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HUMAN CAPITAL INVESTMENT FOR FIRM: AN ANALYSIS[1]

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Abstract: Many companies nowadays derive their competitive advantages mainly from human capital, so human capital must be invested and maintained. It becomes critical for companies to select human capital that matches their strategic targets. In this article, by summing up three different definitions of human capital in existing literature, the author firstly explores the definition and characteristics of human capital, and then discusses the inherent relationship of the human capital investment and the firm strategic targets. On the basis of aspects mentioned above, the author emphasizes that human capital should be designed according to specific firm strategic targets, and should try to assess the contribution of the human capital investment to company at the microcosmic area. Finally, this paper suggests some ways for business to select proper human capital that meets their strategic targets.

Key words: Human Capital, Human Capital Investment, Strategic target

1. INTRODUCTION

Elements contributing to the value of companies are numerous, including organizational capital, customer (relations) capital and human capital. All these factors center on human as a foundation for all sorts of capital. However, current accounting research on the definition, forms and characteristic of human capital have been limited. It is hard to obtain statistical data of human capital from the current accounting system, let alone apply the data to managing human capital, which has become increasingly important to companies' value creation. Against this backdrop, this paper aims to present an in-depth discussion on human capital.

Enhancing the value of employees is a win—win goal for firms and employees alike. The more an organization recognizes the intrinsic value of each of employee; the more it recognizes that this value can be enhanced with nurturing and investment; the more it recognizes that employees vary in their

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talents and motivations, and that a variety of incentive strategies and working arrangements can be created to enhance each employee's contributions to organizational performance, the more likely the organization will be to appreciate the variety of employee needs and circumstances and to act in ways that will make sense in both business and human terms.

2. THE DEFINITION AND CHARACTERISTICS OF HUMAN CAPITAL

Not all expenditure made by companies in The staff is counted as input of human capital. Expenditure on human, such as staff training programs, is not for the labor or services latent in the employees in the past or during the short-term period but for the inducing of the added-value in the future. The so-called costs or investments do not refer to an absolutely fixed set of accounting items but vary according to the business objectives, core skills and human attributes concerned. Existing literature approaches the definition of human capital mainly in three ways: the transaction cost economy theory, the human capital theory and resource-based view of the firm theory.

The transaction cost economy theory presumes that companies choose to employ personnel in the most efficient way[1]. When employing personnel, companies can either recruit new staff outside or promote existing staff. These approaches to employment will incur various costs. For example, the former approach incurs hiring costs and the latter one triggers training costs and management costs. Between these two alternatives, companies choose the most efficient way or combination by comparing all relevant costs[2]. Human capital within the context of this theory must possess the dual properties of asset specificity and asset uncertainty.

The human capital theory emphasizes that companies decide on the amount of human capital investment they will make by comparing it with the potential future benefits, for instance, improvements in production controls. Human capital in this context refers to technical training and knowledge buildup for employees. Flamholtz (1972) suggests that investments are especially focused on training employees' specialized skills and avoiding these to be used by other companies. Human capital referred to in this theory must possess the dual properties of asset specialized skills and non-transferability.

The resource-based view of the firm theory advocates that core skills central to a company's competitive advantages must be acquired from internal development within the company itself and that general technology can be acquired from outsourcing. The core skills are characterized by properties such as value, rareness, not being imitable and immobility[3]. Talents capable of core skills are the human capital deserving attention and investments from companies.

Human capital investments involve an initial cost(tuition and training course fees, forgone earnings while at school and reduced wages and productivity during the training period) which the individual or firm hopes to gain a return on in the future. In other words, only employees possessing value and uniqueness are qualified as human capital. The qualities of employees with core skills are the fountain source for a company to raise competence and profits[4].

By summing up the above theories, this paper defines "human capital investment" as "input made by company through formal education and training on the job in talents and technology that benefit competitive advantage, are valuable and unique, and should be kept out of other companies." Therefore, it is also suggested investments in this kind of employees, ie. human capital investment should be the focal point of our attention[5]. As with investments in physical capital, the wealth-maximizing firm will only undertake this human capital investment if the expected return from the investment is greater than the market rate of interest.

