

# Analysis on the Allocation of Control Right of Intergenerational Inheritance of Family Enterprises in the New Era

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## ABSTRACT

Artificial intelligence (AI) is the primary tool used by businesses to enhance economic advantages. Family company management is undergoing information and the digital industrial revolution because of artificial intelligence. With the fast development of new technologies, the family company management style has a significant effect and previously unimaginable impact. For most enterprises, intergenerational succession is either taking place or will occur shortly. Here intergenerational inheritance significance for family-owned businesses (IISF-OB) has been proposed to solve family company performance and the internal action mechanisms. Intergenerational succession pathways deserve consideration, and research for the family businesses must utilize artificial intelligence technology to enhance related work. The proposed method investigates how family company management modes can be innovated to fulfill societal development requirements methods in artificial intelligence. It will use case studies, comparative analyses, and develop a new solution.

## KEYWORDS

Artificial Intelligence, Company Management, Economic, Family Enterprises

## OVERVIEW OF INTERGENERATIONAL INHERITANCE OF FAMILY ENTERPRISES

The concept of intergenerational interactions encompasses a wide range of subjects, including intergenerational transmission (Gheisari et al. 2021). Relationships between people from different generations of a family are called intergenerational connections (Abdel-Basset et al. 2018). People of all ages, young and old, use the term all the time to describe a wide range of social activities that are unconnected (Liu et al. 2015). A good or service passed down from one generation to the next is transmitted intergenerationally in family contexts (Abou-Nassar et al. 2020). Studies looking at the connection between parents' self-reported involvement and intergenerational characteristics with their parents aim to understand the impact that a parent's involvement has on their children's development.

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These studies look at the ways in which a parent's involvement in their child's life, such as providing emotional support, guidance and financial resources, is linked to the characteristics that parents pass down to their children, such as values, beliefs and lifestyle. The findings of these studies can help parents understand how their involvement in their children's lives can shape their children's future. Additionally, these studies can provide important information for policy makers to better understand the effects of parental involvement in the lives of their children and to develop effective policies that promote positive outcomes for children.

First, these researches examined the relationship between parents' self-reported engagement and intergenerational characteristics with their father's figures and opinions (Kuthadi et al. 2021). Individual capabilities, characteristics, attitudes, and consequences can be transferred from parents to their offspring (Amudha. 2021). Economists have extensively researched the intergenerational transmission of education incomes, reproduction, and welfare (Singh et al. 2021). In addition to being passed down through generations, familial culture too is learned and passed on through the generations (Gao et al. 2020).

One of the most important aspects of China's private sector is the family company, in which traditional family practices are passed down over the years as the family grows, and new generations are introduced (Abdel-Basset et al. 2019). In a family-owned enterprise, the majority of the company's capital or shares are held by the family members who hold the majority of the company's executive roles (Le et al. 2020). Sequences in family-owned businesses (FOBs) do not even work out very often, unfortunately (Abou-Nassar et al. 2020). Father-to-son monarchies, in which the family's love for its offspring demands that a child take over the enterprise, irrespective of appropriateness (MeenaakshiSundhari et al. 2020). Many investigations show a mismatch between an organization's past, which explains why succession is too problematic in organizations (Gao et al. 2020). It is possible that the successor is overly attached to the past, rejects it outright, or mixes the past with the present in a way that does not fit (Amudha & Narayanasamy. 2018). Each has distinct inclinations in strategy, structure, and administration, and each has its own set of unique symptoms (Rao et al. 2019).

The FOB board users must be aware of these indications and view them as focal topics for improvement (Yuan. 2019). However, each succession model is distinct and requires a unique organizational change, governance, and management (Moreno-Gené & Gallizo. 2021). Second-generation business people have always been viewed as incompetent. Several surveys have shown that businesses run by first-generation employees do better than those run by their younger counterparts (Pessotto et al. 2019). Risky enterprise innovations often involve taking chances on new technologies, products, and services. These types of innovations carry a certain amount of risk, as they require companies to invest resources and time into something that may or may not be successful. However, the potential payoff can be high if the innovation pays off. First-generation employees often have a unique perspective on risk-taking, as they are not afraid of failure and are willing to take calculated risks.

Moderate enterprise innovations involve finding ways to improve existing products, services, or processes. These innovations may not be as flashy as risky innovations, but they can still help a company stay competitive. First-generation employees often have a unique perspective when it comes to this type of innovation, as they can see the potential in existing technologies or processes and come up with creative solutions to improve them.

In addition, the generation may be reluctant to invest in hazardous and moderate enterprise innovations because of their desire for quick success following intergenerational transmission (Jianlin et al. 2020). Therefore, disparities in investment company innovation can significantly impact the performance of family firms during the succession process (Fuad et al. 2019). Innovation is the lifeblood of modern businesses, fueling their growth and generating new wealth (Bertaux-Wiame. 2020). Family-owned businesses play a significant role in the economy (Zhou. 2019); it has been possible for family enterprises to play a significant role in China's mixed-ownership economy because of their long-term commitment to entrepreneurship and long-term entrepreneurialism (Ferrando-Latorre et al. 2019). It is widely accepted that human cognitive achievements are facilitated by the

way they use specific artifacts in our surroundings, by artifacts that are sorts of intelligent systems employed in our everyday lives (Kushins & Behounek. 2020). Improved Problem Solving and Decision Making: The use of artifacts can help improve problem solving and decision making skills. By utilizing technology and taking advantage of the vast amounts of data it can provide, individuals can come up with better solutions to a variety of problems.

Improved Memory: By taking advantage of the many features offered by modern technology, individuals can store and recall important information more quickly and easily. This can help improve memory and cognitive functioning.

The major contribution of this paper includes:

- The development of a new solution will address the difficulties, focusing on the management style of family businesses.
- Our proposed system (IISF-OB) is implemented to address concerns such as family company performance and internal action mechanisms.
- Using (AI) technology in day-to-day operations to continue developing and succeeding through intergenerational inheritance.

The remaining section of this paper is defined as the pilot study on existing family firms in section 2. In section 3, our proposed system IISF-OB is implemented using mathematical expressions. Results, discussions, and conclusions based on our proposed system are analyzed in sections 4 and 5, respectively.

