


Article

Impact of Differential Leadership on Employee *Zhengchong* Behavior: A Complex Network's Perspective

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Abstract: Differential leadership exists widely in family businesses. How to maintain the effective operation of differential leadership by conforming to cultural traditions and shaping people's psychology and sense of value has become a popular topic in recent years. At the same time, employee *zhengchong* (striving for a favor) behavior is common in the family enterprises formed by the logic that there are insiders (employees on leaders' own side) and outsiders (employees not on leaders' own side) in family enterprises. How to reasonably guide employee *zhengchong* behavior is very important to the sustainable development of family enterprises. Based on the social comparison theory, this study focuses on exploring the influence of differential leadership on employee *zhengchong* behavior. Based on the perspective of a complex network, a network evolutionary game model among employees was constructed, and through numerical simulation, it was attempted to explore the key factors affecting the choice of strategies for employee *zhengchong* behavior in family enterprises. The simulation results show that the degree of partiality of differential leadership has a certain influence on employee *zhengchong* behavior. For today's family businesses, moderate partiality is more conducive to the spread of employee *zhengchong* behavior. In addition, employees' perception of differential atmosphere has a positive role in promoting favoritism. Leadership plays an important role in the process of employees showing themselves and improving their skills. Therefore, it is of great significance for the sustainable development of the family business to understand how the differential leadership style can effectively promote the positive behavior of employees. This study innovatively uses the complex network theory to reveal the influence of differential leadership on employee *zhengchong* behavior and confirms that leaders' moderate partiality and employees' perception of differential atmosphere can promote employee *zhengchong* behavior. The research conclusions can provide practical experience for enterprises.



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Keywords: differential leadership; employee *zhengchong* behavior; network evolutionary game; degree of partiality; differential atmosphere perception

1. Introduction

Differential leadership is one of the unique leadership styles in Chinese enterprises and organizations. Leaders distinguish between “insiders” (employees on leaders' own side) and “outsiders” (employees not on leaders' own side) and give more preferential treatment to the insiders who perform better. The insiders also reward leaders with higher personal effectiveness and organizational citizenship behavior [1]. In today's business, this management method widely exists in family enterprises. Along with the selfish treatment of the leader, there will be uneven distribution of resources, and team members may compete to distinguish the status of each other. In 2009, Huang proposed the concept of “*zhengchong*” to explore such an interactive behavior among members and defined *zhengchong* as: in order to gain the leader's favor, employees flatter the leader and win over or exclude their colleagues [2]. “Strive” is a purposeful behavior, and “favor” refers to the gift and care of those with higher rank to those with lower rank. In business,

zhengchong (striving for a favor) may occur under various organizational scenarios and relational networks. An appropriate level of differential leadership, that is, the leader's appropriate partiality treatment, may make the insiders who have partiality treatment show the promotion conditions for *zhengchong*. This in turn motivates employees to make more efforts to be appreciated or recognized by leaders, such as improving work efficiency, generating innovative behaviors or ideas that are conducive to organizational development, etc. The outsiders will also strive to further improve their status in the hearts of leaders by competing for favor, so as to realize the dynamic classification process from outsiders to leaders' insiders. As a result, the differential leadership style has a positive effect on causing employee *zhengchong* behavior, thereby improving work enthusiasm and team performance. However, if the leader's differential leadership level is too high, it will build a high wall for the outsiders that is difficult to dynamically advance to the insiders. Invisibly, within the team, the insiders' and the outsiders' factions are clearly demarcated, which is not conducive to the improvement of organizational performance.

Groups of insiders and outsiders formed under the differential leadership style, as informal organizations, widely exist in formal organizations within Chinese enterprises. Existing studies have carried out a lot of qualitative research on the theoretical basis, formation reasons and impact on the informal organization. However, the common behavior of employee *zhengchong* as a direct result of poor leadership has not been paid much attention by academic circles. Then, under the organizational structure of the enterprise, what kind of *zhengchong* decision will be made between the insiders and the outsiders? How do leaders' selfishness and employees' own perception of differential atmosphere affect employee *zhengchong* behavior? Answers to these questions will help family businesses make full use of differential leadership to improve employee effectiveness and organizational performance, which have important theoretical and practical significance.

2. Literature Review

Fei (1948) was the first to put forward the concept of differential order pattern, pointing out that the Chinese interpersonal communication mode is self-centered, divides people into inside and outside circles according to the relationship between closeness and distance, and generates different interaction methods [3]. Zheng (1995) found in his observation of Chinese organizations that leaders treat employees in a different order, and further proposed the concept of differential leadership, that is, the leader will be partial to the employees he likes, and the subordinates who are favored by the leader will be given more opportunities to participate in decision making and therefore are more likely to be promoted or rewarded [4]. The proposal of the differential order pattern has inspired the academic community to think more about the leadership style of Chinese organizations. Zheng (2004), starting from the principle of superiority and inferiority in traditional Chinese culture and the principle of closeness and acquaintance, proposed Chinese culture and organizational leadership structure, and compared two important leadership phenomena in Chinese enterprises and organizations: paternalistic leadership and differential leadership [5]. Jiang and Zheng (2014) defined differential leadership as a style in which Chinese leaders treat members differently by giving more support to insiders rather than to outsiders [6]. Tang et al. (2018) pointed out that differential leadership reflects the prevalent interpersonal relationship phenomenon in the context of Chinese culture. When subordinates are influenced by this leadership style, they are more likely to fall into partiality and relationalism [7].

Differential leadership is rooted in Chinese culture. It is different from the Western LMX theory and from the familiar paternalistic leadership or other leadership forms. The significance of the concept of "differential leadership" is to provide theoretical support for the sustainable development of growing Chinese business organizations. At present, many studies have focused on the relationship between differential leadership and employee behavior or performance, including employee innovation behavior or performance [8–10],

voice behavior [11,12], unethical behavior of employees [13], and employee benefit social behavior [14].

