

EDUCATION AND INVESTMENTS IN HUMAN CAPITAL IN B&H. ENTERPRISES

SANVILA VUK¹

Abstract: The main characteristics of postindustrial era (new economy, knowledge economy) are rapid changes of political, economic, technological and social environment which are reflected in different market demands, way of doing business and competition. Knowledge as an organizational recourse is recognized by many companies as a source of competition in new conditions of constant changes. Developed market economies enterprises undertake huge programs of education and their employees development in order to meet market demands and to adapt unpredictable changes in contemporary turbulent environment becoming the biggest education institutions today. The fact that European Commission developed the long life learning program striving to make whole Europe area space of learning, confirm the importance of education today. Formal education in school and university is not enough to provide employee with knowledge to be capable for new more complex tasks in future. Long life learning is attempt of western economies to meet new market demands based on radical changes which lead economy from industry to services, to knowledge based economy. That is the reason why the continual learning is an imperative not only for the company but for the individuals too. The aim of this paper is to analyze the importance of learning and investments in education in bh. enterprises as well as try to find out how bh. enterprises recognize the role of knowledge and employees education in achieving of competitive advantage today.

Key words: *continual learning, employees education, investments in education of employees*
JEL: O15, M53

INTRODUCTION

Knowledge as an organizational recourse is recognized by many companies today as a source of competition in new conditions of doing business. Companies in developed market economies invest huge amounts in different programs of education and their employees development with the purpose of achieving competitive advantage becoming the biggest education institutions today. Approximately, world companies invest 1,5-2% of their budget for earnings in employees education. (Noe, Hollenbeck, 2006: 208) For example, Pfizer Inc. as a leader in farmaceutical industry, applying different programs of education and development, invest anually about 15% of costs of earnings for that purpose. (Robbins, Coulter, 2005: 235) Besides, sucessfull companies require that their employees spend defined number of hours in different programs of education. Managers, for example, need to spend about 20% of their working time in programs of their own additional education. (Šiber, 1999: 718)

European Commission developed the long life learning program striving to make Europe as a space of learning, confirming the importance of education in contemporary conditions. Formal education in school and university is not being able to provide employee with knowledge for new, more complex tasks in future. Western economies through long life learning, tried to find answer on new market demands based on radical changes which lead economy from industry to services, to knowledge based economy. So, continual learning appeared as an imperative not only for the company but for the individuals too.

¹ PhD, Assistant professor, Faculty of Economics“, Džemal Bijedić” University of Mostar, Bosnia & Herzegovina, e-mail: sanvila.vuk@unmo.ba

1. The aim and methodology of research

The aim of this paper is the analysis of learning and investments in education importance in bh. enterprises as well as to find out how bh. enterprises recognize the role of knowledge and employees education in achieving of competitive advantage today. For that purpose, the following research hypotheses were formulated:

1. The investments in additional education in bh. enterprises are not enough concerning the significance of education in achieving of competitiveness;
2. Industry (company belongs to) has the influence on level of investments in employee education;
3. Company size has the influence on level of investments in employee education;
4. Company property has the influence on level of investments in employee education;

A carefully designed questionnaire, consisted of 43 questions was used as the research instrument for gathering data. Mostly managers of human resources responded but, in few cases, finance managers or top managers fulfilled the questionnaire. 35 bh. enterprises, geographically dispersed, different by size, property and industry belong to, took part in this research. The structure of this sample is following:

| Characteristics of enterprises | Structure of the sample |
|---------------------------------------|---|
| Industry | Production: 13 enterprises (37%); Trade: 6 enterprises (17%); Services: 16 enterprises (46%); |
| Company size | Small: 19 enterprises (54%); Medium 9 enterprises (26%); Big: 7 enterprises (20%); |
| Property of enterprises | Property of state: 4 enterprises (11%); Domestic private property: 24 enterprises (69%); Private property from abroad: 7 enterprises (20%); |

Appropriate statistical methods such as descriptive statistics, chi-square test and graphic presentation of results were used. The data processing was undertaken by using SPSS and Excel computer programs. The results of research and conclusions will be presented in this paper.

