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Capital Structure Impact on the Human Capital Investment: Eastern European Countries Case

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ABSTRACT

Among growth factors of a company, its human capital, because of its hardly imitable trait. However, investing in human capital is intangible and risky, which makes its funding arduous. This article considered the impact of the company's capital structure on the human capital investment decision through training using probit regressions. Among a sample of SMEs from 24 Eastern European countries, the results confirmed that bank loans foster trainings. However, an increase in self-financing slows down such investments.

Key words: Capital structure, human capital investment, professional training, Eastern Europe, SMEs, Profit models.

INTRODUCTION

The impact of human capital investment on the profitability of firms is no longer a controversial topic. This investment offers the company a competitive advantage and enables it to improve its productivity. Indeed, human capital constitutes a major and invaluable asset for the company because it is hardly imitable. Moreover, according to Casimir (2016), staff training increases the company's added value of the company by more than 49%, while technological investment only translates to a 25% increase. Thus, the economic growth sought by a country is through the improvement of its firms' performance.

In this article, we investigate Eastern European countries, which display a development delay, compared to their homologues in the West. These transitioning economies are mainly composed of small and medium-sized enterprises (SME). These enterprises represent the growth engine of their countries. To grow, in an increasingly unstable and competing environment, these companies have no other choice than to invest in their human capital.

Nevertheless, the last European investigation of professional trainings in companies reveals that in 2015, 45% of the companies in Western Europe carried out trainings for their staff against only 36% in Eastern Europe. In addition, according to Ciaran et al. (2016), 40% of SME which need funding, in Eastern Europe, do not apply for a bank loan, against 17% in Western Europe. The authors explain the reluctance of SME to apply for loans by the high interest rates,

required guaranties, and rejection expectation. Whereas, the human capital investment requires funds which can come, among other sources, from bank loans.

These outstanding facts lead us to question the impact of funding sources on human capital investment. Particularly, we will examine the effect of the components of working capital of Eastern European countries SME's on the decision to invest in human capital through trainings. Thereby, we retain a sample of SME belonging to 24 Eastern European countries which took part in the BEEPS survey (Business Environment and Enterprise Performance Surveys).

Beforehand, we review various literature movements on funding options and the impact of capital structure on the human capital investment decision.

We also review theoretical foundations of the relevance of human capital in the value creation of the firm.

LITERATURE REVIEW

New literature movements converge to the idea that the accumulation of human capital is, henceforward, more than physical capital, a competitive advantage for companies.

Investing in human capital refers to training, education and other professional initiatives that improve employee's knowledge and skills. This leads to employee satisfaction and efficiency, and enhances the company's performance. This investment requires funds that must be provided by the company. The funding choice has continued, since the work of Modigliani & Miller (1958), to stimulate the development of thought movements and their application to different economic contexts.

Investment in human capital and its characteristics

Maximizing the value of the firm no longer occurs via maximizing its shareholders wealth.
On the contrary, the "Stockholder Theory" has gradually given place to the "Stakeholder Theory" which states that managers have an ethical responsibility not only towards shareholders, but also towards all stakeholders who contribute to the company's profit-earning. Business stakeholders usually include customers, suppliers, shareholders and employees constituting human capital.

Human capital is a resource that has gained more value for the company thanks to its main characteristic of being inimitable, which can create a sustainable competitive advantage. This argument emanates from the "Knowledge-based Theory", initially founded by Penrose (1959) and then extended by other authors, which states that the knowledge in the company is its fundamental strategic resource. Indeed, knowledge-based resources are complex and difficult to reproduce.

Garavan et al. (2001) consider that human capital has three key attributes (1) flexibility and adaptability, (2) improvement of individual skills, (3) organizational skills development. They showed that these attributes generate an added value to individual and organizational results. These skills are of two types: general skills (literacy, basic calculations, learning abilities), and specific skills related to technology or production processes.

When the education system does not provide individuals with skills required by the labour market, training becomes an alternative to fill the void (Ng, 2005). So, human capital investment through training, is of great importance on both levels, the employees and the company. According to Bapna et al. (2013), in today's knowledge-based economy, companies must continuously nurture their human capital to achieve sustainable competitive advantage. Indeed, accelerated technological development and market liberalization require companies and their human capital to adapt to their evolving environment, hence the need for continuous training to maintain this competitive advantage. Improving human capital leads to greater competitiveness and better performance (Agarwala, 2003).

In this same framework, "Resource Based Theory" (RBT), argues that the heterogeneous distribution of valuable resources among companies, such as the human capital, explains the difference in performance. Firms that benefit from valuable resources that others cannot easily replicate perform better (Barney, 1991). To this end, Barney et al. (2001), Acedo et al. (2006) highlighted the role of human capital as a key factor explaining why some companies outperform others.

