



## **Investments in Human Capital and Innovativeness of Enterprises**

**Małgorzata Kuraś, Ph.D.**

Czestochowa University of Technology, Faculty of Management, Poland

*m.kuras@onet.pl*

**Sylvia Łęgowik-Świącik, Ph.D.**

Czestochowa University of Technology, Faculty of Management, Poland

*sylwialegowik@op.pl*

*Abstract: Human capital becomes increasingly important for the functioning and development of the contemporary enterprise. It determines its economic potential and enables building competitive advantage. It is also the main source and stimulus of innovation. In the paper there is discussed the problem of the role of investment in human capital for the enterprise development. There is also presented the issue of human capital as the basic resource creating innovation potential of an enterprise.*

*Keywords: innovation, human capital, investments in human capital.*

### **1 Introduction**

Both among the theoreticians of management and economic practitioners there is a consensus as for the growing role of intangible assets for the functioning of the contemporary organizations. It is thought that they have the greatest impact on the enterprise development and an increase in its value for stakeholders. Particularly, there is underlined the role of human capital in building competitive advantage. Also, the enterprise capability to create innovation, whose main source and stimulus is knowledge, experience and specialized skills of employee, is very important. Therefore,

the entities which wish to achieve success in creating and introducing innovation onto the market face the necessity of investing in the development of human capital.

The aim of the paper is to present human capital as one of the main resources building innovation potential of a company and to underline the significance of investment in the development of human capital for its competitive position.

## 2 The essence and types of innovation

Innovation is a polysemous concept connected with the processes of creating and distributing widely understood technical and economic changes. This term comes from Latin "*innovare*", which means "renew; refresh; change" [9]. In the most general sense, this concept includes all changes which, in specified conditions, are the carriers of newness and concern both material and non-material sphere [6]. In accordance with the most frequently applied definition "innovation is the process consisting in transforming the existing opportunities into new ideas and introducing them into practical use" [15]. P.F. Drucker urges that innovation penetrates all the spheres of the organization activity and it may appear both in a project, a product and marketing. It may also concern the offered price or changes in the organization and management methods [2]. However, regardless of the sphere it refers to, it is necessary to remember that each change introduced into the organization should serve the interest of a client and not the interest of itself [18]. The plurality of the approaches and diversity of the ways of defining the concept of innovation itself brings about that there is lack of clarity in understanding both the concept of innovation itself and also the range of its uses. Some authors maintain the position of J. Schumpetera [20], who introduced this term into economic sciences, that it includes the first practical application of an invention in the economic activity. In turn, others claim that innovation needs to be regarded as all activities aiming at leading a new product or method to its practical use.

For a company to be innovative, i.e. successfully introduce innovation, it must have appropriate innovation potential. According to M. Zastempowski, innovation potential is created by the resources which enterprises should have to efficiently create and commercialize innovation [21]. According to K. Poznańska, innovation potential is the capability to effectively introduce innovation, i.e. new products, technologies, organizational methods and marketing innovation. It is defined by four key elements: financial potential, human potential, physical potential and knowledge. There is distinguished internal and external innovation potential. The environment of a specified entity is indicated as the external potential whereas resources and capabilities possessed by an enterprise, which may be used for the current activity of an enterprise, are understood as the internal potential [16]. Also A. Żołnierski represents the view that both internal innovation potential and access to external sources of information have impact on creating innovation potential of the company. In the first case, this potential is created by: the staff (their knowledge, experience, capabilities and the way of managing the available resources, information management), research and development

and technology. In turn, external sources of innovation include: universities, research and development units, competitors and customers and suppliers [22].

From the point of view of the discussed problem, a particularly important element creating innovation potential are human resources.

