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THE ROLE OF HUMAN CAPITAL IN ATTRACTING FDI THE CASE OF THE LODZ REGION

Keywords: human capital, FDI, Lodz Region

1. Introduction

Human capital is an important factor favouring the building of knowledge-based economy. According to De La Fuente and Ciccone, human capital means „the knowledge and skills embodied in humans that are acquired through schooling, training and experience, and are useful in the production of goods, services, and further knowledge”¹. So it is a part of the investment climate of the economy and it implies skilled labour, that is, skills are acquired by individuals through investment in education and training. Knowledge is regarded one of the main driving forces of innovation and development. The results of research of the World Bank highlight important role of human resources in stimulating economic growth. The same study revealed that their share in global wealth is 64%².

Hence knowledge, in its broader sense, is considered decisive for economic growth and we are looking for new ways of acquiring it. One of the channels

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¹ **A. de la Fuente, A. Ciccone**, *Human capital in a global and knowledge-based economy. Final report*, Employment and Social affairs, European Commission, 2002, p. 3.

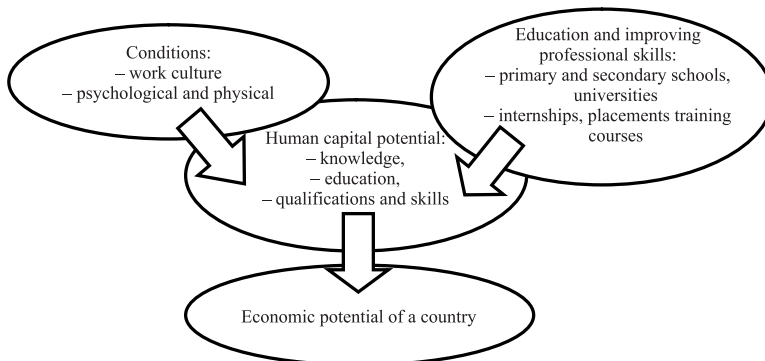
² **M. Kabaj**, *Strategie i programy przeciwdziałania bezrobociu w Unii Europejskiej i Polsce*, Scholar Publishing House, Warsaw 2004, p. 211.

of knowledge transfer, which gained in importance at the turn of the 20th and 21st centuries is foreign direct investment (FDI). On the other hand, research shows that human capital helps attract FDI. The paper focuses on the second aspect, that is why we want to assess the role of human capital in attracting FDI in the light of selected empirical studies conducted in Poland and globally.

2. Theoretical aspects of human capital

The term “human capital” was coined by T.W. Schultz and G.S. Becker. They defined it as a set of characteristics, natural talents, predispositions, attitudes, respected values, acquired abilities and knowledge of people, which may be enriched through investment³. Since the 1960s, the term evolved and was carefully analyzed by many researchers. That is why in literature we may come across many definitions. For the needs of this paper, human capital is defined as a set of knowledge, education, qualifications and skills of a given society. It is created through education and improving professional skills, taking account of work culture aspects as well as psychological and physical conditions. This is how resources of valuable and useful knowledge can be used to foster economic potential. (Fig. 1)

FIGURE 1: *Conditions shaping the potential of human capital*



Source: own study based on **M. Niklewicz-Pijaczyńska, M. Wachowska**, *Wiedza – Kapitał ludzki – Innowacje*, University of Wrocław, Wrocław 2012, pp. 46–47.

³ **M. Niklewicz-Pijaczyńska, M. Wachowska**, *Wiedza – Kapitał ludzki – Innowacje*, University of Wrocław, Wrocław 2012, pp. 45.

Human capital has long been considered an important factor in economic growth and development. The importance of human capital investment in standard economic growth models was realized in the 1960s and 1970s from pioneering works of Schultz⁴ and Becker⁵. Then it was broadly quoted as a principal engine for growth (Romer⁶, Stokey⁷). Several cross-country studies support the importance of human capital in economic development (Barro⁸, Benhabib and Spiegel⁹). Lukas argued that human capital should be treated as an input into production process like any other production factors. He says that the accumulation of human capital implies capital deepening, which leads to a period of accelerated growth¹⁰.

Other researchers like Cohen and Soto state that human capital is the most important production factor¹¹. Furthermore, Topel¹², Krueger and Lindahl¹³ find a positive effect of the education level and the education improvement on economic growth. They underlined the increasing need for nations to invest in their human capital. Romer¹⁴ also argued that investments in knowledge (for example research and development, education, and training) may generate externalities that prevent diminishing returns to scale for labour and physical capital. He also finds that sustainable economic growth in an economy is not

⁴ **T.W. Schultz**, *Investment in Human Capital*, The American Economic Review 1961/51/1, pp.1–17.

