

## **Human Capital Development in Small Business: Life Cycle Approach with Resources' Mediation Effect**

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*Human capital constitutes a crucial category of intangible resources for the modern companies. It concerns as well small businesses, which character marked by a relatively low employment level points out a necessity for focus on the qualitative dimension of human capital development. This development requires the engagement of the small businesses' limited resources, whose level differentiates among different phases of a business life cycle. Taking this into account, the aim of this article is to identify and asses the range of engagement in human capital development in various stages of small business life cycle including the mediation effect of the resources level in companies. The considerations are based on an authorial concept of the life cycle showing both static and dynamic character of the development stages. The aim of the paper was achieved by conducting a survey based on a sample of 356 SME sector companies from the European Union (EU). 3 research hypotheses were positively verified based on the outcome. The results indicate that concentration of higher level of resources (resulting from operating in the dynamic life cycle phases) has a positive effect on the stage of human capital development. Simultaneously it determines the small businesses performance.*

**JEL Codes:** J24, L26 and O15

### **1. Introduction**

Human capital understood as a dynamic configuration of competences, commitment, intellect and energy of people working in companies, is one of the key areas of the modern companies' intangible resources potential (Kraaijenbrink, 2011). It also concerns the SME sector companies which due to the relatively low employment level should focus on the qualitative dimension of human capital improvement. The development activities in the human capital area have mostly an investment character and require engagement of the small businesses' limited resources, whose level differs among different stages of companies life cycle. This leads to two research questions: (1) what is the range of engagement in the human capital development in different stages of the SME sector companies life cycle? and (2) what is the influence of the resources level on engagement in the human capital development in different stages of the small business' life cycle?

Taking this into account, the aim of this article is to identify and assess the range of engagement in the human capital development in different stages of companies' life cycle, including the mediation effect of the resources level in the companies. These considerations are based on authorial concept of the life cycle, emphasizing the static and dynamic character of the development stages. 3 research hypotheses were defined which correspond directly with theoretical considerations. The aim of the article is supported by a quantitative survey conducted on the sample of 356 companies from the European Union.

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Conducted research differentiates from the previous studies mainly in its complexity. Previous studies focused primarily on the so-called emerging phases which are the first stages of small business life cycle. The proposed approach takes both earlier and later stages of the companies life cycle into consideration. This approach has been broadened by giving a proposal to divide those stages in the static and dynamic ones and showing how it influences the researched topic. Given complexity contributes therefore to enriching the current level of knowledge in management sciences.

The article is organized as follows: firstly the literature review is covered, then the methodology and research model are presented. In the next section main conclusions which lead to the discussion aimed to verify research hypotheses are provided. The last part summarizes presented considerations based on which practical and cognitive implications are formulated.

## 2. Literature Review

Currently, there is a renaissance of Human capital theory with significant perspectives for further research development (Nyberg, Wright, 2015), although its origins date back to the second half of the XVII century. In 1676 W. Petty in his work 'Political Arithmetic' stated that the man himself is a capital and the key to increase nation's wealth is to progress in the specialization of work. Almost a century later, A. Smith said that knowledge and abilities are both acquired during the education process and that training, and health is a capital embodied in man.

According to M.L. Legnick-Hall and C.A. Legnick-Hall (2003), human capital is viewed as knowledge and abilities and other attributes of the employees which create potential needed to achieve a competitive advantage of the organization. Moreover, human capital is created through the development of people's competencies, allowing new attributes to develop within the organization. More views of different authors on the human capital definition are presented in table 1.

**Table 1. Human capital definition of the leading authors.**

S.n.	Authors	Definition
1.	G. Bohlander, A. Sherman, S. Snell	Human capital is knowledge, competencies, and individual abilities which constitute an economic value for the enterprise.
2.	J. A. Woods, J. Cortada	Human capital is an overall value of knowledge which is present in the company. This capital refers to the value usually not reflected in the books of this entity but is a result of this entity's investment to extract the employee's knowledge.
3.	L. Edvinsson, M. S. Malone	Human capital presents all individual abilities and experience of both company's employees and it's management.
4.	G. G. Dess, J. C. Picken	Human capital is knowledge, abilities and experience being an integral part of man, which cannot be separated.
5.	T.O. Davenport	Human capital is an overall value of intangible assets that employees bring to the organization. It includes knowledge, abilities, talent, and attitude.

Source: (Edvinsson, Malone 1997; Dess, Picken, 1999; Davenport, 1999; Woods, Cortada 2000; Bohlander, Snell, Sherman 2001; Legnick-Hall, Legnick-Hall 2003).