### **3 The role of human capital in innovativeness of enterprises**

Human capital is an integral and basic part of intellectual capital, which is nowadays considered as the main factor of the development of the contemporary enterprise. It has become one of more important research issues, both in the economy and management sciences [13]. The result of this interest is the appearance of numerous concepts of human capital, which basically amount to defining it as a set of characteristics of a man or society, bringing about certain implications in both micro- and macro-economic dimension. OECD defines human capital as knowledge, skills, capabilities and other attributes characteristic of an individual which enable creating personal, social and economic welfare [8]. The most frequently human capital is understood as:

- the resource of health, stamina and motivation included in the society,
- a set of demographic characteristics of the community (the structure of age and health condition) and capabilities (usually connected with education and professional skills),
- the resource of skills and capabilities and entrepreneurship and proficiency in a profession,
- ability to cooperate, creativity, attitudes, resources of competencies and internal motivation to work [5].

In the framework of the research conducted by Swedish insurance company Skandia there was given the definition according to which human capital amounts to combined knowledge, skills, innovation and capability of individual employees of an enterprise to perform tasks efficiently. It also includes the values of an enterprise, organizational culture and philosophy [4]. This term also appeared among the creators of the factor-content theorem. They applied the concept of *human capital*, understood as the resource of valuable and useful knowledge acquired in the process of education and experience gained in the course of vocational training. It is a type of appropriately directed investments in a human being whose effect is the capability of the entire economy to create innovation [7, 17, 14].

Human capital is a type of composition of knowledge, skills, experience and talent. These are values which are in people and constitute an inextricable link with them. Therefore, enterprises, which wish to develop and be innovative, must increase the resources of knowledge and capabilities of their employees and, at the same time, enrich the resources of human capital. Investment in the development of employees ought to be treated by employers equally on a par with investments in research and development. The ability to learn and continuously develop brings about creating value added of an enterprise more significantly than other resources. The confirmation of the

significance of this type of investment is the statement by A. Marshall, claiming that the capital invested in human beings is the most valuable of all capitals [1].

Investing in a human being is connected with gaining new experiences by them and their education by the process of learning individually and team learning. Raising the possessed qualifications, and also gaining new ones may be developed both in a formalized way by means of courses, training or studying and by self-studying. As A. Smith stated, education and learning should be defined as investments in people [1]. Therefore, investment of enterprises in human capital is connected, among others, with organizing and financing all types of training and courses developing their skills in the profession they practise [3].

The measurement of the efficiency or return on investment is generally a commonly applied practice in appropriately managed enterprises. The issue of such a measurement is regarded a bit differently in case of investment in human capital. Taking actions in this field is no longer so obvious. One of the reasons of such a way of conduct can be, still prevailing among entrepreneurs, the conviction that funds involved in employees constitute more a category of costs than investments. Such reluctance and, consequently, lack of activities aiming at the measurement of investments in human capital may also be the result of the fact that, in spite of the existing measuring instruments (both quantitative and qualitative), it is the category which is difficult to measure.

## **4 Investments in human capital in Poland**

Investments in human capital constitute a significant part of the costs of functioning of an enterprise. They are often defined as labor costs, which include costs amounting to the total of gross salary and non-salary expenditure borne for the benefit of recruitment, maintenance, retraining and development of employees. According to the data by Central Statistical Office, in 2012 the average monthly labor costs per an employee amounted to 4 758.64 PLN, out of which more than 76.6% constituted personal salaries and social security contributions paid by employers amounted to 13.7% [12]. The detailed data concerning labor costs by the type of a business activity are presented in Table 2.

Type of activity	Labor costs per an employee		
	2010	2011	2012
	PLN	PLN	PLN
<b>Total (in the national economy)</b>	<b>4388</b>	<b>4634</b>	<b>4759</b>
Agriculture, forestry and fishing	4673	5199	5572
Industry including:	4305	4598	4819
Mining and quarrying	7503	8586	8802
Manufacturing	3843	4079	4276
Electricity, gas, steam and air conditioning supply	6932	7409	7476
Water supply; sewage, waste management and remediation activities	4164	4331	4498
Construction	4086	4294	4411
Trade, repair of motor vehicles	3735	3932	3885
Transportation and storage	4222	4363	4533
Accommodation and catering	2792	2943	3042
Information and communication	7993	8374	8111
Financial and insurance activities	6930	7389	7546
Real estate activities	4432	4625	4625
Professional, scientific and technical activities	6269	6565	6565
Administrative and support service activities	3067	3250	3250
Public administration and defence	5068	5584	5584
Education	4354	4772	4772
Human health and social work activities	4011	4174	4174
Art, entertainment and recreation	3871	4152	4152
Other service activities	3448	3536	3536