⁵ **G.S. Becker**, *Human capital: a theoretical and empirical analysis, with special reference to education*, University of Chicago Press, Chicago 1964.

⁶ **P.M. Romer**, *Increasing returns and long run growth*, Journal of Political Economy 1986/4/5.

⁷ **N. Stokey**, *Human Capital, Product Quality and Growth*, Quarterly Journal of Economics 1991.

⁸ **R.J. Barro**, *Economic Growth in a Cross-Section of Countries*, Quarterly Journal of Economics 1991/106.

⁹ **J. Benhabib, M. Spiegel**, *The role of human capital in economic development evidence from aggregate cross-country data*, Journal of Monetary Economics 1994/34/2.

¹⁰ **R.E. Lucas**, *On the mechanics of Economic Development*, Journal of Monetary Economics 1988/22, pp. 7–10.

¹¹ **D. Cohen, M. Soto**, *Growth and Human Capital: Good Data, Good Results*, CEPR Discussion Papers 3025, C.E.P.R. Discussion Papers 2001, pp. 3–5.

¹² **R. Topel**, *Labor markets and economic growth*, [In:] **O.C. Ashenfelter, D. Card** (eds), *Handbook of Labor Economics* 1999/3C.

¹³ **A. Krueger, M. Lindahl**, *Education and Growth: Why and for Whom?*, Journal of Economic Literature 2001/39.

¹⁴ **P.M. Romer**, *Increasing returns and long run growth*, Journal of Political Economy 1986/4/5; **idem**, *Endogenous Technological Change*, Journal of Political Economy 1990/98.

with a large number of people but rather into one with a large amount of human capital. Barro and Sala-i-Martin¹⁵ found that higher levels of human capital will allow a country to grow faster. The result depends on a nation's ability to absorb and imitate technology. The level of education must be adequate.

Not all studies unambiguously confirm positive correlation between human capital and economic growth. Bils and Klenow¹⁶ find a weak association between education quantity and growth. Pritchett rejects standard arguments as to why there is an overall lack of evidence at the macro level to support the view that human capital positively correlates to output growth. Nevertheless, it is worth stressing, that the micro evidence shows some relationship between education and higher wages¹⁷.

3. Human capital as a factor conducive to FDI inflow

At international scale, knowledge transfer takes place through a variety of channels, e.g., through the exchange of goods, services, technologies and also as a result of FDI inflow. At microeconomic level, human capital impacts, e.g., salaries while at macroeconomic level it influences business location decisions or may determine innovation transfer as well as adaptation capabilities of technologies developed in other countries¹⁸. Prospects of development for economies, especially the emerging markets and the developing world, are dependent on their potentials to make profitable investments and to accumulate capital. The Benhabib and Spiegel's argument is that the countries with a high level of human capital are able to achieve higher growth rates through their ability to attract foreign enterprises and assimilate new technologies with efficacy¹⁹.

It is stylized in the literature on foreign direct investment that a country's stock of human capital is one of the most important determinants of its inward FDI flow. Many countries see attracting FDI as an important element of their

¹⁵ **R.J. Barro, X. Sala-i-Martin**, *Technological Diffusion, Convergence, and Growth*, NBER Working Papers 5151, National Bureau of Economic Research, Inc., 1995.

¹⁶ **M. Bils, P. Klenow**, *Does Schooling Cause Growth?*, American Economic Review 2000/90.

¹⁷ **L. Pritchett**, *Where has all the education gone?*, Policy Research Working Paper Services 1581, The World Bank 1996, p. 12.

¹⁸ **A. Golejewska**, *Kapitał ludzki, innowacje i instytucje a konkurencyjność regionów Europy Środkowo-Wschodniej*, 2011/49, pp. 29–30.

¹⁹ **J. Benhabib, M. Spiegel**, *The role...*, p. 143.

economic development strategies. FDI is one of the main avenues for the movement of technology across national borders. FDI can increase competition in the host economy, making domestic companies more efficient and stimulates sectoral and product diversification. A well-educated workforce is perceived as an important incentive for foreign investment location decision²⁰.

The hypothesis that human capital in host countries is a determinant of foreign investment has been embodied in the theoretical literature. Lukas²¹ and Easterlin²² conjecture that low skills and inadequate level of training adversely affect the rate of return of FDI, and thus deter capital inflows. Developing countries with appreciable levels of human capital attract more FDI inflows. Type of investment (labour-intensive or capital-intensive) may be decisive for an FDI location decision. In case of capital-intensive investment projects, because of modern technologies, foreign investors seek highly skilled people. For labour-intensive investment, access to cheap workforce plays a vital role in attracting investors. When firms transfer their operations to foreign countries, they are motivated by reduction in transaction costs. They look for destinations where the transaction costs of training workers to use new technologies are minimized. This view is enforced by Yeaple²³ who claims that cost cutting is the main motivating factor driving the FDI. Xing²⁴ also cites that the relatively cheap labour in China has been the main attraction of FDI inflows.

