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Identification and Analysis of Factors Influencing Green Growth of Manufacturing Enterprises Based on DEMATEL Method—Wooden Flooring Manufacturing Companies as a Case

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Abstract: It is significant to scientifically identify what factors influence the green growth of manufacturing enterprises and analyze the relationship among these factors, thus promoting green growth. Firstly, the corresponding conceptual model is designed; then, the DEMATEL method and steps used to identify the influencing factors are introduced; finally, the DEMATEL method is adopted to empirically analyze wooden flooring manufacturing companies so as to identify influencing factors of their green growth. According to the results, there are six reason factors, namely environmental standard constraints, green market demand, market competition, green technology advancement, upstream and downstream synergy of green industrial chain, and policy support, which provide the most important external support to enterprises' green growth and main driving power to wooden flooring manufacturing ones.

Keywords: green growth; influencing factor; factor identification; DEMATEL method; manufacturing enterprises

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1. Introduction

Crucial to the industrial economy, manufacturing is a typical and fundamental symbol of comprehensive national strength and international status. Over the past 40 years since the reform and opening-up of China, China's manufacturing industry has made great progress, now with more than 30% of the world's total manufacturing output, a comprehensive industrial system with all sectors, and a complete industrial chain [1], However, despite the huge volume, China is still not a manufacturing powerhouse [2] subject to scale expansion [3]; therefore, transformation is urgent to upgrade China's manufacturing industry.

To pursue a higher quality of industrial development, green growth has become an important symbol [4]. In 2015, the Chinese government officially put forward the "Made in China 2025" Initiative, in which green growth was a guideline for strategic implementation, emphasizing that sustainable economic development should be coordinated with the natural environment towards fully green manufacturing [5]. In particular, manufacturing enterprises are required to shift from a traditional development model that was at the expense of the environment to foster green transformation and upgrading to realize green growth [6,7].

"Green growth" refers to the process that manufacturing enterprises grow stronger through green strategies and green behaviors, fewer pollutant residues, less consumption of resources and energy, and more environmentally friendly, safe, and healthy products, together with ever-increasing green competitiveness. In particular, the leading concept is green development throughout the production and management practices of manufacturing enterprises relying on relevant technological and management innovations, featured by less environmental pollution and higher resource efficiency [8,9].

It is clear that green growth essentially emphasizes sustainable development to realize both economic growth and environmental protection [10]. Enterprise behaviors should follow the basic green premise and corresponding requirements under green constraints, which is necessary for their survival and development.

Such green growth of manufacturing enterprises is a "systematic project" with a wide range, rich contents, and many influencing factors [11]. As a result, it is pragmatic to identify and refine these key factors.

This paper aims to effectively identify the influencing factors of manufacturing enterprises' green growth, then further define and utilize key ones to promote green growth. Major contributions made in this paper include a conceptual model of the factors influencing the green growth of manufacturing enterprises and a method to further explore the relevant dynamic mechanisms and key influencing factors identified through the DEMATEL method and verify the effectiveness of the DEMATEL method. Finally, this paper concludes with six verified key influencing factors. In particular, the introduction of the "industrial chain" factor and the proposed "collaboration within the industrial chain" factor have improved comprehensiveness in analyzing green growth dynamics and provided more perspectives apart from previous individual enterprises.

2. The Research Objectives and Method

2.1. Setting up a Conceptual Model of Influencing Factors

Enterprise management pursues more values and shareholders' maximum benefits. That is, green behaviors cannot sustain without more business values or better financial performance [12]; therefore, based on rational human assumption, manufacturing enterprises driven by their interests (including short-term and long-term gains) will be more willing to adopt green behaviors with various "green motivation" factors that add values. In this sense, effective identification of external factors that can improve such "green behavior willingness" [13] is necessary; thus, a conceptual model of influencing factors is designed as shown in Figure 1.