Existing studies have paid more attention to the positive incentive and negative differentiation effects of differential leadership [15,16], and there are certain differences in the research conclusions, which are not conducive to deepening the development of indigenous leadership theory. At the same time, few studies link differential leadership to employee *zhengchong* behavior. In order to compete for resources or rights, employees at all levels will adopt different strategies in the process of *zhengchong*. The result may not only promote the improvement of their own or team performance but can also lead to the depletion of internal resources of the enterprise. Taking the family business, “True Kung Fu” (<http://www.zkungfu.cn/>) as an example, the conflicts among insiders caused by “de-familyization” led to serious loss of management, and the business operation ended in failure [17]. On the contrary, Fotile Group (www.fotile.com), as a typical successful representative of the family business, tries to avoid discrimination between the insiders and the outsiders within the enterprise and adopts a variety of incentive methods and punishment systems to continuously promote the enthusiasm of all employees [18]. For enterprises, the organizational phenomenon constituted by *zhengchong* has an important impact on their long-term development [19]. For most family-owned businesses in the growth stage, differential leadership may lead to doubts about the injustice of the leader. Thus, how can such a leadership style persist in the organization? Under what circumstances can differential leadership improve employee effectiveness? To sum up, this paper focuses on the two key words of “differential leadership” and “employee *zhengchong* behavior” and uses the method of game theory to study the behavioral decision making of employee *zhengchong* behavior. Game theory mainly studies the interaction between competitive incentive structures, which is suitable for the study of *zhengchong* behavior of insiders and outsiders in this paper. The evolutionary game is different from the static equilibrium of the traditional game, which can better reflect the changes of the two sides in the time series. In addition, complex network characteristics have emerged in today’s enterprises, and network characteristics can enable members in the network to exchange information directly. The information flow in this will affect the transmission and diffusion of strategies. The choice of strategies for employees to *zhengchong* is not only based on their own benefits, but also on the benefits of colleagues. Based on this, from the perspective of a complex network, this paper constructs an evolutionary game model of a complex network and attempts to explore whether differential leadership in family enterprises will affect the choice of strategies for employees in the enterprise to conduct *zhengchong* behavior.

3. Construction of Evolutionary Game Models for Complex Networks

The complex network evolutionary game model of the spread of employee *zhengchong* behavior mainly includes three parts: network structure, game model and evolutionary rules.

3.1. Network Structure

As far as family enterprises are concerned, the internal organization social network members of the enterprise include both family members involved in the operation and management of the enterprise and external employees recruited through contractual relationships [20], usually referred to as the insiders and the outsiders. In the process of the spread of employee *zhengchong* behavior, the degree of partiality of differential leaders plays an important role. The different limited resource allocation methods of leaders to the insiders and the outsiders make employee *zhengchong* behavior show complex network characteristics. The complex network characteristics within the enterprise have an important impact on the spread of employee *zhengchong* behavior. Embedding network characteristics into employees’ micro-decision-making mechanisms has practical significance for revealing the influence of differential leadership on employee *zhengchong* behavior.

The complex network model is constructed with the employee relationship network as the carrier. The employee relationship network takes enterprise employees as nodes and the employee competitive relationship as the edge to abstract the network. Whether there is competition among employees depends on the limited emotional and organizational resources in the hands of leaders. The complex network of enterprises is recorded as $G = (V, E)$, where $V = \{v_1, v_2, \dots, v_n\}$ represents n employees in the family business network, and $E = \{e_1, e_2, \dots, e_n\}$ represents a direct connection (edge) between employees in a corporate network. If employee v_i and employee v_j are network neighbors, edge $(v_i, v_j) = 1$; otherwise, edge $(v_i, v_j) = 0$. The total number of edges of the team in the network is called the degree of the employee, and the degree of the employee v_i is denoted as d_i . Each employee in the enterprise competes with their network neighbors and learns policies through the edges in the network. Network modeling related to social networks usually adopts small-world networks [21] and scale-free networks [22]. Compared with the small-world network, the scale-free network has a preferential connection mechanism, that is, when a new node enters the network, the node with a large centrality is preferentially selected for connection. For example, when a person enters a new organization, he is more likely to establish relationships with people with greater influence in the organization, which is consistent with the research theme of this paper. Therefore, the simulation analysis is carried out on the scale-free network in this paper. The scale-free network model algorithm has three specific steps: (1) Initial condition ($t = 0$): the network consists of m_0 isolated nodes. (2) Growth: At each time step t , a new node is added into the network, and the node has m ($m \leq m_0$) edges. (3) Preferential connection: The probability that a newly added node is connected to an existing node i in the network is $\frac{k_i}{\sum_{j=1}^{N_0} k_j}$, where N_0 is the total number of nodes in the current network.

3.2. Game Model

In a corporate network, each employee competes with their network neighbors. Based on the realistic background, this paper proposes the following hypotheses:

Hypothesis 1. *This paper assumes that each employee in the enterprise can clearly define himself as an insider or an outsider, and the definition of this identity remains unchanged for a long period of time. In this paper, the insiders refer to relatives of leaders or people who have established a deep emotional relationship with leaders. It is assumed that the proportion of insiders is q , the proportion of outsiders is $1 - q$, and the total number of employees of the enterprise is n .*

Hypothesis 2. *This paper assumes that the degree of partiality of leaders when the insiders have zhengchong behavior is greater than that of leaders when insiders do not strive for a favor. In other words, as an insider, when he chooses the strategy of “not strive for a favor”, the leader has partiality, but the degree of partiality is small. This hypothesis is based on a realistic background. In an enterprise that wants to seek long-term development, if a leader is always more biased to insiders than outsiders, that is, no matter what kind of efforts outsiders make, their benefits will always be less than that of insiders. Then, outsiders will lose their enthusiasm for work, which is not conducive to the sustainable development of the enterprise.*

Next, a game model among employees in the enterprise network is built. First, the game process between insiders and network neighbors is expounded. Assuming that employee v_i is an insider, the relevant parameters are shown in Table 1.

Figure 1 shows the game matrix when the inside employee v_i adopts the strategy of zhengchong. The first row of the payoff matrix represents the payoff of v_i , and the second line shows the payoff of his neighbor v_j . The benefits of v_i adopting the strategy of zhengchong are described as follows.

Table 1. Parameter symbols and meanings.

Symbol	Meaning
Z	The strategy of <i>zhengchong</i>
IZ	The strategy of not <i>zhengchong</i>
q	The proportion of insiders in the total number of employees in the family business
d_0	The initial degree of partiality of differential leaders toward insiders
d_1	The degree of partiality of the leader when insiders strive for a favor
d_2	The degree of partiality of the leader when outsiders strive for a favor
λ	Employee’s marginal productivity
C_1	The actual cost of insiders striving for a favor
C_2	The actual cost of outsiders striving for a favor
s_1	When they all choose the strategy of <i>zhengchong</i> , the loss of income due to unfair treatment of outsiders
s_0	When none of them choose the strategy of <i>zhengchong</i> , the loss of income due to unfair treatment of outsiders