Several authors agree that, knowledge integrated in human capital constitutes the most universally valuable and imperfectly imitable resource (Grant, 1991, 1996; Kogut & Zander, 1992; Coff, 1997). In particular, human capital that holds firm-specific knowledge is unique because it is not easy to transfer and apply to other firms (Kor & Mahoney, 2005).

On the other hand, according to Coff (1997), human capital with general knowledge can easily move among competitors. So, all other elements being equal, the difference in performance between firms is caused by the knowledge heterogeneity and human capital skills among them. This creates a competitive advantage that the company should aspire to preserve.

Such purpose can only be achieved by a sustainable transfer of knowledge and a large participation of human capital in continuous training imposed by technological progress, increased competition and increasing deregulation.

However, investment in human capital through training is characterized by significant risks due to its intangibility and the possibility of the employee resigning before recovering the costs of his training through the company's improved productivity. In this sense, according to Popov (2014), investing in human capital is expensive and intangible, which makes it more difficult to fund than physical assets. This brings us back to the issue of funding choice, which is still a controversial topic delete the economic literature.

Theoretical foundations of the funding choice

The capital structure of the company, as well as its funding options, have historically attracted researchers' interest in financial theories, given their impact on the company's investment decisions, its value and its future performance. The funding sources available to the company are multiple and divided into equity and borrowed capital. Equity is represented by self-financing and capital increase. As for borrowed capital, it can be divided into bank loans and bond loans.

Several theories have been developed and have emphasized the importance of the funding selection such as the theory of capital structure impertinence of Modigliani & Miller (1958) which states that the capital structure neither influences the firm value, nor its investment decisions. This theory is based on several unrealistic hypotheses, such as market efficiency, absence of taxes and bankruptcy costs, and informational symmetry. In 1963, Modigliani & Miller abandoned their hypotheses by incorporating income tax and concluded that debt provided tax savings that increase the firm's value.

Then, Miller (1977) lays the foundations of the trade-off theory, which states that there is an optimal capital structure that the company must preserve when choosing funding for its investments. According to this theory, debt has a positive effect on the firm value, through tax savings. Nevertheless, increasing indebtedness decreases this marginal positive effect until it reaches zero, which is the optimal structure. Any deviation from this structure decreases the value of the business.

As a response to the hypothesis of the Trade-off theory, that remain unrealistic, Meyers & Majluf (1984) take into account the context of information asymmetry and agency costs to advance the Pecking Order Theory which stipulates a priority regarding the choice of funding sources. Indeed, information asymmetry relative to potential shareholders causes moral hazard and adverse selection costs. This leads managers to prioritize internal funding to external one. Thus, they prioritize, first and foremost, self-financing and adapt their dividend payment policies according to their investment opportunities. Then, if external financing is required, managers choose to issue debt from the least risky to the riskiest. Finally, if it is insufficient, shares are issued. The issuance of new shares sends a negative signal to the market and causes a drop in the firm value. This is why it is at the bottom of the funding hierarchy.

In addition, inspired by market theory, Baker & Wurgler (2002) advance the "Market Timing Theory" according to which, the current capital structure is closely linked to the historical market shareholder values. Indeed, companies tend to issue new shares when their shareholder value is high in relation to their book value and past market values; and to buy back those stocks when they become undervalued. Fluctuations in stock prices affect a firm's funding decision and therefore its capital structure.

Moreover, the effect of the capital structure on the investment decision drew the attention of several researchers such as Sundaresan et al. (2015); Hsu et al. (2015). Likewise, Baños-Caballero et al. (2016) showed that the working capital structure influences the firm's financial flexibility and therefore its investment strategies. However, the funding structure effect on the investment decision in human capital remains an issue that is scarcely considered in literature. Besides Popov (2014), Caucutt & Lochner (2020), find that removing borrowing constraints significantly increases investment in human capital.

Contrary, He & Wintoki (2016) and Ahrends et al. (2018) stress the importance of internal funds for risky investments financing. External resources are more expensive and their procedures are complicated (Driver & Bugarin, 2019). Investing in human capital through training is considered risky due to its intangible nature and the possibility of job resignation of trained employees. Thus, the choice of opting for self-funding or debt to support human capital

investments remains an unclear question in literature. In this article, we propose to study the impact of the funding structure on the investment decision in human capital.

EMPIRICAL METHODOLOGY

Research hypotheses

Investment in human capital becomes a necessity for the company: On the one hand, qualified employees who constitute a key factor of success must be preserved. On the other hand, technological progress, competition and constant changes in the environment require the company to motivate its staff and update the new requirements of its field of operation. Investing in training is one of the preferred manners to achieve these objectives. Nevertheless, the capital structure involves an effect on the investment decision, as demonstrated by several works such as Sundaresan et al. (2015) and Hsu et al. (2015).