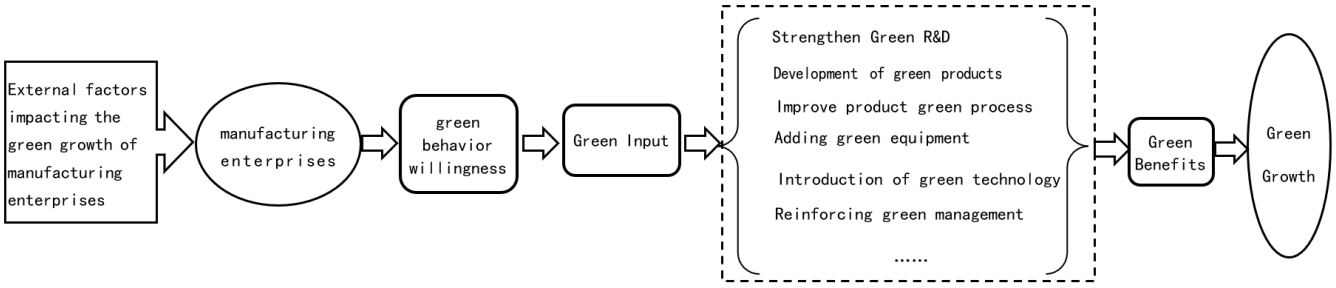

Figure 1. Conceptual model of the main factors influencing green growth.

The model logic is that due to external influencing factors, manufacturing enterprises have a stronger willingness to green behaviors driven by their interests. Then these green behaviors realize green benefits and green growth in different ways. That is, "external influencing factors → manufacturing enterprises → stronger willingness to green behaviors → green behaviors → more revenues → green growth."

Here are definitions of several relevant concepts in Figure 1.

(1) Green behavior willingness, with manufacturing enterprises as the subject. It refers to enterprises' subjective readiness for green behaviors under comprehensive influencing factors, which is crucial to connect external and internal factors.

(2) Green input, mainly including capital input and technical staff input. The former one reflects emphasis and implementation of environmental protection, while the latter is key to ensuring deliveries and green competitive advantages.

(3) Green behaviors, namely a series of environmentally friendly actions. There are mainly four categories: Firstly, green product development, that is, relying on green technologies to develop new green products with less resource or energy consumption, emissions, and pollution. Secondly, green process improvement, including clean production and end-of-pipe management, that is, better new technologies, processes, and equipment are adopted to save energy and control pollution. Next is the research and development of green technologies so as to improve green competitiveness in pollution prevention and control. Finally, stronger green management. Through building up green corporate culture, staff training, and a green management system, employees can have and implement this concept with stronger green awareness and consciously fulfill their environmental responsibilities.

(4) Green benefits, namely, more environmental and economic benefits as a result of green behaviors. Specifically, environmental benefits are obvious in saving energy and reducing consumption, and further enhancing green image indirectly. However, economic benefits refer to revenue and profit increases, along with fewer costs and expenses.

2.2. Methods and Steps to Identify Influencing Factors

This paper adopts the widely recognized DEMATEL method to identify influencing factors of manufacturing enterprises' green growth. Compared to methods such as structural equations, linear regression analysis, and system dynamics, the DEMATEL method can not only analyze the influence relationship between individual factors, but also show corresponding specific influence levels [14]. Simply, this method is powerful in simplifying intricate relationships. Firstly, the direct impact matrix is established by judging the logical relationships between factors in the system with the help of professional expertise and rich experience. The influence level of each factor on other factors and the degree of being influenced are analyzed using this matrix, thus calculating the centrality and the reason degree of each factor [15]. This helps to identify key influencing factors for system optimization decisions.

The major steps are as follows:

Firstly, selecting out influencing factors of green growth. As numerous relevant factors constrain and interact with each other, it is neither practical nor necessary to examine them one by one. Instead, "literature reference+ expert consultation" is more feasible to conduct preliminary screening and form the "alternative sets" $\{f_1, f_2, \cdots, f_n\}$, so as to have more sensible analysis and decisions from theoretical or practical perspectives.

Next is to determine the relationship between these factors through comparisons between each other. A panel of experts was invited to score each group from 0 and 4 according to "influence level".