Zhang and Markusen present a model where the availability of skilled labour in the host country is a direct requirement of multinational firms (MNEs) and affects the volume of FDI inflows. Their theory hypothesizes an inverse U-shaped relationship between human capital and foreign direct investment.

²⁰ **T.S. Eicher, P. Kalaitzidakis**, *The human capital dimension to foreign direct investment: training, adverse selection and firm location*, University of Washington, Department of Economics Working Papers 97-03, 1997, pp. 22-28; <http://faculty.washington.edu/te/papers/infoasym.pdf>; at the date 15.06.2014 r.

²¹ **R.E. Lucas**, *Why doesn't capital flow from rich to poor countries*, American Economic Review 1990/80.

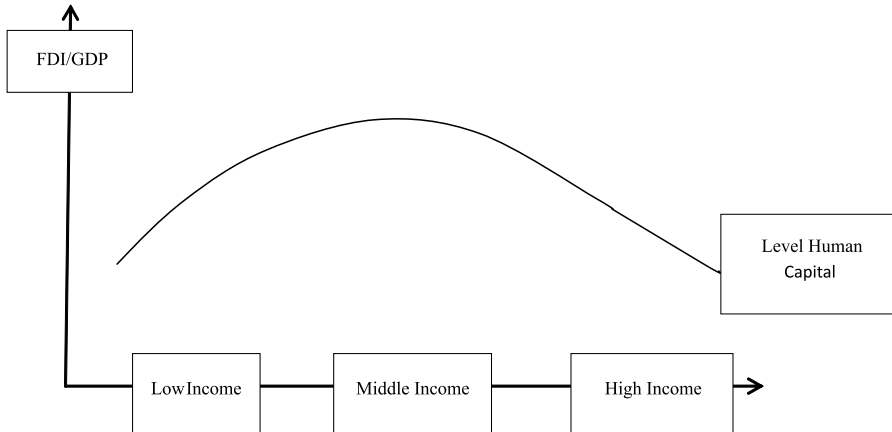
²² **R. Easterlin**, *Why isn't the whole world developed?*, Journal of Economic History 1981/41.

²³ **S.R. Yeaple**, *The role of skill endowment in the structure of US outward foreign direct investment*, The Review of Economics and Statistics 2003/85/3.

²⁴ **Y. Xing**, *Why is China so attractive for FDI? The role of exchange rates*, China Economic Review 2006/17/2.

It means that MNEs will not invest, even if the wages of unskilled-labour in the host country are very low, due to insufficient human capital (Chart 1)²⁵.

CHART 1: *The Inverse U-Shape of FDI/GDP and Human Capital*



Source: **M.S. Akin, V. Vlad**, *The relationship between education and foreign direct investment: testing the inverse U shape*, *European Journal of Economic and Political Studies* 2011/4/1, p. 28.

MNEs' activity will occur when the country has some skilled labour to offer. MNEs production is becoming overly skill-conscious with an increasing number of high-technology manufacturing and services. MNEs seek labour force equipped with knowledge in engineering, technology, organizational skills and business administration. Akin and Vlad²⁶ empirically examined the Zang-Markusen theory and presented findings, which partly support it. They found that FDI level is significantly higher in countries with high levels of education. Secondary and tertiary education have a positive and significant impact on FDI. The relationship is stronger in the case of middle-income countries and weaker for high- and low-income categories. It means that low-income countries have a lower level of competitiveness on FDI market due to lower wages for unskilled workers. "Their results indicate that a 10 percent increase in education level is associated with a 0.2 percent increase in FDI in

²⁵ **M.S. Akin, V. Vlad**, *The relationship between education and foreign direct investment: testing the inverse U shape*, *European Journal of Economic and Political Studies* 2011/4/1, p. 28

²⁶ *Ibidem*, p. 28.

general whereas a 10 percent increase in education level is associated with a 1.2 percent increase in upper-middle income countries²⁷.

The above quoted results confirm that many authors empirically confirmed significant role of human capital as a factor, which attracts FDI. However, we must point out that the role of human capital in FDI is not clear in the literature. Borensztein et al.²⁸ state that FDI is positively associated with economic growth but it depends on human capital. Countries with a low level of human capital do not benefit from FDI investment. Blomstorm, Lipsey and Zeyan²⁹ haven't found a positive impact of education on FDI. Hanson finds that the adult literacy rate was not a significant determinant of FDI. Narula indicates that the number of people with tertiary education was not a statistically important variable for FDI inflows³⁰. Hence, the above mentioned studies from different countries let us conclude that human capital is not necessarily one of important factors which attract foreign investors. The conclusion is based on studies of statistical data from the 1960s and 1970s. Then FDI was concentrated on market and resource seeking. Highly skilled human resources were not important for attracting the FDI. Education becomes an increasingly important determinant from the mid-1980s to the late 1990, as shown by the studies of Nunnenkamp and Spatz³¹.