In addition, self-financing constitutes a preferred funding source for risky investments. In this context, multiple researchers show that SMEs have more difficulty than large enterprises in accessing formal funding (Arraiz et al., 2014). Thus, we propose to examine the effect of the funding structure, or more precisely, the working capital structure on human capital investment. Thereby, we try to test the following research hypotheses:

H1: Self-financing positively affects investment in human capital.

H2: Bank loans financing, negatively affects investment in human capital.

Our objective is to examine, for a sample of Eastern Europe SMEs, the impact of the working capital structure on the human capital investment via trainings. In the following parts, we present the sample, variables, the empirical approach, and the model used. Then, we discuss descriptive statistics and regression results.

Sample description

Our study considers Eastern Europe countries. These countries, more than half of which have joined the European Union, are lagging behind Western countries. The economic fabric of Eastern Europe countries is characterized by a predominance of small and medium-sized enterprises which suffer from difficulties in accessing funding. These difficulties hamper their growth because they block their investments and therefore their potential for wealth accumulation. Indeed, Brown et al. (2011) find a big difference between SMEs in Eastern and Western Europe in forbearance from requesting credit. In Eastern Europe, 40% of SMEs in need of financing do not apply for loans because they anticipate rejection; against only 17% in Western Europe.

Furthermore, the community continuing vocational training survey in companies CVTS4 (2010) and CVTS5 (2015) reveals a considerable gap between the two European regions. The survey results show that in 2010, in Eastern Europe, 29% of employees participated in professional training, compared to 41% in Western Europe. Likewise, in 2015, a gap persists between the two regions with 36% in Eastern Europe and 45% in Western Europe. Differences in human capital investment and credit access between Eastern and Western European countries, may help to explain the development gap between the two regions.

Our main data source is the results of the Business Environment and Enterprise Performance Surveys (BEEPS). This survey, carried out jointly by the World Bank and the European Bank for Reconstruction and Development (EBRD) consists of a questionnaire answered by companies from Eastern Europe and Central Asia. The questionnaire covers several key themes of the business environment in these two regions. Among other aspects, it provides information on the capital structure and on-the-job training of answering companies.

Our sample covers 7542 SMEs in 24 Eastern European countries for the years 2012, 2013, 2014 and 2016. We must underline that Georgia; Armenia and the Republic of Cyprus are included in our sample for cultural and historical reasons rather than the geographical area.

Variables description

We remind that we are attempting to examine the impact of capital structure on investment in human capital through training. Thereby, the dependent variable represents the investment in human capital. Explanatory variables reflect the companies' working capital structure. In addition, we retain control variables in order to take into account other determinants of investment decision recognized by literature.

The dependent variable

To measure investment in human capital, we use on-job-training as a proxy for the dependent variable, denoted "TRAIN". This variable has been used by several researchers, notably Neumark & Wascher (2001), Marinaccio (2018) and Lehmann et al. (2019). Popov (2014) also opted for training to measure investment in human capital. In our study, "TRAIN" is a binary variable that answers the following question addressed to companies: "Does your company offer formal training programs for permanent full-time employees during the last fiscal year? Thus, "TRAIN" takes 1 if the company answered "YES" and 0 if it answered "NO". It is indisputable that this variable has limits, since it does not provide information on amounts, durations and frequency of training.

Independent variables

Explanatory variables reflect the capital structure, or more precisely, the composition of the company's working capital of the sample. Baños-Caballero et al. (2016) show that the working capital structure influences the financial flexibility of the firm and therefore its investment strategies.

Thus, working capital structure includes four ratios. SELF-FINANCING, denoted "SELF FIN", reflects the percentage of internal funds such as share capital, reserves and retained earnings. BANK CREDITS, denoted "BANK CRED", represent the percentage of bank loans used by the company to finance its investments. This variable was used by Chemmanur et al. (2013). The variable "SUP CRED" illustrates the percentage of SUPPLIER CREDITS in the working capital of the company studied. Finally, we took into account the presence of OTHER SOURCES OF FUNDING in the working capital of the company by the variable "OS". It represents the percentage of funds from external sources, other than bank debts and supplier credits, such as funds from shadow Banking, crowdfunding and loans from private equity firms. Indeed, Drover et al. (2017) emphasize the importance of these sources for business investment and their relationship to human capital.

Control variables

To minimize the problem of omitted variables and improve the overall significance of the model, we integrate control variables that we split into macroeconomic and microeconomic variables. Macroeconomic variables reflect the effect of the country's economic conditions on the human capital investment decision. On the other hand, microeconomic variables take into account the effect of firm's features, in addition to its capital structure.

For macroeconomic variables, we retain the GDP growth rate, denoted "GDP" and the inflation rate denoted "INF". The introduction of these variables into the model is particularly important for transition countries, where structural and macroeconomic reforms have coincided with developments in both, access to funding and firms' incentives to invest in professional training. These variables have been used previously by Popov (2014) and Lee et al. (2017) in the context of human capital investment.