Corresponding figures are shown in Table 1.

Table 1. Judgment basis of impact degree.

Influence Level	No influence	Little Influence	Moderate Influence	Stronger Influence	Huge Influence
Score	0	1	2	3	4

Thirdly, direct impact matrix. Based on scores, direct impact matrix A of these influencing factors can be set up as $A = \left[a_{ij}\right]_{n\times n}$, a_{ij} representing the influence level of factor f_i on factor f_j.

The fourth step is to normalize the direct impact matrix so as to obtain the normalized influence matrix B: $B = \left[b_{ij}\right]_{n\times n}$.

$$b_{ij} = a_{ij} \times \frac{1}{\max\limits_{1\le i\le n}\left(\sum_{j=1}^{n} a_{ij}\right)} \quad (i, j = 1, 2, \ldots, n) \tag{1}$$

Then, the next step is to calculate the comprehensive impact matrix T according to the formula $T = B(I - B)^{-1}$, where I is the unit matrix. That is, $T = B(I - B)^{-1} = [t_{ij}]_{nn}$, t_{ij} indicates the level of direct and indirect influence of factor f_i on factor f_j.

The sixth step is to calculate corresponding levels of influence and being influenced. According to the comprehensive impact matrix T, the relationship between each influencing factor is determined, specifically the influencing level D_i and the level being influenced F_i. The calculation formula is:

$$D_i = \sum_{j=1}^{n} t_{ij} (i = 1, 2, \ldots, n) \quad (2)$$

$$F_i = \sum_{i=1}^{n} t_{ij} (i = 1, 2, \ldots, n) \quad (3)$$

D_i is a row-wise sum of the elements in T, which represents the comprehensive value of the influence level of X_i on other factors.

F_i is a column sum of the elements in T, which represents the comprehensive value of how much X_i is influenced by other factors.

Finally, the centrality and reason degree of each factor are calculated. The formulas for the centrality H_i and the reason degree J_i are as follows:

$$H_i = D_i + F_i (i = 1, 2, \ldots, n) \quad (4)$$

$$J_i = D_i - F_i (i = 1, 2, \ldots, n) \quad (5)$$

The centrality H_i is the total sum of D_i and F_i, which indicates the position of the factor X_i in the system. A larger H_i indicates that X_i has a higher position in the system and X_i plays a larger role [16].

The reason degree J_i is the difference between D_i and F_i. It indicates how the influence is realized among influencing factors, literally whether a factor is to influence or to be influenced. If $J_i > 0$, it is called a reason factor, indicating that factor X_i has a strong influence on other factors; but if $J_i < 0$, it is called a result factor, indicating that factor X_i is strongly influenced by other factors [17].

In summary, the DEMATEL method not only helps to identify key influencing factors, but also provides a preliminary analysis of the interaction mechanism among these factors according to centrality and reason degree, thus providing a reference for exploring the green growth mechanism of manufacturing enterprises.

3. Empirical Analysis of Wooden Flooring Manufacturing Enterprises as a Case

Wooden flooring manufacturing is a typical traditional type. This industry in China grew rapidly from the 1980s, with an average production scale of 400 million m^2 for many years and an annual output value of nearly 100 billion RMB, making China the world's largest producer and consumer of wooden flooring [18]; however, along with rapid expansion, this industry also faces some environmental problems that cannot be ignored or yet to be fundamentally solved, especially low resource utilization, high unit energy consumption, harmful emissions, free formaldehyde residues [19]. The environmental pressure and utilization chain are shown in Figure 2.

Concerning increasing pressure on resources and the environment, the consumer demand for green wooden flooring products is growing. Faced with both challenges and opportunities brought by "greenness", enterprises urgently need to identify and grasp key influencing factors of green growth so as to empower their sustainable growth [20].

