

Original Research Article

## **Research on Proactive Learning Behavior of Employees under the Impact of Artificial Intelligence Technology**

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**Abstract:** According to conservation of resources theory, our research explores the behavioral strategy, mechanism, and boundary condition for employees to respond to the application of artificial intelligence technology. We show that the application of artificial intelligence technology triggers the employee's proactive learning behavior. The job insecurity plays a part of the mediating role between the application of artificial intelligence technology and the employee's proactive learning behavior.

**Keywords:** Artificial intelligence technology; Job insecurity; Proactive learning; Proactive personality

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### **1 Research Background**

With the amazing performance of Alpha Go in human-machine Go, as well as the powerful learning and creative abilities demonstrated by Chat GPT, the general public has begun to pay widespread attention to artificial intelligence technology. In fact, prior to this, artificial intelligence technology had already been applied in multiple stages of production and consumption. Wang Jun et al. <sup>[2]</sup> believe that the application of artificial intelligence technology will replace the labor of employees, which may lead to the risk of unemployment for employees; Some scholars even believe that artificial intelligence technology the application will challenge the way employees survive and threaten their labor value. With the widespread application of artificial intelligence technology, how will employees react and respond? This is also the application of artificial intelligence technology driving human resources .The important issue of resource management transformation <sup>[4]</sup>. Artificial intelligence technology, as an important engine, has triggered various fields Multi stage transformation. Based on this, the academic community has begun to pay attention to the impact of artificial intelligence technology applications on employees. Previous studies have shown that the application of artificial intelligence technology will reduce employee innovation behavior <sup>[5]</sup>, change support willingness <sup>[6]</sup>, enhance employee job insecurity <sup>[7]</sup>, induce depression and cynicism tendencies <sup>[8]</sup>, turnover intention <sup>[9]</sup>. The application of artificial intelligence technology not only does it have negative effects, but it also has positive effects. Zhu Xiaomei et al. <sup>[10]</sup> The embedding of artificial intelligence poses new requirements for employees' job positions, which will enhance their sense of work enthusiasm; Sheng Xiaojuan et al<sup>[11]</sup>. It is believed that the application of artificial intelligence technology can have a positive impact on employee job performance, and the study by Zhou Wenbin et al. <sup>[12]</sup> found that this positive impact is only positive before the use of artificial intelligence technology reaches a critical value. Overall, existing literature has emphasized the impact of the application of artificial intelligence technology on employees, with less attention paid to their behavioral strategies in response to the application of artificial intelligence technology <sup>[13]</sup>. Although some scholars believe that the application of artificial intelligence technology makes employees perceive the risk of job substitution <sup>[2]</sup>, Wang Cai et al. <sup>[7]</sup> believe that the application of artificial intelligence technology will also create more new jobs in the future. David <sup>[14]</sup>, Wilson et

al.<sup>[15]</sup>, Zhou Zhuohua<sup>[16]</sup>. I also hold the same viewpoint. Due to the application of artificial intelligence technology changing social division of labor, leading to a “transformation” of employee business content<sup>[3]</sup>, will employees adopt proactive behavioral strategies to adapt to the new employment situation. Further expand their career development? According to the theory of resource conservation<sup>[17]</sup>, the application of artificial intelligence technology will threaten the self-worth of employees in the organization. In order to restore self-worth evaluation and enhance control over their own work stability qualitative confidence means that employees will actively learn new skills, knowledge, and abilities.

Focusing on the impact of artificial intelligence technology applications on employees, most literature is based on theoretical exploration. Zhang Zhixue et al.<sup>[18]</sup> studied self leadership and self-management in the era of digital intelligence, while Xie Xiaoyun et al.<sup>[13]</sup>. We have studied the impact of artificial intelligence on the transformation of human resource management. Chen Nan et al.<sup>[19]</sup>, Wang Xinyu et al.<sup>[20]</sup>, and Zhang Yuan et al.<sup>[21]</sup> have all focused on the impact of artificial intelligence on employment; On this basis, scholars such as Haesevoets et al.<sup>[22]</sup>, Tang et al.<sup>[23]</sup>, and Yang Gong et al.<sup>[24]</sup> studied how human-computer interaction occurs in the context of artificial intelligence and the impact it produces. However, research on how the application of artificial intelligence technology affects employee willingness and behavior is relatively scarce. Existing literature has studied the psychological mechanisms by which the application of artificial intelligence technology affects employee behavior and willingness based on organizational self-esteem<sup>[6]</sup>, job satisfaction, work anxiety<sup>[5]</sup>, competency needs<sup>[10]</sup>, growth needs intensity<sup>[12]</sup>, knowledge and skill requirements, etc. The application of artificial intelligence technology may eliminate certain occupations and industries<sup>[25]</sup>, and its greatest threat is to replace human labor<sup>[3]</sup>, which will directly affect the survival and stability of employee work<sup>[26]</sup>.