As for microeconomic variables, we retain several variables whose effect on the investment decision in general as well as on human capital, has been approved in the literature.

First, the variable "APPROACHES DEVELOPED BY EMPLOYEES", noted "APPR-EMPL", is a binary variable that takes 1 if the company allows its employees to develop new approaches and 0 otherwise. This choice is motivated by the importance of allowing staff to develop new approaches internally. This improves the responsiveness of the company and the motivation of the staff. Thereby, this variable is likely to promote internal training.

Second, we integrate the variable "SUBSIDIARY OF A LARGE ENTERPRISE" noted "SLE". Indeed, belonging to a parent company facilitates access to several resources and allows skills sharing between companies of a same group. Lu & Bjôrkman (1998) showed that foreign parent companies send trainers or offer training programs to local staff to improve their skills. This variable was used by Georgiadis & Pitelis (2012).

As it was mentioned in the previous literature, investment in human capital is characterized by its high risk and intangibility that can create agency conflicts. We take into account the power of control and decision-making in the company by a variable which measures the MAJORITY OWNER'S SHARE, denoted "MOS". It is integrated into the model to measure the level of ownership dilution in a SME. It is recognized that dilution of control can increase agency conflicts which influences decision making.

Similarly, a firm's ownership structure influences its investment decisions (He & Kyaw, 2018). Thus, we take into account the OWNERSHIP STRUCTURE by the government participation percentage in the capital of the company (shares held by the government) noted "GOUV".
Two other variables are integrated into the model to reflect whether the gender of the CEO or the owner has an effect on the decision to invest in vocational training. The inclusion of these two variables refers to numerous studies that have addressed the effect of gender on decision making in the company (Zeng & Wang, 2015; Ongena & Popov, 2016; Hanousek et al., 2019). Thus we retain two binary variables "WOM CEO" and "WOM OWN" which take 1 if the general manager and/or the majority owner is a woman and 0 otherwise.

In addition, we control the effect of the size of the company by the variable "SIZE" measured by the Natural logarithm of the number of permanent employees. Indeed, a large company can benefit from an economy of scale compared to a smaller one. Hereof, Lillard & Tan (1992); Veum (1995) and Goux & Maurin (2000), empirically confirm that the firm size has a positive effect on employee training.

In the same sense, the variable relating to the age of the company, noted "AGE", is taken into account according to previous literature. Indeed, among several works, Gomez (2019) indicated that small and young companies face resources availability issues, which influences their investment decision-making.

The last control variable in the model is the PERCENTAGE OF EMPLOYEES WHO HAVE COMPLETED THEIR UNIVERSITY EDUCATION, denoted “UNIV EDU”. According to Jackson (2016), employees who have completed their university studies apply their theoretical knowledge in the professional field. However, this requires a knowledge adjustment phase. The author emphasized the effect of graduate employees on companies training.

Models and pre-estimation tests

To estimate the impact of financial structure on investment in human capital, we use a Profit-estimation method. This method is suitable when the dependent variable is a qualitative one. In our case, the dependent variable “TRAIN” is a binary variable.

Thus, the Probit-estimation method allows us to determine the change in the probability of investing in human capital, through training, following a one unit increase in explanatory variables. Beforehand and in order to ensure the reliability of our results, we must rule out any risk of multicollinearity between the variables. For this, we establish the correlation matrix between all independent variables defined above, then we carry out the VIF (Variance Inflation Factors) test.

Indeed, the correlation matrix gives the correlation coefficients of variables two by two. It allows to check whether variables selected are correlated with each other or not. According to Cooper & Schindler (2003), a collinearity problem arises if the correlation coefficient between two variables exceeds 0.7. In our case, the correlation matrix shows the absence of a correlation problem between the explanatory variables taken in pairs. All correlations are less than 0.7.

Table 1: Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1)SLE	1.000														
(2)MOS	0.006	1.000													
(3)GOUV	0.080	-0.011	1.000												
(4)WOMOWN	-0.017	-0.218	0.038	1.000											
(5)AGE	-0.016	-0.077	0.069	0.054	1.000										
(6)WOMCEO	0.001	0.037	0.032	0.493	-0.022	1.000									
(7)APPREMPL	0.082	-0.014	0.031	0.028	0.035	-0.051	1.000								
(8)UNIVEDU	0.025	-0.049	-0.021	0.010	-0.110	0.025	0.051	1.000							
(9)SIZE	0.118	-0.149	0.133	0.001	0.176	-0.110	0.149	-0.121	1.000						
(10)SELF FIN	-0.023	0.021	-0.019	-0.011	-0.015	0.009	-0.070	0.006	-0.058	1.000					
(11)BANK CRD	-0.044	-0.015	0.032	-0.010	0.022	-0.036	0.110	-0.031	0.103	-0.437	1.000				
(12)SUPCRED	-0.007	-0.027	-0.004	0.015	0.015	0.001	0.034	-0.010	0.030	-0.483	-0.065	1.000			
(13)OS	0.024	0.016	0.017	0.013	-0.011	-0.006	0.040	0.020	-0.020	-0.279	-0.032	-0.005	1.000		
(14)GDP	-0.013	0.054	0.009	0.001	0.051	0.013	0.083	-0.132	-0.005	0.012	0.049	0.005	0.008	1.000	
(15)INF	0.015	-0.035	0.030	0.005	-0.097	0.036	-0.008	0.078	-0.013	0.063	0.012	-0.054	-0.017	-0.045	1.000

