)

Drawing on the metrics of Wang Hongming, Sun Pengbo and Guo Huifang (2022), this paper uses the number of occurrences of digital transformation keywords in the text of annual reports of listed firms to do logarithmic processing as an indicator of the degree of firms' digital transformation. The selection of digital transformation keywords is divided into two dimensions: underlying technologies and practical applications. The underlying technology includes four categories: artificial intelligence, big data, blockchain, and cloud computing, and the practical application refers to the actual application of digital technology in each category. The textual indicators selected for this paper comprehensively cover all aspects of digital technology and can accurately quantify the degree of digital transformation of enterprises.

(3) Control variables

Following existing studies, this paper controls for firm size, firm age, Tobin's Q, ROE, PB, NetProfit, AssetGrowth, Lev, Liquid, Total Asset Turnover, Mfee, Board size, Dual, Mfee, Total Asset Turnover (ATO), Management Expense Ratio (Mfee), Board Size (Board), Dual, Management Shareholding (Mshare), Average Age of Management (TMTAge) and other company-level characteristics.

Definitions and descriptive statistics of the above variables are shown in Table 1.

Table 1 Variable definitions and descriptive statistics

Variable type	variable name	Variable Meaning	calculation method	Obs	Mean	Std.	Min	Max
implicit variable	COMP	Common Wealth Score	Multi-indicator composite calculations	22335	5.221	2.398	1	9
independent variable	DIGT	Degree of digital transformation	Python crawls keywords and logarises them	22335	1.459	1.450	0.00	5.22
control variable	Size	Enterprise size	Natural logarithm of total assets for the year	22335	22.342	1.286	20.16	26.30
	Firm Age	Founding Years	$\ln(\text{current year} - \text{year of incorporation} + 1)$	22335	28.75	0.33	1.72	34.97
	TobinQ	Tobin's Q	$(\text{Market value of outstanding shares} + \text{number of non-outstanding shares} * \text{net assets per share} + \text{book value of liabilities}) / \text{total assets}$	22335	2.034	1.276	0.88	8.195
	ROE	return on net assets	Net profit/average balance of shareholders' equity	22335	0.074	0.013	-0.049	0.357
	PB	market capitalisation	Price per share/net assets per share	22335	3.396	2.677	0.567	15.763
	NetProfit	net sales margin	Net profit/operating income	22335	0.079	0.015	-0.077	0.483
	AssetGrowth	Total asset growth rate	Total assets for the current year/total assets for the previous year - 1	22335	0.080	0.032	-0.264	2.157

	Lev	gearing	Total liabilities at year-end/total assets at year-end	22335	3.414	2.914	1.153	18.750
	Liquid	current ratio	Current assets/current liabilities	22335	2.449	2.438	0.327	15.99
	ATO	Total asset turnover	Operating income/average total assets	22335	0.652	0.437	0.088	2.582
	Mfee	management cost ratio	Administrative expenses/operating income	22335	0.088	0.067	0.009	0.395
	Board	Board size	The number of board members is taken as a natural logarithm	22335	2.131	0.199	1.009	2.708
	Mshare	Management shareholding	Management shareholding/total share capital	22335	13.859	19.450	0.000	67.423
	TM TAge	Average age of management	Average age of management	22335	49.256	3.136	4.169	56.670
	Dual	two jobs in one	Whether the chairman of the board and the general manager are the same person (1:yes, 0:no)	22335	0.282	0.450	0	1

4. Empirical results and analyses

4.1. Baseline regression results

Table 2 reports the results of the baseline regressions on the impact of the degree of digital transformation on firms' commonwealth. Column (1) of the table presents the results of the regression without adding any control variables, column (2) presents the results of the regression with the inclusion of year, industry and province fixed effects, and column (3) presents the results of the regression with the inclusion of each of the control variables and the three fixed effects. As can be seen from the results in column (3) of the table, after controlling for a range of factors that may affect

the level of firms' shared prosperity, the DIGT regression coefficient β_1 is significantly positive at the 1 per cent significance level. This indicates that, all else being equal, digital transformation significantly increases the level of corporate shared prosperity, validating the research hypothesis H1 proposed in the previous section.