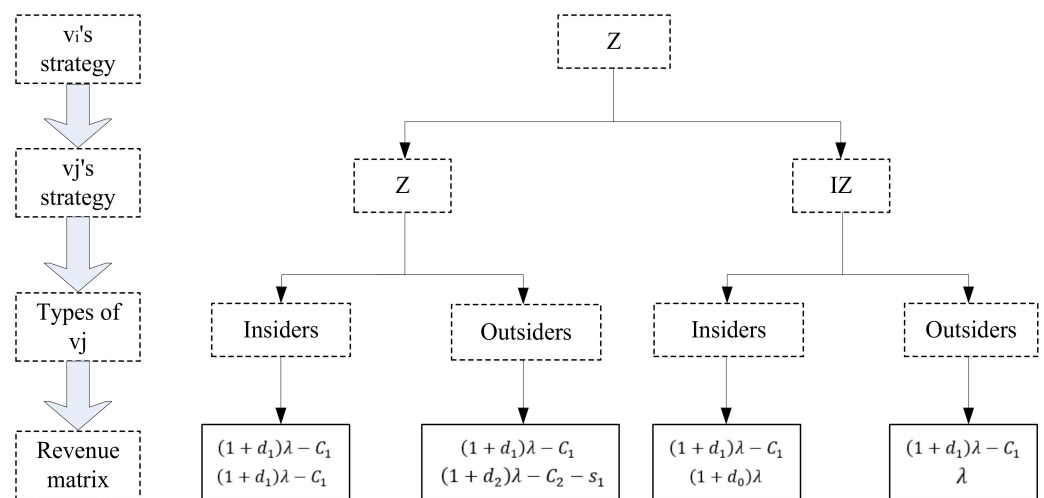


Figure 1. The game matrix when insider v_i adopts the strategy of *zhengchong*.

When the insider v_i and his neighbor v_j both adopt the strategy of *zhengchong*, and the neighbor v_j is also an insider, then the income of v_i and v_j is $(1 + d_1)\lambda - C_1$. When the insider v_i and his neighbor v_j adopt the strategy of *zhengchong*, and the neighbor v_j is an outsider, the income of v_i is $(1 + d_1)\lambda - C_1$, and the income of v_j is $(1 + d_2)\lambda - C_2 - s_1$. Among them, d_1 and d_2 represent the leaders’ degree of partiality toward insiders and outsiders, respectively, $d_1, d_2 \in [0, 1]$, and $d_1 \geq d_2$. $d_1 + d_2 = 1$, given that leaders have limited emotional or organizational resources. In other words, when leaders are completely partial to insiders ($d_1 = 1$), the degree of partiality d_2 to outsiders is 0. λ is defined as the employee’s marginal productivity, and $\lambda \geq 0$; the larger the λ , the more value the employee creates per unit time. C_1 and C_2 represent the actual cost of *zhengchong* of insiders and outsiders, respectively, and the actual *zhengchong* cost of outsiders is often more than that of insiders, that is, $C_1 \leq C_2$. s_1 is the loss of income caused by the unfair treatment of outsiders in the case of trying to *zhengchong*. When the insider v_i adopts the strategy of *zhengchong*, his neighbor v_j adopts the strategy of not *zhengchong*, and the neighbor is also an insider; then, the income of the employee v_i is $(1 + d_1)\lambda - C_1$, the income of the neighbor v_j is $(1 + d_0)\lambda$, and d_0 is the initial degree of partiality of differential leaders for their insider employees. In other words, even if insiders choose not to *zhengchong*, they will be treated biasedly by differential leaders, but the degree of partiality in this case is much smaller than that of employees when they *zhengchong*, that is, $d_0 \in [0, 1]$ and $d_1 \geq d_2 > d_0$. Here, this paper assumes that *zhengchong* will definitely gain partiality from leaders, regardless of whether they are insiders or not, and the biased treatment of outsiders who *zhengchong* is greater than the biased treatment received by insiders who do not *zhengchong*. This hypothesis is based on the actual situation. In today’s corporate practice, the excessive

bias of differential leaders to insiders who do not work hard will be detrimental to the sustainable development of the company. When v_i adopts the strategy of *zhengchong*, his neighbor v_j adopts the strategy of not *zhengchong*, and the neighbor is an outsider, the income of the employee v_i is $(1 + d_1)\lambda - C_1$, and the income of the neighbor v_j is λ .

Among all the neighbors of employee v_i , the number of neighbors who adopt the strategy of *zhengchong* is recorded as d_i^z . Therefore, the ratio of employee *zhengchong* among neighbors is d_i^z/d_i , and employees' policy choices are affected by the policies of all network neighbors. Meanwhile, the probability of neighbors as insiders is $q - \frac{1}{n}$, and the probability of neighbors as outsiders is $1 - q + \frac{1}{n}$. Therefore, the expected benefits of insiders adopting the strategy of *zhengchong* are:

$$U_i^Z = \begin{pmatrix} \frac{d_i^z}{d_i} & 1 - \frac{d_i^z}{d_i} \end{pmatrix} \times \begin{pmatrix} (1 + d_1)\lambda - C_1 & (1 + d_1)\lambda - C_1 \\ (1 + d_1)\lambda - C_1 & (1 + d_1)\lambda - C_1 \end{pmatrix} \begin{pmatrix} q - \frac{1}{n} \\ 1 - q + \frac{1}{n} \end{pmatrix}$$

Figure 2 shows the game matrix when the inside employee v_i adopts the strategy of not *zhengchong*. In the game model, the benefits of v_i are described as follows.

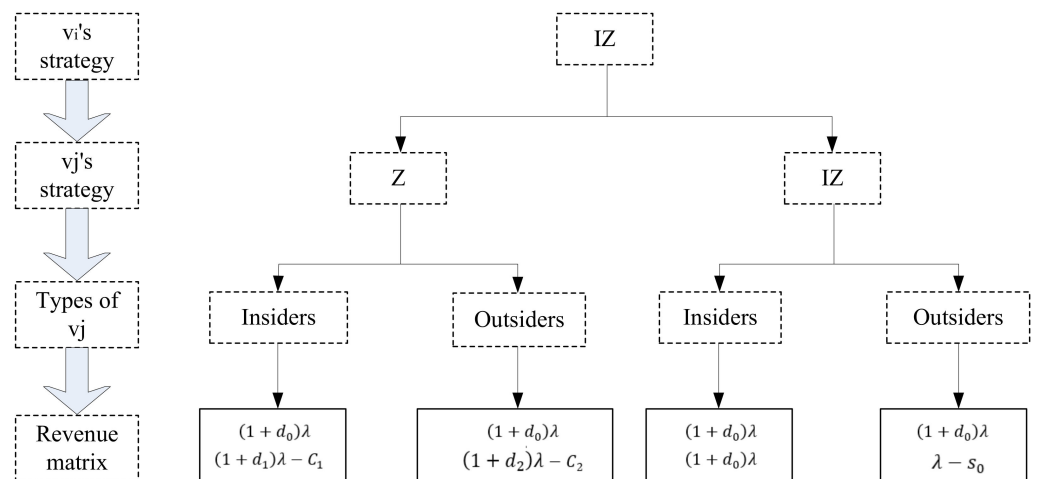


Figure 2. The game matrix when insider v_i adopts the strategy of not *zhengchong*.