The Variance Inflation Factor (VIF) test examines whether the factors are correlated with each other. This tool measures the extent to which the variance is inflated due to the multicollinearity problem[1]. This influences the significance of coefficients and reduces the reliability of the model. Table (1) below summarizes the VIF test results.

[1] To interpret the value of VIF, the following rule is applied: if VIF = 1 no correlation, if 1<VIF< 5 moderate correlation, if >5 high correlation. A VIF value close to 1 rules out any multicollinearity problem (Daoud, 2017)

Table 2: Variance Inflation Factor

Independent Variables	VIF	1/VIF
SELF FIN	26.678	.037
SUP CRED	14.335	.07
BANK CRED	13.458	.074
OS	3.926	.255
SIZE	1.132	.217
GOUV	1.258	.795
WOM OWN	1.128	.886
SLE	1.113	.898
AGE	1.084	.923
MOS	1.061	.942
UNIV EDU	1.057	.946
APPR EMPL	1.015	.985
WOM CEO	1.044	.958
INF	1.063	.941
GDP	1.036	.965
Mean VIF	4.88	

Table (2) reflects significant multicollinearity between the four explanatory variables relating to the capital structure. To remedy this problem, one of the solutions proposed by Daoud (2017) is to leave, in the model, only one of the variables strongly correlated with each other. Thus, to capture the impact of each component of the working capital structure, we integrated them separately in four regressions. Thus, table (3) below summarizes the new values of the VIF test, each time considering one of the explanatory variables. It shows that the multicollinearity problem has been eliminated since all the values are close to 1. Thus, we obtain a better reliability of the selected variables.

Table 3: Corrected VIF test

Independent variables	Reg (1)		Reg (2)		Reg (3)		Reg (4)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
SIZE	1.165	.859	1.168	.856	1.162	.861	1.163	.86
WOM WON	1.124	.89	1.124	.89	1.122	.892	1.121	.892
GOUV	1.113	.898	1.113	.898	1.113	.898	1.113	.898
SLE	1.104	.906	1.105	.905	1.102	.907	1.103	.907
AGE	1.074	0.931	1.072	.932	1.074	.931	1.073	.932
INF	1.06	.944	1.059	.944	1.062	.942	1.059	.944
UNIV EDU	1.052	.95	1.052	.95	1.051	.951	1.051	.951
MOS	1.05	.952	1.05	.953	1.05	.952	1.051	.952
WOM CEO	1.043	.959	1.043	.959	1.043	.959	1.043	.959
GDP	1.031	.97	1.03	.97	1.032	.969	1.031	.97
APPR EMPL	1.012	.988	1.013	.987	1.011	.989	1.011	.989
SELF FIN	1.011	.989						
BANK CRED			1.02	.981				
SUP CRED					1.005	.995		
OS							1.006	.994
Mean VIF	1.070		1.071		1.070		1.070	

Therefore, we proceed to four regressions of the following four equations where we insert each time, one of the explanatory variables which describes a source of funding in the working capital of the SME (first Self-financing (SELF FIN) in equation 1, bank credits (BANK CRED) in equation 2, supplier credits (SUP CRED) in equation 3 and other sources of funding (OS) in equation 4).

$$TRAIN_{i,k} = \alpha_1 + \beta_1 SELF\ FIN_{i,k} + \delta_1 APPR\ EMPL_{i,k} + \delta_2 SLE_{i,k} + \delta_3 MOS_{i,k} + \delta_4 GOUV_{i,k} + \delta_5 WOM\ CEO_{i,k} + \delta_6 WOM\ OWN_{i,k} + \delta_7 SIZE_{i,k} + \delta_8 AGE_{i,k} + \delta_9\ UNIV\ EDU_{i,k} + \delta_{10} GDP_k + \delta_{11} INF_k + \varepsilon_{i,k} \quad (eq\ 1)$$