On the basis of the above, it can be concluded that human capital is a set of qualitative factors embodied in man and being it's integral element. It includes knowledge, abilities, professional experience, health and other attributes, which a man brings into the

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organization. The main elements that create human capital within the organization are (Stiles, Kulvisaechana, 2003; Arthur, Boyles, 2007; Ployhart, Moliterno, 2011; Kehoe, Wright, 2013):

- employment level: the number of employees required to effectively deliver the service and meet the company's needs and objectives,
- employee's competencies: knowledge, skills, abilities, mental and physical attributes. The potential is dependent on the qualifications of the employees and their level,
- professional experience: level of expertise in dedicated tasks and performance,
- demographic structure: a factor determining the potential of resources being a derivate of the individual employment having certain characteristics to the overall employment level or to the proportion of the employees in different groups. For instance, an employment structure based on age, education, years of experience,
- employee's attitudes: determines a way in which an employee sees his role, his organization and coworkers,
- individual employee's behaviors: regular behaviors of an individual employee, which recur,
- collective employees' behaviors: regular behaviors of homogenous groups of employees which recur.

Human capital is the most important asset of each organization. This statement is true for all of the activities that require human involvement. Without investment, this capital won't grow or it can even lose in value. In the light of today's competition, the companies realize that the key to achieving and keeping a competitive advantage is having a high level of human capital. It is a valid statement for both small and big businesses.

In today's European economy, small businesses play a crucial role in its further development (Floyd, McManus, 2005). It can be seen in their contribution to GDP creation, the amount of SMEs compared to the whole amount of businesses in the economy, and employment level. A small business is defined by quantitative criteria imposed by the European Commission Recommendation (2003) and the European Commission Regulation (2004) illustrated in table 2.

**Table 2. Classification of the size of enterprises given by the European Commission**

S.n.	Criteria	Enterprise size			
		Micro	Small	Medium	Big
1.	Annual average employment level	< 10	< 50	< 250	> 249
2.	Annual turnover value (mln. Eur.)	< 2	< 10	< 50	> 49
3.	Total value of assets (mln. Eur.)	< 2	< 10	< 43	> 43
4.	Capital/ownership relations with other companies	Capital/ownership independence			n/a

Source: own work based on (Commission Recommendation, 2003; Commission Regulation, 2004).

On the other side the most important qualitative characteristics of the small businesses are (Storey, Greene, 2010; Bridge, O'Neill, 2013):

- relatively low share in the market,
- the operations are mostly based on the knowledge, experience and intuition of the owner,
- the majority of the operations take place in the local and regional market,
- the offer is dedicated to individual buyers,
- growth and development is based on low level capital which require solutions,

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- lack of financial reserves,
- a low level of formalization within the entity,
- operations based on reaction rather than on long term planning,
- flexibility of the resources and organizational structures within the company,
- short time of adapting to the market requirements and fluctuations.

The importance of human capital in the success of small businesses finds its place in many theoretical concepts and empirical researches. Among the most important is the analysis of the human capital accumulated in the owners person (Fairlie, Robb, 2007), the assessment of this capital's role in the development of the entrepreneur's attitude in the SME sector companies (Unger, Rauch Frese, Rosenbusch, 2011; McGowan, Cooper, Durkin, O'Kane, 2015) and internationalization of the small business (Onkelinx, Manolova, Edelman, 2016). A very important research problem is also the engagement of the SME sector companies in the development of human capital (Colombo MG and Grilli L 2005; Martin, McNally, Kay, 2013).

The development system of the human capital in small businesses should assume the maximum efficiency of the training system which will help achieve organization's goals. The aim of this system is to increase the skills of the employees and optimization of the employment in terms of required skills which are necessary to achieve success. In order to achieve it, the development system of the human capital should be:

- complex - the training should be available for all employees, without the division into current priorities; otherwise the training can have a negative impact on the organization as a whole,
- wide - the development system of the human capital should be organized in a formal manner, consisting of the ways of development accepted by management, which will allow to meet both current and future needs,
- connected - the development path of human capital should be connected to mission, vision, and long term planning in the organization,
- flexible - the implementation of the development path must be accompanied by the monitoring of the current trends on the market; if they change, a correction can be made.

The complexity of the development system of the human capital is expressed in the concept of human capital development star proposed by J. Fitz-Enz (2009) and includes it's planning, keeping, acquiring, developing, supporting and assessing. The main challenge is to focus this system on developing a firm-specific human capital (Molloy, Barney, 2015). This development should be based on the long-term planning of an appropriate employment level with regard to the desired competency profiles. J. Mahoney and Y. Kor (2015) emphasize that firm-specific human capital for its development requires accumulation in long term. Therefore, in the process of human capital development it is important to limit the rotation of employees and link up their interests with the interests of the small company.

