

Analysis of On-the-Job Training in China

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Abstract

Economic development is closely related to the accumulation of human capital, and on-the-job training of enterprise as an important way of human capital accumulation needs to be emphasized. At present, Chinese enterprises have the problem of insufficient on-the-job training, thus analyzing the characteristics of on-the-job training and sorting out the reasons leading to the insufficiency of on-the-job training in enterprises are of certain significance to the accumulation of human capital of workers. This paper finds that the coverage rate of on-the-job training for Chinese employees is still relatively low, and there are problems of insufficient funding for employees' on-the-job training, imperfect on-the-job training system, and low investment in individual employee training. Further, this paper surveys the literature on the factors affecting firms' provision of on-the-job training, and the results show that the degree of competition in the product market, the minimum wage system, and firm characteristics all affect firms' training investment behavior. Therefore, to promote the accumulation of workers' human capital and improve firms' competitiveness, it is recommended to increase investment in employee training and provide support and incentives at the policy level. In addition, strengthening cooperation with educational institutions and industry associations to jointly promote the development of on-the-job training will help to solve the problem of insufficient on-the-job training in enterprises.

Keywords

On-the-job Training; Human Capital; Product Market; Minimum Wage.

1. Introduction

Workers can accumulate human capital through education, on-the-job training, and learning by doing. Education is the more traditional and basic way of human capital accumulation, in which workers continue to improve their specialized knowledge through primary, secondary, and tertiary education in China, while on-the-job training provides more practical and targeted training content to help workers acquire skills and knowledge in specific industries or occupations. On-the-job training, on the other hand, provides more practical and targeted training content to help workers acquire skills and knowledge in specific industries or occupations and improve their work skills. As one of the important ways for workers to accumulate human capital, on-the-job training has several advantages. First, on-the-job training can quickly adapt to changes in market demand and occupational development, helping workers continuously update and upgrade their skills and increase their competitiveness in employment. Secondly, it can provide opportunities for practical exercises and case studies, combining theoretical knowledge with practice to improve work effectiveness and problem-solving ability. In addition, on-the-job training can promote employees' professional growth and career development, increase job satisfaction and loyalty, and have a positive impact on the long-term development of enterprises.

However, on-the-job training in China faces several challenges and problems. On the one hand, workers may face constraints such as insufficient funds to fully participate in and complete training activities. On the other hand, enterprises have problems such as insufficient

investment in training, irrational training plans, and imperfect evaluation of training results, thus affecting the realization of training effects. In contrast, Germany has a well-established vocational education and training system, especially the special apprenticeship system, also known as the dual system, which is a training system that combines on-the-job training with formal education in vocational schools, in which on-the-job training is mainly carried out in enterprises, and according to the 1996-1999 report on vocational training in Germany, due to the decreasing number of training provided by small and medium-sized enterprises, they will also jointly invest in establishing cooperative professional training institutions to fill the gap in training. In addition, Some studies point out that in the special dual system background of Germany, enterprises are the main body to bear the costs required for training, and most of the cooperative enterprises need to pay for the costs of youth participation in on-the-job training, of course, the government will also provide appropriate subsidies to enterprises providing training, so that it can be seen that the vocational training provided by enterprises in Germany for their employees is sufficient. On-the-job training is an important way of human capital accumulation, so it is meaningful to analyze the characteristics of insufficient on-the-job training in Chinese enterprises and discuss the causes of insufficient on-the-job training to improve the accumulation of human capital of workers.

2. The Current Situation of On-the-Job Training in Chinese Firms

2.1. Insufficient Provision for Employee Education Fund

Enterprises' investment in employee training is very unbalanced. According to Act, the general enterprises should extract the full amount of employee education funding in accordance with 1.5% of the total wages of the employees. Generally speaking, large-scale enterprises have invested 1.5% of their employees' gross wages in employee education funds, and some of them have invested even more. According to the China Vocational Training Development Report in 2005, Sinopec Group Corporation has indicated that the training funds have been increased to 2.5% of the gross wages from 2005 onwards, however, most small and medium-sized enterprises have not extracted the full amount of the employee education fund in accordance with the regulations. According to the China Vocational Training Development Report in 2007, the proportion of employee education funds in the agriculture, forestry, animal husbandry, and fishery industry and the real estate industry is only 1.2% and 0.76% respectively, which is not yet up to the national standard of employee education fund. Furthermore, in terms of the use of employee education funds, more than 50 percent of enterprises spend only 20 percent of their employee education funds on training skilled workers, with no emphasis on improving worker productivity through vocational training.