$$TRAIN_{i,k} = \alpha_2 + \beta_2 BANK\ CRED_{i,k} + \delta'_1 APPR\ EMPL_{i,k} + \delta'_2 SLE_{i,k} + \delta'_3 MOS_{i,k} + \delta'_4 GOUV_{i,k} + \delta'_5 WOM\ CEO_{i,k} + \delta'_6 WOM\ OWN_{i,k} + \delta'_7 SIZE_{i,k} + \delta\delta'_8 AGE_{i,k} + \delta'_9\ UNIV\ EDU_{i,k} + \delta'_{10} GDP_k + \delta'_{11} INF_k + \varepsilon'_{i,k} \quad (eq\ 2)$$

$$TRAIN_{i,k} = \alpha_3 + \beta_3 SUP\ CRED_{i,k} + \delta''_1 APPR\ EMPL_{i,k} + \delta''_2 SLE_{i,k} + \delta''_3 MOS_{i,k} + \delta''_4 GOUV_{i,k} + \delta''_5 WOM\ CEO_{i,k} + \delta''_6 WOM\ OWN_{i,k} + \delta''_7 SIZE_{i,k} + \delta''_8 AGE_{i,k} + \delta''_9\ UNIV\ EDU_{i,k} + \delta''_{10} GDP_k + \delta''_{11} INF_k + \varepsilon''_{i,k} \quad (eq\ 3)$$

$$TRAIN_{i,k} = \alpha_4 + \beta_4 OS_{i,k} + \delta'''_1 APPR\ EMPL_{i,k} + \delta'''_2 SLE_{i,k} + \delta'''_3 MOS_{i,k} + \delta'''_4 GOUV_{i,k} + \delta'''_5 WOM\ CEO_{i,k} + \delta'''_6 WOM\ OWN_{i,k} + \delta'''_7 SIZE_{i,k} + \delta'''_8 AGE_{i,k} + \delta'''_9\ UNIV\ EDU_{i,k} + \delta'''_{10} GDP_k + \delta'''_{11} INF_k + \varepsilon'''_{i,k} \quad (eq\ 4)$$

Where *i* denotes the company and *k* the country. The *αj, βj, δg, δ'g, δ''g, δ '' 'g* are the parameters of the model, with *j* = {1, .., 4} and *g* = {1,…, 11}. $\boldsymbol{\varepsilon_{i,k}}$, $\boldsymbol{\varepsilon'_{i,k}}$, $\boldsymbol{\varepsilon''_{i,k}}$, $\boldsymbol{\varepsilon'''_{i,k}}$ are the error terms.

IMPACT OF FUNDING STRUCTURE ON HUMAN CAPITAL INVESTMENT DECISION: EMPIRICAL RESULTS

Before presenting and discussing regression results of the four models above, we first, analyze the descriptive statistics of the model variables.

Descriptive statistics

Regarding the dependent variable "TRAIN", descriptive statistics reveal the percentage of SMEs having completed at least one training course during the last fiscal year. In average, 34.5% of SMEs in Eastern Europe carried out training for their employees in the last fiscal year. Among these companies, those belonging to the European Union, display an average percentage of 34.5%, against 34% for those that are not part of the European Union. Unlike our expectations, membership to the EU does not seem to be a factor which favours business investment in training. It should be noted, however, that besides Hungary, the last five countries which invest in employee training are not from the EU.

For explanatory variables, in average, 71.2% of stable resources after financing fixed assets (working capital) are from self-financing. In second position, we find bank credit, then supplier credit, which admit average percentages of 13% and 12.6% respectively. On the other hand, other funding sources display negligible presence in the working capital structure of SMEs in Eastern Europe. Their percentage does not exceed 2.3%. It seems that other means of funding such as "Crowdfunding" and "Private Equity" have not yet been developed in Eastern Europe. Thus, self-financing appears to be the preferred funding source for SMEs in Eastern Europe.

Regarding control variables summarized in Table 4 below, it appears that only 16.7% of the SMEs in the sample allow their employees to develop new approaches. Besides, 26.5% of employees have a university degree.

In addition, only 8% of SMEs are subsidiaries of parent companies. This result converges with the concentrated ownership structure that characterizes SMEs in the region. In fact, the percentage of capital held by the majority owner is around 77.3% with small dispersion around this average. On the other hand, governments of Eastern Europe countries, are not strongly involved in their economic fabric, since the shares they hold in the capital of SMEs do not exceed 0.6% in average.

Moreover, 19.9% of the companies have at least a woman among their owners. In other words, about 80% of firms are owned, exclusively, by men. This shows a limited entrepreneurial involvement of women in Eastern European countries. According to a study by Badia et al. (2013), women face greater obstacles and constraints than men in entrepreneurship. This result can be explained by women's more risk-reluctant behaviour. In the same vein, descriptive statistics of the sample of SMEs studied reveal that 20.5% of businesses are managed by women.

Finally, the sample's SMEs are characterized by an average number of employees of 55 and an average age of 16 years. Based on the number of employees, they are medium-sized companies. However, the size and age have values widely dispersed around the mean which reflects a heterogeneous sample in terms of size and age of selected companies.

