

## Aspects regarding human capital and its influence on the competitiveness of firms in the European Union

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### Abstract

*Human capital represents the source of competitive advantage of a firm. The importance of human capital is acknowledged by firms. However, in an increasingly complex and turbulent environment many organizations face a lot of issues regarding the attraction, retaining and development of their most valuable asset. The approach chosen to solve above mentioned issues influences the competitiveness of the firm. The goal of the paper is to analyse the level and extent of theoretical research regarding the influence of human capital on the competitiveness of the firms, as well as issues related to firms' human capital development. Moreover, the paper presents the results of studies conducted in different European countries (comprising United Kingdom, Ireland, Netherlands and Sweden) regarding the relationship between investment in employee training and the effects on company performance. It elucidates that training generates positive effects on sales, value added, productivity, net profitability etc. Although the link between investment in human capital and company's performances is evident, the reciprocal connection – between companies' investment activities and skills of employees was pointed out.*

**Keywords:** human capital, general training, specific training, firm's knowledge, company performance

### Introduction

The aim of the paper is to point out the influence of investments in human capital on company performance, the correlation between human capital development and firm's competitiveness, to analyse the practices applied in human capital reporting, to identify how the perception of skill gaps influences the activity of European firms.

Human capital represents a specific resource of the firm, comprising the knowledge, skills and expertise of the employees. Human capital is perceived based on different dimensions and examined according to their influence on firm performance. Human capital is regarded as the intangible resources embedded in individuals and comprising the stock of competencies, knowledge, skills, expertise, and connections that individuals gain through education and experience (Becker, 1993).

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Employee training, as a tool in developing firm's human capital, is analysed through its effects on building skills and competencies on the one hand, and generating higher productivity, wage increase and innovation on the other hand. Training of employees orients towards both general knowledge and firm –specific knowledge. Firm – specific knowledge can reduce personnel turnover, raise productivity, allow implementation of specific managerial practices, generate innovations etc.

A large number of studies in the field tend to emphasize the relationship between human capital and innovation activity of the firm. Competitive advantage realized through human capital may be sustained, even if some of the knowledge is imitable, because human capital provides continuing superiority in the rate of knowledge creation and cost reduction over the life of a product and across multiple generations of products (Hatch and Dyer, 2004, p. 1157).

Human capital valuation represents a point of interest for many firms, since human capital is a strategic resource in gaining competitive advantage. For a firm to sustain its competitive advantage, the resources must also be inimitable and non-substitutable, to prevent rivals from replicating them. Thus, human capital, especially, the firm –specific one, is the most valuable resource of competitive advantage. Specific human capital is typically the product of individual learning and, in turn, enhances ongoing learning within the firm. Thus, human capital may be costly to imitate because it is firm-specific.

The resources – based view of the firm seeks to explain sustained differences in firm performance by identifying differences in firm resources. A firm with resources that are valuable and rare may generate a competitive advantage over its rivals, resulting in superior financial performance. (Hatch and Dyer, 2004) The stock of human capital in a firm comes from its employee selection, development, and use (Koch and McGrath, 1996; Snell and Dean, 1992). Firm-specific human capital is a resource that is fundamental to knowledge creation through learning by doing and is not readily expropriated by rival firms (Hitt *et al.*, 2001). To the degree that internal development results in human capital that is firm-specific, the human capital will be inimitable because rivals will not be able to put the human capital to the same firm-specific use (Klein *et al.*, 1978; Mahoney and Pandian, 1992). In addition to trying to generate advantage through the acquisition of superior human resources, firms may attempt to develop the human resources through investments in training. As training builds firm-specific human capital it speeds the rate at which human resources learn their duties, thereby improving their productivity (Hatch and Dyer, 2004, p. 1158). The human capital embodied in newly hired employees is not firm-specific, so firms work to develop the employees, making investments in specialized human capital that will improve their productivity (Hatch and Dyer, 2004, p. 1158). As training builds firm-specific human capital it speeds the rate at which human resources learn their duties, thereby improving their productivity (Hatch and Dyer, 2004, p. 1158). Thus, Hatch and Dyer (2004), concentrate on mechanisms of firm-specific human capital developing

through internal investment in the training of employees, including the process of learning by doing, and the competitive advantage that it creates.