Further human capital development activities have a character of investment initiatives and actions. Their aim is to develop the human resources within the organization by improving qualifications, acquiring new skills and abilities and personal development. It should identify the required characteristics, capabilities and aspirations of employees and integrate the organization's targets with the employee assumptions. The traditional creating methods of human capital include: internal and external development trainings, planning and following the individual career paths, as well as the forms used in the area of work: preparing for a certain job or function and allowing to change the qualifications. The useful and available

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forms of human capital development in SME sector's companies which are connected with methods mentioned above include e.g.: internal and external trainings, undergraduate, graduate, post graduate courses, professional certificates or foreign languages courses (Kotey, Folker, 2007; Kock, Ellström, 2011; Jones, Beynon, Pickernell, Packham, 2013).

Continuous improvement of qualifications is a challenge for each employee in knowledge based economy. The employee is under pressure of constant improvement of his qualifications and he also wants to enhance his competitive position within his professional area. The above mentioned methods and forms of human capital development are very traditional. Modern companies put emphasize on interpersonal and social skills of the employees. The commonly used (Utrilla, Torraleja, 2013; McKevitt, Marshall, D 2015) modern ways of human capital development include:

- mentoring: a process of helping one person by someone else which aim is to transfer knowledge, experience and way of thinking (Cranwell-Ward, Bossons, Gover, 2004),
- coaching: a similar process to mentoring, however, the key differences are shorter time horizon and a clear target of this method's use (Whitmore, 2009),
- counselling: a process of identifying one's needs and problems and helping understand them, however, different from advising (Hough, 2010).

An interesting research approach explaining the engagement of the small business in the human capital development is the life cycle approach. This concept derives from the classical "S" curve social system development model in which 3 basic phases are given: emergence and growth, stabilization and dynamic balance and the change and fall (Jackson, Morgan, 1982). The life cycle based on phases is determined by a number of various factors among which internal and external conditions play a crucial role, as well as the business's specifics (Jaffar, Webb, Kumbirai, 2012).

According to the above argument the literature proposes different life cycle concepts. J. Levie and B.B. Lichtenstein (2008) based on the literature review present 104 phase based life cycle models. Some of these models are adapted to the specificity of small business. The authors who have created such proposals are: N. Churchill and V. Lewis (1983), I. Adizes (1988), M. Scott and R. Bruce (1987), E. Masureland K. Van Montfort (2006) and N. Jones (2009). Despite the significant impact on the theory of management sciences, phase based life cycles are often criticized (Phelps, Adams, Bessant, 2007). The weaknesses are: overly deterministic character of the described development paths, significant variances in the number of phases, and the lack of harmonized criteria which could allow to determine the actual phase of the company's life cycle. Taking into account the theoretical background and the reference to these accusations, a phase based model of companies' lifecycle was composed and proposed by the paper's authors (Matejun, 2013). It consists of 8 phases which are characterized by certain specifics and which can be divided into two groups according to dynamics of the development processes: static and dynamic phases. This model is presented in table 3.

**Table 3. Static and dynamic phases in the lifecycle of the SME sector's companies**

Phase name	Description of phase
Pre-emergence (static)	Concept phase which aim is to analyze pro's and con's and decide whether to start a company.
Emergence (dynamic)	Phase in which first investment decisions are being made as well as commercialization of company's offer on the market.
Survival (static)	Period of verification. Key challenge of this phase is to maintain the proper level of profitability and cash flow.
Dynamic growth (dynamic)	Phase of dynamic growth of quantitative indicators such as: turnover, employment level, number of business partners; without implementing key changes in the qualitative aspect of the functioning.
Separation and expansion (dynamic)	Phase of strategic thoughts, in which important decisions are being made in the areas of expansion, product, market and investment. Often the owners hand the governance to the professional managers.
Stabilization (static)	Phase in which the dynamics of growth is reduced. It is characterized by stabilization of financial ratios, limitation of investments and organization's growth.
Revitalization (dynamic)	Phase which is characterized by the dynamic approach to further growth based on significant changes in the company's structure and it's strategies, technological solutions and other organizational sub-systems.
Decline (static)	Period of permanently reduced efficiency and negative financial ratios.

Source: own work based on (Matejun, 2013).

