

The Job Crafting of Employees in the Context of Artificial Intelligence

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Keywords: Artificial intelligence, Job crafting, Work design, Job characteristics

Abstract: The high efficiency computing ability and fast learning ability of artificial intelligence bring far-reaching influence to all walks of life. The utilization of artificial intelligence, change the employee's work in the workplace, employees must adapt to the work of artificial intelligence in the work scene, the relationship between processing and artificial intelligence, learn how to cooperate with artificial intelligence work, therefore must redefine the meaning of the work, when finish the work according to its working tasks and the change of the working relationship, to make a cognitive and operational adjustment, give full play to the staff's own subjective initiative to accomplish a specific task, promote job satisfaction and job performance, the realization of artificial intelligence under the background of employees work to restore, has important theoretical and practical significance.

1. Introduction

As an important branch of computer science, artificial intelligence was formally proposed by McCarthy at the Dartmouth institute in 1956, and is now known as one of the three most advanced technologies in the world. After more than half a century of joint efforts of numerous scientific and technological workers, at present, the main development directions of artificial intelligence include problem solving, CD system, machine learning, neural network, pattern recognition, artificial life and other directions.

2. Artificial Intelligence

With the new round of scientific and technological revolution and industrial upgrading, artificial intelligence technology has been able to be more mature in many fields, and gradually become a strategic technology. In China, the made in China 2025 released by the state council in 2015 proposed the development strategy of "intelligent manufacturing", and the new round of artificial intelligence development plan released in 2017 proposed the goal of China becoming the world's artificial intelligence innovation center by 2030. The attention paid to artificial intelligence technology by major industrial countries reflects the powerful function and great potential of artificial intelligence technology. The wide application of artificial intelligence technology has become an irresistible wave. Artificial intelligence can do more and more complicated things and replace more and more human work.

3. Job Crafting

3.1 Definition of Job Crafting

Wrzesniewski and Dutton first proposed the concept of Job Crafting in 2001. They define Job Crafting as: "the operational or cognitive changes made by employees to their work tasks and work relationships during the completion of work."^[1] Leana, Appelbaum and Shevchuk(2009) propose the concept of collaborative job crafting, in which team members decide together how to change work content or approach based on collaboration and communication.^[2] Tims and Bakker define

work crafting as: “employees to balance the job requirements and resources, according to their own ability and the demand for their actions to adjust”.^[3] Although the focus of these concepts is different, none of them is divorced from the nature of job crafting, which emphasizes bottom-up, positive changes in what employees do and how they do their jobs.

3.2 Classify of Job Crafting

(1) Laurence (2010) divided job crafting into expansion job crafting and contraction job crafting. The former refers to the behavior of employees who like their work, in order to better match their work with themselves, to increase tasks and expand the scope of interpersonal communication; the latter refers to the behavior of employees who do not like their work, but to reduce tasks and simplify interpersonal relations.^[4]

(2) Wrzesniewski and Dutton (2001) divided job crafting into task crafting, relationship crafting and cognitive crafting according to the content of job crafting. Task remodeling means that an employee changes the number, scope or type of work tasks; Relationship crafting refers to that employees change the quality, quantity, frequency and object of interpersonal communication. Cognitive crafting refers to that employees change the way they view or perceive their work so as to find the meaning of their work.^[1]

(3) Tims and Bakker (2010), combined with the work request-resource model, divided job crafting into three dimensions: improving the level of work resources, raising the level of work requirements and lowering the level of work requirements. To improve the job requirements is to create more challenges at work when employees think that they cannot give full play to their skills. To reduce the level of work requirements is to ask colleagues to help to complete the task when the ability of the employee is unable to complete the work requirements, or reduce the contact with demanding customers, colleagues and other behaviors to lower the level of work requirements.^[3]

(4) Tims, Bakker and Derks (2012), based on their three-dimension classification, divided job crafting into four dimensions: increasing structural work resources, increasing social work resources, increasing challenging work requirements and reducing obstructive work requirements^[5]. Increasing structural work resources means striving for various types of resources, grasping development opportunities, and improving the degree of work autonomy. Increasing social work resources means seeking social support, guidance and feedback from superiors, etc. To increase challenging work requirements, i.e. to increase workload, complexity, and urgency of tasks; Reduce the need for disruptive work, meaning less role ambiguity, job insecurity, and interpersonal conflict.