3.1. The Main Factors Influencing Green Growth of Wooden Flooring Manufacturing Enterprises

Berry and Rondinelli [21] held that government, customer, employee, and competitor pressure are driving enterprises' shift to proactive environmental management. Bansal and Roth [22] proposed competitiveness, legitimacy, and ecological responsibility as three main elements leading to the ecological responsiveness of enterprises. Zhu [23] identified through factor analysis that corporate awareness of laws and regulations, environmental

strategies, supply chain pressure, market demand, and the cost of green activities are the major factors of pressure/motivation and practice of green supply chain management in companies, also pointed out that green supply chain management had become an effective means for companies to improve their competitiveness. Hao et al. [24] used the "entropy decision model" to investigate 30 enterprises and concluded that expected benefits, environmental regulations, ecological environment, cluster network characteristics, and corporate social responsibility are key factors affecting green behavior decisions of enterprises in resource-based industrial clusters. Jiang [25] found through an empirical study that demand pressure, competitive pressure, policy opportunities, demand opportunities, and competitive opportunities all contribute to green performance. Furthermore, Zeng [18] also found through an empirical study that command-and-control policy instruments in environmental regulation, international market pull in demand-pull factors, and ISO14001-certified firms in supply-side factors are all key factors influencing enterprises to engage in green innovations.

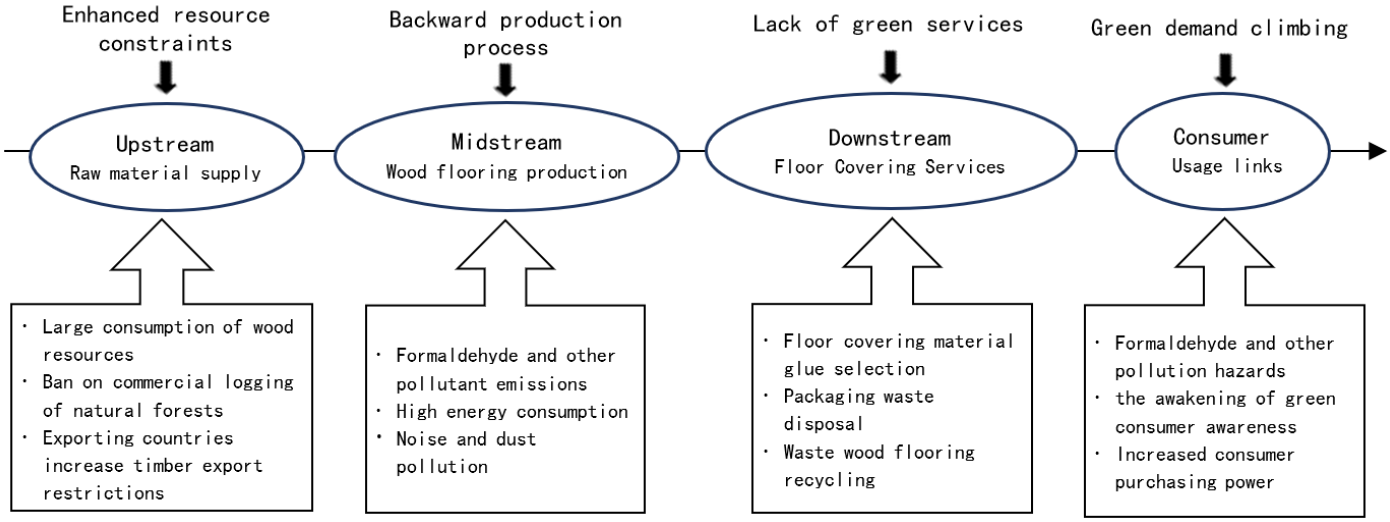

Figure 2. Environmental pressure from manufacturing to consumption.

Based on relevant literature and characteristics, together with many rounds of discussions by the CGE, a prepared set of factors influencing the green growth of wooden flooring manufacturing enterprises was formed as follows.

(1) Policies, basically government policy support and environmental standard constraints. The former mainly promotes enterprises to adopt green behaviors and implement green growth through favorable, subsidy, and incentive policies; the latter sets relevant environmental standards to constrain and regulate enterprises' behaviors [26].

