

Proactive Personality on the Innovative Behavior, Sampling In Manufacturing Engineering Talents

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Abstract: How to tackle the challenges and “improve the capability of independent innovation” has become an important strategy of national development in the new era. In the era of innovation, manufacturer enterprises are paying every time attention to the cultivation of engineering talents’ innovation ability. Based on the data from manufacturer enterprises in Hebei Province, this paper proposes a theoretical framework by means of qualitative research methods and finds that with the moderating function of enterprise culture, the overall innovation ability of manufacturing talents can be enhanced by cultivating the proactive personality. Enterprises should give full play to advantages of these talents featuring strong innovation initiative, creating an atmosphere respecting traditions and encouraging innovation, thus promoting the overall innovation ability, encouraging them to adopt more innovative behaviors, and valuable suggestions for the cultivation of innovative engineering talents.

1. Introduction

When Bateman & Crant explored the initiative in organizational behavior, they proposed the concept of proactive personality for the first time, namely a stable disposition of individuals to affect the surroundings by proactive behavior [1]. It refers that proactive individuals tend to take actions to change the environment, instead of being much subject to the environment. Liu Mi (2007) raised that different from the big five personalities, proactive personality refers to a stable disposition toward proactive behavior exerting positive influence on individual work performance, career success, team performance and entrepreneurial intention, whose connotation has been expanded and deepened in China [2].

Innovation is a kind of a high-uncertainty and high-risk investment, which can never be achieved without strong will, firm perseverance, optimistic attitude, and a personality full of hope for innovation [3]. Prior researches have shown that proactive personality is closely related with innovative behavior [4, 5]. However, affected by earlier creativity studies, attention is mostly focused on the individual-level studies. This paper, taking the external environment factors as the starting points, focuses on the secondary dimension of innovative behavior, finds out the influencing mechanism of environmental factors, and then pushes forward the innovative behavior.

2. Mediating Effects and Shared Visions of Relationship building

From the perspective of social capital, Thompson proposed that in order to achieve success on the job, proactive individuals will take measures to establish good working relationships [6]. Among these measures, the most effective one is relationship building, which means proactive individuals tend to seek alliances to support their initiative and establish relationships with people enjoying higher power and more information resources. Relationship building plays an important intermediary role when the

proactive individuals take actions. Wang Bingcheng and Zhang Shiqiang concluded that innovative behavior and the legitimacy of innovation had a significant positive correlation with job performance [7]. Relationship building not only manifests itself in the formation, deepening and utilization of the relationship, but also forms a “consensus” between the two interacting parties, emphasizing the characteristics of joint participation, common concern and joint construction. Wang Li proposed that a shared vision could enhance the cohesiveness of an organization, and under the vision’s guidance, the organization members could strengthen their ability and willingness to coordinate the individual goals with the organizational goals [8]. Therefore, in the context of manufacturer enterprises, proactive manufacturing engineering talents will take initiatives to establish contacts with their tutors. In the process, the tutors set specific tasks and intentionally make the manufacturing engineering talents perceive and focus on the guidance of the tutors, thus forming a common vision between the manufacturing engineering talents and the tutors and promoting such an innovative behavior. Based on the relationship between relationship building and job performance, and the relationship between innovative behavior and job performance, combined with the research sample of manufacturing talents,.