## PILOT STUDIES ON EXISTING FAMILY ENTERPRISES

A substantial amount of research indicates that the transition of a company's senior management is particularly difficult. It can be seen in the dramatic price movements that accompany numerous announcements of a new CEO of a firm. In the theory of intergenerational disparities, sociologists stated that groups from different eras would have different concepts, opinions, and actions because of their differing birth dates or upbringings. When stock prices rise and fall dramatically, it is often the result of changes in the company's senior management. Such changes can be due to a variety of factors, including strategic shifts, changes in executive leadership, or the introduction of new products or services. In addition, changes to a company's senior management can signal to investors that the company is in a state of flux, which can lead to a sudden shift in investor sentiment and an associated change in the company's stock price. For example, if a company announces the appointment of a new CEO, investors may interpret this as a sign that the company is undergoing a major change, leading to a spike in the stock price. Similarly, if a company announces the departure of a senior executive, investors may interpret this as a sign that the company is facing difficulty and the stock price may decrease.

### The Intergenerational Inheritance

Some academics anticipated those large political events, breakthrough technologies, the transformation, and upgrading of the social sector, as well as proposed succession and rejuvenation of social cultures (SRSC), would substantially impact the establishment of intergenerational differences (Malik. 2019). Since the late 1970s, China's economy has grown at an incredible rate. Due to intergenerational and age impacts, groups from various historical periods had varying values and personal characteristics during the period of rapid upheaval. Family firms typically have a 20 to 30 year age gap between the founders and their successors in addition to the other differences listed above. Enterprise management disparities decisions (EMDD) were proposed to determine the business's affecting overall success (Izuhara & Köppe. 2019).

When it comes to Chinese family enterprises, intergenerational succession is a vital phase. Results showed that intergenerational succession had a negative relationship with the performance of

family businesses and that intergenerational succession had a moderating impact on intergenerational succession and the performance of family businesses. Furthermore, intergenerational succession and enterprise innovation using negative correlation (ISEI-NC) has been inclined to put it another way. It indicates that the performance of family firms declines due to intergenerational transmission, which has a direct effect on investment in innovation (Li & Zuo. 2020). These findings could be useful to help family firms plan their innovation strategy and oversee business performance during the intergenerational transition stage. However, companies' internal resources may be depleted as a result of such measures. For businesses to innovate effectively, they require certain input. As a result, questions such as how intergenerational transition will affect the performance of family firms and how they will operate internally are worthy of investigation.

## Social and Emotional Wealth

On the other hand, social and emotional wealth is rare because of the long payback cycle and high uncertainty (Moreno-Gené & Gallizo. 2021). The intergenerational succession of a family business is the core purpose of the family business. It is the most significant difference from other organizations and proposed intergenerational inheritance of family enterprises promoting investment (IIFEPI). It sends a strong signal to outsiders that the company will continue to run for many generations, and the readiness of the family to pass the business along raises the company's investment in innovation.

According to the research, this article examines the features and processes of family businesses with certain characteristics. It is a combination of leadership and administration processes for market incentives (CLAPMI). Investigating entrepreneurial opportunity concerns is based on viewpoints such as human attributes, entrepreneurial education, and virtual communities to discover opportunities for family entrepreneurship (Li & Goetz. 2019). As a result, the concept of managing dissipative was proposed with the management of dissipative is a disorderedly complicated enterprise that continuously changes energy, matter, and information with its surroundings.

Here from the existing researches SRSC, EMDD, ISEI-NC, IIFEPI, CLAPMI are compared with our proposed system IISF-OB to analyze the parameters like yearly comparison of intergenerational firms, socio-economic comparison, analysis of psycho-social, risk identification in families, and the relationship between enterprise values are compared and implemented in the following sections.

## PROPOSED SYSTEM OF INTERGENERATIONAL INHERITANCE SIGNIFICANCE FOR FAMILY-OWNED BUSINESSES

From the standpoint of innovation activities energy transfer of enterprises, there have had publications that mainly utilized research and development intake with the invention of derivative instruments as indexes to quantify enterprise innovation. Intangible assets of listed firms often included company performance, copyright design, and property use rights which are challenging to measure the innovation degree of companies.

It is common for western organizations to use the number of patentabilities to gauge an organization's creativity and capacity. That is not the case in China, where most of the invention occurs in imitation-innovation:

$$EM = Cs \sum_{i=1}^e Is \log Is_i \quad (1)$$

Mathematical model of management entropy  $EM$  assumes that the organization is a self-contained and closed system  $Cs$  (table 1). As a result, the environment rarely receives knowledge, energy, and matter from it; and second, the energy  $e$  of organizations through summation using

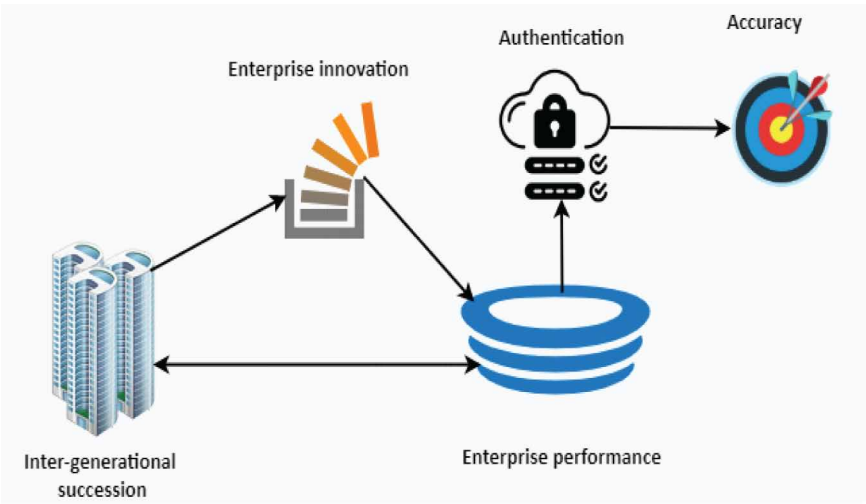
Table 1.  
Nomenclature

Symbol	Explanation
$EM$	the organization is a self-contained
$Cs$	closed system
$\partial$	integer constant values
$Aq_{i,p}$	dependent variables
$st$	organization structure
$Eg$	entropy generated
$Ev$	squared root of entropy value
$Cs$	company's success
$E$	expansion

random variable  $i$  varies greatly, and they are in an imbalanced state  $Is$  by logarithmic function mentioned in the above equation (1).