The issues of the resources importance in the small business development have been a topic of many previous research. A good example may be D.G. Sirmon and M.A. Hitt (2003), who point out the meaning of the resource inventory, resource bundling, and resource leveraging in building the competitive advantage of a small business. J. Wiklund and D. Shepherd (2003) in their research show the moderating role of resources in small firm's growth. An important research problem regarding these considerations is the development conditions of human capital connected with enterprise's life cycle. However, previous research concentrated mostly on the analysis of efficiency of the human capital development of the small business functioning in the early stages only. An example may be the research of P. Davidsson and B. Honig (2003), which put emphasize on the role of human capital in predicting market entry and nascent entrepreneurship development. N. Bosma, van P. Mirjam, R. Thurik and de W. Gerrit (2004) analyzed the scope of human capital investment in startups. However, literature lacks a research that concentrates on the resource based conditions of human capital development in reference to the complex model of small business' life cycle. This shows a significant cognitive limitations and methodological problems of past studies. On the other hand it indicates the research gap that motivates the research presented in this article.

In authors' model a complex approach to resources distribution in the company's life cycle is proposed. The first group consists of dynamic phases which are characterized by an active approach towards the enterprise's operations, investment and growth processes. The other group consists of static ones which are more stabile, less risky and are focused more on the current company's operations. Based on this, the following hypothesis has been given:

*H1: The dynamics of companies life cycle affects significantly, directly and positively the level of engagement in the human capital development, within the surveyed companies.*

The proposed model assumes rejection of the typical deterministic approach in favor of a more complex one which allows the phases to recur in the company's life cycle. In the

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phases of the life cycle, the level of resources controlled by the SME sector companies differentiates. In the dynamic phases the company should control more resources and have their surplus. This allows them to make investment decisions, including those in the human capital development. This leads to formulating the following hypothesis:

*H2: The level of resources controlled by the SME sector companies plays an intermediary role between the dynamics of the life cycle phase and their engagement in the human capital development.*

At the same time, many research show that the level of the enterprise's human capital is correlated with the performance of the small business, including those in the early stages of their life cycle (Bosma, van Praag, Thurik, de Wit, 2004), as well as the later ones (Crook, Todd, Combs, Woehr, Ketchen, 2011; Stam, Arzlanian, Elfring, 2014). The above leads directly to the next hypothesis:

*H3: The level of engagement in the development of the human capital influences significantly, directly and positively the small business performance.*

This hypothesis justifies the allocation of the resources surplus, which are a result of the dynamics of the life cycle, into investing in the development of the human capital in the SME sector companies.

### 3. The Methodology and Research Model

In order to achieve the scientific aim of the paper and to verify the hypotheses, an empirical study was conducted. The authors used the nomothetic research approach (Salvatore, Valsiner, 2010; Babbie, 2014) directed towards the search for the general proprieties and towards the use of the statistical methods in order to generalize the results of the research on the given sample of SME sector companies. A survey was selected as a research method (Nardi, 2016). This method was successfully applied in the previous human capital development researches (Fairlie, Robb, 2007). CSAQ - *Computerized Self-Administered Questionnaire* was used as a research technique (Vehovar, Manfreda 2008). The research tool was a survey questionnaire available at [www.webankieta.pl](http://www.webankieta.pl).

The research was conducted on the randomly selected sample of 356 SME sector companies operating in the European Union. The size of those entities has been determined on the basis of the uniform, formal definition of micro, small, and medium-sized enterprises according to the European Commission Recommendation (2003) and the European Commission Regulation (2004). The average annual employment level (in terms of full time employment), the turnover and assets value were taken into account as the criteria of defining the size of those companies. Additionally, only autonomous companies were considered (European Commission, 2015), whose share in different companies haven't exceeded 25%. Based on the declarations from the respondents, 235 micro, 89 small and 32 medium sized companies were identified. The research was conducted in 2015. The sampling process had been adopted according to the procedure proper for the business research methods, which ensured a high level of methodological rigor (Hair, Celsi, Money, Samouel and Page, 2011). The sample size was estimated in order to make sure it represents the whole SMEs population (Gravetter, Forzano, 2016).

Researched enterprises mostly operated as individual companies (55%) or limited liability companies (24%). A majority of them run in the traditional technology businesses (71%),

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69% in the services and 42% in the local market. In the research sample the majority of the companies has been operating for over 20 years (31%) or from 5 to 10 years (29%). The specifics of the research method indicated that all of the analyzed companies have internet access and use electronic mail. The detailed characteristics of the entities are presented in table 4.

