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How Does Digital Leadership Affect the Green Innovation of Private Enterprises?

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Introduction

In the wave of digital transformation, digital leadership is an indispensable prerequisite for digital transformation, and private enterprises are an important part of the Chinese economy. However, up to now, no research on the relationship between them has been found. This study aims to explore the influence mechanism of digital leadership on the green innovation of private enterprises, which has important theoretical significance and practical value for promoting the development of digital innovation theory and the digital transformation of private enterprises. Through the collation and analysis of the paired data from 225 questionnaires, this paper finds that 1) The digital leadership of private enterprises positively promotes green innovation; 2) Green operation management and green information sharing play a mediating role between the digital leadership and green innovation of private enterprises; 3) Stress evaluation negatively moderates the indirect effects of the digital leadership of private enterprises on green operation management and green information sharing. This paper not only enriches and improves the relevant research on the digital leadership of private enterprises but also provides a reference for private enterprises to enhance their digital leadership and optimize their green innovation.

Research Questions

Q1: Whether digital leadership of private enterprises will promote green innovation.
Q2: Whether the green operation management, IT technology integration and green information sharing of private enterprises play an intermediary role between digital leadership and green innovation.
Q3: Whether the stress evaluation will play a moderating role between the digital leadership of private enterprises and green operation management, IT technology integration and green information sharing.

Methodologies

In this study, a total of 300 questionnaires were collected through the questionnaire star. After the completion of the questionnaire collection, some invalid questionnaires need to be eliminated. The principle of screening invalid questionnaires is as follows: 1) eliminate the questionnaires with too short completion time; 2) remove questionnaires that are not filled in carefully or in a certain order; 3) eliminate the questionnaire that the answer of the reverse item is completely contrary to the answer of other items. According to the above requirements, 225 valid questionnaires were finally obtained, and the effective rate of the questionnaire was 75%.

The reliability of the questionnaire is tested by SPSS software, the validity of the questionnaire is tested by Amos software, and the hypothesis proposed in this paper is verified by hierarchical regression.

Table

Mean, standard deviation, and correlation coefficient table

	1	2	3	4	5	6
1. DL	(0.733)					
2. GOM	0.380**	(0.755)				
3. IT	0.323**	0.574**	(0.758)			
4. GIS	0.309**	0.589**	0.569**	(0.740)		
5. PE	0.175**	–0.119	–0.242**	-0.167*	(0.760)	
6. GI	0.367**	0.443**	0.357**	0.446**	0.182**	(0.825)
Mean	3.228	2.637	2.833	2.444	3.041	2.106
SD	0.731	0.722	0.747	0.872	0.780	0.812

Note: 1) N = 225. 2) *p < 0.05, **p < 0.01, ***p < 0.001. 3) The square root of the core.

Result

Hierarchical regression results

variable	GOM			IT			GIS			GI		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Sex	–0.115	–0.111	–0.106	0.041	0.044	0.034	–0.089	–0.086	–0.083	–0.084	–0.081	–0.042
Age	–0.044	–0.059	–0.042	–0.082	–0.095	–0.078	0.005	–0.008	0.013	–0.026	–0.041	–0.022
Job	–0.055	–0.057	–0.059	–0.005	–0.007	–0.010	0.038	0.036	0.033	–0.004	–0.006	–0.002
E-age	–0.003	0.014	0.016	0.007	0.022	0.027	0.089	0.103	0.106	0.100	0.117	0.090
E-size	0.073	0.066	0.038	0.116	0.110	0.067	0.062	0.056	0.018	0.011	0.004	–0.028
E-pro	0.161*	0.156*	0.118	0.173*	0.169**	0.119	0.040	0.036	–0.014	0.023	0.018	–0.030
Industry	0.085	0.090	0.091	0.062	0.066	0.066	–0.054	0.050	–0.049	0.037	0.042	0.032
DL		0.381***	0.400***		0.323***	0.367***		0.310***	0.340***		0.373***	0.210**
GOM												0.200*
IT												0.054
GIS												0.222**
PE			–0.175**			–0.273***			–0.239**			
DLxPE			–0.141*			–0.055			–0.152*			
R^2	0.057	0.202	0.246	0.054	0.158	0.227	0.029	0.125	0.196	0.019	0.158	0.350
ΔR^2	0.057	0.144	0.189	0.054	0.104	0.069	0.029	0.096	0.071	0.019	0.139	0.350
F	1.886	6.825	6.999	1.777	5.079	6.297	0.935	3.859	5.209	0.608	5.060	24.693

Note: 1) N = 225. 2) *p < 0.05, **p < 0.01, ***p < 0.001. 3) The results reported in the table are standardized coefficients.

Conclusion

Digital leadership can effectively affect the green innovation of private enterprises; green operation management and green information sharing play a dual intermediary role in the overall impact mechanism; the moderating effect of stress evaluation is negative and significant. This study shows that there is a significant positive correlation between digital leadership and green innovation of private enterprises. Private enterprises provide many jobs for the society and alleviate social pressure. With the development of big data and artificial intelligence, if private enterprises do not attach importance to the development of digital leadership within the enterprise, it may have a negative impact on the green transformation and green innovation enthusiasm of enterprises in industries subject to policy restrictions. Therefore, private enterprises should seize the opportunity of digital opening reform and obtain more digital new information and capabilities with the help of digital open platform, to form an internal digital atmosphere and promote enterprises to improve green innovation.