3. Moderating Role of manufacturing enterprises Culture

Individual innovative behavior does not only depend on the cognitive style [9], intrinsic motivation and psychological capital, but also on effective stimulation from the external environment, especially the support and stimulation from the superiors [10]. This view confirms the effective impact of the external environment on individual behaviors, and also states that personnel relations as an important part of the external environment play an important role in individual innovation behavior. Individuals with active behaviors will actively establish relationships with their superiors in the process of taking initiative, which is an important part of relationship construction. The external environment is conducive to adjusting the effects of relationship building. By developing the external environment with a sound interpersonal relationship, a good interpersonal relationship is built within the organization and a common vision is formed, which improves the quality of relationship building, facilitating the members to take initiative, and ultimately bringing about innovative behavior. The construction of manufacturing enterprises culture can lead to a manufacturing enterprises culture system with long-lasting influence, playing a positive role in the cultivation of manufacturing engineering talents’ innovation ability. The organizational relationship in the context of manufacturing enterprises culture mainly manifests as the tutor-talent relationship, in which the tutors play the role of “supporters” in the process of guiding. A qualified faculty group attaches great importance to the cultivation of manufacturing engineering talents’ proactive innovation ability, which helps engineering talents to form a shared vision of valuing the proactive innovation atmosphere, improves the quality of tutor-talent relationship, facilitates manufacturing engineering talents to take actions and enhances their overall innovation ability.

4. NVIVO Qualitative Test and Model Establishment

Qualitative research is conducted with the software NVIVO10, Sampling manufacturing engineering talents in these industries, such as Automobiles, Biomedical Engineering, Instrumentation and Control, Manufacturing Control and Automation Engineering, Health and Biological Materials, Construction and Building Materials in Hebei Province as the main object of research, with continual revision based on case study, this paper carries out research and model building in a way from parts to the whole, from empirical facts to theories, and finally obtains the analysis results. The research is divided into two stages. The first one is the pre-test stage in which this paper gathers the factors that influence the proactive innovative behavior of manufacturing engineering talents according to the existing literature and conducts preliminary analysis on the “gathered” factors. The manufacturing engineering talents of H manufacturing enterprises are stratified and then 30 of them are randomly sampled. Semi-structured interviews were conducted on the interviewed subjects, recorded and

recorded on the spot. According to the reference points of the child nodes, the pursuit of “future and life” and “promotion” are both important driving forces for innovative motivation; “shared vision” and “relationship building” are vital factors that affect the “proactive behavior”; the tutor-talent relationship and enterprise policies also have considerable influence on innovation behavior.

In the “innovation motivation” dimension, most respondents have good innovative attitude and clear working objectives, includes long-term orientation, such as yearning for future life and hope for future life more comfortable; also includes short-term goals, such as for annual work model and annual corporate awards. Clear working goals and proactive innovative attitude compose the internal impetus of taking innovative behavior. In the “proactive behavior” dimension, 60% of respondents believe that they cannot adapt to the changing environment actively. On the one hand, they are affected by the environment, such as blind competition, obscure professional cognition, and lack of interest. On the other hand, in the process of building the tutor-talent relationship, insufficient guidance fails to encourage engineering talents to strive to accomplish organizational goals or to complete the common vision of establishing an innovative organization. The data analysis found that the Skill level of the respondents is related to the initiative of innovation: on the one hand, the length of time the respondents work in the enterprise affects their innovative behavior, and the higher-level respondents are in the teaching mode, working atmosphere, etc. Under the influence of manufacturing enterprises culture, and the social pressures faced will be more inclined to take the initiative to innovate, taking active innovation is an important manifestation of its ability to develop itself. Accordingly, in the formal measurement phase, the "Skill level" dimension is added to the structure.

In the dimension of “manufacturing enterprises atmosphere”, the tutor-talent relationship, open workplace model and enterprise innovation training activities account for a large proportion. The subjective of the relationships among the three dimensions are the tutors and engineering talents, so this paper can collectively call them the “tutor-talent relationship” dimension. As guides in this relationship, manufacturing enterprises tutors play an important role in the development of engineering talents’ innovative thinking, the cultivation of innovation ability, and the formation of innovative behaviors. At the same time, focusing on the main body of tutors and engineering talents, activities of the enterprise policy category are carried out and adjusted, such as the cooperation as well as policy and planning, which can be called the “relationship supporting” dimension. The manufacturing enterprises atmosphere always influences the engineering talents subtly, so it can be called the “soft environment of campus” dimension.