2.2. Lack of Perfect On-the-job Training System

Some data show that only 42% of the enterprises in China have independent training organizations for management, but almost all of them do not have a training system in place, such as through the simple form of lectures, expatriate learning, etc., without combining the training needs of the enterprise's employees, and the benefits of training are not significant. Secondly, the management of employee education funds is also confusing. According to the China Vocational Training Development Report in 2007, 40% of the enterprises surveyed in some provinces still lacked the relevant system or methods for vocational education funding, and there was irrational use or misappropriation of employee education funds, such as some enterprises used employee education funds only for re-employment programs rather than employee training, and some enterprises used employee education funds for programs such as developing bases.

2.3. Insufficient Investment in Training for Individual Employees

According to the China Corporate Training Industry Survey Report of Ai Rui Consulting in 2021, from 2016 to 2018, the training expenditure of a single employee in a U.S. enterprise was 5,647 yuan, 7,024 yuan, and 6,767 yuan respectively, while the training expenditure of a single employee in a Chinese enterprise in the same year was only 2,220 yuan, 2,304 yuan, and 2,406 yuan respectively. Thus the training expenditure of a single employee in China was less than half of that of U.S. employees. In addition, the proportion of different groups receiving training is different. First of all, it is the rural labor force, which is an important input for the development of China's secondary industry. However, in 2006, the State Council issued the "Research Report on China's Migrant Workers", which pointed out that the overall skill level of China's rural labor force is not high, the competitiveness of employment is not strong, and that the proportion of the rural labor force who have received short-term vocational training is only 20%, and the proportion of the rural labor force who have not received any technical training is as high as 76.4%. And according to the statistics of the Ministry of Construction, the number of migrant workers in the construction industry has reached 32 million, but only 10% of them have participated in the training, while the proportion of the rural labor force in the United States, Canada, the Netherlands, Germany, and Japan who have received vocational training is more than 70%. In addition, according to data from the World Bank China-Enterprise Survey in 2012, the proportion of production employees trained is higher than the proportion of non-production employees in most industries. There are differences in the proportion of on-the-job training provided to employees by enterprises in various industries.

3. The Influencing Factors of On-the-job Training in Firms

3.1. The Impact of Product Market Competition on On-the-job Training

Competition in the product market is one of the most important factors affecting corporate on-the-job training. Lai and Ng (2014) constructed a training delivery index from the perspective of product market competition using longitudinal and nationally representative data from Statistics Canada's Workplace and Employee Surveys (WES), which covers a wide range of different types of classroom and on-the-job training, and found that there is a strong positive correlation between product market competition and training provision. In addition, Heywood et al. (2017) find that a high degree of product market competition also increases the amount of on-the-job training provided by firms, but when competition is intense and threatens firms, product market competition will fail to increase firms' on-the-job training, suggesting an inverted U-shaped relationship between competition and investment in training. Bilanakos et al. (2018) also found that firms competing through product quality invested more in training their employees, this is partly because employee training can directly change product quality, and partly because when product quality improves and is consumed by consumers, employee participation in training also reduces production costs and increases productivity and improves the competitiveness of the product in the market. However, some studies have also found that competition in product competition markets does not increase the on-the-job training provided by firms, unlike Lai and Ng (2014) and Heywood et al. (2017) who measure the level of competition in product markets using self-reported degrees of competitiveness, Roshchin and Travkin (2017), based on the Herfindahl index of the market, examined the impact of Russian product market's competition on the probability of firms providing on-the-job training and the intensity of training, and found that firms with a higher level of competition in the product market need to be more careful in controlling their expenses, which, in turn, will reduce the likelihood of firms providing on-the-job training. As can be seen, the impact of product market competition on firms' on-the-job training also remains controversial.

3.2. The Impact of Minimum Wage on On-the-job Training

A large number of studies have been conducted to analyze the issue of on-the-job training in enterprises from the perspective of the minimum wage system, among which Becker (1964) was the first to analyze on-the-job training as an important way of human capital and pointed out that under the condition that workers are not constrained by credit, workers are always able to invest in their own human capital. And the earliest to introduce the minimum wage standard into the discussion of on-the-job training in enterprises was Hashimoto (1982), who argued that the purpose of on-the-job training is to provide young workers with basic skills, stimulate their motivation, and cultivate their responsibility, and that the upward adjustment of the minimum wage standard may affect the on-the-job training provided by enterprises. Although, domestic and foreign scholars have been studying the relationship between the minimum wage rate and on-the-job training for a long time, it can be found in numerous related literature studies that there are differences in the conclusions of academic research on the relationship between the two.