When v_i adopts the strategy of not *zhengchong*, and his neighbors adopt the strategy of *zhengchong*, and the neighbors are all insider employees, then the income of v_i and v_j are both $(1 + d_0)\lambda$. When v_i adopts the strategy of not *zhengchong*, his neighbor v_j adopts the strategy of *zhengchong*, and v_j is an outsider, the income of the v_i is $(1 + d_0)\lambda$, and the income of the neighbor v_j is $(1 + d_2)\lambda - C_2$. When v_j and his neighbor v_j both adopt the strategy of not *zhengchong*, and the neighbor is an insider, then the income of v_i and v_j are both $(1 + d_0)\lambda$. When v_i and his neighbor v_j both adopt the strategy of not *zhengchong*, and the neighbor is an outsider, the income of v_i is $(1 + d_0)\lambda$, and the income of v_j is $\lambda - s_0$.

$$U_i^{IZ} = \begin{pmatrix} \frac{d_i^z}{d_i} & 1 - \frac{d_i^z}{d_i} \end{pmatrix} \times \begin{pmatrix} (1 + d_0)\lambda & (1 + d_0)\lambda \\ (1 + d_0)\lambda & (1 + d_0)\lambda \end{pmatrix} \begin{pmatrix} q - \frac{1}{n} \\ 1 - q + \frac{1}{n} \end{pmatrix}$$

Second, a game model between the outside employee and his neighbors is built. Assuming that employee v_i is an outsider employee, a game model between the outsider and his network neighbors is constructed.

Figure 3 shows the game matrix when the outside employee v_i adopts the strategy of *zhengchong*, in which the first row of the payoff matrix represents the payoff of v_i , and the second line shows the payoff of his neighbor v_j . The benefits of v_i adopting the strategy of *zhengchong* are described as follows.

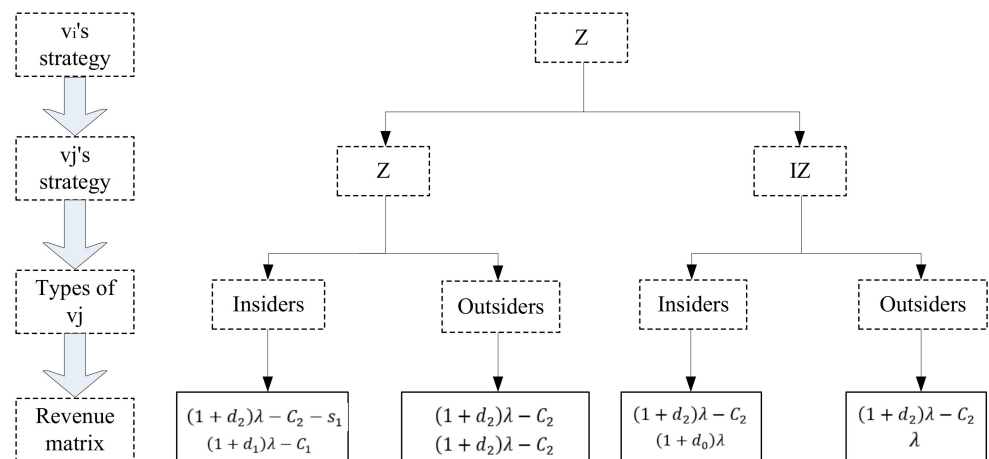


Figure 3. The game matrix when outsider v_i adopts the strategy of zhengchong.

When v_i and his neighbor v_j adopt the strategy of zhengchong, but v_j is an insider, then the income of v_i is $(1 + d_2)\lambda - C_2 - s_1$, and the income of v_j is $(1 + d_1)\lambda - C_1$. When v_i and his neighbor v_j both adopt the strategy of zhengchong, and v_j is also an outsider, then the income of both v_i and v_j is $(1 + d_2)\lambda - C_2$. When v_i adopts the strategy of zhengchong, his neighbor v_j adopts the strategy of not zhengchong, and the neighbor is an insider, then the income of v_i is $(1 + d_2)\lambda - C_2$, and the income of v_j is $(1 + d_0)\lambda$. When v_i adopts the strategy of zhengchong, and his neighbor v_j adopts the strategy of not zhengchong, and the neighbor is also an outsider, the income of employee v_i is $(1 + d_2)\lambda - C_2$, and the income of v_j is λ .

Among all the neighbors of the outside employee v_i , the number of neighbors who adopt the strategy of zhengchong is recorded as d_i^z . Therefore, the ratio of employees zhengchong among neighbors is d_i^z / d_i , and employee's policy choices are affected by the policies of all his network neighbors. At the same time, the probability of neighbors being insiders is $q + \frac{1}{n}$, and the probability of neighbors being outsiders is $1 - q - \frac{1}{n}$. Therefore, the expected benefits of the outside employee v_i adopting the strategy of zhengchong are:

$$U_i^Z = \left(\frac{d_i^z}{d_i} \quad 1 - \frac{d_i^z}{d_i} \right) \times \begin{pmatrix} (1 + d_2)\lambda - C_2 - s_1 & (1 + d_2)\lambda - C_2 \\ (1 + d_2)\lambda - C_2 & (1 + d_2)\lambda - C_2 \end{pmatrix} \begin{pmatrix} q + \frac{1}{n} \\ 1 - q - \frac{1}{n} \end{pmatrix}$$

Figure 4 shows the game matrix when the outside employee v_i adopts the strategy of not zhengchong. In the game model, the payoff of v_i is described as follows.

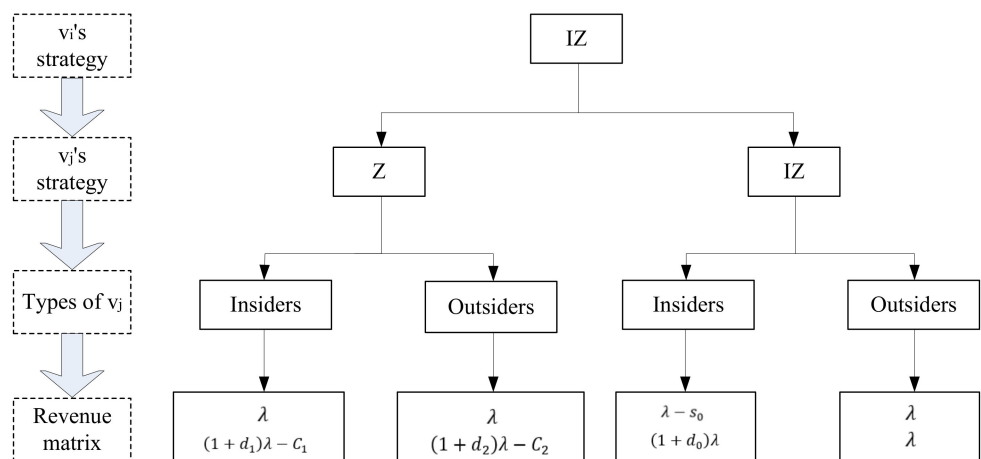


Figure 4. The game matrix when outsider v_i adopts the strategy of not zhengchong.