Table 1

Labor costs by the type of activity in 2012

Source: Based on: [12, p. 28]

As the data included in Table 2 show there is a large variety of labor costs in individual sectors of the economy. The highest labor costs per an employee (8802 PLN) were found in the entities running a business activity in the field of mining and quarrying. They were higher by nearly 85% than the value of costs in the national economy (4759 PLN). A high level of labor costs was in the entities operating in the sectors of information and communication, electricity, gas, steam and air conditioning supply and financial and insurance. On the other hand, the lowest labor costs were borne by the entities dealing with accommodation and catering. They were lower than the costs in the national economy by 36%. The difference between the highest and the lowest labor costs was significant and amounted to 5760 PLN, which constitutes about 189%.

Among the constituents creating total labor costs a very important element affecting the development of employees is expenditure on development, education and retraining of employees. Unfortunately, according to the data by Central Statistical Office for 2012, the share of this expenditure in the total labor costs was rather small and amounted to mere 0.5%. Moreover, in relation to 2008, its value dropped by 0.1%, and to 2004 by 0.2% [11, 10]. Table 3 shows the share of this expenditure in the total labor costs in Poland by the type of activity.

Type of activity	The share of expenditure in the total labor costs [%]
<b>Total (in the national economy)</b>	<b>0.5</b>
Agriculture, forestry and fishing	0.5
Industry including:	0.5
Mining and quarrying	0.3
Manufacturing	0.5
Electricity, gas, steam and air conditioning supply	0.7
Water supply; sewage, waste management and remediation activities	0.5
Construction	0.3
Trade, repair of motor vehicles	0.6
Transportation and storage	0.4
Accommodation and catering	0.2
Information and communication	0.6
Financial and insurance activities	1.3
Real estate activities	0.3
Professional, scientific and technical activities	0.8
Administrative and support service activities	0.3
Public administration and defence	0.4
Education	0.3
Human health and social work activities	0.5
Art, entertainment and recreation	0.3
Other service activities	0.5

Table 2

The share of expenditure on the development, education and re-training of human resources in labor costs

Source: Based on [12, p.28]

The data included in Table 3 show that in six cases the share of expenditure on development, education and retraining of employees in the total costs was at the same level as the overall ratio, i.e. 0.5%. The highest share of this expenditure was in the sector of financial and insurance activities. This activity includes financial services, insurances, reinsurance, activities connected with pension funds, holding companies, trusts, funds and similar financial institutions. It is an activity usually run by large corporations, offering the latest products on the market and intensively training their staff. The significance of such a level of the ratio deserves more attention since it constitutes the percentage of one of the highest labor costs (see: Table 2). Fairly significant level of the indicator against the background of the others was also shown by the sector of professional, scientific and technical activities (0.8%). In the framework of this sector there are, among others, legal, book-keeping and tax activities, consultancy connected with management, activities in the field of architecture and engineering, technical research and analyses and scientific research and development. Therefore, it is an activity involving very specialized knowledge and highly qualified staff. According to the author, investments in different forms of development of employees, in this case,

should show even greater intensiveness and the share of expenditure on the staff development ought to be significantly higher. A very similar level of the indicator is shown by: the sector of electricity, gas, steam and air conditioning supply and the sector of information and communication (respectively 0.7% and 0.6%).