(2) Industry, such as green market demand, market competition, green technology advancement, and local support. Among them, green market demand is a necessary precondition for green growth, which is mainly reflected comprehensively by population, purchasing power, and purchasing desire. Moreover, market competition mainly focuses on the status of competition between various industrial chains, with wooden flooring manufacturing enterprises as the core. Green technology advancement is crucial to support green innovations and a decisive factor for quality "greenness" [27]. In terms of local support, namely industrial support and other "hardware and software" in the area where an enterprise is located, it provides protection to enterprises' green growth. Specifically, such support includes public service facilities, production factors' trading market, logistics' supporting network, local economy, and government–industry–university–research cooperation and innovation, along with industrial information environment.

(3) Industrial chain. This mainly refers to the green synergy of enterprises in the industry chain, which is represented by their cooperation level, the "green requirements" for wooden flooring manufacturing enterprises, and response levels of upstream and downstream enterprises.

(4) Green behavior willingness. It demonstrates how strong enterprises' readiness are to adopt green behaviors, which is the key link to transforming the "external factors" of green growth into "internal ones".

(5) Green input. This shows the quantity and quality of input resources and generates economic and environmental benefits through the process of "green input—green output", which is mainly reflected by the green input intensity (such as upgrading green products, manufacturing processes, production equipment, end-of-pipe pollution control, etc.) and the number of technicians.

(6) Green management level. Led by the sustainable development idea, environmental protection is integrated into the whole process of enterprise production and operation so as to control pollution, save resources, shape the green image, and finally achieve sustainable growth of enterprises embodied in "green" comprehensive management capacity. To define such a level, symbol factors mainly refer to green strategies and their implementation, higher green quality of products, and enterprises' green images.

(7) Green output. This refers to outcomes of enterprises' green governance and green R&D through green inputs; for example, the number of patent applications, especially invention patents that can reflect the comprehensive strength of enterprise scientific research, which can be used as an important indicator reflecting green outputs.

Building a Direct Impact Matrix.Firstly, the major influencing factors of wooden flooring manufacturing enterprises' green growth are named and listed in Table 2.

Table 2. The main factors impacting the green growth of wooden flooring manufacturing companies.

Dimensionality	Impact Factors
Policy	Government Policy Support f_1, Environmental Standard Constraints f_2
Industrial environment	Green Market Demand f_3, Market Competition f_4, Green Technology Advancement f_5, Local Support f_6
Industry Chain	Green Synergy Between Industry Upstream and Downstream f_7
Green Behavior Willingness	Green Behavior Willingness f_8
Green Input	Green Input Intensity f_9, Number of Technical Staff f_{10}
Green Management Level	Green Strategy Formulation and Implementation f_{11}, Product Green Quality f_{12}, Corporate Green Image f_{13}
Green Output	Number of Patent Applications f_{14}

Next, a panel of nine professionals in business growth and green development was established, including four university professors, two researchers from research institutions, two senior consultants from consulting organizations, and one top executive from a wooden flooring manufacturing enterprise. They were invited to evaluate the above 14 influencing factors and score them according to Table 1, thus forming the quantitative relationship values between these factors. Each set of quantified influence relationship values indicates the direct effect of an influencing factor on another.

Finally, the experts' scores are averaged and rounded to form a direct impact matrix A'. Then A' is sent back to experts for confirmation and correction so as to gain direct impact matrix A, as shown in Table 3.

Table 3. The direct impact matrix A.