When v_i adopts the strategy of not *zhengchong*, his neighbor adopts the strategy of *zhengchong*, and the neighbor is an insider, and then, the income of v_i is λ , and the income of v_j is $(1 + d_1)\lambda - C_1$. When v_i adopts the strategy of not *zhengchong*, his neighbor v_j adopts the strategy of *zhengchong*, and v_j is an outsider, the income of the v_i is λ , and the income of v_j is $(1 + d_2)\lambda - C_2$. When v_i and his neighbor v_j both adopt the strategy of not *zhengchong*, and the neighbor is an insider, then the income of v_i is $\lambda - s_0$, and the income of neighbor v_j is $(1 + d_0)\lambda$. When v_i and his neighbor v_j both adopt the strategy of not *zhengchong*, and the neighbor is an outsider, the income of both v_i and v_j is λ .

Among all the neighbors of the outside employee v_i , the number of neighbors who adopt the strategy of *zhengchong* is recorded as d_i^z . Therefore, the ratio of employees *zhengchong* among neighbors is d_i^z/d_i , and employees' strategy choices are affected by the policies of all network neighbors. At the same time, the probability of neighbors as insiders is $q + \frac{1}{n}$, and the probability of neighbors as outsiders is $1 - q - \frac{1}{n}$. Therefore, the expected benefits of outsider employees adopting the strategy of not *zhengchong* are:

$$U_i^{IZ} = \left(\frac{d_i^z}{d_i} \quad 1 - \frac{d_i^z}{d_i} \right) \times \begin{pmatrix} \lambda & \lambda \\ \lambda - s_0 & \lambda \end{pmatrix} \begin{pmatrix} q + \frac{1}{n} \\ 1 - q - \frac{1}{n} \end{pmatrix}$$

3.3. Evolutionary Rules

In a family business with complex network characteristics, the strategy of *zhengchong* spreads among employees through the edges of the network. In the initial state, each employee has a pure strategy, and the proportion of employees who adopt the strategy of *zhengchong* in the enterprise network is α . In Period t , employee v_i updates his strategy by observing the strategies and benefits of his and his neighbors in Period t according to the Fermi selection rule. The Fermi selection rule [23] is:

$$P(s_i \leftarrow s_j) = \frac{1}{1 + \exp((U_i - U_j)/k)}$$

U_i represents the income of v_i adopting the strategy s_i , U_j represents the income of the neighbor v_j adopting the strategy s_j , and the parameter k measures the degree of individual irrational decision making. Based on the existing research [24,25], $k = 0.1$ is generally taken. An individual can only change whether he is *zhengchong* but cannot change whether he is an inside employee.

The complex network evolutionary game model of this section is composed of three elements: network structure, game model and evolutionary rules. First, employees make decisions and obtain benefits in the comprehensive process of corporate differential atmosphere and competition. Then, during the evolution process, employees learn and update their strategies according to their own and neighbors' strategies and benefits, until the evolution is stable, because in the game model of complex network evolution, the game among employees is embedded in the network, and the income of the game is not only related to the degree of leader's partiality, but is also affected by the network structure and the strategies of neighbors. The complex network characteristics determine that the evolution process cannot be expressed analytically. The simulation analysis provides a method to gain insight into the employee network game relationship in the process of spreading favoritism. Therefore, this paper follows the existing research paradigm and uses the numerical simulation method to analyze the evolution process and results under reasonable parameter settings.

4. Model Simulation and Result Analysis

4.1. Parameter Initialization

In this paper, Jiangsu DG Technology Co., Ltd. was selected as the research object, and the simulation was carried out according to the relevant data of the family business. Jiangsu DG Technology Co., Ltd. specializes in R&D, production and sales of medium- and high-voltage power cable accessories and other products. It is a high-tech enterprise in

Jiangsu Province, China. At present, the number of employees in the company is 79, and the initial network needs to be constructed by a symmetric matrix; thus, setting $n = 81$. Convention, relationship, and human affection are common ways of family business governance in China, especially in the initial stage of family businesses. The shortcomings accumulated by this governance method are gradually exposed as the scale of the enterprise expands. The limitations of family business, such as the integration of ownership and management rights, the backward human resource management model, and the unclear responsibilities and rights among family members hinder the long-term development of the enterprise [26]. In recent years, family businesses have begun to realize the importance of non-family employees and the limitations of “family governance of family businesses”, and the proportion of “inside employees” has gradually decreased. According to the results of the field investigation, currently, Jiangsu DG Technology Co., Ltd. has 30% of inside employees who are distributed in various departments of the company, including core management personnel, technical personnel, sales personnel and front-line employees. Therefore, this paper sets the ratio of insiders $q = 0.3$. Differential leadership divides employees into “insiders” and “outsiders” according to their closeness and distance and gives more selfish treatment to the insiders. However, in today’s social situation, due to the fierce market competition, for the survival and development of the family business, the leaders gradually reduce the degree of partiality toward the insiders. Therefore, the initial value of d_0 is set to 0.1, and the initial values of d_1 and d_2 are set to 0.6 and 0.4, respectively. Employees choose the strategy of *zhengchong* in order to obtain more partiality from leaders. Compared with insiders, outsiders have a higher cost of *zhengchong*, therefore setting the initial values of C_1 and C_2 to 2 and 3, respectively. The initial values of other parameters are set as shown in Table 2. The next section will use the parameter values in Table 2 to conduct simulation analyses, and the number of games is 100 times.

Table 2. Initial values of simulation parameters.