4. Benefits from FDI for human capital development

Benefits resulting from the presence of foreign investors for the strengthening of human capital have been identified in theory and are confirmed by empirical studies in Poland and all over the world. Foreign direct investment positively impacts the quality of workforce. Modern companies which use modern technologies need highly skilled staff and they pay a lot of attention and promote high level of education and, by disseminating the patterns worked

²⁷ *Ibidem*, p. 42.

²⁸ **M. Borensztein, J. De Gregorio, J. Lee**, *How does foreign direct investment affect economic growth?*, Journal of International Economics 1998/45.

²⁹ **M. Blomstorm, R. Lipsey, M. Zejan**, *What explains developing country growth*, NBER Working Paper 1992/4132.

³⁰ **M.S. Akin, V. Vlad**, *The relationship...*, pp. 30–31.

³¹ **P. Nunnenkamp, J. Spatz**, *Intellectual property rights and foreign direct investment: The role of industry and host-country characteristics*, Kiel Working Paper 2003/1167.

out within their organisations, they impact the mentality of employees. Then the latter see the need to improve and upgrade their skills. Usually multinational companies offer more courses and ensure better access to other forms of improving human capital than domestic businesses. Moreover, Eicher and Kalaitzidakis state that the multinational firm pays a higher wage than the domestic firm, because the multinational firm introduces a superior technology, and incurs higher training costs³².

We should bear in mind, however, that the system of training courses provided by foreign investors should be treated as a complementary element of the process of strengthening human capital. Improving knowledge, qualifications and professional background should rest on the shoulders of educational organizations. Education curricula should take account of the demand of the labour market for skilled labour. Analysed companies very favourably assessed the impact of a foreign investor upon their development.

The quality of human capital and indirect effects are closely connected with technology transfer. Benhabib and Spiegel³³ proved that human capital acts not only as a production factor but also as the accelerator of technological innovations. Results of analyses conducted, e.g., for Ireland and selected countries of systemic transformation demonstrated that the concentration of human capital in urbanised regions attracts foreign capital to technologically advanced sectors.

Aghion and Howitt³⁴ contend that human capital is necessary for the discovery of new technology, thus the stock of human capital is permanently related to the growth rate of output. It is more probable that technologically advanced industries and countries notice indirect effects of human capital.

Moreover, countries with high component of human capital are more open to indirect effects of technology transfer. Parallel activities aimed at the deepening of technological advancement and education generate more benefits from technology transfer and indirect effects of human capital³⁵.

³² T.S. Eicher, P. Kalaitzidakis, *The human...*, p. 26.

³³ J. Benhabib, M. Spiegel, *Human Capital and Technology Diffusion*, [in:] *Handbook of Economic Growth*, Volume 1, Part A, 2005.

³⁴ P. Aghion, P. Howitt, *A Model of Growth through Creative Destruction*, *Econometrica* 1992/60.

³⁵ *Foreign Direct Investment for development. Maximising Benefits, Minimising Costs*, OECD 2003, p. 16.

Galor and Moav³⁶ conclude that technological progress, (which, we can assume, results from technology transfer) raises the returns to skills, both in terms of abilities and education. Consequently, this increase in the returns to skills includes an increase in the supply of educated workers.

Borensztein, De Gregorio, and Lee conclude that “FDI is a vehicle for the adoption of new technology, and therefore, the training required to prepare the labour force to work with new technologies suggests that there may also be an effect of FDI on human capital accumulation”³⁷.

Summing up the overview of studies on the role of human capital in attracting FDI and FDI impact upon the strengthening of the quality potential of human capital of the host country we must underline that human capital and FDI reinforce each other with complementary effects. An enhanced human capital increases the inflow of FDI by making the investment climate attractive for the foreign investors. This takes place through an upgraded skill level of the workforce. On the other hand, the FDI contributes to human resource development since multinational firms, active providers of education and training, bring new skills, information and technology to host countries. Interdependence between human capital and FDI for the countries, which host foreign capital means also higher benefits. They experience a continuous inflow of FDI over time by attracting world’s higher value-added multinational firms and simultaneously upgrade the skillcontent of pre-existing multinational firms and domestic enterprises.

5. Human capital and FDI in the Lodz Region

This paper was drafted on the basis of results of a direct study conducted in 2011. Its aim was to assess the activity of foreign investors in the region of Lodz. The study, among others, focused on: the structure of FDI, motives of its location in Poland and in the Lodz voivodeship, factors encouraging and discouraging from the continuation of operations in the region, human resources management, effects of investment, and factors increasing the investment attractiveness of the region of Lodz.