**Table 4. Characteristics of the companies participating in the survey**

<b>Company size</b>	<b>N</b>	<b>%</b>	<b>Range of operations</b>	<b>N</b>	<b>%</b>
Micro	235	66%	Local	45	13%
Small	89	25%	Regional	65	18%
Medium	32	9%	National	149	42%
			International	97	27%
<b>Legal form</b>	<b>N</b>	<b>%</b>			
Individual company	195	55%	<b>Company age</b>	<b>N</b>	<b>%</b>
Private/general partnership	55	15%	Up to 5 years	27	7%
Limited liability company	85	24%	Over 5 to 10 years	103	29%
Joint stock company	8	2%	Over 10 to 15 years	67	19%
Cooperative	13	4%	Over 15 to 20 years	50	14%
			Over 20 years	109	31%
<b>Dominant sector of operations</b>	<b>N</b>	<b>%</b>			
Trade	61	17%	<b>Technology level in the operations</b>	<b>N</b>	<b>%</b>
Service	246	69%	Traditional technology	254	71%
Production	49	14%	Advanced technology	102	29%

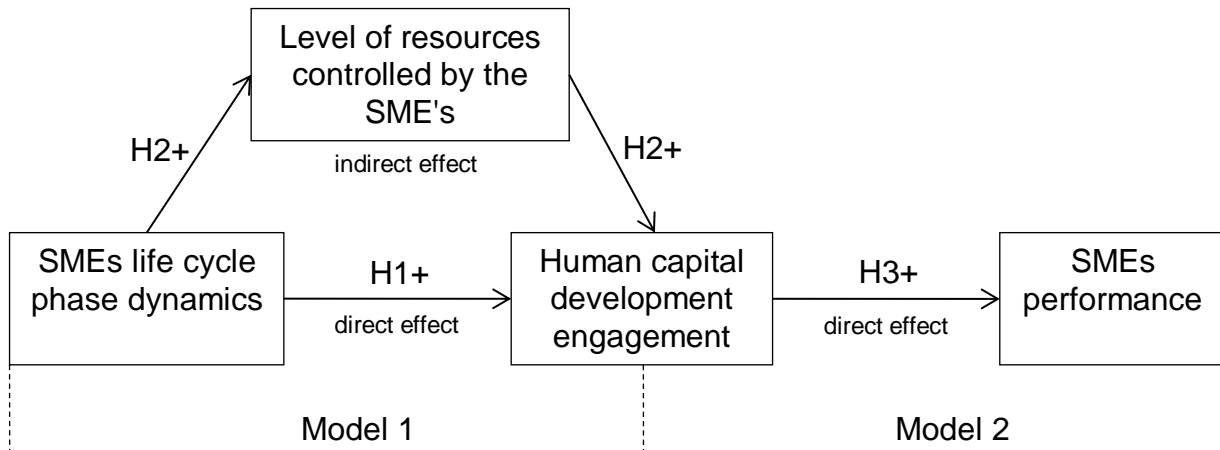
Source: Own study based on survey results.

The surveys were mainly filled out by 231 companies owners (65%) but also by the 79 managers (22%) or 46 other authorized employees (13%), which had the knowledge about the company's operations and human resources within them. The respondents were mostly men (58%); people between the age of 31 to 50 years (60%), and people with higher education (84%) in technical (36%) or economic fields (31%).

In the research model authors assumed that the engagement in the human capital development is significantly determined by the dynamics of the life cycle. Simultaneously, there is a significant influence of controlled resources level as a mediator of the above mentioned relation (model 1). Moreover, the engagement in the human capital development significantly determines the performance level of the SME sector companies (model 2). Proposed models are visualized in figure 1



Figure 1. Proposed research models



Source: own work based on theoretical considerations.

The statistical analysis was conducted in the IBM SPSS Statistics (Wagner, 2015). The following methods and statistical tools were used:

- analysis of arithmetic mean as measure of location,
- Spearman's correlation coefficient  $r_s$  and its significance test as a measure of interdependence of phenomena,
- analysis of linear regression to evaluate the influence of the independent variable(s) on the dependent variable,
- mediation analysis.

To interpret the dynamics of phenomena's interdependence an approach based on a proposal made by J. Cohen (1992) was adopted. This approach was adjusted to fit the specific nature of behavioral research which use is recommended to evaluate social opinions in management sciences (Dixon, Woolner, 2012). The following interdependence scores were taken as cutoff levels of the linear correlation coefficient: 0.1 – weak; 0.3 – medium; 0.5 – strong, 0.7 – very strong.