Parameters	n	q	d_0	d_1	d_2	C_1	C_2	λ	s_1	s_0
Initial values	81	0.3	0.1	0.6	0.4	1	2	4	1	0.5

4.2. Analysis of the Influence of the Degree of Partiality of Differential Leadership on Employee *Zhengchong* Behavior

Figure 5 shows the impact of the initial partiality degree d_0 of differential leadership on employee *zhengchong* behavior. The initial degree of partiality refers to the fact that when insiders choose the strategy of not *zhengchong*, the leader will also have a certain degree of partiality toward them. However, the degree of partiality in this case is always smaller than the degree of partiality of the leader when insiders choose the strategy of *zhengchong*, under the condition that other parameters keep the initial value unchanged, setting d_0 as 0, 0.1 and 0.3. It can be seen from Figure 1 that when $d_0 = 0$, the proportion of employees who choose the *zhengchong* strategy in the initial state is relatively small. With the increase in the number of games, the number of employees who choose the strategy of *zhengchong* gradually increases, and the final proportion stabilizes around 0.9. When $d_0 = 0.1$, the initial *zhengchong* ratio exceeds 0.5. Over time, the ratio of employees conducting *zhengchong* tends to approach 1. Comparing conditions $d_0 = 0$ and $d_0 = 0.1$, it is not difficult to find that the promotion effect is stronger when $d_0 = 0.1$. When $d_0 = 0.3$, the proportion of employees who choose the strategy of *zhengchong* gradually approaches 0 over time. It can be seen from this that the initial degree of partiality of differential leaders to their “own” employees should not be too small or too large, and only moderate circumstances are conducive to the spread of employee *zhengchong* behavior. The reasons for this phenomenon are as follows: in a family business, the leaders’ reasonable division of insiders and outsiders can often be recognized by all employees. Such division standards can help employees position themselves to reduce uncertainty to a certain extent, guide employees’ professional values, and enhance employees’ organizational identity. In the

same way, even if the insiders choose the strategy of not *zhengchong*, the leaders' moderate partiality toward the insiders is accepted by all employees. In this case, the outsiders often do not think it is unfair, but choose to endure and gain the appreciation of leaders through continuous performance, that is, *zhengchong*, and then obtain more resources or become inside employees. Furthermore, when the inside employees choose the strategy of "not *zhengchong*", if the leader is excessively partial to insiders, according to Bolino and Turnley (2009), compared with insiders, outsiders will have a strong sense of unfairness, believing that they are being deprived of their rights [27]. Therefore, they choose to abandon the strategy of *zhengchong*; at the same time, the excessive partiality of the leader will also lead to the inaction of more insiders. However, if the leader is completely unbiased, it will not meet the role expectations of insiders to become a leader, and then insiders will have an unfair perception. As Zhai (2010) pointed out that leaders rashly adopt the rule, "do official business according to official principle", which seems to be very fair, in the eyes of Chinese people, it is unfair [28]. At this time, both insiders and outsiders will lack a strong sense of responsibility for the organization, and it will be difficult to promote more *zhengchong* behaviors to promote the achievement of organizational goals.

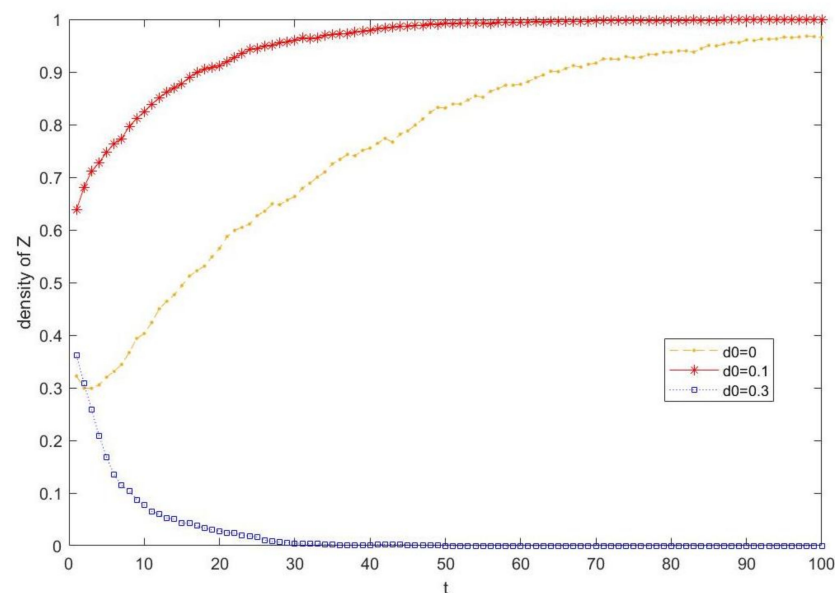


Figure 5. The influence of the initial partiality degree d_0 of differential leadership on the strategy of employee *zhengchong* behavior.

Figure 6 shows the impact of the differences between the partiality degree d_1 of inside employees and the partiality degree d_2 of outsider employees by differential leadership on employee *zhengchong* behavior. $d_1 - d_2$ represents the difference between the leaders' partiality degrees toward insiders and outsiders, that is, the leaders' differential degree, which is assigned as 0, 0.2 and 0.4. The larger the difference, the higher the degree of differential treatment implied by leaders. It can be seen from Figure 6 that under the existing network scale ($n = 81$), when $d_1 - d_2 = 0$, that is, when the leader treats insiders and outsiders indiscriminately, the proportion of employees who choose the strategy of *zhengchong* initially is around 50%. With the increase in the number of games, the proportion of employees choosing the strategy of *zhengchong* first decreases and then increases, and finally reaches 0.8. When $d_1 - d_2 = 0.2$, that is, when the leader is moderately biased to insiders, the proportion of employees who choose the strategy of *zhengchong* is in a high state at the beginning, and with the increase in the number of games, the proportion continues to increase and finally stabilizes on the status that the strategy of *zhengchong* is chosen by all employees. When $d_1 - d_2 = 0.4$, that is, when the leader is excessively biased to insiders, the proportion of employees who choose the strategy of *zhengchong*

is approximately equal to the proportion when the leader is not biased. However, with the increase in the number of games, the proportion gradually decreases, and finally approaches 0.1. The comparative analysis shows that moderate partiality of leaders plays a more positive role in promoting employee *zhengchong* behavior, while excessive partiality of leaders has a negative effect. The reasons for this phenomenon are as follows: the moderate partiality of the leader can make the inside employees obtain considerable benefits and then stimulate the enthusiasm of insiders. At the same time, in the process, the moderate partiality of the leader can encourage outside employees to learn from insiders and update existing strategies to maximize their own benefits. It is worth mentioning that if the leader is too biased, the outside employees will initially choose the strategy of *zhengchong* in order to obtain more benefits. With the increase in the number of games, the larger income gap between insiders and outsiders will kill the enthusiasm of outsiders. However, the number of outsiders is relatively high in today's family businesses. The active *zhengchong* behavior of a few insiders cannot improve the overall efficiency of the company, and then, the enthusiasm of insiders is also reduced, resulting in the loss of motivation for the company to move forward.