Patent applications may be used to reveal the most original aspects of its technology process listed in Figure 1. Because of this, the article chose to express the level of innovation in family firms in terms of the year's research and development strength rather than the amount of money invested. This represents the relationship between the cost of replacing a product and the company's performance, which includes a wide range of indicators that are difficult for managers to control, such as working

Figure 1.  
Representation of intergenerational process in an enterprise



capital, sales revenue, and profitability. As a result, dependent variables measure the industry sector, divided into industrial and non-manufacturing by the China securities regulatory report's business classification of listed businesses based on 1 and 0. As a control variable, the article considered factors including the industrial sector, ownership percentage, enterprise dimension, enterprise period, asset-liability ratio, and growth in the major enterprises to be important. Other variables involved in the authentication process are said to control, collect and compute data following their definitions and assumptions of accuracy measured. Based on these control variables, the article predicted that intergenerational succession would have a noticeable impact on family company innovation and enterprise performance. Dependent variables are the outcomes that are being studied. Independent variables are the inputs that can affect the dependent variables. Mediating variables are the variables that explain the relationship between the independent and the dependent variables.

Before and after the family enterprises are taken over, there used to be a noticeable difference in their performance. Family firms showed a fall in performance following succession, indicating that the intergenerational succession of family enterprises will negatively impact business performance.

Even though independent factors in the first two models correlate with dependent variables in the third model, it is still possible to prove that independent variables significantly influenced dependent variables through the mediating variables:

$$IS = \int \frac{\partial_0 + \partial_0 * \partial_1 S_{i,p} + \partial_1 * \partial_2 S_{i,p}}{QI_{i,p} + Ag_{i,p} + Yr_{i,p}} \quad (2)$$

$$IS = \int \frac{\partial_0 + \partial_0 * \partial_1 S_{i,p} + \partial_1 * \partial_2 S_{i,p}}{QI_{i,p} + Ag_{i,p} + Yr_{i,p}} + \in_{i,p} * QI_{i,p} \quad (3)$$

No matter how relationship associated a third model's independent and dependent variables  $i, p$  respectively for intergenerational succession  $IS$  are shown in the above equation (2) with integer constant  $\partial$  values get enlarged based on the number of concerns used for example  $\partial_0, \partial_1, \partial_2$ , it is still possible to prove that independent for quality inheritance  $QI$  exercised a meaningful influence for age  $Ag_{i,p}$  dependent variables through the integration factors used for mediating factors through several years  $Yr$  using equation (3). The organization's creativity and capacity utilized to extract numerical aspects of a texture using spatial relationships of similar grey tones that you have highlighted and used as derivatives refers to the organization's ability to use its creativity and resources to identify numerical characteristics of an image by analysing the spatial relationships between different shades of grey in the image. This information can then be used as a derivative to improve the quality of the image or to gain a better understanding of the texture.

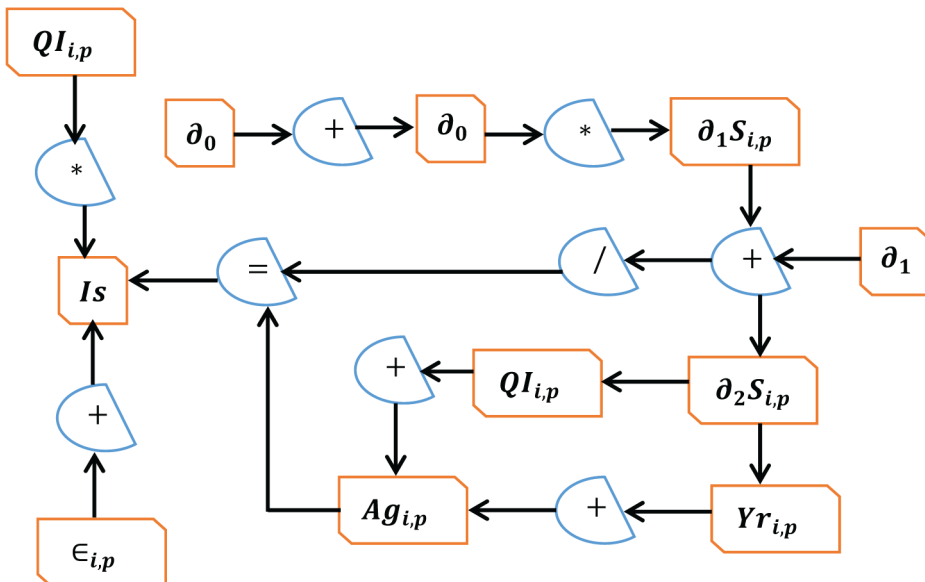
Several ways to reduce the risks associated with in an organization:

1. Increase communication between health care workers, patients, family members, friends, and caregivers to ensure all relevant information is tracked and disclosed.
2. Utilize electronic medical records and other health information systems to ensure accurate and timely communication of health information.
3. Train health care workers on how to properly use, store, and share confidential patient information.
4. Implement secure access to patient health information and establish strict protocols for access control.
5. Develop policies and procedures for the protection and security of health information, such as password protection and encryption.
6. Establish a comprehensive privacy and security compliance program that includes regular monitoring, audits, and training.

There are many reasons why a firm can use patent applications internally, such as the ones outlined in figure 2. Thus, rather than relying on the quantity of money invested, the strength conveys the level of innovation in family businesses. This shows the link between the cost of a product's replacement and the company's performance, which covers a wide range of measures that managers find difficult to regulate, such as working capital, revenue from sales, and profit margins. The research showed why the intergenerational continuation of family enterprises had a noticeable impact under the Chinese organization's culture by combining family emotional wealth theory, legitimacy disadvantage theory, and the human capital theory of entrepreneurs. Intergenerational successors of the family business are the most notable difference from other companies and the planned intergenerational succession of family firms stimulating investment. An intergenerational recruitment and family business performance correlation has been an intergenerational primogeniture and enterprise innovation correlation. The level of innovation in family businesses is communicated through the strength of the company by evaluating the following factors:

1. **The company's structure and operations:** This includes assessing the size, scope and complexity of the company, as well as its ability to respond to changes in the market.
2. **The company's financial performance:** This includes examining the company's financial statements and analyzing the company's cash flow and profitability over time.
3. **The family's business strategy:** This includes examining the family's long-term vision and strategy for the company, as well as its ability to adapt to changing market conditions.
4. **The company's ability to innovate:** This includes looking at how the company is investing in new technologies and processes, as well as how it is leveraging existing products and services to drive growth.
5. **The family's commitment to innovation:** This includes understanding the family's commitment to innovation and its willingness to invest the necessary resources and time to develop new products and services.

