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An Analysis of the Influential Factors of Corporate Innovation in Chinese Listed Companies

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Abstract: Enterprise innovation, as an important part of enterprise development, has now become one of the popular research objects. Under this background, this paper analyses the influence of external factors and internal factors on corporate innovation, and it takes into account the fact that external and internal factors can both promote and inhibit the development of innovation in firms. Based on the analysis of relevant literature on innovation influencing factors of Chinese listed companies, firstly, the external and internal factors affecting corporate innovation are sorted out and summarized respectively. Secondly, the factors or mechanisms by which Chinese listed companies should negatively affect corporate innovation are pointed out. And finally, it is shown that it is a future research trend to improve enterprise-related policies to alleviate or offset the inhibiting effect on corporate innovation. This study is conducive to promoting the continuous innovation of enterprises, promoting the stable development of the level of economic development of enterprises, and provides scholars with a clear classification and ideas in terms of enterprise innovation factors.

Keywords: corporate innovation, political connection, economic policy uncertainty

1. Introduction

Because of the continuous rapid development of science and technology and the increasingly fierce competition among enterprises, countries and enterprises attach great importance to innovation activities. For them, innovation is a high-quality way to compete with other countries or enterprises, and it not only helps enterprises form core competitiveness, reap long-term benefits in the future, become the main body of innovation and the source of innovation vitality in the country, but also transforms the country's overall economic growth mode, so as to realize sustainable value creation. In the international arena, the frontiers of science and technology continue to extend, industrial renewal is accelerating, a new round of scientific and technological revolutions and industrial changes are emerging, and the ability to innovate in science and technology is becoming the key to improving international competitiveness. Moreover, because of the reckless exploitation of resources and legal constraints, for Chinese enterprises urgently need to change the mode of development. To achieve better quality and more efficient development, innovation can be a method to achieve. To date, we have found little attention in academia to the fact that some factors are not appropriate for all firms, and that in some cases, the factors that promote innovation tend to limit it. For example, a higher proportion of female directors has a positive impact on firm innovation. The higher the level of

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regional economic environment, the better the regional environment and the richer the resources faced by the firm, the more complete the conditions and resources for firms to innovate [1]. However, only if the higher the level of regional economic development, the more opportunities for women to access to a variety of resources, the proportion of female directors will be large and thus have a positive impact on innovation. In other words, only if the regional economic development level is high, the proportion of female directors will have a positive effect on corporate innovation. On the contrary, if the level of economic development is low, the percentage of female know how will be low and it will not be able to promote corporate innovation. In light of this, this paper focuses on the external and internal factors that promote corporate innovation and which factors that would otherwise promote innovation can in some cases inhibit corporate innovation.

2. Positive impact of selected factors on business innovation

2.1. External factors of enterprise innovation

As for the existing literature, scholars generally believe that the development of digital economy is conducive to the development of enterprise innovation. Yu Zhou, Linyu Zhang [2] argues that the digital economy can improve the efficiency of enterprise innovation by promoting the diversification of innovation subjects, accelerating the flow of innovation factors, facilitating the change of innovation tools, and promoting the optimisation of innovation management, and adopts a benchmark regression model to validate the illustration. Xueping Dai [3] verified through regression analysis that higher economic policy uncertainty leads to more significant innovation peer effects. Rising economic policy uncertainty exacerbates the degree of information ambiguity, and firms take peer firms' innovation inputs as valid information influencing innovation decision-making, managers may also follow peer corporate decision-making to protect their reputation, which can safeguard their personal interests; Jie Ren[4] used a mixed panel model proved that the rise of economic policy uncertainty index can significantly increase the number of enterprise innovation patents, it also means a boost to business innovation and development. The regression analysis conducted by Qilin Mao, Jiayun Xu [5] verified that only moderate subsidies can significantly stimulate enterprise new product innovation, while high subsidies have a negative impact on enterprise new product innovation, and the subsidy intensity is in the "moderate range" [0.009, 0.0399] with a decreasing trend from year to year. In addition, regional governance is also a factor that affects firms' innovation. Differences in technological innovation often depend on the external operating environment faced by firms, i.e., the root causes can be found at the national level Yin Dang, Tong Lu [6] in different regions of a country, differences in technological innovation depend on the differences in the governance environment at the regional level Bai Junhong et al [7].In addition, the higher the level of regional economic development, the better the regional environment and the richer the resources faced by enterprises, and the more complete the conditions and resources for corporate innovation are. Having a good institutional environment can guide and motivate enterprises to actively carry out innovative activities, so that enterprises can fully and effectively use the economic resources in the region; having more high-quality talents can provide the source and strength for enterprises to carry out innovative activities. High-quality talents are the key factors for enterprises to carry out innovation, and they are the direct implementer of innovation activities, which directly determines the inputs and outputs of innovation activities Yang Xiaoyou [8], and the regional economy determines the talents. On the other hand, take the aspect of political affiliation. Many firms try to maintain a good relationship with the government based on the fact that they can obtain larger financial subsidies and tax breaks. In addition, the existence of political connections strengthens the image and reputation of firms, and shows the government's "backing" support for their risky behaviour, which makes it easier for firms to obtain bank loans, higher loan amounts, and longer loan periods; and it is also easier for

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firms to obtain bank loans, higher loan amounts, and longer loan periods. On the one hand, it is easier for enterprises to obtain bank loans, higher loan amounts and longer loan periods; on the other hand, it is also easier for them to gain the attention and favour of institutional investors or angel investors. Moreover, due to the high failure rate and high risk of innovation projects, and the imperfect protection of research results, enterprises are not sufficiently motivated to innovate; however, if there is a political connection, even if an innovation project fails in the end, the enterprise is more likely to receive government bailouts or other forms of government subsidies.