## 1. Practices applied in human capital reporting

To measure the value of human capital is possible when there are quantifiable and specific data provided by firms.

*In an increasingly complex and turbulent environment many organizations do not know the value of their most valuable asset, human capital [...] finding an effective way to record and report human capital issues will help firms identify critical sources of value, which in turn should allow them to better manage their human capital effectively to gain competitive advantage (McCracken et al., 2017, p. 138-139).*

These researchers had undertaken a study on human capital reporting in the United Kingdom, concluding that most of the companies included in the study have been increasing their human capital reporting, and were doing more than simply fulfilling their statutory duties in this regard – they choose to make it in a narrative form, too, for the issues that cannot be directly quantified.

The companies in this study reported strongly in areas of employee training, health and safety, career development and employee leadership, succession planning. The results also show that analysed companies are moving away from wider intellectual capital disclosures to focus more on human resources issues. Additionally, metrics were employed to monitor employee engagement initiatives, and examples of these metrics included average sick days per employee, training hours per full-time employee and the percentage of employees in the appraisal process. Although human capital issues such as entrepreneurship, innovation, and employee wellbeing have increased in prominence, this contrasts significantly with more widely reported items such as expertise, employee training and health and safety, which demonstrated more modest increases. (McCracken et al., 2017, p. 138-139).

A study performed by Bryl and Truskolaski (2017) revealed that enterprises from developed nations report more complete data regarding human capital than companies from transition economies. The extent of human capital reporting and the quality of information is influenced also by two important factors: the size of the company and the industry.

Human capital data are more available to the general public in the sector of production and services in Germany, whereas in Poland the most disclosed human capital information belonged to companies from energy and mining industry. In the meantime, larger firms disclosed more

information on human capital compared to smaller economic entities, that were reluctant to provide the information to the general public.

## **2. Human capital development in relation to firm's competitiveness**

Özer and Çam (2016) provided studies related to the role of human capital in firm valuation, with results suggesting that human capital indicators, that were used to capture the “other information” in firm valuation, can, actually, reveal the significant part of the unexplained variation in firm values. Therefore, human capital can be considered as value relevant to market participants due to the significant relationship with the market value of a security, because of this reason the public disclosure of these human capital indicators is important in making business valuation decisions. Market participants treat human capital indicators, especially personnel expenses, as a value-creating investment and therefore human capital related information needs to be reported in financial statements. In the meantime, management should make appropriate resources planning on compensation policies to create and manage human assets more effectively and efficiently and also to maximize firm's long- term competitiveness in the global market (Özer and Çam, 2016, p.176).

As Crook *et al.* (2011) state, firms possessing valuable resources, that others cannot easily duplicate or substitute for, will outperform competitors lacking such resources (Crook *et al.* 2011). Because investments in firm-specific resources can represent a source of enhancing capabilities, there are increasing requirements for firms to manage and govern these capabilities effectively, so that realized economic value creation can be achieved by firm-specific human capital. Firm-specific human capital is valuable because it helps employees make decisions that are congruent with a firm's unique strategy, organizational context, and competitive environment. Moreover, it is not easily transferred and applied in other firms, and this makes it difficult for employees to demand compensation that is commensurate with their full value to the firm (Crook *et al.* 2011, p. 444).

Mahoney and Kor (2015) emphasize that firm-specific human capital development is a co-production generated through investments, made both by the firm and its employees. However, the appropriation hazard can cause employees to refrain from making such investments. Rewards and safeguards provided by the firm have the potential to encourage and shelter those individuals incurring risk by choosing to co-deploy their time, energy and personal capital in building firm-specific assets and competencies and in developing collective social capital and trust with the firm's internal and external stakeholders (Mahoney and Kor, 2015, p. 301).

Approaching the resource-based view of the firm, Wang *et al.* (2007) emphasize the role of firm-specific resources, especially firm-specific knowledge resources, for enabling a firm to gain and

sustain competitive advantage. Since the deployment of firm-specific knowledge frequently requires key employees to make specialized human capital investments that are not easily transferable to other settings, employees with foresight may be reluctant to make these specialized investments. The appropriate use of the economic-based governance mechanism of granting employee stock ownership and a relationship-based governance mechanism of building firm-employee relationships can mitigate this underinvestment problem. The increased use of these governance mechanisms strengthens the relationship between the level of firm-specific knowledge and a firm's economic performance (Wang *et al.*, 2007, p. 36).