Figure 2.  
Societal development requirements methods representation



Furthermore, an intergenerational succession and family performance management correlation are mediated by enterprise innovation. Intergenerational succession is an important factor in the success of family businesses. It can provide continuity of purpose, values, and leadership, as well as helping to ensure that the business is passed on to the next generation. Successful intergenerational succession can lead to improved performance and long-term sustainability of the business. It can help to strengthen family relationships, create a sense of shared purpose, and provide a platform for the next generation to develop their own leadership skills. Poorly managed intergenerational succession, however, can lead to a breakdown in family relationships, a lack of direction and focus, and ultimately, a decrease in performance. Therefore, it is essential for family businesses to plan for and manage the succession process effectively to ensure the future success of their business. Nostalgic this means that the performance of family firms suffers as a result of intergenerational succession, which is one of the processes by which intergenerational succession decreases company innovation commitment. In family businesses, it is possible that a replacement may be too nostalgic or dismissive, or a combination of the two. This can manifest itself in a variety of ways. Nostalgia can be seen in a tendency to cling to the past and to resist change. This can be seen in a reluctance to embrace new technologies or processes, or a reluctance to accept feedback from outside the family. Dismissiveness can be seen in a lack of respect for people outside the family, a lack of engagement with employees or customers, or a lack of enthusiasm for new ideas or approaches. Each of these approaches has its own unique collection of symptoms, which can be identified and addressed with an IISF-OB approach, organisation, and administration style. For example, a nostalgic approach may require more time and effort to be devoted to engaging with the family, while a dismissive approach may require more focus on external stakeholders, such as employees and customers.

To ensure a successful transition, it is important to identify the symptoms of nostalgia or dismissiveness, and to develop an IISF-OB approach, organization, and administration style to address them. This should include a focus on both internal and external stakeholders, and should also involve a commitment to learning and to embracing change. The findings of this article could serve as a guide for family firms as they transition from one generation to the next generation in terms of entrepreneurial strategy and enterprise performance management. By understanding the relationships between social traits such as communication, trust, and respect, and succession traits such as leadership quality, ability to delegate, and problem-solving skills, family businesses can use this information to develop strategies for transferring ownership and management responsibilities across generations. Additionally, understanding the connection between social and succession traits could help to identify potential areas of conflict between family members and provide guidance on how to best address these issues. Finally, the research could provide family businesses with insight into the impact of social and succession traits on the performance of the business, allowing them to make informed decisions about how to best manage the business and ensure its long-term success. It has been shown that family firms performed better than non-family businesses in both the United States and internationally due to the internal benefits of family enterprises. The transition from one generation to the next is unavoidable in all family enterprises:

$$EC' = \frac{st^* \sum \sum_{i=1}^e Tw(I)}{Eg^2 * (st - 1)} \quad (5)$$

$$EC = \frac{st^* \sum \sum_{i=1}^e Tw(I)}{Eg^2 * (st - 1)} * \ln Eg^2 \sqrt{EC} \quad (6)$$

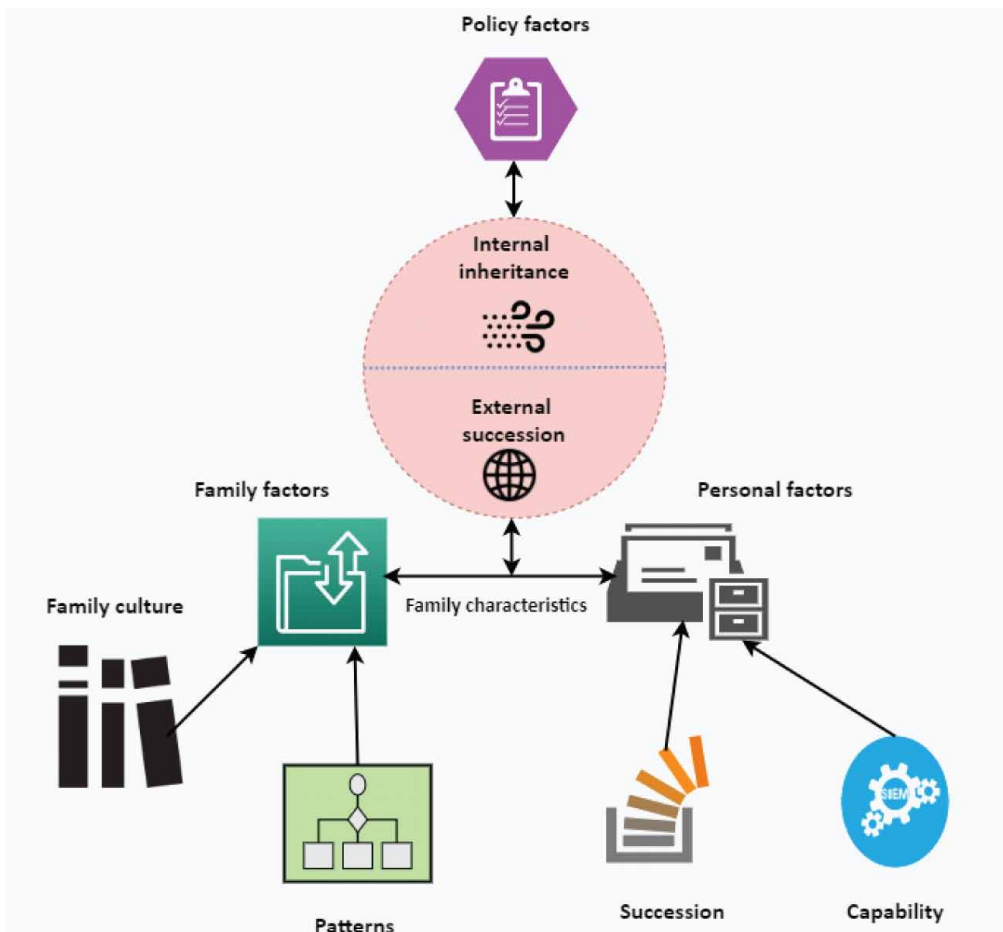
From the above-stated equation (5) and (6), many aspects affect entropy relative  $EC'$  to closeness  $EC$  and independence, such as organization structure  $st$ , human factors for the function  $\ln$ , and



policies in the formula (5). An industry's  $I$  or a stage represents the total weight  $Tw$  of all aspects in that industry or squared root stage using  $\sqrt{EC}$ . The entropy generated  $Eg$ , by a wide variety of causes is represented with summation followed from equation (1). Intergenerational succession in family businesses has a negative effect on performance because it often involves a transfer of power from one generation to the next. This transfer of power can be difficult to manage if the successor is inexperienced or not adequately prepared, and it can lead to a lack of clear direction and objectives. In addition, family members who are not in positions of power can feel alienated and less committed to the business, leading to a decrease in morale and productivity. Furthermore, the successor may lack the necessary expertise and knowledge to effectively manage the business, leading to a decrease in profitability and success.