2.2. Internal factors of enterprise innovation

Wengui Li, Minggui Yu [9] measured corporate innovation from the dimensions of innovation input and innovation output, and found that the higher the proportion of non-state equity in privatised firms, the stronger the willingness of firms to carry out innovative activities, the greater the innovation input, and the innovation output also increased under a high proportion of non-state equity, indicating that non-state equity has a facilitating effect on the innovative activities of privatised firms. Using a double-difference model, Si Chen, Wenlong He, Ran Zhang, [10] show that the entry of VCs significantly increases the number of patent applications, which promotes the innovation of the invested enterprises. Returnee talent has a positive impact on enterprise innovation development. Yuan and Wen [11] found that managers with foreign study experience and foreign working experience have a significant positive impact on enterprise innovation. Meanwhile, Siping Luo,Yongda Yu [12] also found that returnee talents have become a special carrier for international technology transfer, and enterprises with returnee executives have significantly more patent applications and focus on the enhancement of enterprises' innovation and technological capabilities, which effectively promotes the innovation of enterprises. Innovation. In addition, investment in human capital will enhance the organization's cognitive social capital in the form of shared codes and languages, which will improve the organization's innovation performance through their impact on knowledge exchange and combination. In addition to this the number of female directors is also a factor that can influence firms to innovate as female directors may bring new and different understanding of the consumer market to the board of directors and women's social networks are usually more diverse than men's. This is a key source of information for a company's innovation activities. In addition, according to the gender facilitation theory Sheng-Hua Kim [13] the higher the proportion of female directors, the more actively male directors become involved in governance, meaning that men will behave more adventurously because they are driven by an impression motive and will tend to perform better in front of the opposite sex to stimulate creativity and thus bring innovation to the firm.

2.3. Internal and external factors inhibit corporate innovation

However, there are specific conditions under which these internal and external factors can be counterproductive. Political connections can sometimes have a negative impact on innovation. For example, firms seeking political resources have to pay rent-seeking costs and may divert R&D resources from the firm; even if political resources are obtained, firms may still try to accommodate the government's "interventionist hand", which may distort the firm's normal investment behaviour Deng and Zeng [14]. Moreover, Zhang and Huang's [15] study shows that politically connected firms are more willing to diversify and expand their business performance, or prefer to expand their business scale through mergers and acquisitions Pan and Hongbo et al., [16], and that such firms may not pay attention to technological innovation activities. In addition, a large number of studies have shown that market competition can promote technological innovation Nie Huihua et al., [17] Shen Kunrong and Sun Wenjie [18]. The existence of political affiliation can help firms to obtain more

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government subsidies or even direct orders, which enables them to continue to survive at a lower level of innovation even in the face of fierce market competition, so they will not have a sense of crisis and naturally will not innovate. In addition to this some politically connected firms will overinvest and induce the risk of overcapacity in order to cater for the needs of local officials to promote local economic growth, thus sacrificing the long-term development capability of the firm Li Jian et al. [19]; Xu Yekun et al.[20].Besides Quiggin and Anderson's study[21] presents that the uncertainty brought by economic policies has an important impact on agricultural decision-making , corporate innovation is a high-cost, long-cycle, high-risk investment decision-making activities, companies will worry that the future benefits of R & D investment will not be enough to offset the losses brought by the uncertainty of the economic policy, so in the case of fluctuating economic policies the conservative attitude of the enterprise is likely to make the innovation project is shelved Therefore, in the case of economic policy volatility, firms' conservative attitude is likely to put innovation projects on hold, which is not conducive to innovation. In addition, economic policy uncertainty worsens the external financing environment, increasing the information asymmetry between borrowers and lenders, making future cash flows more unstable and increasing the risk of default. When economic policy uncertainty rises gradually, the cost of capital also rises on average, and firms are less likely to raise external capital, thus suggesting that economic policy uncertainty has a negative impact on firms' innovation [22]. On the other hand Bessen and Maskin [23] argue that if innovations are sequential (i.e. each subsequent innovation is carried out on the basis of its predecessor's earlier innovations) and complementary (i.e. each potential innovator adopts a different line of research), then technological imitation will increase the expected profits of the inventor. In this case, patent protection (a barrier to imitation) may not help encourage firms to innovate. In contrast to the conclusion of Bessen and Maskin (2009), Zeng [24] finds that increasing subsidies for technological imitation increases investment in technological imitation and decreases investment in technological innovation. Assuming that innovations are independent, technological imitation reduces the value of a firm's innovations and thus its incentives to innovate. Multiple majority shareholders can lead to reduced risk-taking ability and tolerance for innovation failure, so multiple majority shareholders can lead to "excessive monitoring" and inhibit the development of corporate innovation Bing Zhu [25].

3. Conclusion

This paper summarizes a variety of enterprise innovation influencing factors through the study of existing literature. The article divides these influencing factors into two aspects—external factors and internal factors. and explains the reasons for their influence on enterprise innovation as well as the role of the mechanism, however, some of the factors have both promotional and negative effects on enterprise innovation, and the channels through which these factors influence innovation need to be further explored. This study has some imperfections, due to the insufficient number of literatures read and the word limit of the article, it is not yet possible to summarize all the factors influencing enterprise innovation. In addition, when enterprise innovation is significantly positively affected, it will also have a positive impact on other factors of enterprise development, such as innovation performance can make the level of enterprise economic development significantly improved, which requires scholars to organize the existing literature, analyze the reasons for the impact through theoretical knowledge and channels, and test it through empirical analysis.

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