Almeida and Carneiro (2008) analysed the return on investments in human capital. The results of their analysis have shown that it is not possible to read the returns to firm investments in human capital from the coefficient on training in a regression of productivity on training. Data on direct costs is essential for computing meaningful estimates of the internal rate of return to these investments. The returns for firms providing training are substantial – between 6,7% and 8,6% increase in productivity (Almeida and Carneiro, 2008, p. 105).

Khan and Quaddus (2018) focused on dimensions of human capital and firm performance in a micro-firm context. Researchers have repeatedly recommended that human capital resources and capabilities can be a source of a firm's superior performance and success. As they stated, human capital can be perceived based on different dimensions and examined according to their influence on firm performance (Khan and Quaddus, 2018, p. 2). The researchers identified two groups of factors which can assist in the micro-firm's human capital measurement – demographic (education or explicit knowledge, experience, skills and age range of employees) and psychographic (tacit knowledge, extraordinary commitment, and voluntary labour). The model Khan and Quaddus (2018) suggested is based on the assumption that both demographic and psychographic factors positively influence micro-firm performance; demographic factors positively influence the psychographic factors, while psychographic factors mediate the relationship between demographic factors and firm performance (Khan and Quaddus, 2018, pp. 3-4).

The relationship between investments in human capital and the company's productivity was analysed not only in the case of micro-firms, but also in the case of small and medium enterprise (SME) internationalization process (Inkelinx *et al.*, 2016). As it stated by the researchers, an important element in the process of SME internationalization is the attraction and retention of key employees with prior export experience or knowledge about specific markets (Inkelinx *et al.*, 2016, p. 354). Their findings suggested that for small firms following an accelerated pattern of internationalization, higher productivity levels, which derived from investments in employee human capital, were critical. Companies that extend their international activity in an accelerated rhythm,

tend to be present in capital and skill intensive industries, where firms have specialized knowledge, and are exporting that knowledge in the form of unique products or services. However, the results were different in case of companies that extended their international activity in a gradual rhythm. Since this type of internationalizing firms access nearby markets, and, consequently, these firms do not need superior productivity levels in order to start exporting, they appeared to be less interested in investing in human capital or other intangible assets.

Other studies (Kianto *et al.*, 2017) related to knowledge-based human resources management practices, intellectual capital, and innovation activity in the firm have shown that knowledge-based HRM practices impacts a firm's intellectual capital, producing higher innovation performance; knowledge-based HRM practices impact structural and relational capital partially through human capital, and human capital affects innovation performance by enhancing structural and relational capital (Kianto *et al.*, 2017, p. 11).

Skaggs *et al.* (2004) emphasize the relation between strategic positioning in a firm (service customization, customer contact and customer co-production) and investments in human capital. When an organization standardizes its production processes, it reduces the cognitive demands placed upon employees involved in the production process. This, in turn, reduces the organization's need to invest heavily in developing and selecting human capital. As customer-employees' contact increases, organizations demand higher levels of human capital, in order to deal with the heightened information flows and variability resulting from this increased interaction. In a service firm, investments in human capital add to the level of organizational competitive advantage, for they create a resource that allows the firm to better cope with the potential uncertainty customers bring to the service environment (Skaggs *et al.*, 2004, p. 94).

### **3. The influence of investments in human capital on company performance – case of European firms**

Those companies that make full use of the knowledge assets are considered to be the market leaders. The innovations, technological change and other factors affecting the growth rate and the capability to withstand strong competition have a strong impact on the total turnover or the market share in the line of business are linked with the knowledge (Kassay, 2013, p.135).

In order to perform on a competitive market a firm needs to constantly update its knowledge. The question that arises is the extent to which investment in employee training generates firm's performances.



Studies on results of training revealed that the benefit of enterprise-related training is high, both in terms of productivity and wage effects. Average productivity growth following training was found to be 16 %, while average wage growth was 3.3 % (Groot, 1999).