The quantitative assessment of variables was compared to the results of the main competitors. This allowed to achieve a more complete measures and more precise positioning of the company in the business area. This approach is recommended especially in the research on the business resources and the performance of the companies (Koh, Demirbag, Bayraktar, Tatoglu, Zaim, 2007; Keh, Nguyen, Ng, 2007).

#### 4. The Findings and Discussion

The first stage of the research identified and assessed the life cycle of the surveyed companies. The phases were defined on the basis of indications (declarations) of the respondents who had to choose one phase in the survey, which fitted best their actual state. To increase the accuracy of the answers each phase had a short description, corresponding with their theoretic characteristics. The respondents mostly indicated that their company's current life cycle phase is stabilization (31.5%) or dynamic growth (28.4%). Majority stated that their company's life cycle is in the static phases (52.8%), however, small and medium companies more often chose the dynamic ones. The results indicate that the dynamics of the life cycle is positively and significantly related to the size of the enterprises, but this correlation,  $r_s$  (N = 356) = 0.15,  $p < 0.01$  is very weak. The detailed characteristics of the

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declared life cycle phases of the surveyed companies with the division into both static and dynamic ones is presented in table 5.

**Table 5. Life cycle phases of the surveyed SME sector companies**

Life cycle phase	Overall in the sample		Micro		Small		Medium	
	N	%	N	%	N	%	N	%
Emergence stage	4	1.1%	4	1.7%	0	0.0%	0	0.0%
Survival stage	53	14.9%	42	17.9%	10	11.2%	1	3.1%
Dynamic growth stage	101	28.4%	58	24.7%	30	33.7%	13	40.6%
Separation and expansion stage	12	3.4%	4	1.7%	7	7.9%	1	3.1%
Stabilization stage	112	31.5%	75	31.9%	25	28.1%	12	37.6%
Revitalization stage	51	14.3%	32	13.6%	14	15.7%	5	15.6%
Decline stage	23	6.4%	20	8.5%	3	3.4%	0	0.0%
Static phases in total:	188	52.8%	137	58.3%	38	42.7%	13	40.6%
Dynamic phases in total:	168	47.2%	98	41.7%	51	57.3%	19	59.4%

Source: own work based on the survey results.

The next step of the research assessed the level of the resources controlled by surveyed entities. The assessment was carried out in comparison to the results of the main competitors in the defined scale from 1 (far worse than the competitors) to 7 (far better than the competitors). The surveyed companies rated the average level of controlled resources as slightly better than competitors (the average level was 4.66). The resources assessed relatively better than the competitors were: human resources, relational resources and market resources. The resources level is positively and significantly correlated with the size of the surveyed entities, however, the level of correlation  $r_s$  ( $N = 356$ ) = 0.15,  $p < 0.05$  is very weak.

The key point of the analysis was to identify and assess the level of use of certain human capital development forms in the surveyed companies. It was completed in relation to the main competitors in the scale from 1 (far worse than competitors) to 7 (far better than the competitors). The results indicate that the participants engage in the human capital development at comparable level to their competitors. The level of engagement is positively and significantly related to the size of the entities  $r_s$  ( $N = 356$ ) = 0.22,  $p < 0.01$ . It is clearly visible that the level of use of certain human capital development forms grows in the dynamic life cycle phases and declines in the static ones. The detailed results concerning the use of certain human capital development forms in relation to the size of the enterprises and their life cycle phase has been presented in table 6.

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**Table 6. The engagement in the human capital development forms in the surveyed SME sector companies**

Human capital development forms	Overall in the sample	Company size			Life cycle phase	
		Micro	Small	Medium	Static	Dynamic
Long term competencies planning	4.13	3.88	4.49	5.00	3.81	4.49
Solutions reducing the level of employees turnover	4.43	4.25	4.72	5.00	4.13	4.77
Internal trainings	4.29	4.08	4.49	5.28	3.96	4.66
External trainings	4.48	4.32	4.49	5.56	4.19	4.80
Undergraduate / graduate courses	3.19	2.94	3.39	4.44	2.77	3.66
Post graduate courses	3.23	3.06	3.34	4.19	2.79	3.73
Certifications	3.93	3.68	4.21	5.00	3.54	4.36
Foreign languages courses	3.43	3.28	3.51	4.34	3.08	3.82
Coaching	4.23	4.17	4.24	4.66	3.84	4.66
Mentoring	4.47	4.43	4.45	4.84	4.22	4.74
Counselling	3.69	3.69	3.56	4.06	3.48	3.92
SMEs human capital development engagement in total:	3.95	3.80	4.08	4.76	3.62	4.33

Source: own work based on the survey results.