Situational factors include threat perception<sup>[6]</sup>, organizational support perception, competitive atmosphere perception<sup>[9]</sup>, human-machine symbiosis relationship, etc.<sup>[10]</sup>, while individual factors include professional ability<sup>[7]</sup>, organizational leadership forgetting, etc.<sup>[12]</sup>. However, the academic community has not yet conducted research on how the personality traits of employees regulate the impact of artificial intelligence technology applications on employee behavior and willingness. This article focuses on the positive personality trait - proactive personality, exploring how it affects employees' behavioral strategies and internal mechanisms in responding to the application of artificial intelligence technology. Positive personality traits are an important individual resource<sup>[17]</sup>. Employees with high proactive personality traits are not afraid of the loss of individual resources due to their own abundant resources<sup>[27]</sup>, and are more likely to acquire resources in a proactive manner.

## 2. Theoretical Foundations and Research Deduction

### 2.1. Technology Shock Awareness and Proactive Learning Behavior

The application of artificial intelligence technology will penetrate multiple industries such as elderly care, safety, health, education, as well as multiple links such as production, distribution, exchange, and consumption<sup>[2]</sup>, and will replace the labor of employees in the future<sup>[3]</sup>. Artificial intelligence technology will change the division of labor and even replace mental and physical labor in the future. Based on this situation, employees will form a perception of technological substitution, that is, a sense of technological shock<sup>[6]</sup>.

The theory of resource conservation suggests that when employees feel the continuous loss of their individual resources, their awareness of resource acquisition will be activated, prompting them to increase their

behavior of resource acquisition <sup>[17]</sup>. Active learning behavior can achieve the function of employees restoring positive self-evaluation as an important individual resource. Therefore, technology shock awareness will induce employees to engage in proactive learning behavior. That is, the awareness of technological shock positively affects employees' proactive learning behavior.

## **2.2. The Mediating Role of Job Insecurity**

Employees believe that the stability and sustainability of their current work are not good. Stable job characteristics are an important resource for employees <sup>[17]</sup>. In addition, employees' perception of the possibility of their work being replaced by technology can lead to negative emotions such as fear <sup>[13]</sup>, concern, and anxiety<sup>[4]</sup>. When experiencing negative emotions, individuals can regulate or improve their negative emotional experiences, and this process requires the consumption of their physiological and psychological resources <sup>[38]</sup>. According to the theory of resource conservation <sup>[17]</sup>, when individuals feel threatened by the loss of resources and are unable to protect their resources, they will experience psychological pressure, leading to a sense of job insecurity <sup>[7]</sup>. The positive impact of technological shock awareness on employee job insecurity.

By actively learning and acquiring new skills, knowledge, and abilities, employees can enrich their knowledge, skill, and ability reserves, thereby giving themselves more confidence in controlling the continuity and stability of their work. At the same time, the proactive learning behavior of employees increases individual resources, with the aim of mitigating or eliminating resource scarcity caused by job insecurity. Therefore, job insecurity may trigger proactive learning behavior among employees. Job insecurity positively affects employees' proactive learning behavior.

According to the theory of resource conservation, the perception of external situations may consume individual resources, and under the drive of resource acquisition awareness, employees will increase their behavior of resource acquisition <sup>[17]</sup>. In addition, employees who develop a sense of technological shock will generate a series of negative emotions, and when they regulate these negative emotions, they will consume a lot of physiological and psychological resources. Wang Cai et al. <sup>[7]</sup> believe that when employees feel the threat of losing resources and are unable to protect individual resources, they will feel unsafe at work. In summary, technology shock awareness has an indirect impact on active learning behavior through job insecurity. Work insecurity plays a mediating role between technological shock awareness and active learning.

## **2.3. The Regulatory Role of Proactive Personality**

As a typical positive personality trait, possessing Employees with a high proactive personality have more coping resources themselves. When faced with the pressure of resource scarcity, employees with a high proactive personality may not be too afraid of the loss of their own resources, and may be willing to actively build their own resources source, actively seeking a change in one's own situation. That is to say, the lower the proactive personality of employees, the weaker the positive impact of job insecurity on proactive learning behavior. The impact of proactive personality regulation on job insecurity and employee proactive learning behavior. Specifically, the higher the proactive personality of employees, the stronger the impact of job insecurity on their proactive learning behavior; On the contrary, the lower the proactive personality of employees, the weaker the impact of job insecurity on their proactive learning behavior.

### 3. Conclusion

Based on the theory of resource conservation, this article explores the proactive learning behavior of employees when facing the application of artificial intelligence technology; And, with job insecurity as a mediator and proactive personality as a mediator, the mechanism and boundary conditions of occurrence are tested. The research results indicate that the application of artificial intelligence technology will stimulate employees' active learning behavior; the widespread application of artificial intelligence technology will induce job insecurity among employees, thereby stimulating them to engage in active learning. That is, job insecurity mediates the connection between the application of artificial intelligence technology and employees' active learning behavior; Proactive personality positively regulates the relationship between work insecurity and active learning behavior; Meanwhile, proactive personality positively regulates the indirect impact of artificial intelligence technology application on employees' active learning behavior through their job insecurity.

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