According to the results of studies training generates substantial gains for employers in terms of influence on sales growth (evidence from studies on Irish firms) (Barrett and O'Connell, 1999), on value added (evidence from studies on 94 British industries over 12 years) (Dearden *et al.*, 2000), on productivity (evidence from studies on 479 Dutch firms) (Groot, 1999), on net profitability (evidence from studies on a Swedish case study of programmers) (Hansson, 2004), value added, return on capital employed (evidence from studies on French firm-level data) (d'Arcimoles, 1997), on stock market return and sales per employee (evidence from studies on 314 US firms) (Bassi *et al.*, 2001).

Formal training courses have more impact on productivity than informal training. Specific investments are more significant for company performances in case of start-ups, while investment in general training proves to have more impact in case of companies that exist for a longer period.

General training functions as an insurance against personnel turnover, therefore firms should invest in general training and they should safeguard joint investments in specific training. (Glick and Feuer, 1994). Specific knowledge provides benefits to the firm by restraining personnel mobility, since the greater the extent of specific knowledge applied in the work of a certain firm, in a certain sphere, the greater are the expenses of the firm to hire a new employee instead of an old one. Firms use back-loaded compensation schemes that induce costs for individuals who change employer. Back-loaded compensations are defined as increasing wages with seniority over and above productivity increases.

The delay in training effects has also been an object of the study. It has been determined that the effects of training emerge one to two years after the training period, so they should be measured after at least one year from the point of the investment and, eventually, over a longer time horizon (according to the results based on French data and on Swedish information) (Hansson, 2004).

In the knowledge-based economy, investment in training and human resources management practices are prerequisites of innovation and are necessary to realize the productivity potential of new information or advanced manufacturing technologies. There is a multiple relationship between innovation patterns of the firms, innovation performance and training investment.

A distinctive feature of innovative firms is an elaborate human resource strategy materialized in innovative compensation packages and associated with a combination between frequent formal and informal training, continuous over time.

Innovative firms offer a close link to research institutions, thus enhancing innovation capacity. They rely on a highly qualified workforce and are more dependent on employees' abilities and competences in generating profit (Leiponen, 1996). In the meantime, skills shortage is a severe

obstacle to innovation. Studies show that firms owners' technical education and their prior working experiences, in addition to the technical skills of the workforce, have a significant effect on innovative capability. Thus, the proportion of higher educated employees in innovative firms is associated with profitability, meaning higher net profit margin, higher value added, an increase of revenues to cost ratio. (Hansson, 2004)

Investments in training generate substantial gains for firms even if employees can use this training in other firms. The evidence that employers' profit from training investments comes from different countries including United Kingdom, Ireland, the Netherlands and Sweden. The main findings on the impact of human capital on company performance are listed below:

- *United Kingdom* – Training has a positive impact on productivity and wages, with a twice as large effect on productivity. Formal training has larger impact on productivity than informal training.
- *Ireland* – General training has a positive impact on productivity, specific training has no impact.
- *Netherlands* – As the result of the training, average productivity registered a growth about 4-5 times larger than wage growth. Weak connection between who contributes to training investment and who benefits from the training.
- *Sweden* – The impact of training on wage is significant. The skills and competences of the individual are significantly related to profitability. In IT firms an increase in educational level leads to productivity growth (Hansson, 2004).

#### **4. Perceive of skill gaps in European firms**

The appropriate quantitative and qualitative structure of the firm's personnel is crucial for a right and judicious capacity utilization. Investment into human capital needs longer time to generate a return and its result is difficult to measure. Besides, another issue arises – retaining of employees that attended trainings and developed firm-specific knowledge. Emigration of skilled personnel, higher staff fluctuation are phenomena that lead to aggravation of the problem of the lack of firm-specific knowledge. Evidence of correlation between companies' investment activities and skills of employees was pointed out.

The EIB Group Survey on Investment and Investment Finance (EIBIS), performed in 2017, has shown that limited availability of skills is considered to be a problem by firms of different size (both large and small) and from different sectors (manufacturing, construction, infrastructure and the service sector). In the meantime, companies that are oriented towards a more innovative activity, as



well as companies that export their products abroad, tend to perceive a deeper lack of skills in their human capital.