The first perspective argues that minimum wage increases have a negative impact on corporate training (Hashimoto, 1982; Grossberg and Sicilian, 1999; Schumann, 2017). In the analysis of this viewpoint, scholars have a richer research perspective. Among them, Hashimoto (1982), who builds on the theory of perfectly competitive labor markets, points out that the marginal cost of hiring a worker is a combination of the wage level and the cost of training, and that the minimum wage may indirectly affect the on-the-job training of firms through the number of workers they hire. Similarly, starting from the German labor market in the construction industry and considering both apprenticeship training costs and productivity, Schumann (2017) verifies the relationship using a difference-in-difference model, which shows that there is indeed a significant negative correlation between the minimum wage and apprenticeship training. Aeppli and Kuhn (2021), on the other hand, for the first time in the context of an open labor market context, using Swiss business census data for empirical analysis and finding that the minimum wage, while having less impact on apprenticeship training, may have a negative effect on high-skilled workers, and that the increase in training and hiring costs due to the wage rate significantly enhances the substitution of cross-border workers for high-skilled workers in the home country, indirectly illustrating the possibility that firms may reduce apprenticeship training.

The second view is that the minimum wage has no effect or the effect on on-the-job training is very complex and highly controversial among different scholars (Acemoglu and Pischke, 2002; Arulampalam et al. 2002; Hara, 2017). Acemoglu and Pischke (2002) estimated the impact of changes in the U.S. state and federal minimum wage on training over the period 1987-1992 by comparing workers in different states in the U.S. He found that the minimum wage rate has a weak effect on firms' on-the-job training and argued that the training provided by firms depends on a mixed model related to the size of labor market rents. Some studies, mainly from theoretical analysis, using the two-oligarchic model and based on the perspective of employee turnover, discuss the internal and external wage differentials caused by employee training and conclude that there are wage compression effects and turnover effects of the minimum wage on on-the-job training, arguing that the superposition of the two effects will make the impact of the minimum wage on corporate on-the-job training show a U-shape, which extends to a certain degree the theoretical research on the relationship between minimum wage and corporate on-the-job training. Hara (2017), on the other hand, utilized data from the Japanese Ministry of Labor, Health and Welfare on the Basic Survey on Human Capital Development (HRDS) to empirically examine the relationship between the minimum wage standard and informal training in Japan, and evaluated the policy of the minimum wage standard by conducting a difference-in-difference-in-differences analysis. The study found that there was no statistically significant effect between the two. Through the above literature, We find that the reasons for

the differences in the research results of various scholars are manifold. In terms of the space of the research samples, the existing research mainly discusses the impact of the minimum wage standard on the on-the-job training of enterprises in developed countries, such as the United States, the United Kingdom, Germany and Japan. While China is still a developing country, the impact of minimum wage standards on on-the-job training in enterprises needs to be discussed according to the actual situation in China. Secondly, the difference of enterprise training measurement index, both scholars from the perspective of enterprise full-time employee training, but also scholars from the perspective of enterprise's informal employment training and apprenticeship training to analyze, which is mainly related to the training system and training system of each country, for example, Germany is a dual system of vocational education system, while the United Kingdom is implementing a modern apprenticeship training system.

3.3. The Impact of Firm Characteristics on On-the-job Training

Firstly, in terms of firm size, Barron (1987) earlier discussed on-the-job training in firms from the perspective of firm size, as larger firms have higher monitoring costs, thus they are not only more inclined to invest more resources in screening job applicants and providing them with training, but also pay higher wages to their employees in order to minimize employee turnover, and found that employers with larger firms are indeed more willing to provide training. Holtmann and Idson (1991) also viewed on-the-job training as an investment from the perspective of employer size effect and observed that larger firms are more willing to invest in training because of their greater risk-taking ability, and also analyzed the internal decision-making process of on-the-job training from the perspectives of different workforce groups, and found that larger firms are more likely to choose to train employees with less education to improve their skills. In addition, there are also studies that analyze the issue of on-the-job training in terms of their monopoly characteristics, Bilanakos et al. (2017) used the Workplace Employment Relations Surveys (WERS) conducted in the UK in 1998, 2004 and 2011 to estimate the relationship between the level of training and the level of competition in the market, and found that firms with a monopoly are more likely to choose training education to improve their skill levels due to the rent effect, in other words, due to the fact that firms occupying a dominant position in the market can earn additional profits, monopolistic firms can invest more in corporate on-the-job training to increase worker productivity and reduce production costs. This shows that the size of the firm and the characteristics of the degree of competition in the market affect the extent to which the firm provides on-the-job training.