(5) Lyons (2008) divided job crafting into five dimensions: personal ability development, task function, relationship enhancement, relationship maintenance and tactical choice^[6], which is a beneficial exploration and attempt of existing classification methods.

4. The Crafting of Employees' Job in the Context of Artificial Intelligence

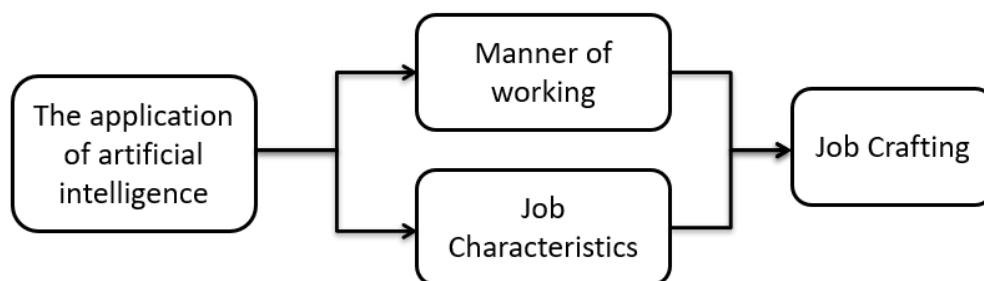


Fig.1 Research Framework

4.1 The Impact of Artificial Intelligence on Society

The emergence of artificial intelligence will have a certain impact on all walks of life, and even replace some people's work. The self-learning ability of artificial intelligence system enables it to improve its perceptual ability and cognitive ability, and its replacement degree of labor force is

much higher than that of traditional mechanization and automation. Frey and Osborne based on probability model to predict 47% of the 702 kinds of professional in a high risk be replaced^[7], they will analysis framework to extend to 2016 developing countries, the calculated result shows that China post replacement rate is as high as 77%. Low-skilled labor in manufacturing is the main group is out of the Labour market of artificial intelligence, Boston consulting group and routine work of the application of intelligent robot is expected to lead to the German manufacturing industry in the next 10 years net reduction 120000 manufacturing jobs demand (1.7% of the total number of manufacturing jobs), PWC(Price water house coopers) consulting with general equilibrium model to predict the future 20 years of artificial intelligence will replace the 59 million industrial jobs (36% of the total industrial jobs), but at the same time create 63 million industrial jobs (39% of the total industrial employment).

4.2 Changes in the Working Methods and Working Characteristics of Employees in the Era of Artificial Intelligence

The progress and popularization of artificial intelligence have a great impact on employees' work and even change their working methods. Based on the existence of a large amount of data and the rapid development of data technology, Li Diya (2016) proposed that artificial intelligence is changing the way of working in the public relations industry and has a great impact on the employment form. Wang kai et al. (2018) cited the application of artificial intelligence by facebook and the statistics of Gartner, a well-known e-commerce brand, and proposed that the application of artificial intelligence would, on the one hand, change the production process of enterprises, and on the other hand, replace the existing production methods of employees.^[8] Jiang Xinting (2019) proposed that the application of artificial intelligence would greatly simplify the work of basic accounting personnel and pose great challenges to them. Due to large demand gap, high-end accounting talents need more professional knowledge. Artificial intelligence will make such talents work more efficiently, but it cannot replace them in a short time.

The extensive application of artificial intelligence has transformed the work characteristics of employees. In the research field of work characteristics, Hackman and Oldham's work characteristics model has the most influence and application. In their job characteristics model, job characteristics include five core dimensions: skill diversity, task integrity, task importance, job autonomy and feedback.

4.2.1 Changes in the Diversity of Skills

With the progress of The Times, employees need more and more diverse skills to complete the work, complex and advanced work, often need to master a variety of skills to be competent. With the application of artificial intelligence, part of people's work can be replaced by more efficient methods, which makes some skills need to be eliminated. At the same time, people need to master some new skills to adapt to the requirements of work.