The performance level of the surveyed enterprises was assessed on the basis of G. Murphy, J. Trailer and R. Hill's proposition (1996), as well as on A. Aragón-Sánchez and G. Sánchez-Marín's proposition (2005). They perceive the business performance as a complex phenomena which includes, quantitative (financial) and qualitative (non finance related) measures. Adopted measures of performance were evaluated in comparison to the results of the main competitors in the defined scale from 1 (far worse than the competitors) to 7 (far better than the competitors). In general the results indicate that the respondents rate the performance of their companies at slightly higher levels than their competitors (the average rate at the level of 5.50), and the qualitative rates (at the average of 5.77) is higher than the quantitative ones (at the level of 5.03). Performance of the surveyed business enterprises is positively and statistically significantly related to their size  $r_s (N = 356) = 0.25, p < 0.01$ .

In the last stage of the research the proposed research models were analyzed. The first one assessed the influence of the life cycle dynamics on the enterprises' engagement in the human capital development mediated by the level of the resources controlled by those companies. The engagement of the human capital development was adopted as a dependent variable. It was expressed by the engagement in the human capital development of the company, measured by the average rate of use of the presented human capital development forms. The ordinal scale expressing statics or dynamics of the life cycle phase was adopted as an independent variable. The level of the resources controlled by the business enterprises was adopted as mediator variable and given as the average rate of certain tangible and intangible resources categories. The mediation analysis was conducted in 3 steps as proposed by R.M. Baron and D.A. Kenny (1986):

- Step 1: proved that the dynamics of the life cycle statistically significantly determines the level of engagement in the human capital development,

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- Step 2: demonstrated that the level of resources is statistically dependent on the life cycle dynamics,
- Step 3: confirmed that the level of controlled resources by the surveyed enterprises is a significant predictor of the engagement in the human resources development. It also has been observed that the level of the controlled resources and the dynamics of the life cycle considered together predict the level of human capital development engagement. The previously significant relation between the dynamics of the life cycle and the level of engagement in human capital development is now reduced and statistically non-significant.

Additionally, the Sobel's test (1982) was performed, which confirmed that the impact of the dynamics of the life cycle, which significantly determines the level of human capital development in the surveyed companies, is statistically mediated by the level of the resources controlled by surveyed enterprises  $t = 3.47$ ,  $p < 0.01$ , standard error = 0.05.

In order to verify the second model, a linear regression analysis has been performed. The business performance of the surveyed enterprises was adopted as a dependent variable. The level of engagement in the human capital development was adopted as an independent variable. The details of the performed analyses are given in table 7.

Research results confirmed the assumed hypotheses. The analysis in the step one, model 1, positively verifies hypothesis H1: the life cycle dynamics, statistically significantly, directly and positively determine the level of engagement of the SME sector companies in the human capital development. In the dynamic phases this engagement is averagely 20% higher than in the static phases. In the dynamic phases the engagement in the external human capital development forms grows, which requires the greater use of company's resources. The following examples can be enumerated:

- higher education including the post graduate studies (33.7% higher in the dynamic phases) and undergraduate / graduate studies (32.1% higher in the dynamic phases),
- the external courses and trainings including the foreign languages courses (24% higher in the dynamic phases) and professional certificates / exams (23.2% higher in the dynamic phases).

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**Table 7. Verification of the proposed research models, based on the regression analyses**

Variables	Model 1			Model 2
	Step 1	Step 2	Step 3	
Dependent variable	Human capital development engagement	Level of resources	Human capital development engagement	SMEs performance
Independent variable(s)	Life cycle dynamics	Life cycle dynamics	Life cycle dynamics and the level of resources	Human capital development engagement
Human capital development engagement				0.46** (0.05) [0.48]
Life cycle dynamics	0.71** (0.12) [0.31]	0.38** (0.10) [0.20]	-0.05 (0.04) [-0.07]	
Level of resources			0.51** (0.06) [0.41]	
Constant	3.62** (0.08)	4.48** (0.07)	1.83** (0.35)	3.68** (0.18)
Observations	356	356	356	356
R <sup>2</sup>	0.10	0.04	0.20	0.23
R <sup>2</sup> corrected	0.09	0.04	0.20	0.23
F-stat	36.98**	15.45**	77.65**	106.74**

Linear regression / multiple linear regression analysis. Standard errors in parentheses, standardized coefficients in square brackets. \* significant at 0.05; \*\* significant at 0.01.

Source: own work based on survey results.