	f_1	f_2	f_3	f_4	f_5	f_6	f_7	f_8	f_9	f_{10}	f_{11}	f_{12}	f_{13}	f_{14}
Government Policy Support f_1	0	0	1	2	1	2	2	4	3	1	3	3	3	2
Environmental Standard Constraints f_2	0	0	2	3	4	2	2	4	4	2	4	4	3	3
Green Market Demand f_3	2	2	0	4	3	2	3	4	4	2	4	4	4	3
Market Competition f_4	1	3	0	0	3	2	3	4	4	3	4	4	4	3
Green Technology Advancement f_5	0	4	2	2	0	2	1	4	4	3	3	3	2	3
Local Support f_6	1	0	2	1	2	0	0	1	1	1	1	1	0	1
Green Synergy Between Industry Upstream and Downstream f_7	2	3	2	2	1	1	0	4	3	1	4	4	3	2
Green Behavior Willingness f_8	1	1	0	2	1	1	3	0	4	4	4	4	4	3
Green Input Intensity f_9	0	0	0	2	2	0	1	3	0	4	2	3	3	4
Number of Technical Staff f_{10}	0	0	0	1	1	0	0	1	2	0	2	3	2	3
Green Strategy Formulation and Implementation f_{11}	1	1	0	1	1	0	2	3	4	3	0	4	3	2
Product Green Quality f_{12}	0	0	1	2	1	0	2	3	3	2	3	0	4	2
Corporate Green Image f_{13}	0	0	0	1	0	0	1	3	3	2	3	2	0	2
Number of Patent Applications f_{14}	0	0	0	2	3	0	0	2	2	2	2	4	4	0

3.2. Calculations and Results

3.2.1. The Comprehensive Influence Matrix

Based on matrix A, the normalized influence matrix B is calculated according to Equation (1). Then, according to $T = B(I - B)^{-1} = [t_{ij}]_{nn}$, the comprehensive influence matrix T is obtained, as shown in Table 4.

Table 4. The comprehensive influence matrix T.

	f_1	f_2	f_3	f_4	f_5	f_6	f_7	f_8	f_9	f_{10}	f_{11}	f_{12}	f_{13}	f_{14}
f_1	0.0215	0.0363	0.0444	0.1165	0.0840	0.0712	0.1085	0.2058	0.1918	0.1264	0.1838	0.1976	0.1926	0.1485
f_2	0.0288	0.0559	0.0782	0.1694	0.1814	0.0832	0.1320	0.2533	0.2655	0.1916	0.2526	0.2730	0.2415	0.2144
f_3	0.0788	0.1068	0.0347	0.2019	0.1670	0.0882	0.1647	0.2719	0.2834	0.2039	0.2707	0.2919	0.2822	0.2282
f_4	0.0499	0.1204	0.0326	0.0976	0.1556	0.0808	0.1513	0.2507	0.2623	0.2107	0.2505	0.2707	0.2608	0.2122
f_5	0.0247	0.1376	0.0746	0.1376	0.0838	0.0793	0.0996	0.2337	0.2455	0.1979	0.2128	0.2322	0.2009	0.1999
f_6	0.0345	0.0212	0.0589	0.0604	0.0794	0.0151	0.0310	0.0810	0.0848	0.0734	0.0800	0.0874	0.0612	0.0748
f_7	0.0724	0.1140	0.0738	0.1361	0.1022	0.0564	0.0789	0.2358	0.2237	0.1498	0.2355	0.2521	0.2235	0.1734
f_8	0.0448	0.0619	0.0233	0.1240	0.0919	0.0477	0.1343	0.1291	0.2285	0.2059	0.2193	0.2374	0.2307	0.1854
f_9	0.0148	0.0309	0.0155	0.1051	0.0983	0.0187	0.0726	0.1642	0.1051	0.1804	0.1443	0.1810	0.1767	0.1805
f_{10}	0.0084	0.0174	0.0092	0.0607	0.0567	0.0103	0.0315	0.0846	0.1121	0.0566	0.1065	0.1386	0.1153	0.1247
f_{11}	0.0395	0.0534	0.0183	0.0875	0.0778	0.0201	0.1002	0.1723	0.2019	0.1628	0.1045	0.2084	0.1828	0.1418
f_{12}	0.0179	0.0323	0.0386	0.1059	0.0747	0.0196	0.0987	0.1675	0.1755	0.1364	0.1683	0.1127	0.1986	0.1361
f_{13}	0.0121	0.0203	0.0098	0.0662	0.0379	0.0120	0.0611	0.1380	0.1452	0.1134	0.1393	0.1288	0.0794	0.1120
f_{14}	0.0124	0.0290	0.0150	0.0988	0.1137	0.0175	0.0468	0.1347	0.1424	0.1274	0.1346	0.1887	0.1865	0.0800

3.2.2. The Levels of Influence, Being Influenced, the Reason Degree, and Centrality

According to Equations (2)–(5), the levels of influence, being influenced, reason degree, and centrality of each factor are calculated, respectively [18], as shown in Table 5.