Table 4: Control variables descriptive statistics

Control variables	Mean	Standard deviation
SIZE	54.084	2.491
WOM OWN	.199	---
GOUV	.006	.001
SLE	.08	---
AGE	16.031	.119
UNIV EDU	.265	.003
MOS	.773	.003
WOM CEO	.205	---
APPR EMPL	.167	---

Regression results and discussion

As mentioned above, the estimates are based on four Probit regressions, each including one of the explanatory variables of the capital structure, in addition to control variables. Table (5) below summarizes the estimation results.

Table 5: Capital structure components Effects on the probability of employee training investment

Training	Reg (1)	Reg (2)	Reg (3)	Reg (4)
% GDP Growth	-5.599***	-5.674***	-5.636***	-5.653***
	(0.737)	(0.735)	(0.735)	(0.734)
Inflation	0.445**	0.424**	0.431**	0.440**
	(0.187)	(0.188)	(0.187)	(0.187)
Self-funding	-0.099**			
	(0.044)			
Bank credits		0.224***		
		(0.065)		
Supplier credits			-0.015	
			(0.063)	
Other sources				0.038
				(0.134)
Approaches developed by employees	0.111***	0.111***	0.112***	0.113***
	(0.012)	(0.012)	(0.012)	(0.012)
Subsidiary of a large enterprise	0.296***	0.309***	0.288***	0.288***
	(0.060)	(0.060)	(0.060)	(0.060)
Majority owner's share	-0.004	0.000	-0.002	-0.002
	(0.051)	(0.051)	(0.051)	(0.051)
Government's share	-0.429**	-0.433**	-0.421**	-0.426**
	(0.214)	(0.214)	(0.214)	(0.214)
Women owner	0.002	0.002	0.002	0.002
	(0.013)	(0.013)	(0.013)	(0.013)
Age	-0.001	-0.001	-0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Women CEO	0.041	0.045	0.041	0.038
	(0.036)	(0.036)	(0.036)	(0.036)
Ln (number of permanent employees)	0.230***	0.227***	0.232***	0.231***
	(0.014)	(0.014)	(0.014)	(0.014)
% employees finishing university studies	0.149***	0.155***	0.150***	0.151***
	(0.056)	(0.056)	(0.056)	(0.056)
Constant	-0.452***	-0.551***	-0.537***	-0.543***
	(0.101)	(0.096)	(0.097)	(0.096)
Number of obs	7518	7536	7520	7542
Pseudo r-squared	0.068	0.068	0.067	0.067
Chi-square	657.836	665.139	650.912	656.101

The table reports coefficients from 4 probit regressions where the dependent variable is training, defined as an indicator equal to 1 if the firm offers formal on-the-job training to its employees during the last fiscal year, and to 0 otherwise. Column (1) refers to self-funding effect, Column (2) refers to bank credit effect, Column (3) refers to supplier credit effect and Column (4) refers to other sources of funding effect on the probability of investing in training. Standard errors appear below each coefficient in parentheses, where * indicates significance at the 1% level, ** at the 5% level, and *at the 10% level.**

According to the results of the first regression, a negative and statistically significant relationship appears between investment in training and self-financing. Indeed, 1% increase in the share of self-financing in working capital reduces the probability of carrying out staff training by 9.9%. We can say that internal funds of Eastern Europe SMEs are not a preferred funding source for investment in human capital. Hypothesis (H1), that supports the idea that risky investments are primarily financed by internal company funds, is then rejected.

The second regression reveals a positive and statistically significant impact of bank indebtedness on the probability of investing in staff training. Indeed, 1% increase in the share of bank debts in the working capital of the company, increases the probability of investment in human capital by 22.4%. It seems that SMEs are more motivated to invest in training when they contract loans. This result can be explained by the positive leverage effect provided by debt. Regarding uncertainty of future returns from investing in human capital, the savings in financial expense taxes offsets the risk taken by the business. This attitude is consistent with Modigliani and Miller (1963) thesis, which considers that debt improves the profitability of investments and increases the firm value. The research hypothesis (H2) is thus rejected.

On the other hand, the third regression reveals a non-significant relationship between funds from supplier loans and training. We can conclude that the presence of supplier credits in the working capital of SMEs has no effect on the decision to invest in human capital.

Likewise, other sources of funding do not seem to have a significant impact on investment in training. Indeed, the fourth regression gives a non-significant coefficient to the variable “OS”. This result is expected given that descriptive statistics reveal that other sources of funding represent only 2.3% of the SMEs financing structure in Eastern Europe.

We can conclude that for SMEs studied, financing investments in human capital is mainly done through bank loans. On the other hand, the increase in the internal funds share, which occurs at the expenses of credit access, discourages SMEs from investing in staff training.