On the other hand, the lowest level of the discussed expenditure was recorded in the sector of accommodation and catering (in this sector there was also the lowest value of labor costs – Table 2). It includes the provision of a short-term stay along with board intended for direct consumption. It is the activity which does not require from the staff possessing specialized skills and knowledge, therefore the development of employees does not involve significant expenditure. Low level of the indicator (0.3%) appeared in six sectors, among others in education, public administration and defence. According to the author, in case of these two sectors, the share in expenditure on education and development should be significantly higher.

Raising skills and qualifications of employees should be one of the prior activities taken by employers since this form of investment in human capital favorably affects the enterprise development and, at the same time, an increase in its innovativeness. According to the research conducted in Poland, there is a clear correlation between the development of the company and the competency development of employees.<sup>1</sup> In this study, the assessment of the development of companies was made by means of three factors: an increase in profit, an increase in employment and an introduction of innovative products, services and ways of production. In the view of the above, there was made the division of enterprises into stagnant, poorly developing and strongly developing ones. In the first group there were the companies which did not fulfill any of the previously mentioned conditions. The group of strongly developing companies included the ones which fulfilled all the criteria at the same time. On the other hand, the entities which fulfilled one or two of the previously mentioned assumptions were defined as developing or poorly developing. The research showed that the stronger the development of an enterprise the more involved it was in the education of employees. In case of strongly developing companies, the percentage of entrepreneurs investing in raising qualifications of their employees amounted to as much as 87%. For stagnant companies this percentage amounted to only 58%, and in poorly developing and developing companies – respectively 71% and 78%. Table 4 includes the data concerning the extent of activity of entrepreneurs in the area of educating employees with the consideration of the number of employees.

---

<sup>1</sup> The research concerns the years of 2010 and 2011 and it was conducted by Polish Agency for Enterprise Development and Jagiellonian University in the framework of the research project *Bilans Kapitału Ludzkiego*; see: [19].

Number of employees	Extent of development of the company			
	Stagnant	Poorly developing	Developing	Strongly developing
1 – 9	57	71	78	87
10 – 49	63	76	85	85
50+	85	93	95	99

Table 3  
The percentage of entrepreneurs investing in education of staff in 2011  
Source: [19, p. 60]

The analysis of the data in Table 4 shows that the companies characterized by strong development, irrespective of the number of employees, were most involved in investment in the development of employees. However, the dependency between the value of the indicator and the number of employees is noticeable for all the entities: the higher the level of employment the bigger the value of the indicator.

While analyzing the above data, it is possible to come to the conclusion that in entities open to innovation there is greater awareness of the need for investment in broadening the competences and knowledge of employees. Such an approach is the consequence of the fact that development of an enterprise somehow enforces investments in human capital. On the other hand, it is an inseparable element of its development. There appears a kind of feedback.

## 5 Conclusions

Human capital is defined as a strategic resource since it constitutes one of the most important factors of building competitive advantage. Therefore, one of the prior activities taken in enterprises should be its increasing by means of investments in employees.

Unfortunately, the research presented in the paper indicates that in Poland expenditure on educating employees was low. The share of expenditure on development, education and retraining of the staff in the total labor costs established for the national economy amounted to only 0.5% in 2012 and fell down by 0.1% in relation to the analogical one of 2008 and by 0.2% of 2004. The analysis of the share of this expenditure by the sectors of Standard Industrial Classification indicated that the entities which achieved the highest level were the ones running financial and insurance activities (1.3%). A relatively high share was shown by the entities classified in the sectors: professional, scientific and technical activities and electricity, gas, steam and air conditioning supply (respectively 0.8% and 0.7%). In turn, the smallest share of expenditure on education of employees was presented by enterprises operating in the field of accommodation and catering (merely 0.2%).

The research presented in the paper also indicates that the more strongly enterprises develop the more involved they are in education of their employees. There is also



dependence between the size of employment and the activity towards educating staff. The larger an enterprise the more frequently it invests in development of employees.