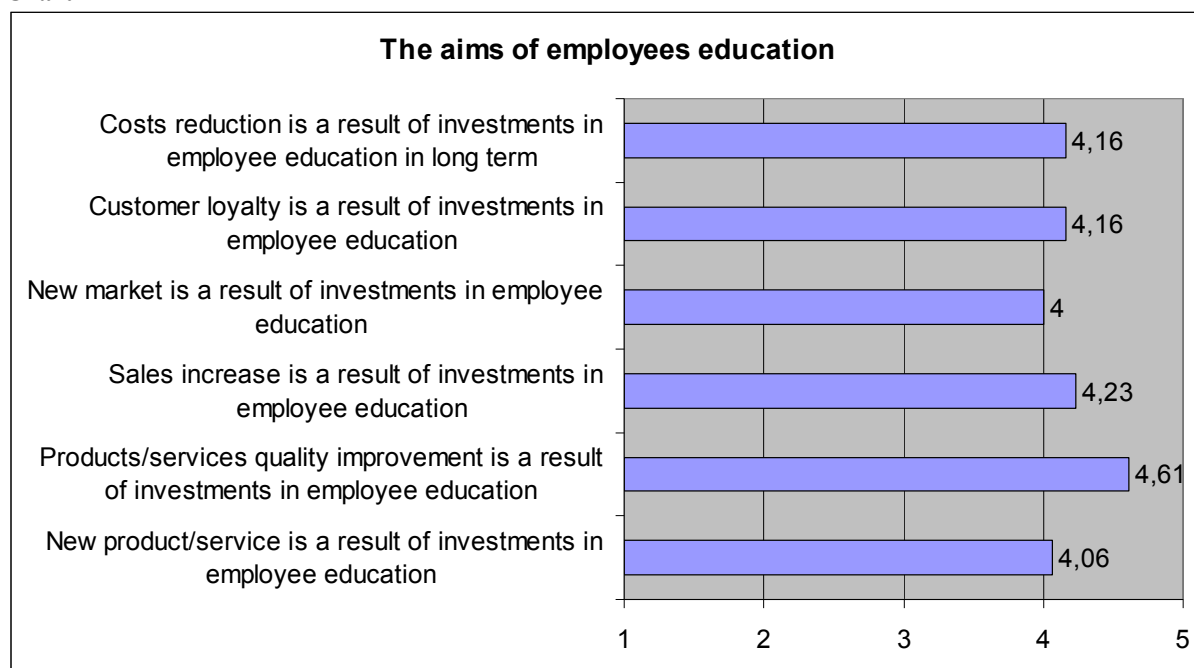
2. The importance of employees education in achieving of competitive advantage

Following characteristics of competitiveness as the aim of employees education are considered: new product/service, quality of product/service improvement, sales increase, new markets, customer loyalty, costs reduction. These elements were evaluated using the frequency scale between 1 to 5 (absolutely disagree, disagree, undecided, agree, absolutely agree). These evaluations mean the importance of education in achieving previously mentioned elements of competitiveness.

As the main effect of employee education, the greatest number of analysed enterprises quoted quality of product/service (99% (38% agreed; 61% absolutely agreed), then sales increase and costs reduction as well as the loyalty of customers. The cart bellow shows this average grades and it could be mentioned that the grade of quality of products/services improvement as the results of employees education is the highest (4,61).

But, coefficient of correlation calculated between the grades of this aims of employees education and data of investments in education in total sum, found out that there is no statistically relevant correlation (Table 7 in Appendix). Such a result means that the financial investments in education of employees in total amount in bh. enterprises are not enough. Relatively high grades of competitiveness characteristics as the aims of employees education are not „accompanied“ with high investments for that purpose.

Chart 1



Source: designed by author

In the same way, the Spearman coefficient of correlation is calculated between variables concerning the aims of employees education and investments in employee education (Table 8 in Appendix). Calculated coefficient ($\rho = 0,408$) shows that correlation between *quality of product/service* (as a result of employees education) and *investments per individual employee* exists (significance $\alpha = 0,05$). This result is expected, having in mind that 81% of analyzed companies quoted high quality as their long term aim.