Moreover, regarding control variables, the economic situation affects the company’s decision to undertake employees training. Indeed, GDP growth admits a negative and significant impact on the probability of investing in training. Thus, a favourable economic situation, characterized by GDP growth, eases the pressure on companies to create or maintain a competitive advantage through training.

However, inflation positively, and significantly affects the likelihood of investing in training. Its effect is considerable since, in average, an increase in the inflation rate of 1%, increases the probability of undertaking staff training by 43%. This result is justified by the depreciation of financial charges values which results from financing training by bank debts during an inflationary period. This encourages companies to take loans and invest in staff training.

As for company-specific variables, in accordance with our expectations, belonging to a parent company and size, positively and significantly affect the probability of investing in training. Thus, for a SME in Eastern Europe, being a subsidiary of a foreign company promotes skills sharing with the parent company and facilitates access to internal training. This improves

access to bank loans to finance training because creditors have the guarantee of the foreign group. Likewise, an increase in the number of permanent employees, which reflects the size of the SME, by 1%, increases the likelihood of staff training by 23%. This result is also found by Mignot (2013). The size of the company favours the decision to invest in human capital because on the one hand, a larger size reflects more resources and therefore easier access to credit. On the other hand, a high number of employees allows economies of scale on training costs.

However, the age of the company has no effect on the probability of investing in human capital. Requirements due to technological, and competitive pressures affect all companies regardless of their age and lead them to invest in training.

Regarding the ownership structure of companies, it seems that concentrated or diluted ownership does not affect the decision to invest in training. Indeed, SMEs of our sample are characterized by a concentrated ownership structure, where the average share of the majority shareholder is 77%. This variable admits a non-significant coefficient. Nevertheless, the participation of the State in the capital of SMEs in Eastern Europe, although low, admits a negative and significant impact on the probability of having recourse to staff training. A 1% increase in the government's share in the company's capital, decreases by 42% the probability that the firm opts for staff training. This confirms that private companies, more than public ones, seek to be competitive and to motivate their staff. Thus, privatization streams should stimulate investments in human capital.

In addition, variables that reflect the impact of the gender of the owner or leader on the investment decision in human capital are found to be insignificant. The presence of Woman as owner or manager has no effect on the likelihood of deciding a training for staff.

Finally, staff-related variables, positively and significantly affect the decision to invest in training. Indeed, the presence of employees with a university degree encourages trainings. An increase in this variable by 1%, increases the probability of undertaking a training by 15%. This result can be explained by the importance of pursuing education as a motivational tool for qualified personnel. In addition, according to the thesis of Jackson (2016), employees who achieved their university education need a training phase to adapt their theoretical knowledge to practical applications for professional life.

Likewise, companies that give their employees the opportunity to develop new working approaches are those that invest more in training. Thus, personnel who received training to be up to date with technological progress and new operating procedures, becomes qualified to implement new work approaches.

CONCLUSION

Eastern European countries are transitional economies that lag behind their Western European counterparts in terms of development. The average GDP of Eastern countries is much lower than developed ones in the West. Gaps in income, access to education and health are palpable between the two regions. In addition, Eastern Europe economies are dominated by small and medium-sized enterprises. Thus, their growth is the main source of wealth creation and

development in these countries. However, SMEs growth depends on several factors, among which we have focused on human capital.

The firm can achieve a competitive advantage, thanks to its staff skills, experience and loyalty. Human capital admits a one of kind characteristic which resides in its imperfect imitation (Becker, 1962). Investing in human capital is not only a necessity to keep up with technological progress, but also a performance lever. Among the forms that human capital investment can take, is professional training. However, such an investment is risky because of its intangibility and the possibility of losing employees to competitors before realizing expected gains from their training. As a result, accessing the necessary funding is not an easy task, especially for SMEs which generally suffer from a lack of resources.

Therefrom arises the problematic of this article where we examined the impact of the funding structure on the human capital investment decision, approximated by training. To do so, we selected a sample of SMEs from 24 Eastern European countries that were the subject of the Business Environment and Enterprise Performance Surveys (BEEPS).

The results of our estimates show that only the share of bank loans in working capital has a positive and significant effect on the probability of investing in training. This allows us to conclude that investment in human capital is favoured by the presence of bank loans.

On the other hand, self-financing admits a significant and negative impact on the probability of staff training. Thus, an increase in the share of internal funds in the working capital of the firm, inhibits the decision to invest in human capital. However, supplier credits as well as other sources of financing such as "crowdfunding" or "private equity" have no effect on the probability of investing in training.

In conclusion, access to funding by bank credit favours the decision to invest in human capital. This is the preferred source for investing in staff training.

Nevertheless, it would be interesting to examine whether Eastern Europe SMEs have easy access to bank credit or, on the contrary, they suffer from obstacles that hinder their access to bank funding and therefore explain their limited investments in staff training.

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