³⁶ O. Galor, O. Moav, *From Physical to Human Capital Accumulation: Inequality and the Process of Development*, Review of Economic Studies, Oxford University Press 2004/71/4.

³⁷ M. Borensztein, J. De Gregorio, J. Lee, *How does...*, p. 134.

It was a direct questionnaire-based study. A questionnaire included demographics and was composed of several dozen closed and open questions. Some of them included rating scales. Random and quota sampling was applied. For companies, we used the REGON database and the results of our own statistical analyses. The survey results were digitalized. Various statistical tools were used for processing the questionnaire data.

The study included 188 companies with foreign capital (CFCs) from the voivodeship of Lodz i.e. 9% of their overall population³⁸.

Companies included in the sample represented two sectors: industry and services and all were partially financed with foreign capital.

The size of their employment varied and they were divided into groups in accordance with binding classification of businesses. The most numerous were companies employing 10–49 and 50–249 people. The population of big businesses, which employ more than 249 people, was two times smaller than that of small or medium-sized companies. The group of micro-companies was the smallest.

The question concerning the reasons, which made a foreign investor invest in Poland was answered by assessing 12 factors on a seven-point scale. Analysis of results, besides the distribution of answers, employed averages and dispersion measures. The analysis was preceded by the estimation of measurement reliability using the Cronbach's alpha coefficient³⁹.

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k \delta_i^2}{\delta^2} \right)$$

where:

α – Cronbach's alpha coefficient,

k – number of questions,

δ_i^2 – i-question variation,

δ^2 – sum of each questions' variation.

Its value informs about the correlation between answers to individual questions and the total result of the measurement. It demonstrates to what

³⁸ In this paper we used the partial outcomes of a research project *Role of FDI in shaping current and future economic profile of the voivodeship of Lodz* co-financed by the European Union under European Social Fund.

³⁹ **G.A. Ferguson, Y. Takane**, *Statistical analysis in psychology and education*, PWN Publishing House, Warsaw 2004, p. 496.

extent the items (factors) on the scale are homogenous and represent the same interpretation of questions by respondents. It varies from 0 to 1. The higher it is, the better it describes the subject matter of the research. The value of Cronbach's alpha coefficient of 0.736 confirms high reliability of the measurement.

As shown by the study and data in Table 1, one of the major reasons for locating FDI entities in Poland is the availability of the workforce with adequate qualifications. Another valid reason was low cost of labour.

TABLE 1: *Impact of selected factors on FDI location decision in the case of Poland – ranking based on average answers**

No.	Factor	Average answer	Standard deviation	Variance
1.	Availability of workforce with adequate qualifications	5.054	1.78	3.182
2.	Low salaries and labour-related costs	4.909	1.633	2.667
3.	Big domestic market	4.829	2.067	4.272
4.	Little competition	3.613	1.987	3.947
5.	Good infrastructure	3.602	1.756	3.084
6.	Entry into the single EU market	3.594	2.224	4.946
7.	Availability of Polish subcontractors and suppliers	3.299	1.928	3.719
8.	Availability of foreign subcontractors and suppliers	3.156	3.156	3.156
9.	Vicinity of markets of the Community of Independent States	3.154	1.868	3.490
10.	Tax allowances	2.454	1.757	3.086
11.	High quality, stable legal regulations	2.341	1.289	1.661
12.	Other**			

* The points on the scale were as follows: very big (7), big (6), quite big (5), neither big nor small (4), small (3), very small (2), none (1). ** Statistical coefficients were not calculated as there were too few answers.

Source: own study.

Next part of the study was designed to identify the reasons why entities with foreign capital decided to locate their investments in the Lodz Region. Companies assessed the degree to which selected factors encouraged or disco-

uraged them from doing so. They rated 27 reasons on a seven-point scale. Like in the part of the study concerning motivations behind investors' decisions to establish a FDI business in Poland, we used distributions of answers and statistical indicators: average answer, variance and standard deviation. Cronbach's alpha coefficient was 0.884 in this case, meaning a very reliable measurement.

Foreign investors were the most encouraged to locate their businesses in the Lodz Region by factors relating to costs and employment. These were:

- relatively low salaries,
- low total costs of business activities,
- availability of workforce with adequate qualifications,
- availability of professionals with adequate qualifications.

In the following stage of analysis, reasons why investors selected the Lodz Region as the destination of their FDI we distinguished the most encouraging and the most discouraging factors.

Afterwards, we could rank the most important factors influencing foreign investors' location decisions:

- costs of production (services),
- salaries and wages,
- availability of professionals with adequate qualifications,
- availability of workforce with adequate qualifications.