The royal class of the family business views the process as a family-owned business because of the impact of conservative cultural tradition. The success and growth of the company represent the culmination of the family's achievements are illustrated in above figure 3. There is an increasing need to bring in foreign managers to run the business for the family characteristics. Currently, the two most common methods of passing down a family culture are domestic and foreign succession. The company's success and growth represent the pinnacle of the family's accomplishments because it is a tangible representation of the hard work and dedication of the family. It is a symbol of their collective efforts and a testament to their

Figure 3.  
Internal action mechanisms



commitment to excellence. Furthermore, the success and growth of the company represent the family's legacy, showing that their hard work and dedication have paid off in a meaningful way. For a firm's long-term viability, selecting the best method of passing down the family business with many patterns is critical. Some researchers believe that the professional management succession model is better for the growth of businesses than internal inheritance, and other scholars believe that both are equally effective with several policy factors. It is difficult for external managers to feel safe and secure in a company that has a strong feeling of family culture. It is hard or impossible to establish their factors in a company with many capabilities. External succession is possible that external managers' sense of duty will be damaged, resulting in a lack of desire or inability to perform their management responsibilities:

$$Tev = cs_i \sum Wm_i = \sum_{i=1}^n Wm_i * \frac{\sqrt{(sv - cse)}}{Ev} \quad (7)$$

The total entropy value  $Tev$  of the family firm culture system  $cs$  is the weighted mean  $Wm$  of the indicators in the second hierarchy using summation, which are the indicators in the first hierarchy mentioned in equation (7). Hierarchy II metrics are weighted based  $Wm_i$  on the industry and stage at which they are used. Each indicator's weight is given by state variable  $sv$  in the family enterprise culture system  $cse$  is its entropy value as  $i = 1$  to  $n$ . The system state is represented by the entropy value, which varies depending on the squared root of entropy value  $Ev$ .

## External Succession

- Provides fresh perspectives and ideas from outside the family which can help the business to grow.
- Brings in new skills and experience which can be used to modernize the business.
- Helps to establish a professional management culture which can be beneficial for the business's long term success.
- Reduces the potential for conflict between family members.
- Reduces the risk of nepotism and favoritism.

## Internal Succession

- Provides continuity and stability to the business which can help to maintain customer loyalty.
- Allows the family to maintain control over the business and its future direction.
- Enables family members to learn and develop business skills which can be beneficial in the future.
- Allows the family to preserve their legacy and pass on the business to future generations.
- Provides an opportunity to develop closer family ties and a sense of shared responsibility.

Strong family values have diverse effects on the management of family businesses. There is a greater propensity to pass on rights within the family in places with a strong family concept atmosphere. However, in locations with an unstable family concept environment, founders are less likely to be affected by family members when deciding on succession. The number of points of view taken into consideration when looking into the possibility of family business entrepreneurship depends on the specific research project. Generally, researchers may consider a variety of factors such as family dynamics, organizational structure, marketing, financing, legal and regulatory issues, and the role of technology. Additionally, researchers may consider the impact of human traits, entrepreneurial education, and virtual communities on family business entrepreneurship. It is possible to meet the business management needs of an enterprise if its industrial model is centralized. Compounded management skills are required for a company that chooses a multi-faceted growth strategy. For the

enterprise, the internal members of the family are frightened to be competent and need to introduce external professional abilities. Traditional management approaches and contemporary, specialized talents can help organizations with a centralized industrial model satisfy the management requirements of a company's diversified growth strategy. Strategy, KPIs, goals, objectives, and plans for achieving them are all staples of conventional management methods. Data analysis, project management, and risk management are all areas of expertise that can help businesses better understand their consumers and markets, as well as spot and respond to opportunities and risks. Companies should think about implementing cutting-edge digital solutions to handle the complexity and scale of their operations.

In the same way businesses and individuals both exist in social contexts, their actions and decisions are inextricably linked to those contexts. The research has discovered that family company owners' perceptions of the institutional environment are linked to their readiness to pass down the business within the family. In contrast, a negative assessment of the institutional environment reduced their willingness to do otherwise:

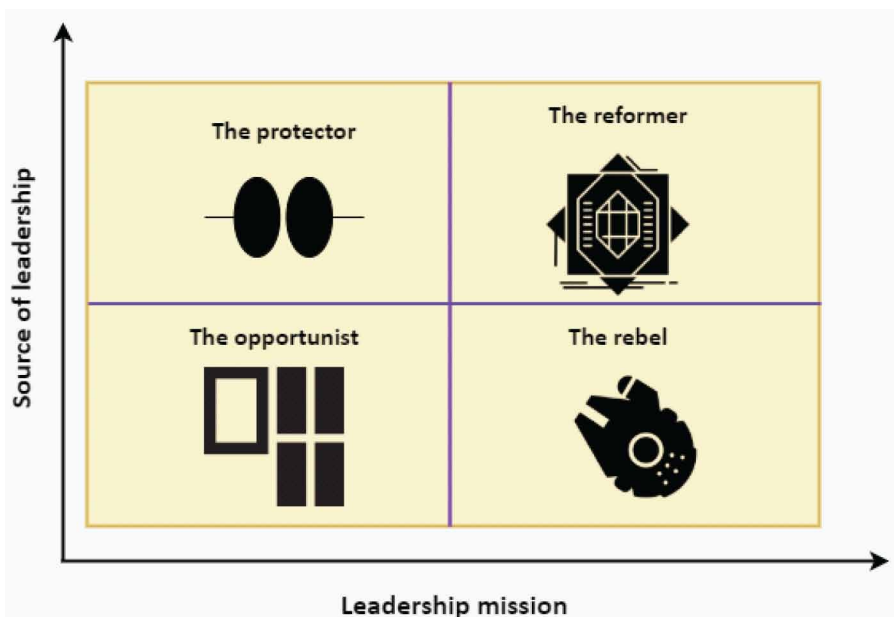
$$Cs(E)_{fe} = \int \mu_1(fob_1) Cs * \mu_2(fob_2) Cs * \dots * \mu_n(fob_n) Cs * \mu_n(fob_i) \quad (8)$$

$$Cs(E)_{fe} = \frac{\int \mu_1(fob_1) Cs * \mu_2(fob_2) Cs * \dots * \mu_n(fob_n) Cs * \mu_n(fob_i)}{Cs(E) * Cs} \quad (9)$$