Table 2 Benchmark regression results

VARIABLES	COMP		
	0.255*** (0.011)	0.269*** (0.014)	0.073*** (0.012)
Size			1.030*** (0.014)
FirmAge			0.181*** (0.045)
TobinQ			-0.058*** (0.021)
ROE			4.305*** (0.202)
PB			0.066*** (0.010)
NetProfit			0.041 (0.147)
AssetGrowth			-0.042 (0.042)
Lev			-0.049*** (0.011)
Liquid			0.067*** (0.013)
ATO			1.177*** (0.042)
Mfee			5.365*** (0.255)
Board			-1.028*** (0.069)
Mshare			0.007*** (0.001)
TMTAge			-0.005 (0.005)
Dual			0.070** (0.030)
Year fixed effects	Clogged	Be	Be
industry fixed effect	Clogged	Be	Be
Province fixed effects	Clogged	Be	Be
intercept term	4.849*** (0.022)	5.610*** (0.171)	-16.299*** (0.410)
sample size	22,335	22,335	22,335
R-squared	0.024	0.143	0.408
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

The empirical results show that digital transformation has optimised the pattern of cake distribution while making the enterprise profit cake bigger and has significantly contributed to the improvement of the level of commonwealth of enterprises. In the era of digital economy, the effective integration of digital technology and means into the daily production and operation process of enterprises has become a necessary way for enterprises to become bigger and stronger and achieve sustainable development in the future.

4.2. Impact mechanism test

Columns (1)-(3) of Table 3 report the results of the mediation effect test for business complexity. The coefficient of L1. DIGT in column (1) is significantly positive at the 1% level, indicating that digital transformation significantly increases the level of firms' cointegration. The regression coefficient of L1. DIGT in column (2) is still significantly positive at the 1% level, indicating that digital transformation promotes firms' innovation capability. The regression coefficients of LnCit and L1.DIGT in column (3) are significantly positive at the 1% level, and the product of the coefficient of LnCit (0.111) and the coefficient of L1.DIGT (0.158) in column (2) is positive and has the same sign as that of the coefficient of L1.DIGT (0.038) in column (3), which suggests that firms' innovative capacity plays a role in the relationship between digital transformation and the firms' shared prosperity relationship plays a partially mediating role.

Table 3 Mediation effect test results

VARIABLES	COMP	LnCit	COMP
L1.DIGT	0.056***	0.158***	0.038**
	(0.015)	(0.010)	(0.016)
LnCit			0.111***
			(0.014)
control variable	Contained	Contained	Contained
Year fixed effects	Be	Be	Be
industry fixed effect	Be	Be	Be
Province fixed effects	Be	Be	Be
intercept term	-18.605***	-14.885***	-16.954***
	(0.530)	(0.331)	(0.567)
sample size	13581	13581	13581
R-squared	0.439	0.509	0.442
Sobel test	Z=7.224, p=0.000		
Bootstrap Inspection	95 percent confidence interval [0.013,0.022]		
indirect/direct effect.	45.9 per cent		
*** p<0.01, ** p<0.05, * p<0.1			

In order to improve the robustness of the results, this paper uses both Sobel and Bootstrap methods to further test the existence of mediating effects. The Z-value of the Sobel test in Table 4 is 7.224, with a significance level of less than 1%; the 95% confidence interval obtained from the Bootstrap test is [0.010, 0.055], which does not contain 0. Combined with the fact that the product of the coefficients of L1. DIGT in Column (2) and the coefficients of LnCit in Column (3) is of the same sign as that of the coefficients of L1. DIGT in Column (3), it can be demonstrated that the mediating effect of business complexity is statistically significant, and the test results of the stepwise regression method are robust. In the process of digital transformation affecting the commonwealth of enterprises, there is indeed a transmission path of "digital transformation → improvement of enterprise innovation capacity → increase in the level of commonwealth of enterprises", and hypothesis H2 can be verified.