Technological change seriously affects the quality of human capital. The spread of digital technologies increases the perception of skills lack, since these technologies require completely new qualifications. Companies may be reluctant to new technologies, if there is a fear that human resources will lack appropriate skills to implement these technologies. Introducing new technologies into the production process requires better technological and organizational skills, better understanding and knowledge.

Firms operating above capacity tend to be most concerned about the availability of skills. Thus, as the volume of activity of the firm increases its managerial staff may experience a greater lack of skills.

Perceptions of lack of skills is seen as an impediment to investment by 69% of firms in the infrastructure and services sectors, 75% - in construction and 77% - in manufacturing. Limited availability of skills is considered to be the main concern of the largest corporations, replacing uncertainty as the most frequently named obstacle to investment.

Firms that prioritize higher education and professional training consider the skills being an obstacle to investment. In the meantime, results of the study show that limited availability of staff with the right skills often is a more pressing concern for younger firms. Those firms that expect their investment to result in additional employment tend to see limited availability of the right skills as an impediment more frequently, potentially anticipating hiring difficulties. While concerns about skill gaps and shortages are prevalent among firms in the EU, they are particularly pronounced for countries in Central Eastern and South-Eastern Europe, representing an impediment for innovation-led growth model. In case firms face problems to hire and keep talented specialists this may affect the whole economy and slow down the generation of innovations. Thus, arises a need for developing entrepreneurial policies to keep staff at the working place and stimulate share of knowledge and skills. We consider this issue to be a distinct area for further research.

## Conclusions

Human capital is a strategic resource in gaining competitive advantage. In this regard, firm's specific knowledge represents an inimitable asset. Human capital valuation is a matter of interest for many firms.

The results of studies performed on companies from UK, Poland and Germany show that companies undertake efforts to evaluate human capital in areas like employee training, health and safety, career development etc. UK companies are moving away from wider intellectual capital

disclosures to focus more on human resources issues. Human capital data are more available to the general public in the sector of production and services in Germany, whereas in Poland the most disclosed human capital information belonged to companies from energy and mining industry. The effects of education or skills/competence on company performance are generally more difficult to establish, as these factors accumulate and form the human capital stock.

Results of studies from specialized literature suggest that there are two groups of factors which can assist in the micro-firm's human capital measurement – demographic (education or explicit knowledge, experience, skills and age range of employees) and psychographic (tacit knowledge, extraordinary commitment, and voluntary labour).

Human capital and its training have a direct impact on firm's performance, the effects of education, skills and competences generate a change in such indicators as productivity, sales, profit, wages and innovations. A significant effect of training is the increase in wage, due to increased productivity.

Firms can extract profit both from prior education and general training investments, as well as from specific training. The benefits from the mentioned types of trainings depend on the specific nature of the firm's activity. As training builds firm-specific human capital, it speeds the rate at which human resources learn their duties, thereby improving their productivity. Firm-specific human capital is valuable because it helps employees make decisions that are congruent with firm's unique strategy, organizational context, and competitive environment, especially in case of services with a high level of customization. Technological change has a significant impact on the firms' requests regarding quality of human capital.

Perceptions of lack of skills is seen as an impediment to investment by 69% of firms in the infrastructure and services sectors, 75% - in construction and 77% - in manufacturing. Larger firms are more concerned of lack of specific skills.

Investing in human capital presents different patterns in case of companies that internationalize faster – they need specialized knowledge, in contrast to firms that extend their international activity slower – these companies are less interested in developing their human capital.

Competencies and skills which are partly reflected in educational attainment and work experience influence the capabilities to learn and innovate. Innovative human resource management practices and investing in employee training tend to be associated with positive company performance.

The deployment of firm-specific knowledge frequently requires key employees to make specialized human capital investments, to prevent fluctuation of staff and loss of investment into

training, thus, specialized mechanisms should be developed like employee stock ownership and a relationship-based governance of the company.

Undertaken study of the existing researches on issues related to firms' human capital reveal the main directions towards which this subject requires a deeper and more complex analysis in further researches.

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