From the above-defined equations (8) and (9), the company's success  $Cs$  and expansion  $E$  is the result of all of the family's efforts  $fe$ . Family-owned businesses  $fob$  are increasingly relying on foreign managers to operate their operations from  $\mu_1 \dots \mu_n$ . Domestic and international successions are the two most popular ways of passing along a family's culture today.

Good and bad emotions associated with managerial transfer at the individual level are shown in Figure 4. Some participants showed excitement and pleasure at the prospect of becoming the leader of the family firm. In contrast, others voiced uncertainty and hesitation at the prospect of such a

Figure 4.  
Topology of intergenerational succession



difficult position. When families are willing to discuss succession issues openly, positive feelings are viewed as both an outcome and a factor in leadership mission. However, the family's transparency and refusal to address succession issues are perceived as the source of negative emotions. Anxiety and depression are mentioned as barriers to family business participation based on the source of leadership. Managers may experience elation, pride, motivation, and a renewed sense of purpose upon being promoted to a new role. Some examples of such negative emotions are worry, fear of failing, uncertainty, tension, and pressure. The demand of the participants, who were overjoyed at the prospect of taking over the family firm, may be connected to the concepts of legacy and future prosperity for the enterprise.

### **The Protector**

Taking up the role of a successful family businessman is seen as a matter of fate. A strong mission is given to children born into family enterprises, which includes receiving, maintaining, and carrying on the family company legacy to succeeding generations. Thus, adherence to tradition and a lifetime of dedication are required for this legacy.

### **The Reformer**

The role of a family company leader is viewed as a matter of destiny; the environment and material of the leadership role are discussed with older generations. Before the long-term commitment, successors regard management transfer as an intergenerational responsibility that requires intergenerational negotiation. Because taking on a leadership role in a family business is seen as potentially closing the door to other professional prospects, many people put off taking on a leadership position.

### **The Opportunist**

A family business leader's position is seen as predestined, yet older generations analyze the role's context and materials. Management transfer is an intergenerational duty that involves intergenerational negotiation before making a long-term commitment. Since leadership positions in family businesses are perceived as limiting one's professional options, many people put off taking on leadership roles in family businesses.

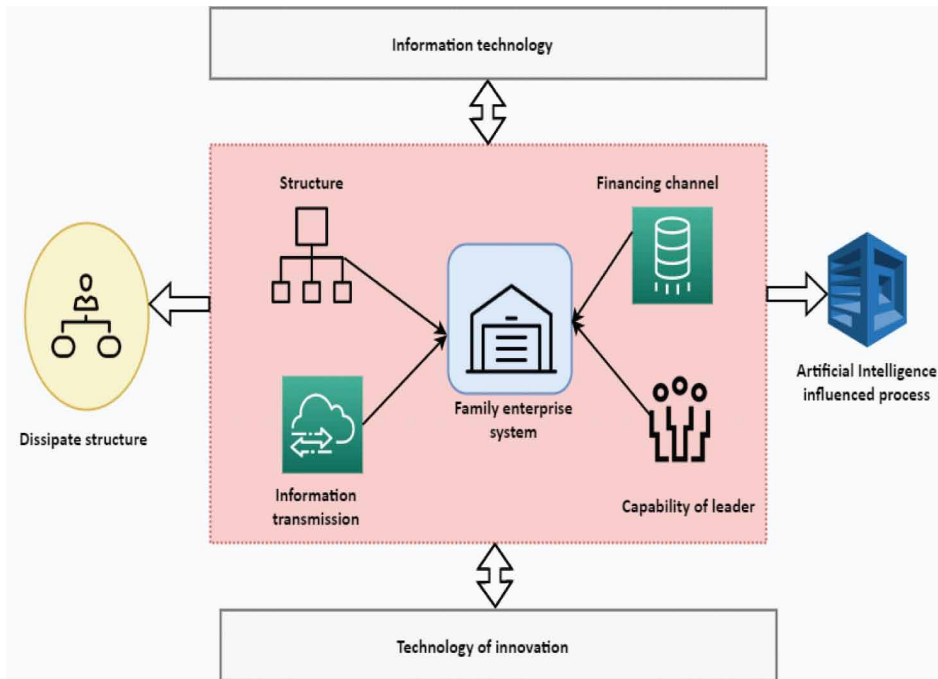
### **The Rebel**

Because of the perceived threats to personal freedom, family business leaders are seen as a professional decision to be avoided at all costs. In the beginning, successors reject that they will ever be able to head the family firm. In some cases, they leave their families and travel for long periods to study or work in fields that have nothing to do with their family's business.

Older and younger generation leaders are significant partners in a succession process, which necessitates common expectations and projections about future management transfer. As a result, here believes that implementing this framework in family businesses will improve the chances of a successful management transition. Next-generation family business members could benefit from knowing which category they fall into, as this could prevent them from making irrational judgments about their involvement. When it comes to family business negotiations, understanding one's management choices gives the next generation of family members a more sensible, balanced base for meetings and discussions. Understand the family's vision and objectives: Before formulating the innovation strategy, it is important to understand the family's vision and objectives for the business, as well as how they want to pass the business on to the next generation. This will provide the foundation and focus of the innovation strategy.

- **Assess current capabilities:** Assess the family business's current capabilities and resources in order to identify areas for improvement and areas for potential strategic investments.