4.2.2 The Change of Task Integrity

In order to improve the work efficiency of employees, enterprises tend to adopt work-centered work design method and over-subdivide employees' work posts into standardized small units. In the era of artificial intelligence, the work of some employees is more detailed and the task integrity is further reduced. Some employees get rid of some tedious work due to the use of artificial intelligence, so they have more energy to deal with more work tasks, and the task integrity will be improved.

4.2.3 Changes in Task Importance

The application of artificial intelligence will improve the work efficiency of almost all industries, which will further liberate the labor force, which means that people need to put more energy into more creative work.

4.2.4 Work Autonomy

The replacement of some tedious work by artificial intelligence enables people to have more energy to engage in more creative things, which will increase employees' work autonomy to some extent. However, the application degree of artificial intelligence will vary among employees, which in itself is a manifestation of special work autonomy.

4.2.5 Feedback

The application of artificial intelligence will improve the efficiency of all aspects of work. With the improvement of efficiency, employees can see the impact of their behaviors on their work tasks earlier, so that they can adjust their working methods faster and craft their work to meet the demands of their work tasks.

4.3 Artificial Intelligence and the Crafting of Employee Work

Artificial intelligence has an impact on the society. Artificial intelligence has an impact on the working methods and working characteristics of each employee, and these changes are also important factors that lead to the remolding of employees' work. Employees in different industries and levels will craft their own work in different contents and degrees.

Zhu min(2019) discussed the influence of the artificial intelligence technology to the editorial staff, analyzes on the advantages of the bot is news and disadvantages, put forward the AI robots under the wave of news editorial staff work to restore the main direction of are: 1, keep up with the trend of the man-machine coordinated, the depth of focus.2. Give play to people's emotional advantages and report news with human touch.3. Activate the intelligence of people and machines, and focus on personalized news reporting.^[9] Deng Hui and Zhang Weili (2020) believe that in order to cope with the huge impact of artificial intelligence, accountants at all levels need to add computer-related skills to help them adapt to the challenges of the new era. Among them, junior accountants will transform to the direction of providing more thoughtful artificial services and controlling and maintaining financial intelligent robots, while senior accountants need to be more skilled in using artificial intelligence technology to improve their strategic thinking and management thinking and increase their management functions.

5. The Response to the Age of Artificial Intelligence

The application of artificial intelligence will replace part of the brain work employees, many of the people who work replaced by artificial intelligence will be promoted to the upstream of the value chain, to play the role of more skills, this will require workers to pay more attention to learning new knowledge, flexible use of artificial intelligence technology, make it a tool, rather than their competitors. With the automation of rule-based artificial intelligence robots, the advantage of human beings lies in the ability to creatively carry out personalized and customized work, and adjust the work content timely through work requirements.

No matter what era, industry or job, employees will reinvent their jobs. In the era of artificial intelligence, the degree of employee job remolding will be huge. Enterprise managers should see the inevitability of this change, grasp the characteristics of the remolding of employees' work through more understanding of artificial intelligence technology and the remolding theory of employees' work, and timely transform management strategies to make the combination of AI technology and employees' work more closely. Only by making employees more integrated with AI technology can enterprises continuously improve their competitiveness and better cope with the challenges of the era of artificial intelligence.

6. Conclusion

The breakthrough of algorithms, the accumulation of data, and the improvement of data processing capacity make artificial intelligence applied in almost every aspect of life. Artificial intelligence USES the Internet, machine learning and special equipment to simulate the specific

external abilities of human beings, such as listening, speaking, seeing, learning, reasoning and acting, etc., and tries to enlarge these abilities as much as possible. At the same time, AI can reach or surpass the human level in some specific tasks. When the brain's computing power is insufficient, AI can help us calculate. Therefore, sometimes artificial intelligence even surpasses human.

Even though AI technology has so many powerful functions, it cannot completely replace human operation. As artificial intelligence continues to deepen in all walks of life, people's work forms and work characteristics will have great changes. In this situation, employees will conduct further job crafting on the basis of their original job crafting, which will be more flexible and in-depth and have closer ties with artificial intelligence technology.

Acknowledgment

Annual project of national Social Science and Science Foundation (NSSFC: 19BGL123): Research on the Impact of Human-Machine Cooperative Behavior Characteristics on Enterprise Human Resource Management System in the Era of Artificial Intelligence.

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