Calculated coefficients of correlation between variables of employees education aims and hours spent in education programs found out that correlation between *quality improvement* and *hours spent in programs of education* exists ($\rho = 0,658$) with significance of $\alpha = 0,01$, then between *new markets* and *hours spent in education programmes* ($\rho = 0,369$) with the significance of $\alpha = 0,05$ as well as between *customer loyalty* and *hours spent in education programs* ($\rho = 0,478$) with the significance of $\alpha = 0,01$.

Analyzing the significance of employees education is possible with data of planned investments in education or existing budget for the purpose of education. 57% analysed enterprises show that they have a budget for employees education and 37% have human resource department within organizational structure which is “responsible” for employees education in general.

Data of education investments in total amount shows that even 72% enterprises annually invest less than 20 000 convertible marks (KM) for this purpose, 14% between 20 000KM and 50 000 KM and 14% invest more than 50 000KM in education. This research found out that 74% enterprises invest less than 1000KM per individual employee, 23% between 1000KM and 3000KM while only 3% invest more than 3000KM per employee for the

purpose of education. But, 59% analyzed enterprises have the plans of expanding investments in education in near future. The average investment in total amount is 21 428, 57KM and standard deviation is 20 057,69KM.

The investment per individual employee in average is 985,71KM and standard deviation is 844,41KM. Average annual investments in education in comparison with turnover is only 0,69% and it confirms the conclusion that the investments in education are not enough. The investments in a few big companies increased this percent. Otherwise, it would be lower than it is. Number of hours spent in different education programs is 20,29 and standard deviation is 13,17. Even in 57% enterprises, employees spent less than 20 hours in education programs. Concerning the scope of additional education, in 56% enterprises less than 30% of all employees take part in such programs.

Correlation coefficients between characteristics of enterprises (industry, size, property) and investments in education programs found out that correlation between *company size* and *investments in total amount in education programs* ($\rho = 0, 542$) as well as *enterprise property* and *investments in total amount in education programs* ($\rho = 0, 347$) also exist (sig. $\alpha = 0,05$). All mentioned above lead to conclusion that big companies in private properties (domestic or from abroad) invest more for this purpose than small or middle sizes companies.

Since, correlation coefficients express strength of connection but not the causality and consequences, chi square test is applied to check the influence of company's characteristics (industry, size, property) on level of investments in additional employees education.

2.1. The influence of industry on level of investments in additional employees education

With the purpose of checking industry influence on level of investments in additional employees education in total amount applying chi square test the hypotheses were formulated:
 H_0 = Industry of company has no influence on level of investments in additional employees education in total amount

H_1 = Industry of company has the influence on level of investments in additional employees education in total amount

Table 1: The investments in total amount for different industry enterprises

| Industry | Investments in total amount | | | Total |
|--------------|-----------------------------|------------------|-------------------|-----------|
| | Less than 20000KM | 20000 to 50000KM | More than 50000KM | |
| Production | 10 | 2 | 1 | 13 |
| Trade | 5 | 0 | 1 | 6 |
| Services | 10 | 3 | 3 | 16 |
| Total | 25 | 5 | 5 | 35 |

Source: designed by author

Calculated value of chi square test = 2,087

Table value of chi square test = 9,487

Degrees of freedom = 4

Level of significance $\alpha = 0,05$

Since, empirical value of chi square test is less than table value with significance of the $\alpha = 0,05$ hypotheses H_0 is accepted. That means that industry, enterprises belong to, have no influence on level of investments in additional employees education in total amount.

In the same way it is possible to check the influence of industry on investments in additional education per individual employee.