Table 5. D_i, F_i, H_i, J_i of each index.

Factor	D_i	F_i	J_i	H_i
Government Policy Support f_1	1.7289	0.4607	1.2682	2.1896
Environmental Standard Constraints f_2	2.4207	0.8374	1.5833	3.2581
Green Market Demand f_3	2.6743	0.5270	2.1473	3.2014
Market Competition f_4	2.4061	1.5676	0.8385	3.9736
Green Technology Advancement f_5	2.1600	1.4044	0.7556	3.5644
Local Support f_6	0.8432	0.6202	0.2230	1.4634
Green Synergy Between Industry Upstream and Downstream f_7	2.1277	1.3112	0.8165	3.4389
Green Behavior Willingness f_8	1.9642	2.5225	−0.5584	4.4867
Green Input Intensity f_9	1.4881	2.6678	−1.1797	4.1558
Number of Technical Staff f_{10}	0.9325	2.1365	−1.2040	3.0690
Green Strategy Formulation and Implementation f_{11}	1.5714	2.5027	−0.9313	4.0740
Product Green Quality f_{12}	1.4828	2.8004	−1.3176	4.2832
Corporate Green Image f_{13}	1.0754	2.6327	−1.5573	3.7080
Number of Patent Applications f_{14}	1.3277	2.2120	−0.8843	3.5397

Based on Table 5, factors' positions in the plane coordinate system were marked to form a diagram of their integrated influence relationship. In this figure, centrality is the horizontal coordinate, reason degree is the vertical coordinate, the intersection of the horizontal and vertical coordinates is [k,0], and the distances from k to the maximum and minimum values of centrality are equal—see Figure 3.

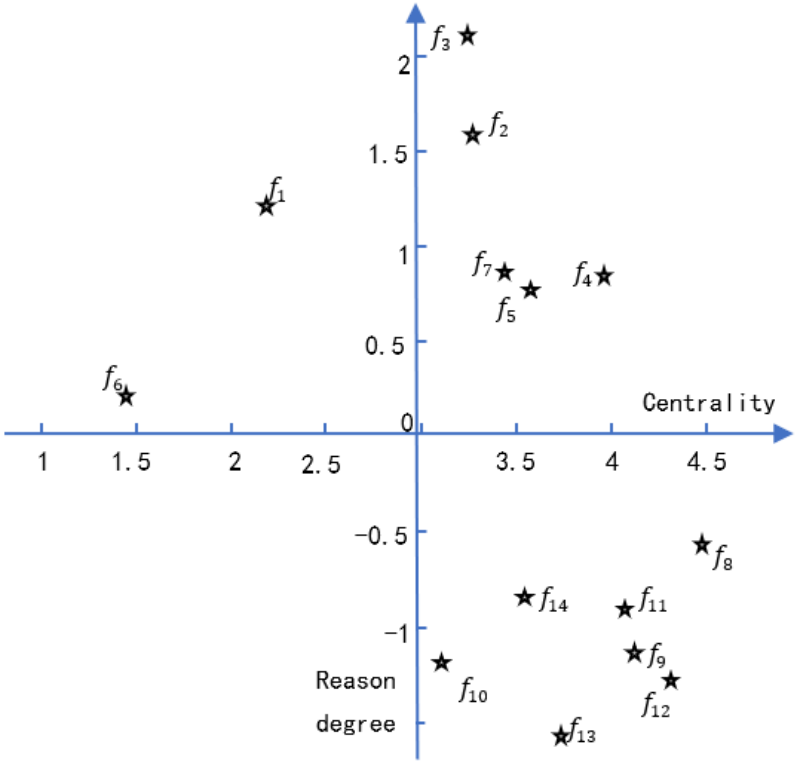

Figure 3. Schematic diagram of comprehensive impacting factors.