Figure 5.  
AI-based information transmission process



Open, far-off balancing conditions, asymmetric interaction, and unpredictable fluctuation variables must be present at all times for family enterprise culture to progress from a random structure to an organized arrangement and produce a dissipative structure represented in above figure 5. A dissipative structure's theory of volatility addresses entropy generation within the system and the interchange of entropy with its surroundings. Inherent family enterprise cultural entropy, based on psychological entropy, reveals the system's internal chaos. When it comes to dissipative structures, it is apparent that the two entropies of system interior and external must be intertwined. Every component of the family business culture system has positive entropy because of their interplay. The degree of system opening and the ability of the system to communicate information with the external world are critical to information technology. As a result, this paper has developed a dissipative structure model of a family business culture system. An organization's high degree of centralization, limited access to external funding, and reliance on family ties to fill leadership positions combine to increase the positive entropy of the family business culture while simultaneously reducing management effectiveness and lowering overall company performance. Yes, it is not uncommon for people to leave their families and travel long distances to pursue education or employment in fields that are unrelated to their family's business. In fact, this type of behavior is becoming increasingly common as more people are opting to pursue their own paths and career paths, rather than following in their family's footsteps.

Reducing internal entropy by exchanging with external environments, introducing multiple financing options and excellent management talent, improving information exchange, and absorbing relevant policies, market trends, and technology innovation are all ways that family businesses can benefit from increased conditions. The degree of entropy represents the degree of complexity and the variety of constituents in a system. Entropy is a measure of how connected and interconnected each piece is. The integration of information, economic, mechanical, and human flow processes is meant by process operations.

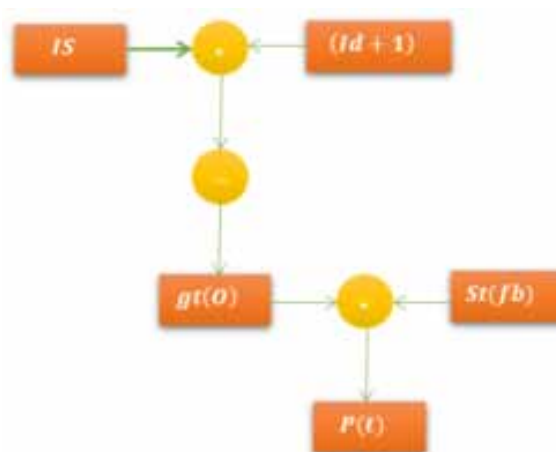
There are generally two sorts of interpersonal trust and processes in all businesses. Enterprises, on the other hand, face a slightly distinct set of circumstances. It is more prevalent in family-owned businesses. Corporate management rights can be transferred spanning two generations means that this is the expected outcome. Advantages include inheritability, regeneration potential, and the ability to diversify a business's operations under a family-owned enterprise:

$$P(t) = IS * (Id + 1) - gt(O) * St(fb) \quad (10)$$

A power transfer  $P(t)$  deviation has occurred in the above-inclined equation (10), allowing an incompetent successor  $IS$  to emerge. In a family-owned business, the two are intertwined. Innovative development  $Id$  is essential to the growth  $gt$  of the organization  $O$  and the strength  $St$  of the family business  $fb$ . Enterprises' conservative tendencies and the immediate financial incentive for succeeding successors are likely to impede innovation in the workplace are demonstrated in above figure 6. The relationship between intergenerational transmission of family businesses and corporate innovation is one of mutual reinforcement. The conservative inclinations of the family business would support the innovation process by providing a stable context in which to develop new ideas, while the immediate gain incentive for succeeding successors would help to drive the innovation process. By minimizing the first type of agency costs, intergenerational transmission of family businesses facilitates the pursuit of innovation, while the conservative inclinations of the family business provide an ideal environment for the development of innovative ideas.

Firstly, the intergenerational transmission of family firms minimizes the first type of agency costs and supports innovation; the conservative inclinations of enterprises and the immediate gain incentive for succeeding successors would hinder corporate innovation. Conservatism, improved family long-term orientation, and the weakening of the second generation's short-sightedness are necessary to promote business creativity. Several factors affect family businesses' external environment, including government policies and intellectual property protection, which have various effects. Protecting intellectual property rights and creating a favourable climate for business innovation should be prioritized by government agencies. Both internal and external influences can influence family business innovation following contingency theories. Family businesses must consider both internal and external influences and integrate them organically to perform innovators' roles effectively. Disruption

Figure 6.  
Family business management mode processes



resistance capacity is vital to mitigate the effects of supply chain disruption. When supply chain disruption occurs, it can have a devastating effect on businesses, resulting in lost revenues, customer dissatisfaction, and other negative effects. Having the capacity to resist disruption through effective planning, risk management, and adaptive supply chain strategies can help businesses minimize the impact of disruption. This can include developing contingency plans, monitoring and analysing supply chain performance, and integrating suppliers and technology into the supply chain.

The increasing focus has been paid to how intellectual property rights affect corporate innovation due to the growing importance of intellectual property (IP) rights in worldwide competition. Entrepreneurs are more likely to pursue long-term sustainable growth through enterprise innovation if properly secured intellectual property rights.

The results of our qualitative research IISF-OB are promising, although more research is compared with the intergenerational firms, socio-economic comparison, analysis of the psycho-social process, risk identification in families, and the relationship between enterprise values are compared implemented using the above figures and mathematical expressions.

## EXPERIMENTAL ANALYSIS

Here focused on the characteristics of challenging successions rather than the causes, the quantitative historical data they acquired for each of our firms provided suggestions on the foundations of many of these successions obtained using 10 to 80 different patterns selected from various sectors. Tables and graphs below sum up these hypotheses, including intergenerational contact patterns, CEO personalities, experiences, and organizational and commercial circumstances.

### Socio-Economic Comparison

Profitability and income revenue generated by family enterprises are higher than those generated by corporations and employees. Global recession does not deter family firms' hiring of new personnel, as shown in table 2. In contrast to other firms, family businesses are unique. However, many family companies within this group are obtained using equation (2) and compared with other existing methods with our proposed system IISF-OB. Global competition refers to the competition between businesses in different countries. It is driven by the desire to gain a market share in other countries, attract foreign investment, increase exports, and tap into new sources of supply and demand. Companies compete with each other not only in terms of price and quality, in terms of their intellectual property rights. This means that companies must focus on protecting their intellectual property rights in order to gain an advantage in the global market.