When making location decisions, foreign investors also assessed the system of education, mostly secondary schools and universities. They are important factors as they supply skilled employees. In the opinion of companies, availability of professionals and workforce with adequate qualifications and appropriate profile of schools are key factors, which encourage to invest in aregion. High assessment of education means investors are convinced the system of education is capable of teaching skills consistent with their preferences. More than a half and 40% of companies, respectively, considered higher and secondary education "very important" and „quite important" in making their investment decisions.

6. Foreign investors' preferences with respect to human capital potential

One of the factors deciding about the location of a foreign investment in the region is human capital. The following analysis refers to foreign investors' preferences from the voivodeship of Lodz with respect to recruiting Polish employees as managers and at lower positions and next to enhance their skills by training.

Most companies have clear expectations vis-à-vis Poles recruited to managerial positions. This is confirmed by the majority of single selections in preference categories.

A Pole employee in managerial position desired by most of FDI companies is a person with the following profile:

- higher education,
- technical or economic background,
- age: 26–50 years,
- with work experience not longer than 10 years,
- fluent in foreign languages.

TABLE 2: *Preferences of FDI companies with respect to recruiting Poles to managerial positions*

Specification	Number of scores	
	absolute	in relation to the sample, in % *
Level of education		
– vocational	2	1.06
– secondary	24	12.77
– higher	164	87.23
– post-graduate	14	7.45
– not important	15	7.98
Total	219	116.49
Education profile		
– technical	113	60.11
– economics	100	53.19
– law	14	7.45
– IT	29	15.43
– not important	24	12.77
– other	18	9.57
Total	298	158.52

Specification	Number of scores	
	absolute	in relation to the sample, in % *
Age		
– 19–25	7	3.72
– 26–35	77	40.96
– 36–50	56	29.79
– 51 and more	6	3.19
– not important	78	41.49
Total	224	119.15
Work experience		
– none	6	3.19
– 1–5 years	62	32.98
– over 5 lat	78	41.49
– over 10 lat	18	9.57
– not important	37	19.68
Total	201	106.91
Command of foreign languages		
– very good	154	81.91
– intermediate	34	18.09
– not important	7	3.72
Total	195	103.72

* The respondents could give more than one answer.

Source: own study.

Among 164 companies preferring university graduates only 17 allowed also for the possibility of a person in managerial position to have secondary education. The importance of post-graduate studies was stressed only by 14 respondents. Technical education is especially important in the industrial sector (over 66% of answers). In services, economic and IT faculties that were more often selected. Over 15% of the respondents preferred IT education and slightly fewer (ca. 13%) did not take account of education profile when recruiting a person to a managerial position.

56% of enterprises are looking for candidates at the age of 26–50 years. Young people are preferred but at the age of 25 years and more. Interestingly enough, more companies are ready to recruit a person of 26–35 years (50) than someone at the age of 35–50 years (29) to a managerial position. For over 40% of respondents the age was not important. There is little chance of employment for people below 25 and over 51 years of age.

An essential factor for foreign investors is the period of previous employment. Data show that they preferred people with work experience exceeding 5 years. FDI companies in general require fluent command of foreign languages from the managerial staff. It is especially important in the service sector and a little less important in industry.

Similar analysis was conducted for foreign investors' preferences with respect to hiring Polish workers to non-managerial positions (table 3).

TABLE 3: *Preferences of FDI companies with respect to hiring Poles to non-managerial positions*

Specification	Number of scores	
	absolute	in relation to the sample, in % *
Level of education		
– vocational	48	25.53
– secondary	89	47.34
– higher	56	29.79
– post-graduate	4	2.13
– not important	51	27.13
Total	248	131.92
Education profile		
– technical	108	57.45
– economics	54	28.72
– law	5	2.66
– IT	21	11.17
– not important	49	26.06
– other	15	7.98
Total	252	134.04
Age		
– 19–25	40	21.28
– 26–35	80	42.55
– 36–50	25	13.30
– 51 and more	–	–
– not important	98	47.87
Total	243	125.00
Work experience		
– none	35	18.62
– 1–5 years	74	39.36
– over 5 lat	26	13.83
– over 10 lat	11	5.85
– not important	75	39.89
Total	221	117.55
Command of foreign languages		
– very good	47	25.00
– intermediate	76	40.43
– not important	80	42.55
Total	203	107.98

* Respondents could give more than one answer.

Source: own study.