4.3. Heterogeneity analysis

4.3.1 Heterogeneity analysis based on different regions of firms.

The heterogeneity of the region where the enterprise is located directly affects the variability of the enterprise's resource endowment, leading to heterogeneity in the degree of impact of digital transformation on the commonwealth of enterprises. The infrastructure, talent and technology, resources, policy support and other factors in the eastern region are significantly superior to those in the central and western regions, which can more comprehensively and effectively promote the development of digital transformation; at the same time, the eastern region has a broader market, and consumers have a higher degree of acceptance of innovative technologies, which is conducive to better pulling the level of corporate shared wealth up.

Columns (1) and (2) in Table 4 show the empirical test results of the regional heterogeneity analysis. The results show that the regression coefficients of DIGT in the eastern region are more significant compared to those of DIGT in the central and western regions, which strongly corroborates the above analyses, indicating that the degree of digital transformation in the eastern region can more significantly play a positive role in the commonwealth of enterprises compared to the central and western regions.

4.3.2 Heterogeneity analysis based on whether firms belong to highly polluting industries or not

The heterogeneity of the industry in which an enterprise is located directly affects the enterprise's digital transformation capability and the diversity of its internal staff structure. Enterprises in high-pollution industries, such as metal smelting, textile, and oil and gas extraction and processing, are significantly less technologically resilient to digital transformation than enterprises in low-pollution industries, such as high-tech industries, and find it more difficult to achieve universal application of digital technology. At the same time, as there is still a large amount of cheap labour in these industries, it is practically difficult to change the employment, remuneration and security levels of this group, leading to the stickiness of the commonwealth level in these industries and a greater resistance to its enhancement.

Columns (3) and (4) in Table 4 show the empirical test results of the industry heterogeneity analysis. The results show that the regression coefficients of DIGT for low-pollution industries are more significant compared to high-pollution industries, which strongly corroborates the above analyses and indicates that it is relatively difficult for high-pollution industries to play a positive role in the degree of digital transformation on the commonwealth of enterprises compared to low-pollution industries.

Table 4 Heterogeneity test results

	regional heterogeneity		environmental heterogeneity	
	(1)	(2)	(3)	(4)
	eastern part	Central and Western region	Low-polluting enterprises	Highly polluting enterprises
DIGT	0.084** *	0.031	0.083***	-0.021
	(0.142)	(0.025)	(0.134)	(0.032)
control variable	Contain ed	Contained	Contained	Contained
Year fixed effects	Be	Be	Be	Be
industry fixed effect	Be	Be	Be	Be
Province fixed effects	Be	Be	Be	Be
intercept term	- 15.228* **	-17.693***	-15.584***	-21.457***
	(0.474)	(0.844)	(0.460)	(0.859)
sample size	15892	6443	17434	4901
R-squared	0.400	0.456	0.394	0.463
Difference between groups (empirical p-value)	0.205		0.512	
*** p<0.01, ** p<0.05, * p<0.1				

4.4. Robustness tests

In order to further verify the robustness of the above findings, the following significance tests are conducted in this paper:

(1) The unbalanced panel data are balanced, and individual fixed effects are added. Balanced panel regressions are done on the newly obtained samples and the results obtained are shown in column (1) of Table 5, which shows that the regression coefficient of DIGT on COMP remains significant.

(2) Considering the persistence of the impact of the degree of digital transformation on firms' commonwealth, the explanatory variables are lagged by one and two periods, respectively. The regression results are shown in columns (2) and (3) of Table 5, which show that the lagged DIGT regression coefficients are still significant.

(3) Considering the continuity of the impact of the degree of digital transformation on the commonwealth of enterprises, the new regression equation is empirically tested by adding the COMP variable with one period lag to the explanatory variables. The results are shown in column (4) of Table 5, which shows that the regression coefficients are still significant.

(4) Replacement of control variables. Replace the control variables of the original equation with a new set of control variables and do regression on the new regression equation, the results obtained are shown in column (5) of Table 5, which shows that the regression coefficient is still significant.