Compared to the “soft environment of campus culture”, the “external environment” belongs to “hard environment”, mainly including two parts - the working environment and the employee entertainment facilities. It can better support the engineering talents’ enthusiasm for working and provide necessary external conditions for innovative behavior. Employee entertainment facilities help engineering talents work better. H manufacturing enterprise's high-quality hardware environment, such as employee electronic reading room, air-conditioned workplaces, and various innovative laboratories, can better support engineering talents' enthusiasm for working and provide necessary external conditions for innovative behavior. In addition, in enterprise innovation talent training activities, corporate engineering talents, the support of the enterprise and the decision-making ability of the managers are also obvious for engineering talents to acquire knowledge and promote innovation behavior. The “external environment” serves as a “hard environment” for engineering talents, with the aim of helping engineering talents to be more proactive in their innovative behavior. This has the same purpose and effects with the “cooperation, policy, and planning” in the dimension of manufacturing enterprises atmosphere and is called the “relationship supporting category” dimension. The revised structure are as following: Innovation Motivation, Proactive Behavior, Tutor-talent Relationship, Relationship Supporting and Skill Level.

Through the analysis on the above-mentioned context and the discrimination of the inherent logical order of the language, this paper finds out the internal logical relationship among the influencing factors of proactive personality on engineering talents’ innovative behavior. According to the model from the perspective of social capital raised by Thompson (2005), combined with the data model of engineering talents’ proactive innovation structure, this paper finds that “relationship building”,

“shared vision” put a heavy weight on the initiative innovations of enterprise engineering talents by analyzing the relationship of each child node in the tree node of “proactive behavior”, and embeds them in the overall framework. Meanwhile, the “manufacturing enterprises atmosphere” and “external environment” are summarized into the “manufacturing enterprises culture” dimension, which is refined into two dimensions: “tutor-talent relationship” and “relationship supporting”. The model of relationship building mechanism is drawn up, as suggested in Figure 1. On the one hand, “proactive personality” together with “manufacturing enterprises environment” impacts “proactive behavior”, and then affects the level of “innovative behavior”; on the other hand, the “innovative behavior” has considerable effects on “manufacturing enterprises culture” in return, which centers on the influence on the manufacturing enterprises innovation atmosphere and enterprise infrastructure, therefore forming a process with spiral effects.

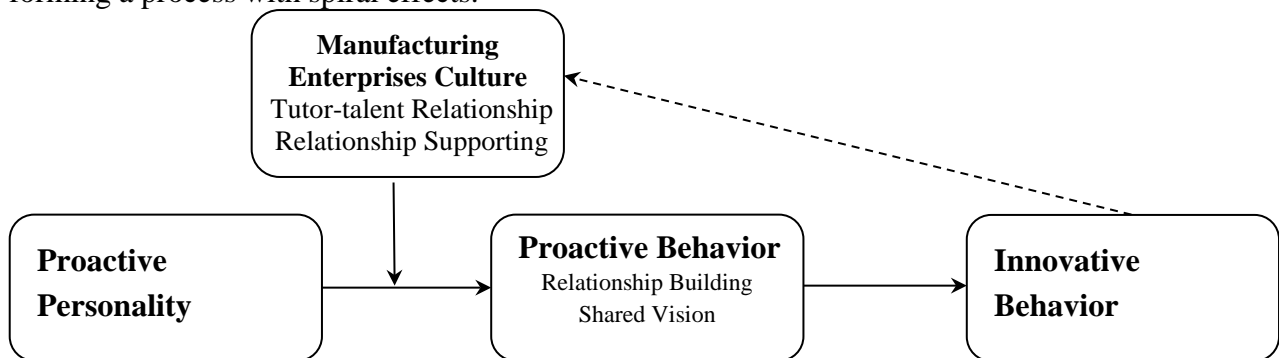


Figure 1: Efforts of Proactive Personality on Manufacturing Talents’ Innovative Behavior: Moderating Paths of Enterprise Culture