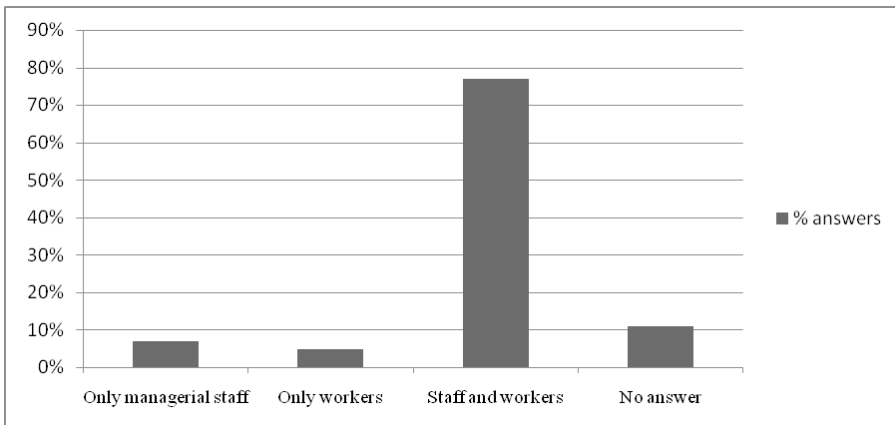
Respondents' answers indicate that a suitable Polish employee in non-managerial position for most the FDI companies is a person with the following profile:

- secondary education,
- technical or economic,
- at the age of 26–35,
- with work experience not longer than 5 years,
- having intermediate command of foreign languages.

Technical background is preferred by FDI companies in industry. Command of foreign languages was not important for about 40% of companies, especially in industry. Fluency in foreign languages was, however, very important in the service sector. Age and work experience of potential employees were irrelevant to respectively 48% and 40% of FDI companies. Other preferred mostly young people with work experience up to 5 years and aged up to 35.

Companies with foreign capital attach great importance to professional training, giving their employees an opportunity to enhance and improve their skills. Almost each surveyed company organized a training in Poland and almost half of them also abroad⁴⁰.

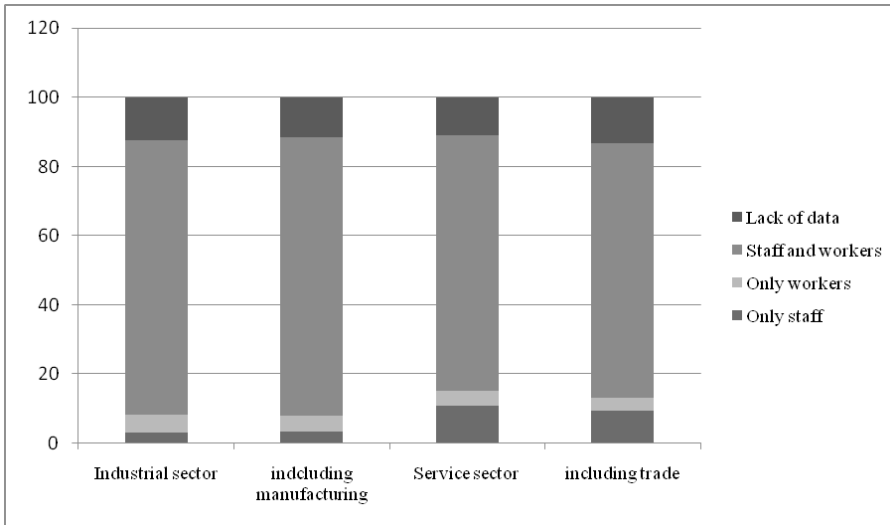
CHART 2: *Employees of FDI companies participating in training*



Source: own study.

⁴⁰ Results are similar to the conclusions contained in: **A. Klysik-Uryszek**, *Bezpośrednie inwestycje zagraniczne w gospodarce regionu. Teoria i praktyka*, CeDeWu, Warsaw 2010, p. 184.

CHART 3: *Employees of FDI companies participating in vocational training by business sectors, in %*



Source: own study.

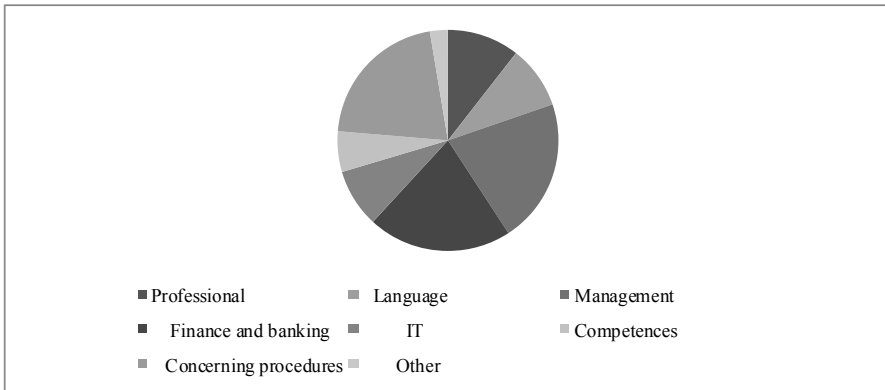
The rule was to organize training both for managerial staff as well as for employees in non-managerial positions. The structure of training by sectors did not reveal bigger differences. In the service sector the share of training courses for managerial staff was higher and for managerial staff and workers lower than in industry. The differences, however, are minor.