There are two key principles that are central to the human capital idea. First, people are assets whose value can be enhanced through investment. As with any investment, the goal is to maximize value while managing risk. As the value of people increases, so does the performance capacity of the organization, and therefore its value to firms and other stakeholders. Second, an organization's human capital investment must be designed to support the organization's "shared vision"—that is, the mission, vision for the future, core values, goals and objectives, and strategies by which the organization has defined its direction and its expectations for itself and its people. All human capital should be assessed by the standard of how well they help the organization pursue its profit creation and its shared vision.

3. DESIGN HUMAN CAPITAL INVESTMENT ACCORDING TO FIRM STRATEGE GOAL

Of course, any company's strategic goals are subject to be changed along with external factors, such as technological innovation, and the passage of time. Likewise, the value and uniqueness of employees defined by each company are affected. Therefore, firm strategic targets should be adjusted with the external environment when necessary. simultaneously, human capital investment is regulated according to firm strategic targets. We can understand the relationship between firm strategic targets and human capital investment through figure 1.

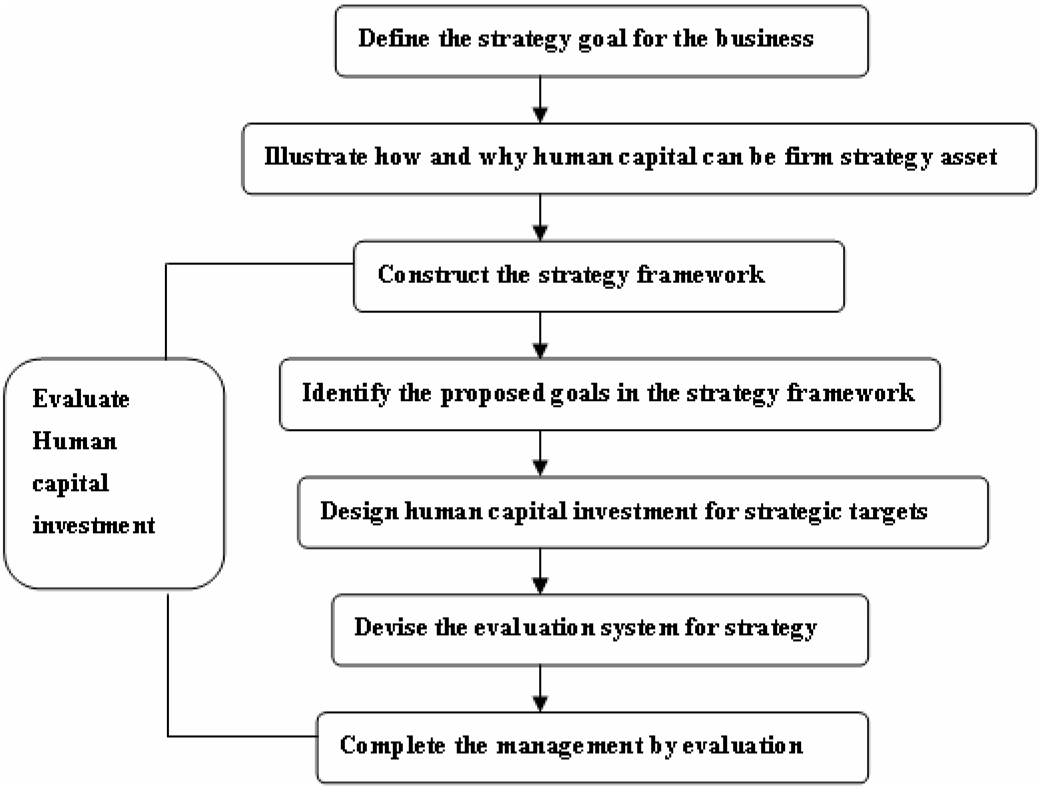


Figure 1. Steps in transforming human capital investment framework into firm

3.1 Define the strategic targets for business

The management should decide current strategic targets through broad discussion. The goal must be clear and helpful to direct employees to understand their roles, the way to complete tasks and how the performance be evaluated.