3.3. Analysis of Results

By calculating factors in comprehensive influence matrix T, the levels of influence, being influenced, reason degree, and centrality of each factor are derived. Through further analysis of the results, the following conclusions were obtained.

(1) In terms of reason degree, each factor has positive and negative values, which indicates that how each factor influences wooden flooring manufacturing enterprises' green growth is complicated. Among them, f_1-f_7 are positive or reason factors and f_8-f_{14} are negative or result factors.

Reason factors (reason level greater than 0) are Green Market Demand f_3 > Environmental Standard Constraints f_2 > Government Policy Support f_1, Market Competition f_4 > Upstream and Downstream Green Synergy f_7 > Green Technology Advancement f_5 > Local Support f_6 according to importance.

Result factors (reason level lower than 0) can contribute to green growth through the influence exerted by reason factors.

(2) Concerning centrality, Green Behavior Willingness f_8 demonstrates the largest value. Other influencing factors with a centrality level greater than 4 are Product Green Quality f_{12}, Green Input Intensity f_9, and Green Strategy Formulation and Implementation f_{11}, which should be the focus of corporate management.

(3) According to Figure 3, Environmental Standard Constraints f_2, Green Market Demand f_3, Market Competition f_4, Green Technology Advancement f_5, Upstream and Downstream Green Synergy f_7 in the first quadrant and are Driving Factors, with the greatest influence and most critical role in promoting the green growth of wooden flooring manufacturing enterprises [28–30].

Government Policy Support f_1 and Local Support f_6 in the second quadrant are called Voluntariness, which plays a supportive role in the model. Specifically, Local Support f_6 has the lowest centrality value, indicating that this factor has little influence on wooden flooring manufacturing enterprises' green growth, which is the same as its reason level. As result, this factor can be excluded from the analysis. The reason level of Government Policy Support f_1 is higher with a certain centrality level, which will promote green growth.

Located in the fourth quadrant, Green Behavior Willingness f_8, Green Input Intensity f_9, Number of Technical Staff f_{10}, Green Strategy Formulation and Implementation f_{11}, Product Green Quality f_{12}, Corporate Green Image f_{13}, and Number of Patent Applications f_{14} are called Core Problems. They are key elements vulnerable to other factors' influence, which are involved in different ways in enterprise production and operation to promote green growth. Among them, Green Behavior Willingness f_8 is crucial to connect enterprises' external motivating factors and internal influencing factors by transforming external motivation into internal actions.

To sum up, six factors, namely environmental standard constraints, green market demand, market competition, green technology advancement, upstream and downstream green synergy, and government policy support, work together to enhance enterprises' willingness to conduct green behaviors, then generating green benefits to promote green growth of wooden flooring manufacturing enterprises. Therefore, driven by the ultimate goal of profit maximization, the above six factors provide the most important external support for the green growth of enterprises, especially the key driving force for wooden flooring manufacturing ones.

4. Conclusions

The green growth of manufacturing enterprises is certainly affected by interactions and joint influence of multiple factors, which is very complex and challenging to analyze the corresponding relationship.

This study uses the DEMATEL method to identify factors influencing the green growth of wooden flooring manufacturing enterprises, concluding with six factors, namely environmental standard constraints, green market demand, market competition, green technology advancement, upstream and downstream green synergy, together with government policy support as reason factors. They are the most important external support for enterprises' green growth, particularly major driving factors for wooden flooring manufacturing ones.

The DEMATEL method is relatively easy to operate and can generate clear and straightforward outcomes; however, there are also limitations, such as the subjective part of experts'

scores and relatively few samples. In future studies, a larger scope and more samples can be utilized to obtain more reliable data. Apart from the DEMATEL method, fuzzy sets theory and the interpretative structural modeling method (ISM) can also be used to further analyze factors influencing the green growth of manufacturing enterprises [31].

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