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Implication of Human Capital in the Development of SMEs through the ICT Adoption

Florin Marius Martin^{a, *}, Laurentiu Ciovica^b, Marian Pompiliu Cristescu^a

^aLucian Blaga University of Sibiu, Faculty of Economic Sciences, 17 Dumbrăvii Avenue, Sibiu 550324, Romania

^bLucian Blaga University of Sibiu, Faculty of Engineering, 4 Emil Cioran Street, Sibiu 550025, Romania

Abstract

ICT adoption in SMEs and the attraction of benefits from use of these technologies remains a key point in their development. For an enterprise to take part in the digital economy must have a defined basis for innovative adopting, meaning a premise for the development of ICT infrastructure. Given that firms are not a self-driven machinery, human capital is a major factor of influence in enterprise digitization. Considering this, in this paper will analyze the effects generated by human capital on the level of ICT adoption in SMEs in Romania.

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1. Introduction

Related to human capital and its implications in the evolution of enterprise (Antlova, 2009 or Wymer, Regan, 2005) shows the human capital of particular importance in the development of enterprise and especially in increasing its competitiveness. This is understandable since, according to theory based enterprise resources, this resource provides enterprise quality hard copied by other companies. Enterprise personnel capacity and knowledge regarding the use of ICT, is an important issue both in large companies and SMEs, this significantly influencing the adoption of innovative technologies in the enterprise (Ilesanmi, 2007). Lack of trained personnel to provide value to the enterprise, and managerial capabilities are catalogued with great importance in the adoption of ICT (Martin, 2005).

* Corresponding author

E-mail address: florin.martin@ulbsibiu.ro (F.M. Martin)

A major problem of human capital to SMEs is that many of the owners / managers of enterprises are not familiar with concepts related to the use of ICT within their company, and then the open of them to these technologies is limited and often ineffective. (Costello et al., 2007) shows the personal characteristics of the managerial staff of particular importance in the adoption of new technologies. Their enthusiasm is the main reason for adopting ICT. Lack of skills and knowledge, both at management level and in other departments, also lead to the generation of other barriers to ICT adoption, namely, the related internal reluctance.

A low capacity storage within the enterprise knowledge generated by a level of human resources capacity to assimilate inadequate level of innovation of adopting ICT in the enterprise creates a lack of information. (Kalanje, 2002) concludes that the most important barrier to ICT adoption in enterprises is the lack of knowledge about the benefits of this technology and the enterprise value felt by using them.

2. Methodology

As noted above, human capital can have a significant impact on the adoption of ICT. Thus we tested the hypothesis that the proportion of employees who use ICT during activity, influence the adoption of ICT. In the summaries research on SMEs in Romania we use the information analysed from carrying out a survey among SMEs in Sibiu. Survey we conducted on a sample of 100 SMEs in all fields of Central Development Region.

In hypothesis testing we use two variables: the proportion of employees who use ICT during activity (ICTemp) score and variable levels of ICT adoption (ICTrank). To see the level of ICT adoption scoring we created a variable calculated as:

$$ICTrank = (ICTu + ITu) / Emp - Emp / Obs \quad (1)$$

ICTrank is calculated using the following variables:

- ICTU - highlights the internal infrastructure of SMEs in terms of ICT. Variable is calculated by combining existing technologies analysis
- ITU - highlights the uptake of the Internet (largely) in SMEs. This I calculated by summing the points obtained for different feature from use of ICT. Specifically it shows the extent to which businesses use technology available.
- Emp - number of employees at the time of analysis
- Obs - indicate the obstacles that influence ICT adoption, which is the main reasons for reluctance in ICT adoption.

ICTemp is a variable that shows the degree to which employees use ICT during activities in the enterprise. This index we have calculated by summing points depending on the class (percentage of employees using ICT) to frame each SME analysed for various facilities.

3. Data analysis and regression testing

For starters, let's analyse the level of knowledge of the companies analysed. As shown in Figure 1, the companies have a share of employees with higher education between 25% and 50% significantly differ from the other classes analysed. Thus it is expected to influence the degree to which businesses have adopted ICT.

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