The hypotheses were formulated with that purpose:

H_0 = Industry of company has no influence on level of investments in additional education per individual employee

H_1 = Industry of company has the influence on level of investments in additional education per individual employee

Table 2: The investments per individual employee for different industry enterprises

| Industry | Investments per individual employee | | | Total |
|--------------|-------------------------------------|----------------|------------------|-----------|
| | Less than 1000KM | 1000 to 3000KM | More than 3000KM | |
| Production | 11 | 2 | 0 | 13 |
| Trade | 4 | 2 | 0 | 6 |
| Services | 10 | 5 | 1 | 16 |
| Total | 25 | 9 | 1 | 35 |

Source: designed by author

Calculated value of chi square test = 2,567

Table value of chi square test = 9,487

Degrees of freedom = 4

Level of significance $\alpha = 0,05$

Calculated value of chi square test is less than table value so the hypothesis H_0 is accepted with the significance of $\alpha = 0,05$. That means that industry of company has no influence on level of investments in additional education per individual employee.

2.2. Company size influence on level of investments in additional employees education in total amount

In order to check the influence of company size on level of investments in additional employees education in total amount applying chi square test, the hypotheses were formulated:

H_0 = Company size has no influence on level of investments in additional employees education in total amount

H_1 = Company size has the influence on level of investments in additional employees education in total amount

Table 3: The investments in total amount for different company size

| Company size | Investments in total amount | | | Total |
|--------------|-----------------------------|------------------|-------------------|-----------|
| | Less than 20000KM | 20000 to 50000KM | More than 50000KM | |
| small | 17 | 2 | 0 | 19 |
| medium | 6 | 3 | 0 | 9 |
| big | 2 | 0 | 5 | 7 |
| Total | 25 | 5 | 5 | 35 |

Source: designed by author

Calculated value of chi square test = 26,168

Table value of chi square test = 9,487

Degrees of freedom = 4

Level of significance $\alpha = 0,05$

Since the calculated value of chi square test is higher than table value, hypothesis H_0 is rejected in favour of H_1 with the level of significance of $\alpha = 0,05$, then it could be concluded that size of company has the influence on amount of investments in employees education in total.

In order to check company size influence on level of investments in additional education per individual employee, the hypotheses were formulated:

H_0 = Company size has no influence on level of investments in additional education per individual employee

H_1 = Company size has the influence on level of investments in additional education per individual employee

Table 4: The investments per individual employee for different company size

| Company size | Investments per individual employee | | | Total |
|--------------|-------------------------------------|----------------|------------------|-----------|
| | Less than 1000KM | 1000 to 3000KM | More than 3000KM | |
| small | 12 | 6 | 1 | 19 |
| medium | 7 | 2 | 0 | 9 |
| big | 6 | 1 | 0 | 7 |
| Total | 25 | 9 | 1 | 35 |

Source: designed by author

Calculated value of chi square test = 1,927

Table value of chi square test = 9,487

Degrees of freedom = 4

Level of significance $\alpha = 0,05$

Calculated value of chi square test is less than table value with the level of significance of $\alpha = 0,05$, so the hypothesis H_0 is accepted. That means, size of bh. companies has no influence on amount of investments in additional education per individual employee.

2.3. Enterprise property influence on level of investments in additional employees education

In order to check influence of enterprise property on level of investments in additional employees education in total amount applying chi square test, the following hypotheses were formulated:

H_0 = Enterprise property has no influence on level of investments in additional employees education in total amount

H_1 = Enterprise property has the influence on level of investments in additional employees education in total amount

Table 5: The investments in total amount for different enterprises property

| Property of enterprise | Investments in total amount | | | Total |
|------------------------------|-----------------------------|------------------|-------------------|-----------|
| | Less than 20000KM | 20000 to 50000KM | More than 50000KM | |
| Property of state | 2 | 0 | 2 | 4 |
| Domestic private property | 22 | 2 | 0 | 24 |
| Private property from abroad | 1 | 3 | 3 | 7 |
| Total | 25 | 5 | 5 | 35 |

Source: designed by author

Calculated value of chi square test = 21,000

Table value of chi square test = 9,487

Degrees of freedom = 4

Level of significance $\alpha = 0,05$

Empirical value of chi square test is higher than table value with level of significance of $\alpha = 0,05$, so the hypothesis H_0 was rejected in favour of the H_1 . That means that property of bh. enterprises have no influence on level of investments in employees education in total amount.