Subjects of training courses organized by FDI companies were very differentiated. Most often, however, concerned three aspects:

- 1) management and marketing, including production, quality and company management, attracting and servicing customers, negotiations;
- 2) finance and banking, including accounting, taxes, personnel, salaries, audits, controlling;
- 3) procedures, including health and safety at work, technical, construction, chemical procedures.

Two thirds of all training courses were connected with these areas.

There were fewer professional, computer, foreign languages and soft skills courses.

CHART 4: *Subjects of training courses organized by FDI companies (in %)*

Source: own study.

Clear majority of FDI analysed in the Lodz Region decided the changes were very positive. The output of production and services increased, together with the number of products placed on the market, employment, productivity, and value of assets; distribution networks also developed. The smallest positive changes were reported for advertising. In a small group of studied businesses negative phenomena occurred, such as a decrease in production and employment.

Innovation of companies with foreign capital in the Lodz Region was assessed based on the turnover in licenses, implementations of innovative solutions and R&D activities. Certificates, patents and protection rights were also analyzed.

The majority of foreign investors (more than 60%) transferred solutions relating to products, technology and organisation developed in their parent companies or daughter companies to FDI companies. Importantly enough, half of businesses implemented also their own innovations. Every fourth FDI company has got an R&D unit and almost 1/3rd collaborate with research institutes in developing and implementing innovative solutions. By improving the quality, lowering costs and better matching between the offer and market needs such activities improve competitiveness of businesses. On the other hand, however, their scope, in most cases, is quite limited. Only very few FDI companies sold licenses and most of them have no certificates, protection rights or patents, which is indicative of their low innovativeness.

7. Summary

Investing in education and human capital is important for creating good climate for investment. It is stressed that achieving a certain minimum level of education is the precondition for a country to attract and maintain foreign direct investment and maximise indirect effects connected with human capital and resulting from the presence of businesses with foreign capital. We should also stress that such a minimum is different for different sectors of the economy. On top of that, care should be taken to avoid the so called educational gap between foreign investors and the host country as that might substantially reduce positive externalities. Access to skilled labour has been the main motive for various types of resource-seeking MNEs. Many companies now consider access to qualified and creative manpower an important factor of competitiveness.

Results of the study conducted in the Lodz Region demonstrated that human capital is an important factor, which attracts FDI to the region. It is especially important from the point of view of benefits that may be achieved by the economy of the Lodz Region from FDI. This factor, which, in the eyes of investors, improves the competitiveness of the region comes from “favourable relation between the price and quality of human capital and high marginal efficiency of capital”⁴¹ characteristic for all the Central and East European area.

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⁴¹ **W. Orłowski**, *W pogoni za straconym czasem. Wzrost gospodarczy w Europie Środkowo-Wschodniej 1950–2030*, PWE Warsaw 2010, p. 217.

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ROLA KAPITAŁU LUDZKIEGO W PRZYCIĄGANIU BEZPOŚREDNICH INWESTYCJI ZAGRANICZNYCH NA PRZYKŁADZIE WOJEWÓDZTWA ŁÓDZKIEGO

(Streszczenie)

Inwestowanie w wykształcenie i kapitał ludzki ma istotne znaczenie przy tworzeniu sprzyjającego klimatu inwestycyjnego. Wskazuje się, że osiągnięcie pewnego minimalnego poziomu wykształcenia jest warunkiem koniecznym, by kraj był zdolny przyciągnąć i utrzymać bezpośrednie inwestycje zagraniczne oraz maksymalizować efekty pośrednie związane z kapitałem ludzkim i wynikające z funkcjonowania przedsiębiorstw z udziałem kapitału zagranicznego. Należy podkreślić, iż taki minimalny poziom różni się w poszczególnych sektorach gospodarki. Ponadto należy zadbać, aby nie pojawiła się tzw. luka edukacyjna pomiędzy inwestorami zagranicznymi a krajem goszczącym inwestycje, z uwagi na możliwość zmniejszenia się znaczących pozytywnych efektów zewnętrznych. Wyniki badania przeprowadzonego w regionie łódzkim, wskazały iż kapitał ludzki jest istotnym czynnikiem przyciągającym BIZ do regionu. Jest to szczególnie ważne z punktu widzenia korzyści jakie może osiągnąć gospodarka regionu łódzkiego z napływu BIZ.

Słowa kluczowe: kapitał ludzki, bezpośrednie inwestycje zagraniczne, region łódzki