It can be noted that the engagement in the internal human capital development forms in the dynamic phases is higher than in the static ones. However, this growth itself is not as noticeable as the in the external ones. For example, the engagement in the internal trainings is only 14.6% higher in the dynamic life cycle phases than in the static ones.

Growth of engagement in the development of the human capital in the dynamic life cycle phases is achievable with the use of the SME sector companies resources. The results indicate the higher level of surveyed enterprises' resources in the dynamic phases of the life cycle than in the static ones. In the sample, beneficial effects have been observed which are related to a positive correlation between the controlled resources level and the engagement in the human capital development. Based on this, it can be concluded that the SME sector companies can beneficially engage into the human capital development in the dynamic life cycle phases. This is possible by using the resources surplus obtained by identification and use of the market opportunities. It confirms hypothesis H2: the level of the resources controlled by the SME sector companies play an intermediary role between the life cycle dynamics and the engagement in the human capital development. The use of those resources in the human capital development is economically and financially justified, because the results indicate that it allows to increase the level of the results achieved through business activity. It confirms hypothesis H3: the level of engagement in the human capital development statistically significantly, directly and positively influences the level of the small business performance.

Conducted research allows to formulate the answers on the research questions given in the beginning:

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1. What is the range of engagement in the human capital development in different stages of the SME sector companies life cycle?

The scope of engagement into human capital development differentiates significantly in different stages of the small business life cycle. The differentiating factor is the specifics of those stages, which can be divided into two groups from the point of view of the dynamics of the development process. The results indicate that the engagement in the human capital development grows significantly in the dynamic phases of life cycle, which are characterized by an active approach towards the enterprises operations, investment and companies' growth process. On the other hand this engagement is smaller in the static phases, which are more stable and are more focused on current operations.

2. What is the influence character of the resources level on engagement in the human capital development in different stages of the small business life cycle?

The results indicate that the level of the resources controlled by the small business differentiates in the given phases of small business life cycle from the point of view of their static and dynamic character. On the other hand it plays an intermediary role between the life cycle dynamics and the engagement in the human capital development in the SME sector companies.

Conducted research and given conclusions enrich the previous studies through delivering a proposal of interpretation of the resource based development processes in the area of human capital in reference to the complexity of small business life cycle concepts.

## 5. Summary and Conclusions

Human capital is one of the most important resource categories building performance of today's business enterprises. The search of the adequate, firm-specific human capital and it's further development plays a key role in today's business. This development requires the engagement of the companies' resources, which in the SME's are often limited, making the development activity harder. To reduce those problems, the authors propose an approach based on the life cycle, according to which a small business should concentrate its resources surplus, which are available in the dynamic phases of the life cycle on the activities which develop human capital. Research results confirm the theoretical assumptions and indicate that those activities increase investment opportunities in the human capital development field. Simultaneously they significantly and positively affect the small business performance.

Research results justify taking certain allocation decisions in terms of resources surplus in the SME's life cycle. Investment in human capital development field should be considered as a relevant factor allowing to improve the competitiveness and the results of a small business. The authors believe that presented considerations will be useful to the owners and the managers of the SME's and will allow to shape the scope of activity in the human capital development area.

Taking into account certain stages and the requirements of the research process (Rubin, Babbie, 2010), the methodological limitations of this research should be considered (Geletkanycz, Tepper, 2012). For example: a subjective character of the responses, the identification of the life cycle dynamics based on one dimension indicator, and taking into account only certain human capital development forms, should be taken into account. The weakness of this research is also the use of cross-sectional studies (Bryman, Bell 2007),

which do not take into account the changes which occur in time in the surveyed companies. An answer to those limitations could be to conduct longitudinal studies (Hedeker, Gibbons, 2006), especially in relation to the same enterprises in different phases of the life cycle. The negative consequence of the longitudinal studies would be the expanded time frame of the research. In addition, many of the SME sector companies fail in the first year of their operations, and do not go through all the stages of the life cycle, which would lead to limitation of the sample.

The presented research definitely requires continuation, which will allow to achieve deeper results concerning the engagement in the human capital development of the small business' life cycle phases. Among the most interesting future directions of research the following can be given: analysis of the influence of the objective and perceived external environmental factors on the engagement in the human capital development in the small business, as well as the influence of the human capital development on the path and dynamics of the small business life cycle. An interesting research approach can be using the case study method, which allows to verify theoretical distortions, make the concepts more precise (Siggelkow, 2007), and further development of theoretical constructs towards the middle range theories (Eisenhardt, Graebner, 2007).

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