In the same way, it is possible to check the influence of enterprises property on level of investments in additional education per individual employee. The hypotheses were formulated with the purpose of checking this relation:

H_0 = Enterprise property has no influence on level of investments in additional education per individual employee

H_1 = Enterprise property has the influence on level of investments in additional education per individual employee

Table 6: The investments per individual employee for different enterprises property

| Property of enterprise | Investments per individual employee | | | Total |
|------------------------------|-------------------------------------|----------------|------------------|-----------|
| | Less than 1000KM | 1000 to 3000KM | More than 3000KM | |
| Property of state | 3 | 1 | 0 | 4 |
| Domestic private property | 18 | 5 | 1 | 24 |
| Private property from abroad | 4 | 3 | 0 | 7 |
| Total | 25 | 9 | 1 | 35 |

Source: designed by author

Calculated value of chi square test = 1,731

Table value of chi square test = 9,487

Degrees of freedom = 4

Level of significance $\alpha = 0,05$

Calculated value of chi square test is less than table value with the level of significance of $\alpha = 0,05$. The hypothesis H_0 is accepted which means that enterprise property has no influence on level of investments in additional education per individual employee.

CONCLUSION

Concerning the calculated values it is possible to conclude that investments in employees education in bh. enterprises are on the very low level and importance of employees education in achieving of competitiveness is not accompanied by appropriate amounts of investments for that purpose. Besides, only 37% analyzed enterprises have human resource department in their organizational structure and in 17% enterprises human resource department take care of employee education which means that this activity is not developed yet in bh. enterprises. Industry has no impact on level of investments neither in total amount nor per individual employee. But, company size has the impact on total amount of education investments. Also, ownership has the influence on amount of investments in educational programs in total. Big and private enterprises invest larger amounts in employee education.

REFERENCES

- Bahtijarević-Šiber Fikreta: Management ljudskih potencijala, Golden marketing, Zagreb, 1999
- Dessler Gary: Osnovi menadžmenta ljudskih resursa (prevod), Data status, Beograd, 2007
- Ivancevich John M.: Human Resource Management, 7th ed, Irwin McGraw-Hill Inc, 1998
- Noe Raymond A., Hollenbeck John R., Gerhart Barry, Wright Patric M.: Menadžment ljudskih potencijala, Mate, Zagreb, 2006
- Price A.: Human Resource Management, South Western Cengage Learning, London, 2007
- Robbins Stephen P., Coulter Mary: Menadžment (prevod), Data status, Beograd, 2005
- Stone Raymond J.: Human Resource Management 4th ed, Wiley, 2002
- Torrington Derek, Hall Laura, Taylor Stephen: Menadžment ljudskih resursa, Data status, Beograd, 2004
- Weihrich Heinz, Koontz Harold: Menedžment, 10th ed, McGraw-Hill, Mate, Zagreb, 1994
- Albu Ruxanda-Gabriela: E-Larning-One of the most important educational challenges of 21 st century, Process of Bologna and Lifelong Learning in the hotel and Tourism Industry, 2009, pp.15 – 26
- Almondo M., Morse G.: Sparking Creativity at Ferrari, Harvard Business Review, A Year of Management Ideas, January, 2007
- Cappelli P.: Talent Management for the Twenty First Century, Harvard Business Review, March, 2008
- Edmondson Amy C.: The Competitive Imperative of Learning, HBR, July, 2008
- Garvin David A., Edmondson Amy C., Gino Francesca: Is Yours a Learning Organisation?, HBR, March, 2008
- Harryson S., Lorange P.: Bringing the College Inside, Harvard Busuness Review, December, 2005
- Jacobson Al, Prusak Laurence: The Cost of Knowledge, HBR, November, 2006
- Martin J., Schmidt C.: How to Keep Your Top Talent, Harvard Business Review, May, 2010
- McDonough E.F., Zack M., Lin H., Berdrow I.: Integrating Innovation Style and Knowledge Into Strategy, Harvard Business Review, Octobar, 2008
- Meister Jeanne C., Willyerd Karie: Mentoring Millennials, Harvard Business Review, May, 2010
- Pološki Vokić Nina, Vidović Maja: HRM as a significant factor for achieving competitiveness through people – The case of Croatia, Working Paper Series, Paper No.07-01, 2007, Faculty of economics and business, Zagreb (<http://www.efzg.hr/wps>) 07.05.2010.
- Pološki Vokić Nina, Grizelj Helena: Obrazovanje i razvoj zaposlenika u hrvatskim organizacijama, Ekonomski pregled, 58 (12) 851-880, 2007 (<http://hrcak.srce.hr/file/30389>) 07.05.2010.
- Pugh Katrina, Dixon Nancy M.: Don't Just Capture Knowledge – Put It to Work, HBR, May, 2008
- Vineet N.: An Overview of the „Employees First, Customers Second“ Approach to Management – How Empowering Your Emploeeys fits the Stage for Transformation Growth, Harvard Business Review, June, 2010