3.2 Illustrate how and why human capital can be firm strategy asset

From the perspective of strategic human resources, human capital can be effectively utilized through a "high-performance work system", to maximize the quality of human capital investment in an organization. Through empirical researches, evidence has shown that this system has positive relation with firm financial performance[3]. The high-performance work system can connect business decision with competitive strategy, provide the skill needed to perform the strategy, develop timely and effective support, and perform rules for evaluation.

3.3 Construct the strategy framework

The framework must connect with firm value chain before creating value. The following thinking can be evaluated before construction:

What strategic targets are most critical and important?

What is the driver of target performance?

What strategic targets are most critical and important?

What is the barrier to complete the goal?

What should the employees do to complete the goal?

Does human resource function in the business allow employees to acquire enough capability to complete the goal?

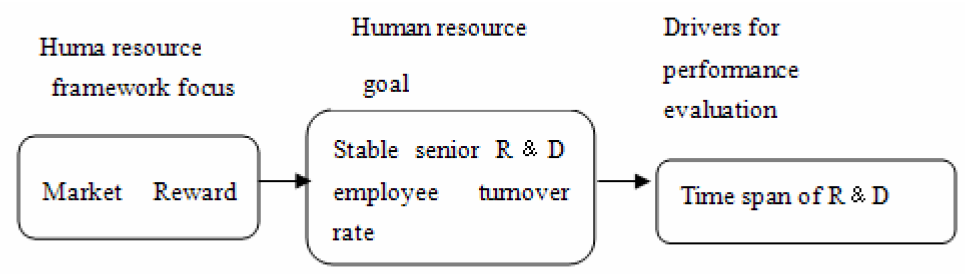
If not, what change should the business make?

3.4 Identify the proposed goals in the strategy framework

We must understand which target will promote the firm performance in the strategy framework. For example, if low employee turnover will shorten the time span of research and development. We can retain our human capital by giving them higher bonus or offering stock option plan to them.

3.5 Design the human capital investment for strategic targets

In order to lower the turnover for senior R& D employees, the firm can adjust policies in the human capital management framework. For example, the management can raise the salary for those employees in order to achieve the goal. *See the charts below*:



3.6 Devise the evaluation system for strategy

When designing the evaluation system for strategy. firms must understand the cause and effect relationship between evaluation index and the strategic targets. The evaluation index must be well defined. Firms that use "turnover ratio of senior employee" as an index must define the qualification of senior employee. In the mean time, evaluation index can be both financial and non-financial.

3.7 Complete the management by evaluation

The evaluation designed to manage the human capital investment that matches firm strategy goal and give feedback and adjust strategy framework periodically should be used.

4. IMPACT ON FIRM THROUGH HUMAN CAPITAL INVESTMENT

Firms fully or partially fund the training and education in the hope of gaining a return on this investment in terms of being more productive, more competitive and consequently more profitable in the future. In practice, it is very difficult to measure this return. We know in general that training results in workers receiving higher real wages. These real wage increases have to be paid out of productivity gains and therefore should provide a lower bound on the likely size of productivity increases. In practice, the productivity gains are likely to be higher than this. For instance, when training has a large firm-specific component (i.e training providing firm-specific knowledge and skills that have little or no value when an employee leaves the firm that provided the training) and, more generally, when labor mobility is effectively restricted, there may be productivity gains from training that are not passed on to the employee in terms of wages but are only reflected in direct measures of competitiveness, productivity and profitability.

There are numerous difficulties in measuring the returns to education and training for firms. In the first instance, it is extremely difficult to obtain data on firm productivity, competitiveness and profitability. Furthermore, there are problems in identifying empirical counterparts to the concepts of general and specific training, and in identifying whether and how much of the costs are borne by workers and by employers. Finally, there are difficult questions regarding causality (does company training cause the firm to improve its performance or does a better (poorer) firm performance foster (require) expenditure on training?). Because of these difficulties, there is a paucity of studies that have directly assessed the impact on firms through human capital investment.