(5) Adding high-dimensional fixed effects. The regression equation with high-dimensional fixed effects is obtained by doing high-dimensional treatment for the province and year fixed effects. The new equation is regressed, and the results are shown in column (6) of Table 5, which shows that the regression coefficients are still significant in the case of high-dimensional fixed effects.

As can be seen from the results in Table 5, the regression coefficients of the degree of digital transformation on the level of corporate shared prosperity are significant at least at the 1% level using several of the above-mentioned ways of conducting the robustness test, and the basic conclusions of

the model have not been substantially altered, which further illustrates the robustness of the conclusions above.

Table 5 Robustness test results

	COMP					
	(1)	(2)	(3)	(4)	(5)	(6)
DIGT	-0.093*** (0.027)			0.715*** (0.005)	0.087*** (0.012)	0.154*** (0.010)
L1.DIGT		0.064*** (0.014)				
L2.DIGT			0.051*** (0.016)			
control variable	Containe d	Containe d	Containe d	Containe d	Containe d	Containe d
Year fixed effects	Be	Be	Be	Be	Be	Clogged
individual fixed effect	Be	Clogged	Clogged	Clogged	Clogged	Clogged
industry fixed effect	Clogged	Be	Be	Be	Be	Clogged
Province fixed effects	Clogged	Be	Be	Be	Be	Clogged
higher dimensional fixed effect	Clogged	Clogged	Clogged	Clogged	Clogged	Be
intercept term	- 10.021** * (1.939)	- 16.366** * (0.475)	- 16.407** * (0.554)	-5.030*** (0.349)	- 11.711** * (0.344)	- 18.159** * (0.393)
sample size	4,939	17,830	14,064	17,830	21,785	22,335
R-squared	0.158	0.387	0.370	0.689	0.456	0.366
*** p<0.01, ** p<0.05, * p<0.1						

5. Conclusions and insights

This paper analyses the data of China's A-share listed companies from 2011-2021 to empirically explore the impact and mechanism of corporate digital transformation on corporate shared wealth. The main conclusions are as follows: (1) Digital transformation significantly increases the level of corporate commonwealth, and this conclusion still holds after a series of robustness tests. (2) The results of the mechanism test based on the mediation effect model show that the enterprise innovation capacity has a partial mediating role in the transmission path of the impact of digital transformation on the common wealth of enterprises, and there is a transmission channel of "digital transformation → enhancement of enterprise innovation capacity → enhancement of the level of the common wealth of enterprises", i.e., the digital transformation can enhance the common wealth of enterprises by improving their innovation capacity. That is, digital transformation can improve the commonwealth level of enterprises by improving their innovation ability. (3) Heterogeneity analysis shows that digital transformation has a significant impact on the improvement of the commonwealth level of enterprises in the eastern region and low-pollution industries, while the impact on the improvement of the commonwealth level of enterprises in the central and western regions and high-pollution industries is not significant.

The following insights can be drawn from the research in this paper:

Firstly, digital transformation of enterprises should be encouraged. Governments should adopt a series of measures to facilitate the digital transformation of enterprises including, but not limited to, providing training and education opportunities, encouraging enterprises to invest in digital transformation through tax policies and fiscal incentives, and actively promoting the construction of digital infrastructure. The government should create a favourable external environment for the digital

transformation of enterprises, so that the commonwealth of enterprises and society can be achieved step by step.

Secondly, the innovative capacity of enterprises should be enhanced. Managers should actively support enterprise innovation and form a positive and active innovation atmosphere within the enterprise. Leaders should strengthen human input and financial support for R&D projects and give innovation projects sufficient resource protection and institutional attention. In addition, enterprises should strengthen the training of employees' skills, improve innovation ability, problem solving ability and teamwork ability, and fundamentally improve the efficiency of enterprise innovation.

Lastly, the Government should further promote co-ordinated development among regions and industries. The Government should strengthen infrastructure construction in the western region and encourage it to introduce more adaptable digital technologies based on its own characteristics and advantages. At the same time, the Government should encourage highly polluting industries to introduce advanced production methods and digital technologies and provide corresponding human and material support and industrial policy incentives to facilitate the successful completion of the digital transformation of highly polluting industries.

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