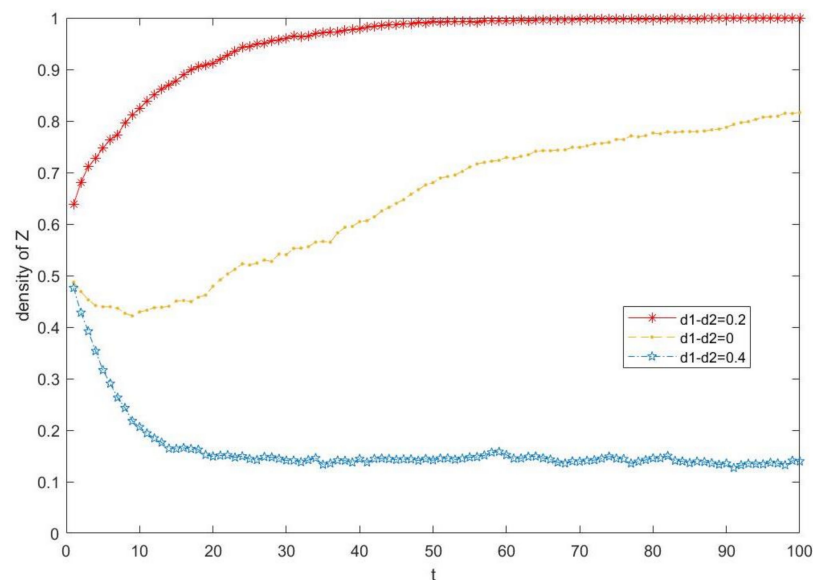


Figure 6. The influence of the difference in the degree of partiality of differential leaders on the strategies of employee *zhengchong* behavior.

4.3. Analysis of the Impact of Differential Atmosphere Perception on Employee *Zhengchong* Behavior

Employees play the role of leadership style receptors in organizations, and their individual characteristics often directly affect the effect of differential leadership. Accordingly, this paper introduces employees' differential atmosphere perception to explain a possible boundary condition of differential leadership in the choice of employee *zhengchong* strategies. Differential atmosphere perception refers to the degree of employees' perception of leaders' biased treatment [29]. When employees have a high degree of perception of differential atmosphere, it means that they believe that employees with different ability levels or intimacy are treated differently in the organization, and the corresponding perception of unfairness is low. Based on this, from the perspective of outsiders, this paper measures the perception of differential atmosphere based on the perception of unfairness caused by choosing different strategies, that is, by analyzing the parameters s_0 and s_1 to explore the impact of differential atmosphere perception on employee *zhengchong* behavior. The larger the s_0 and s_1 , the stronger the employees' perception of unfairness and the lower the perception of differential atmosphere. It can be seen from Figure 7 that when s_0 and s_1 are small, that is, when employees have a high degree of perception of differential atmosphere,

the proportion of employees who choose the strategy of *zhengchong* gradually increases. On the contrary, it can be seen from Figure 8 that when s_0 and s_1 are relatively large, that is, when the perception degree of employees' differential atmosphere is low, the proportion of employees who choose the strategy of *zhengchong* gradually decreases and finally tends to be zero. It can be seen that employees' perception of differential atmosphere has a promoting effect on employee *zhengchong* behavior. For employees of family businesses, in an organization under local background, the biased treatment of differential leadership conforms to traditional Confucianism, and its management standards are also a reflection of fairness. For outside employees with a strong sense of differential atmosphere, leaders' partiality will not arouse their dissatisfaction, and they even have a certain incentive effect.

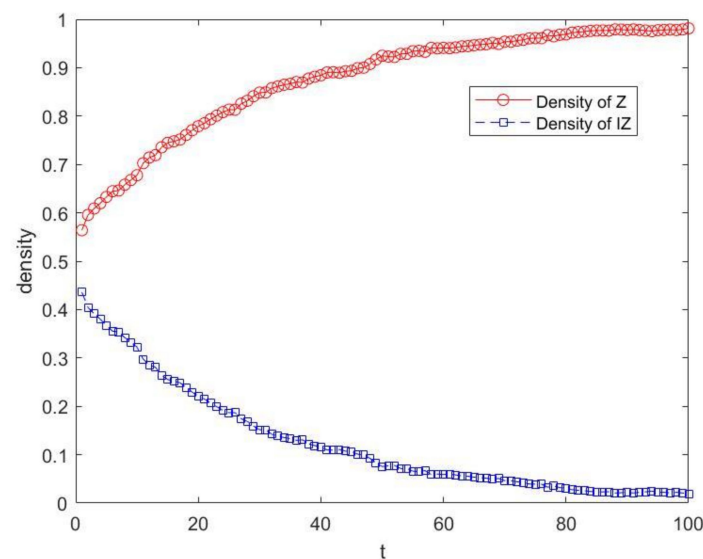


Figure 7. The influence of differential atmosphere perception on employee *zhengchong* strategy ($s_0 = 0.5, s_1 = 1$).

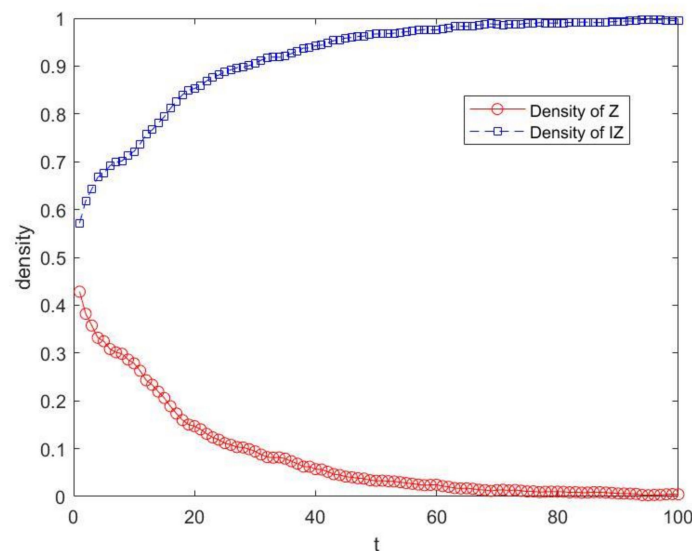


Figure 8. The impact of differential atmosphere perception on employee *zhengchong* strategy ($s_0 = 2, s_1 = 3$).

5. Conclusions and Discussion

By constructing a complex network game model, this paper explores the relationship between the differential leadership of family businesses and the employee *zhengchong*

