Econometric modeling of influence on turnover concerning indicators of information society across the European Union

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Abstract

The impact of information society – as a factor of organizational change (Dovenport, 2003) on performance of firms is increasingly approached and measured – by means of statistical indicators – in the specialty literature, developing in a fast pace. Across the European Union, indicators that measure information society emphasize many disparities and especially characteristics of this sector, aspects that will be detailed further, in this paper in order to justify the approach of this study. However, the goal of this research is to analyze and suggest, by means of the statistic-econometric methodology, a model through which we emphasize – for member countries of the European Union – as it influences (and practically how “contributes” to them) the formation of turnover on total business sectors, indicators of information society (enterprises with fixed broadband access, enterprises using the Internet for interaction with public authorities, enterprises having received orders online, enterprises having purchased online) simultaneously with macroeconomic indicators, respectively: average number of employees, EU - 15 country member or EU -27 country member.

Keywords: information society, turnover, macroeconomic indicators, European Union, econometric modeling, multiple regression.

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1. Introduction and literature review

The impact of information society – as a factor of organizational change (Dovenport, 2003) on performance of firms is increasingly approached and measured – by means of statistical indicators – in the specialty literature, developing in a fast pace and influencing all business sectors, from industrial, services, either touristic, medical, educational or public administration.

Across the European Union, indicators that measure information society emphasize many disparities and especially, the features of this sector, aspects that will be detailed further in this paragraph in order to justify the approach of this study. If the ITC technologies are mainly used by the major organizations to a large extent, the use of this technology by the firms’ type small and medium sized enterprises is in the early stage according to Palvia (1996). Practically, in a global society, in order to be successful, organizations need high quality information and to provide always added value better than competitors when it is about quality, price and services (Pollard, 2006). Hit and Brynjolfsson (1996) sustained that while TIC helps increase productivity and excess consumption, they cannot necessarily increase the firm’s profitability. Nevertheless a direct and cause relation has been found between performances of organizations and IT investments (Grandon and Pearson 2004).

Practically and theoretically there was a positive relation between information technologies and performance. Many researchers reason that implementation of information technologies provides a higher productivity, a better satisfaction of customers, more value added.

Following the studies carried-out by many researchers, it was emphasized that there is a positive relation between a firm’s size and efficiency of using IT within organizations. Lind et al (1989) concluded that the size and structure of an organization have a significant impact on adopting computer. EinDor&Segr (1978) have correlated the size and age of organizations with the use of technological information. The bigger the organization, it will surely extend the use of IT. Another reason for which the firm’s size matters is that the firm’s resources including financial and human capital are used according to the firm’s size (Hong, 1999). Thong and Yap (1995) have emphasized that a firm’s size is almost the most discriminatory factor between users that adopt and does not adopt IT within small firms in Singapore. Acar et al (2005), in the study of using IT by firms in Turkey has shown that as the firms becomes bigger, the bigger is impact on performances achieved following the use of IT. Rahim et al (1998) in the study carried-out on firms in Brunei has noticed that there is a positive relation between type of business and use of IT methods.

In most organizations, employees are considered the most significant contribution together with the manager role, the survival of an organization or its success seriously depends on them. (Melville et al., 2004, Nguyen, 2009). Sarosa and Zowghi (2003) and Ghobakhloo et al (2010) have noticed that IT users will have a positive impact concerning IT adoption within organizations. Within the research in the field we remind those of Rateb J. S. Weis wherein he noticed that attitude of managers is important in IT adoption within organizations as well as approach of some strategies to change attitude of employees, and importance of rising investments in training employees in information technologies, having a role in rising labor productivity. Managers together with employees are IT users and have a drastic influence regarding their successful implementation. Therefore, development of these resources could be necessary for the success of organization (Egbu et al., 2005, Ghobakhloo et al., 2011 b).

According to previous studies a positive relation has been found between IT adoption and government support (Tan et al., 2009, Yap et al 1994). Due to the size of firms and their lack of resources, the firms depend more on other companies or external resources or support (Sarosa and Zowghi, 2003). Government initiatives and policies can affect directly and indirectly IT development in infrastructure and can trigger technology proliferation faster (Ghobakhloo et al 2011 a).

However, the aim of this research is to analyze and suggest, by means of the statistic -econometric
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