## References

- [1] Dobija D., *Pomiar i sprawozdawczość kapitału intelektualnego przedsiębiorstwa*, Wydawnictwo Wyższej Szkoły Przedsiębiorczości i Zarządzania, Warszawa 2003, p. 118.
- [2] Drucker, P.F., *Praktyka zarządzania*, Wydawnictwo AE w Krakowie, Kraków 1994, p. 55.
- [3] Dziwulski J., *Zarządzanie kapitałem ludzkim*, [in:] *Zarządzanie kapitałem intelektualnym w organizacji inteligentnej*, ed. by Harasim W., Wyższa Szkoła Promocji, Warszawa 2012, pp.65-81.
- [4] Edvinson, L., Malone, M.S., *Kapitał intelektualny*, PWN, Warszawa, 2001, p.17.
- [5] Gagacka M., *Kapitał ludzki i społeczny a innowacyjność mikroprzedsiębiorstw*, [in:] *Wiedza w gospodarce, społeczeństwie, przedsiębiorstwach: pomiary, charakterystyka, zarządzanie*, ed. by Piech K., Skrzypek E., Instytut Wiedzy i Innowacji, Warszawa 2007, pp. 309-328.
- [6] Haffer, M., *Determinanty strategii nowego produktu polskich przedsiębiorstw przemysłowych*, Wydawnictwo Uniwersytetu Mikołaja Kopernika w Toruniu, Toruń 1998, p. 27.
- [7] *Handel zagraniczny Organizacja i technika*, ed. by J. Rymarczyk, PWE, Warszawa 2000, p. 288
- [8] *Kapitał ludzki w Polsce w 2011 r.*, opracowanie GUS, Gdańsk 2013, p. 3.
- [9] Kopaliński, W., *Słownik wyrazów obcych i zwrotów obcojęzycznych*, <http://www.sloownik-online.pl/index.php>
- [10] *Koszty pracy w gospodarce narodowej w 2004 r.*, GUS, Warszawa 2005, p. 148.
- [11] *Koszty pracy w gospodarce narodowej w 2008 r.*, GUS, Warszawa 2009, p. 96.
- [12] *Koszty pracy w gospodarce narodowej w 2012 r.*, GUS, Warszawa 2013, p. 32.
- [14] Kuraś P., *Human Resources form the Perspective of the Resource-Based View*, [in:] *People Knowledge and Modern Technologies in the Management of Contemporary Organizations* ed. by Illés C.B., Bylok F., Gödöllő, 2013.
- [15] *Międzynarodowe stosunki gospodarcze*, red. A. Budnikowski, E. Kawecka-Wyrzykowska, PWE, Warszawa 1999, pp. 81-82.
- [16] Okoń-Horodyńska, E., wykłady, *Polityka innowacyjna UE*, p. 9.

- [17] Poznańska, K., *Uwarunkowania innowacji w małych i średnich przedsiębiorstwach*, Dom Wydawniczy ABC, Warszawa 1998, pp. 40-41.
- [18] Rymarczyk, J. *Internacjonalizacja przedsiębiorstwa*, PWE, Warszawa 1996, p. 34.
- [19] Skrzypek, E., *Kapitał intelektualny jako podstawa sukcesu w społeczeństwie wiedzy*, „Problemy Jakości” 2007, No 1, p. 7.
- [20] Szczucka A., Turek K., Worek B., *Kształcenie przez całe życie*, PARP, Warszawa 2012, p. 54-79.
- [21] Wiszniewski, W., *Innowacyjność polskich przedsiębiorstw przemysłowych. Procesy dostosowawcze do polityki innowacyjnej Unii Europejskiej*, ORGMASZ, Warszawa 1999, p. 8.
- [22] Zastempowski, M., *Potencjał innowacyjny polskich przedsiębiorstw w świetle badań empirycznych*, Organizacja i Kierowanie, No 1A (159), Warszawa 2014, p. 305 (303-310).
- [23] Żołnierski, A., *Potencjał innowacyjny polskich małych i średniej wielkości przedsiębiorstw*, PARP, Warszawa 2005, pp. 5-6.