4.1 Impact on firm productivity

Some interesting evidence on the links between the skill composition of the workforce of a firm and labor productivity is provided by researchers at the National Institute of Economic and Social Research. In their work, they take a number of UK manufacturing firms and match them with continental firms producing similar products. This allows them to carry out direct productivity comparisons of these matched samples of manufacturing plants. All these studies have found that, in all of the examined sectors, the higher average levels of labor productivity in continental plants were closely related to the greater skills and knowledge of their workforces. By contrast, in the UK, the lower level of manpower skills was found to affect negatively labor productivity, the types of machinery chosen, the smooth running of machinery and the introduction of new technology. The relationship between workers' productivity and subsequent firm profitability is, however, a complex one.

As to the empirical literature aiming to quantify directly the contribution of training to worker or firm productivity, several studies show that training does indeed have a positive impact on productivity. These estimates range from very large effects to little or no effect. Some studies have found a positive effect of a bundle of human resource practices (including training) on firm productivity.

Some very interesting conclusions can be drawn from the evidence concerning the impact on productivity of training undertaken with a previous worker's initial productivity by 9.5 percent but has no lasting effect. Previous on-the-job training has more long-lasting benefits and increases current productivity by 16 percent. The finding is consistent with the earlier one that employer-provided training was transferable across employers, suggesting that such courses may provide relatively general skills.

4.2 Impact on firm profitability

Comparing the impact of training and education on wage rates with its impact on productivity allows us to shed some light on the links between the returns to the firm, and thus on the impact of training and education on firm profitability.

The few studies available that have addressed this issue tend to confirm that not all the productivity gains resulting from training are compensated through a corresponding increase in individual remuneration, so that investment in training remains profitable for firms. In particular, two studies using very different data and approaches suggest that the productivity increase is over twice the size of the wage increase caused by training.

Further interesting results relate to the existence of profitability returns to the firm from training sponsored by another firms. This suggests that on-the-job firm-provided training sometimes generates considerable third-party externalities when trainees do not stay with the employer who trained them. Formal off-the-job is found to generate substantial long-lasting externalities, while informal training appears to generate externalities only in the first year of a worker's tenure at a firm.

Formal education is the typical example of the accumulation of general skills: the positive impact on current productivity is closely matched by a commensurately higher wage, leaving firm profitability unaffected.

4.3 Impact on firm long-term competitiveness

The matched-plant studies confirm that the rapid and effective introduction of new technology requires managers to be well supported by highly qualified technical staff, and the continental plants were found to enjoy a decisive advantage over their British counterparts in this respect. The available skills of a firm's workforce were shown to affect the type, variety and quality of the product manufactured, but also flexibility and the speed of the production process. In contrast with their British counterparts, the relative abundance of craft-skilled workers in continental machine shops enhanced flexibility in switching workers from one type of machine and product to another to meet rapidly changing production needs. Finally, the differences between the British and the continental engineering plants in the proportions of technicians with appropriate qualifications had visible consequences for both new product innovation and adapting the production process to take advantage of developments in new technology.

Some empirical studies directly confirm these general findings, suggesting strong links between the employment of graduates, including professional scientists and engineers, and the adoption and use of high-level technologies by scientists and engineers, and the adoption and use of high-level technologies in the firm, and between the extent of investment in worker training and the speed and successful adaptation of new technology. More highly-educated and more highly-skilled workers have been found not only to be able to adapt more rapidly and efficiently to new tasks and technologies, but also to be direct source of innovation. In fact, education and even previous informal training have been found to increase substantially a worker's ability to be innovative on the job.

5. CONCLUSION

The available evidence has shown that human capital is an important factor for firm. However, human capital in the business changes from time to time. It is hard to locate human capital that fits firm strategic targets. Lack of suitable data and methodological difficulties have resulted in a paucity of studies that have carried out sound empirical work on this issue. Although still insufficient and scattered, the available evidence points to some positive contribution of human capital investment.

This paper explores the definition and characteristics of human capital. Overall human capital should have different characteristics in different industries during different periods. We analyze how to design human capital investment to meet firm strategic targets and discuss the impact on firm through human capital investments. Finally, the paper suggests the impact on firm because of human capital investment. This paper also suggests ways to elect critical human capital that could benefit the firm strategic targets and practical steps to maintain human capital.

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