behavior. The simulation results show that the degree of partiality of differential leadership has a certain influence on employee *zhengchong* behavior. For today's family businesses, moderate partiality is more conducive to the spread of employee *zhengchong* behavior. Specifically, first, according to the analysis of the initial partiality degree d_0 , it can be seen that in a family business, the leaders' partiality toward insiders can motivate employees to *zhengchong* to achieve organizational goals or improve organizational effectiveness. In the Chinese local context, organizational justice not only includes fairness in the Western countries, but also includes the unique relationship and human obligations of the Chinese people. For leaders, partiality to insiders not only meets the requirements of the formal system of the organization, but also reflects "human affection and face", which can avoid or reduce conflicts within the family as much as possible, thereby maintaining the orderly operation and sustainable development of the enterprise. For insiders, they believe that the biased treatment in the family business is in line with their expectations for the role of leaders, and they tend to think that it is fair. Therefore, they regard the organization as a part of themselves and have a strong sense of responsibility for the organization. For outsiders, leaders' partiality toward insiders naturally exists in Chinese culture, and moderate partiality can motivate them to choose the strategy of *zhengchong* to obtain more benefits. When insiders choose the strategy of not *zhengchong*, the leader should favor less resources for them than other employees when they strive for favors, and the biased process should avoid harming the interests of other employees. That is, partiality within a reasonable range is accepted by outsiders. Secondly, according to the analysis of the difference $d_1 - d_2$ of the biased differential leadership, in the case where both insiders and outsiders choose the strategy of *zhengchong*, the differential leadership is moderately biased toward insiders, which is conducive to the spread of employee *zhengchong* behavior. Specifically, in the growth process of a family business, insiders often play a central role in the enterprise, and outsiders play a supporting role. At this time, the moderate partiality toward insiders is not only conducive to increasing the cohesion of the enterprise, encouraging insiders to work actively and improving individual performance, but can also motivate outsiders. The key to the effectiveness of differential leadership is to influence outsiders through insiders. However, if the degree of partiality is too high, that is, in the case where both insiders and outsiders choose the strategy of *zhengchong*, the income disparity between the two parties is large. In this scenario, outsiders are very likely to have a negative work attitude, thinking that no matter what efforts they make, they cannot be appreciated by the leaders, and then give up conducting *zhengchong* behavior. At the same time, insiders also lose the motivation and pressure to improve their abilities, and it is difficult to form an effective incentive and restraint mechanism.

Finally, through the analysis of parameters s_0 and s_1 , it can be seen that employees' perception of differential atmosphere has a positive effect on *zhengchong* behavior. When employees have a strong perception of the differential atmosphere, they are more likely to repay the leaders' "care" for themselves through appropriate *zhengchong* behavior, and thus maintain their "inner circle" status. For outsiders, the leaders' partiality and trust in insiders is also an affirmation of ability and contribution: outsiders will learn from them as role models and then improve their status in the hearts of leaders by seeking innovation and improving job performance. On the contrary, when employees have weak perception of differential atmosphere, the sense of jealousy brought about by a strong sense of unfairness will lead to loss of their own profits, and at the same time hinder the long-term development of the enterprise.

6. Theoretical Contributions and Management Implications

6.1. Theoretical Contributions

Based on the perspective of a complex network, this paper explores the influence of differential leadership on employee *zhengchong* behavior. The specific theoretical contributions are as follows:

- Most of the existing studies have analyzed the effectiveness of differential leadership for Chinese organizations from a theoretical perspective. A few Taiwanese scholars have used empirical research methods to test the relationship between differential leadership and employee *zhengchong* behavior. However, until now, no scholars on the China mainland have conducted research on the impact of differential leadership on employee *zhengchong* behavior. The particularity of differential leadership and *zhengchong* in Chinese organizations has important research significance and value. Therefore, this paper attempts to explore the relationship between differential leadership and employees' choice of strategies to *zhengchong* by constructing a network evolutionary game model, which to a certain extent provides a reference for the debate on the impact mechanism of differential leadership.
- Numerical simulations are used to verify the influence of the partiality degree of differential leadership on employee *zhengchong* behavior. Compared with the lack of previous studies on the partiality degree of differential leadership, this paper numerically simulated the influence of partiality degree between insiders and outsiders on their *zhengchong* behavior and verified the importance of moderate partiality for organizational development.
- From the perspective of individuals, this paper explores the role of employees' differential atmosphere perception between differential leadership and employee *zhengchong* behavior, which enriches the related research on differential leadership and is of great significance to the research on leadership behavior of local organizations in China.

6.2. Management Implications

Differential leadership theory is an important attempt based on Chinese local culture and practice. Studies have shown that differential leadership is widespread in Chinese organizations. By exploring the relationship between differential leadership and employee *zhengchong* behavior, this paper draws the following important management implications.

6.2.1. Improve the Leaders' Differential Thinking Ability

Chinese people have a different view of justice than Westerners, and differential leadership is a leadership style that conforms to Chinese people's perception of justice. Especially for today's family businesses, it is essential to improve the leaders' differential thinking ability if they want to seek long-term development. Family business leaders occupy a core position in the evolution of differential governance of family businesses. Therefore, family business leaders update their corporate management concepts and awareness according to the change in times, which has become the first and most important step to promote the scientific reform and healthy development of family businesses. Leaders should be aware of the importance of outside employees and the limitations of family governance of family business and should correctly control the relationship between the family and the business. Through continuous learning to broaden their horizons and innovate management concepts, leaders abandon the idea of "kinship first" and treat inside and outside employees equally, laying a good foundation and establishing a correct direction for the optimal governance and transformation of the family business. Today, the differential order pattern has been deeply embedded in all aspects of family business governance, and family businesses in China are under the influence of families for a long time. At the same time, the family culture in the enterprise also has the benefits of coordinating the relationship between family members and improving the enthusiasm and performance of family members. Therefore, from the perspective of managers, the family culture in the enterprise should not be completely denied and abandoned, but the family culture should be transformed and reinterpreted, and the differential management method should be used reasonably to retain the positive factors in the family culture. At the same time, realizing the importance of outside employees, reasonably allocating limited resources in a way that is "meritocracy", and combining practices of informal and formal management will diffuse

loyalty and solidarity between the members of the family atmosphere, give full play to the rivalry catfish effect to motivate staff, and improve the vitality of enterprises.

6.2.2. Cultivate the Differential Behavioral Skills of Leaders

Leaders of family businesses should play the efficient role of differential leadership and avoid negative effects. This requires leaders to establish a fair conversion mechanism for employee classification, create a healthy competitive atmosphere, and give all employees the respect they deserve. Their inside employees will always maintain a sense of urgency, maintain the status of insiders through active *zhengchong* behavior, and obtain moderate partiality treatment. In order to repay the favor of leaders, they will continue to improve their work ability and performance, and contribute to the development of the organization by devoting their efforts. At the same time, the moderate partiality of leaders can make outsiders feel the permeability of the boundary between themselves and insiders and encourage outsiders to continue to *zhengchong* and maintain a positive, hard-working and enterprising work attitude in order to use more innovative achievements to obtain leaders' appreciation. In a family business, non-family employees are the main force. If too much attention is paid to human relationships and cronyism, it is not conducive to establishing a good organizational order. Leaders should reduce the excessive care for "family affection" but fully examine the talents and loyalty of employees and practice the concept of "making good use of talents and living in them". Giving resources, power, and rewards to talented and loyal employees can be recognized by all employees and inspire employees to conduct *zhengchong* behavior, so as to form a healthy competition atmosphere within the enterprise, and then cultivate the core competitiveness of enterprises and promote the sustainable development of enterprises.

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