5. Recommendations

5.1. Pay attention to the relationship building and grasp the shared vision

The common vision in relationship building needs to go through three stages: vague initial appearance, dissemination of explicit prospects, as well as implementation and joint fine-tuning. Therefore, in the initial stage, it must focus on promoting the unity of individual goals and organizational goals, forming a unified context, and then, in line with the context, effectively building the relationship. At the same time, communication is an indispensable part of the second stage. Through communication, the relation among manufacturing enterprises, tutors and engineering talents gets closer, forming a common “cooperative” relationship, also a key process of relationship building. In the third stage of implementation, under the guidance of the shared vision, engineering talents take the initiative to study in the context of the “cooperation” between the tutors and engineering talents, which contributes to the cultivation of innovative ability and promotes innovative behavior.

5.2. Optimize the enterprise cultural for innovation

The manufacturing enterprises culture is mainly composed of two dimensions of tutor-talent relationship and relationship supporting. The construction of auxiliary facilities such as the enterprise policies and employee training environment of enterprise life serve the purpose of building a better humanistic environment in manufacturing enterprises. Therefore, to strengthen the construction of manufacturing enterprises culture, the manager of enterprise are suggested to stress the relationship between tutors and engineering talents. The quality of faculty carries a big weight in any tutor-talent relationship, especially because the proactive guidance of excellent tutors is a key factor influencing the cultivation of engineering talents’ initiative innovative behavior. It is suggested that managers should strengthen the training and assessment of faculty; break the traditional just “Teaching” model but more “discussing and sharing” for engineering talents; and enhance the training of engineering talents’ critical thinking which will improve engineering talents’ innovate ability. It also should encourage engineering talents to take the initiative to establish contacts with the tutors and to

strengthen talent-talent cooperation, stimulate engineering talents' initiative by policy support. For example, manufacturing enterprises managers are suggested focus on team construction of work tutors, encourage tutors to guide engineering talents to participate in scientific researches, clarify the definition and incentives of manufacturing enterprises engineering talents' innovative achievements, strengthen support for team-based innovation projects, boost interdisciplinary cooperation in engineering talents, and improve the software and hardware environment that facilitates the innovative and entrepreneurial behaviors in manufacturing enterprises. In short, manufacturing enterprises should give full play to advantages of the new generation of engineering talents featuring strong innovation initiative, strengthen the propaganda of encouraging innovation, and build a cultural atmosphere that respects traditions and encourages innovations. On this ground, innovative behavior can be promoted by providing opening workplace and carrying out employee training activities of innovation and entrepreneurship in various forms. At the same time, bringing the advantages of engineering talents with strong proactive personality into full play will help to create an innovative atmosphere among engineering talents. In turn, the innovative atmosphere will further improve the humanistic environment in manufacturing enterprises.

Proactive personality has a remarkable bearing on the innovative behavior of engineering talents. Individuals with proactive personality will be influenced by manufacturing enterprises culture when making innovations. The enterprise atmosphere together with the external environment plays an important moderator role especially in the process of the relationship building by individuals and in the establishment of a shared vision. The guidance for engineering talents' innovative behavior is a long-term effort that requires great attention from manufacturing enterprises. The atmosphere building by manufacturing enterprises is of crucial importance, especially tutors' subjective guidance in the construction of tutor-talent relationship. Of course, the initiative of engineering talents is one of the fundamental determinants. Manufacturing enterprise should give full play to advantages of the new generation of manufacturing enterprises engineering talents featuring strong innovation initiative, create an atmosphere respecting traditions and encouraging innovation, thus promoting the overall innovation ability of engineering talents, encouraging them to adopt more innovative behaviors, and raising valuable suggestions for the cultivation of innovative engineering talents in manufacturing enterprises. Since the recommendations and conclusions of this paper are exploratory on the basis of some manufacturing enterprises in Hebei Province, a further expansion of the sample testing is needed.

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