**Table 2.**  
**Comparison of socio-economic analysis**

Number of patterns	SRSC	EMDD	ISEI-NC	IIFEPI	IISF-OB
10	34.11	45.34	33.34	52.14	76.03
20	52.14	52.05	43.14	59.05	74.06
30	52.18	56.31	36.19	66.02	78.43
40	58.17	59.46	55.27	52.08	83.56
50	64.32	68.07	68.06	61.43	85.34
60	69.25	69.06	62.01	64.01	87.02
70	74.34	71.64	71.21	67.15	93.45
80	65.28	67.31	78.25	68.07	94.01

### Analysis of Psycho-Social Process

An individual’s physical and mental well-being and ability to operate are examined from a psychosocial perspective, taking into account the combined effects of psychological elements and the social context in which they are situated in table 3 in our proposed IISF-OB method. These treatments are aimed at addressing the individual’s ongoing psychological and social requirements. Patients with sickness as well as a disorder with their partners, family members, or caregivers are typically served by health care providers in the system using equation 3.

### Risk Identification in Families

The process of identifying hazards that could thwart the achievement of an initiative, organization, or investment’s goals is known as risk identification. It entails keeping track of and disclosing any relevant information. Risk identification aims to remove or develop solutions for minimizing hazards; those functions are carried out throughout the risk assessment and management processes. From the above table 4, risk identification with several families is compared and analyzed with other conventional methods SRSC, IIFEPI is used to calculate with equation 5.

### Relationship Between Enterprises Values

From the above table 5, the relationship between several families is assigned to compare the enterprise values with other conventional methods using equation 6. The market capitalization, or market cap,

Table 3.  
Comparison of psycho-social

Number of patterns	SRSC	CLAPMI	IIFEPI	IISF-OB
10	34.11	33.34	52.14	76.03
20	52.14	43.14	59.05	74.06
30	52.18	36.19	66.02	79.43
40	58.17	55.27	52.08	84.56
50	64.32	68.06	61.43	86.34
60	69.25	62.01	64.01	88.02
70	74.34	71.21	67.15	94.45
80	65.28	78.25	68.07	95.91

Table 4.  
Analysis of risk identification with other methods

Number of patterns	SRSC	IIFEPI	IISF-OB
10	53.7	63.7	89.7
20	54.8	65.8	90.8
30	55.7	66.7	90.7
40	56.7	67.7	91.7
50	57.9	68.9	92.9
60	58.8	69.8	93.8
70	60.6	70.6	93.6
80	61.8	71.8	94.8



**Table 5.**  
**Analysis of enterprise values**

Number of patterns	SRSC	CLAPMI	IISF-OB
10	74.7	82.4	71.7
20	75.8	82.5	72.8
30	76.7	83.7	80.7
40	77.7	84.9	81.7
50	78.9	85.3	83.7
60	78.8	86.1	83.9
70	79.6	86.3	86.6
80	78.8	87.9	88.8

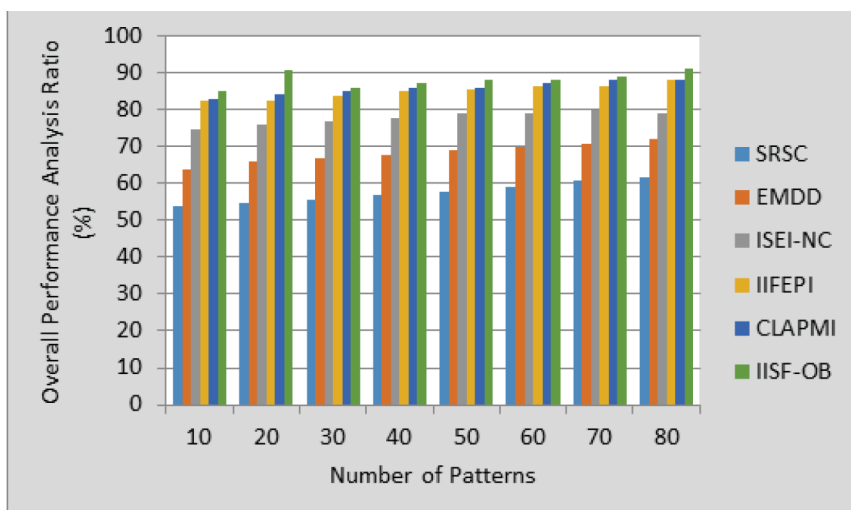
and all of the company's debts are added together to calculate enterprise value. Enterprise value is added to redundant resources, and debt gross of cash is subtracted from this total.

#### *Overall Performance of IISF-OB With Other Methods*

From figure 7, the overall comparison of IISF-OB in information technology relies heavily on how open a system is and how well it can exchange data with the outside world. Thus, a model of the family business culture system based on technological innovation dissipative structure was constructed in this research. Centralization, lack of access to external funding, and reliance on family members to fill leadership positions all contribute to increasing the positive entropy of family business culture while decreasing management effectiveness and lowering overall company performance in a way that is difficult to reverse.

Several existing models have been compared to the IISF-OB model under consideration, all outperforming the IISF-OB model in the categories mentioned above. According to the report, this innovation addresses the competition mentioned above: socio-economic comparison, analysis of

**Figure 7.**  
**Overall performance of IISF-OB**



the psycho-social process, risk identification in families, the relationship between enterprise values issues, and overall performance of 95.4%.

## **CONCLUSION**

A lack of proper connection between the past and the future hinders intergenerational succession in our research, which is enhanced using the IISF-OB method. This can be seen in a successor who is too reliant on the past, a dissident successor who rejects the past, or an uncertain and wavering new leader who combines the past with the present in an inappropriate way. In the early stages of intergenerational succession, scholarly circles focused primarily on the influence of various factors on intergenerational progression. The research of the dissertation on intergenerational succession, enterprise creativity, and business performance is significant. Though time and budget restrictions ultimately limit this piece of academic writing, future research may explore the possibility of breaking through the study's geographic boundaries. Research on intergenerational inheritance and development in family businesses is quite extensive; however, the findings have been drastically diverse. This leads to analysing the relationship between family-owned businesses, intergenerational inheritance, and originality with a performance achievement of 95.4%. Research highlights the relevance of family relationships and the function of elements that mediate family-business relations in defining the succession process and their influence. Family firms will benefit from more studies of possible linkages between social and succession characteristics in future research.

## **CONFLICT OF INTEREST**

The authors declare that they have no conflict of interest.

## **ETHICAL APPROVAL**

This article does not contain any studies with human participants or animals performed by any of the authors.

## **AUTHOR STATEMENT**

Conception and design of study: Zhanzhong Wang

Acquisition of data: Jiajun Li

Analysis and/or interpretation of data: Zhanzhong Wang

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