APPENDIX

Table 7: The correlation between the aims of employees education and investments in education

| Investments in employees education | The characteristics of competitiveness | Coefficient | r | p | n |
|-------------------------------------|--|-----------------|----------------|-------|----|
| Investments in total amount | New product/service is a result of investments in employee education | Spearman ρ | 0,138 | 0,459 | 31 |
| | Products/services quality improvement is a result of investments in employee education | Spearman ρ | 0,260 | 0,158 | 31 |
| | Sales increase is a result of investments in employee education | Spearman ρ | -0,082 | 0,661 | 31 |
| | New market is a result of investments in employee education | Spearman ρ | -0,035 | 0,850 | 31 |
| | Customer loyalty is a result of investments in employee education | Spearman ρ | 0,315 | 0,084 | 31 |
| | Costs reduction is a result of investments in employee education in long term | Spearman ρ | 0,209 | 0,250 | 31 |
| Investments per individual employee | New product/service is a result of investments in employee education | Spearman ρ | 0,307 | 0,093 | 31 |
| | Products/services quality improvement is a result of investments in employee education | Spearman ρ | 0,408* | 0,023 | 31 |
| | Sales increase is a result of investments in employee education | Spearman ρ | 0,219 | 0,237 | 31 |
| | New market is a result of investments in employee education | Spearman ρ | 0,269 | 0,143 | 31 |
| | Customer loyalty is a result of investments in employee education | Spearman ρ | 0,067 | 0,719 | 31 |
| | Costs reduction is a result of investments in employee education in long term | Spearman ρ | 0,154 | 0,409 | 31 |
| Hours spent in education programs | New product/service is a result of investments in employee education | Spearman ρ | 0,456 | 0,010 | 31 |
| | Products/services quality improvement is a result of investments in employee education | Spearman ρ | 0,658** | 0,000 | 31 |
| | Sales increase is a result of investments in employee education | Spearman ρ | 0,029 | 0,875 | 31 |
| | New market is a result of investments in employee education | Spearman ρ | 0,369* | 0,041 | 31 |
| | Customer loyalty is a result of investments in employee education | Spearman ρ | 0,478** | 0,007 | 31 |
| | Costs reduction is a result of investments in employee education in long term | Spearman ρ | 0,154 | 0,409 | 31 |

| Investments in employees education | Characteristics of enterprises | Coefficient | r | p | n |
|--|---------------------------------------|--------------------|---------------|----------|----------|
| Investments in total amount | Industry | Spearman ρ | 0,159 | 0,362 | 35 |
| | Company size | Spearman ρ | 0,542* | 0,001 | 35 |
| | Property of enterprise | Spearman ρ | 0,347* | 0,041 | 35 |
| Investments per individual employee | Industry | Spearman ρ | 0,208 | 0,232 | 35 |
| | Company size | Spearman ρ | -0,285 | 0,097 | 35 |
| | Property of enterprise | Spearman ρ | 0,126 | 0,470 | 35 |
| Hours spent in educated programm | Industry | Spearman ρ | 0,259 | 0,133 | 35 |
| | Company size | Spearman ρ | -0,130 | 0,456 | 35 |
| | Property of enterprise | Spearman ρ | 0,324 | 0,058 | 35 |

Table 8: The correlation between characteristics of enterprises and investments in education

Source: designed by author