4. Conclusion

On-the-job training in enterprises is an important way for workers to accumulate human capital. However, Chinese enterprises suffer from insufficient provision for employee on-the-job training funds, lack of a comprehensive on-the-job training system in enterprises, and insufficient investment in the training of individual employees, which is detrimental to the production and operation of enterprises. Through literature combing, we find that the reasons leading to the insufficiency of on-the-job training in enterprises are manifold, one is that the degree of competition in the product market will have an impact on the on-the-job training of enterprises. This impact is uncertain and both studies found that the higher the degree of competition in the product market, the more on-the-job training will be provided by the enterprises, and also some studies found that there is a non-linear relationship or a negative relationship between the competition in the product market and on-the-job training. Secondly, we also find that a large number of studies have been conducted to analyze on-the-job training from the perspective of the minimum wage system in a more systematic manner. On the one hand, the setting of minimum wage may lead to enterprises' concern about manpower costs, making them apprehensive about investing in training, and the enterprises may be more

inclined to use their limited resources to meet the basic needs of their workforce while neglecting the continuous training and development of their employees. On the other hand, the minimum wage can also motivate enterprises to increase the salary of their employees, thus increasing their demand for and participation in training opportunities. In addition, some studies point out that the size of the enterprise will also have an impact on on-the-job training in the enterprise.

In summary, it is necessary to address the problem of insufficient on-the-job training to promote the accumulation of workers' human capital and improve the competitiveness of enterprises. Firstly, enterprises should recognize the importance of on-the-job training in improving product quality, reducing costs and enhancing competitiveness, and increasing investment in employee training and development to the extent that resources permit. Secondly, the Government can encourage enterprises to increase their investment in on-the-job training by providing appropriate policy support and incentives. Concerning the formulation of the minimum wage policy, the Government should strengthen its supervision and guidance of the minimum wage system to ensure that it protects the rights and interests of workers while not imposing an excessive burden on enterprises' investment in training. In addition, strengthening cooperation with educational institutions and trade associations to jointly carry out training plans and projects is also an effective way to solve the problem, providing enterprises with more training resources and support.

References

- [1] Acemoglu D ,Jörn-Steffen Pischke.Minimum Wages and On-the-Job Training[J].Social Science Electronic Publishing, 2002, 22(03):159-202.
- [2] Aepli, M., and A. Kuhn. Open Labor Markets and Firms' Substitution Between Training Apprentices and Hiring Workers [J]. Labour Economics, 2021, 70: 101979.
- [3] Arulampalam W , Booth A L , Bryan M L .Work-Related Training and the New National Minimum Wage in Britain[J]. 2002.
- [4] Barron J M, Black D A, Loewenstein M A. Employer size: The implications for search, training, capital investment, starting wages, and wage growth[J]. Journal of Labor Economics, 1987, 5(1): 76-89.
- [5] Becker, G.S. Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education[M], 1964.
- [6] Bilanakos, C., Green, C. P., Heywood, J. S., & Theodoropoulos, N. Do dominant firms provide more training?[J]. Journal of Economics & Management Strategy, 2017, 26(1): 67-95.
- [7] Bilanakos, C., Heywood, J. S., Sessions, J., & Theodoropoulos, N. Does demand for product quality increase worker training?[J]. Journal of Economic Behavior & Organization, 2018, 155: 159-177.
- [8] Bilanakosa C, Heywood J S, Sessions J, et al. Worker Training and Quality Competition[R]. GLO Discussion Paper, 2017.
- [9] Grossberg, A.J., and P. Sicilian. Minimum Wages, On-The-Job Training, And Wage Growth [J]. Southern Economic Journal, 1999, 65(3): 539-556.
- [10] Hara, H. Minimum Wage Effects on Firm-Provided And Worker-Initiated Training [J]. Labour Economics, 2017, 47: 149-162.
- [11] Hashimoto, M. Minimum Wage Effects on Training on The Job [J]. The American Economic Review, 1982, 72(5): 1070-1087.
- [12] Holtmann A G, Idson T L. Employer size and on-the-job training decisions[J]. Southern Economic Journal, 1991: 339-355.
- [13] Lai T, Ng T. The impact of product market competition on training provision: Evidence from Canada[J]. Canadian Journal of Economics/Revue canadienne d'économique, 2014, 47(3): 856-888.
- [14] Lechthaler, W., and D.J. Snower. Minimum Wages and Training [J]. Labour Economics, 2008, 15(6): 1223-1237.

- [15] Roshchin S, Travkin P. Determinants of on-the-job training in enterprises: the Russian case[J]. European Journal of Training and Development, 2017, 41(9): 758-775.
- [16] Schumann, M. The Effects of Minimum Wages on Firm-Financed Apprenticeship Training [J]. Labour economics, 2017, 47: 163-181.