

HOW CAN ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS IMPACT ON LABOUR PRODUCTIVITY

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The changing financial and accounting environments are critical to enhance production ability of firms in the globalized and competitive markets. Managers should focus on IC technologies to integrate information and communication across each unit of the enterprises. An ERP system is an attempt to integrate all functions that can decrease the costs of firms with improving the production effectiveness. While the ICT-producing sector is relatively small, it can make large contribution to economic performance. Although, productivity growth is essential in IT industries and has risen over the 1990s, but some unanswered theoretical questions have still remained for the policymakers. The main purpose of this research paper is to support the theoretical insights to the economic role of EPRs in ICT industries and also to highlight how they can impact on labour productivity growth. All in all, the usage of ERPs can be resulted in increased sales efficiency and the improved interactions in warranty services lead to satisfy the customers through providing lower quotations and increased awareness. The enhanced production and the less cost of inventories also improves the performance of organizations.

Keywords: ERPs, ICT contribution, labour productivity.

JEL Codes: D23, E24, J24,

1. Introduction

Nowadays, the changing financial and accounting environments are critical to enhance production ability of firms in the globalized and competitive markets (Darabos, 2014). Many challenges are faced to the organizations in this perspective, such as international trade barriers, economic liberalization and privatization etc., and also made other burdens for organizations. Therefore, managers should focus on IC technologies to integrate information and communication across each unit of the enterprises. In business world, a popular approach of an integrated system is the implementation of an enterprise resource planning (ERP) system (Beheshti, 2006).

An Enterprise Resource Planning (ERP) System is a fully integrated Business Management System solution that covering the functional areas of an enterprise, such as Accounting, Finance, Human Resources, Logistics and Production etc. (Anderson, 2011). The world of 'Integration' is a key element for ERP implementation. An ERP system is an attempt to integrate all functions across a company to a single computer system that can serve all specific needs of users. Moreover, the ERP systems can successfully decrease the costs of enterprises with improving the production effectiveness, in-

crease the clients' level of satisfaction and immediately share information with the whole enterprise (Davenport et al, 1998).

The strong economic performance of the OECD countries over the 1990s led the scientific attention for searching the sources of economic growth. The contribution of the ICT-producing sectors to recent growth performance reflects the importance of productivity. So, labour productivity is principally an important issue to the managers, as the primary purpose of their job, to maximize the outcome of the companies they are responsible for. Nurmilaakso (2009) also stated that one of the reasons behind investing in ICT solutions is to improve labour productivity.

While the ICT-producing sector is relatively small, it can make a relatively large contribution to growth and productivity performance if it grows more rapidly than the rest of the economy. The OECD database of Key Indicators provides helpful information in this regard. Figure 1 reflects the contribution of ICT manufacturing to labour productivity growth from the 1990s until 2011.

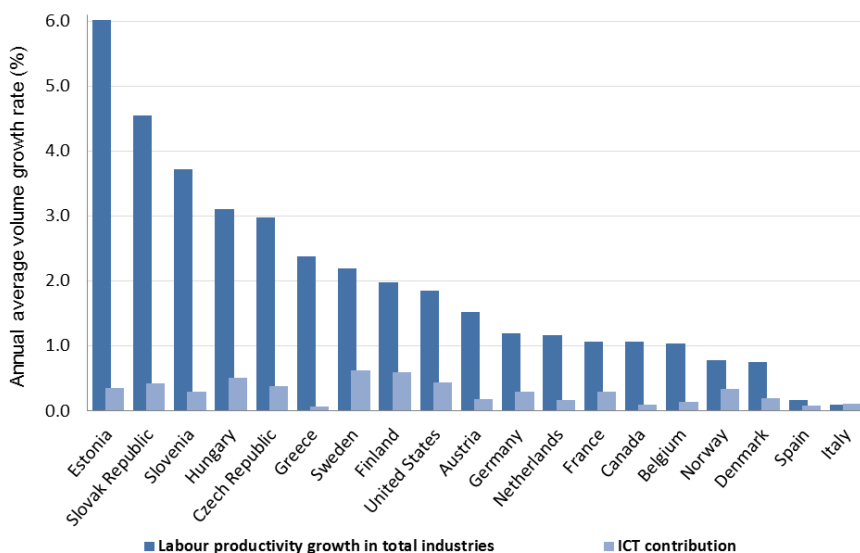


Figure 1: ICT contribution to labour productivity growth (%) in total (OECD-19) industries, 1995-2011

Note: The annual average growth rate (AAGR) is based on geometric average.

Source: based on OECD(2015)

In most OECD countries, the contribution of ICT industries to overall labour productivity growth has risen over the 1990s. This can chiefly be attributed to more rapid technological progress in the production of certain ICT goods, such as semi-conductors etc., which has contributed to more express price declines and thus to higher growth in volumes (Jorgenson, 2001). ICT made the largest contributions to aggregate labour productivity growth in Finland,

Sweden and Hungary, with close to 0.5 percentage point of aggregate labour productivity growth in the examined periods. Although, the productivity growth seems to be essential in IT industries, some unanswered dilemmas have still remained for the policymakers.

The main purpose of this research paper is to support the theoretical insights to the economic role of ERPs in ICT industries and also to highlight how they can impact on productivity growth to support our future researches. This paper will also end with some brief conclusion.

2. An overview of the theoretical framework and empirical findings of ERPs and productivity relationship

According to the solowian paradox, the computers are fundable everywhere in the economies except in the productivity data (Solow, 1987). Although there was an appropriate economic growth in the world during much of the 1980s and early 1990s, the rapid diffusion of computing technology seemed to have little impact on productivity growth (Dirk et al.).

Several research studies over the past decade pointed out the factors that contributed to this contradiction. First, some of the benefits of ICT were not selected in the productivity statistics (Triplett, 1999). This is mainly a problem in the service sector, where most ICT investment occurs and very difficult to capture in statistical surveys. A second reason is that the benefits of ICT usage might have taken a considerable time to emerge, as did the impacts of other key technologies. Hence, ICT has diffused very rapidly in many OECD countries in the 1990s and several empirical studies could find a larger impact of ICT on economic performance than the earlier ones (in 1970s or 1980s). Thus, the role of ICT at the firm level was based on relatively small samples, drawn from private sources and the initial impact of them on productivity performance was unimportant.

Much of the current interest in ICT's potential impact on growth is not only linked to the ICT-producing sector, but to the potential benefits arising from its use in the production process. The use of ICT could have several impacts on productivity in this perspective. For example, it might enhance the firms' production to expand their products and gain market share. Moreover, it could customise the services of firms offered, or respond better to the client demand. Thus, ICT may help reduce inefficiency in the use of capital and labour to reduce the spare inventories. These effects, in our hypothesis, might lead to higher productivity growth in firm level.

All these channels brought about by ERPs made them a very attractive research object of business disciplines to answer how they can impact on labour productivity. Earlier approaches in accordance with this question identified non-financial performance as proxies for financial value (Bhatt, 2000; Booth et al. 2000). Only lately, the accounting discipline has originated with studies to provide domestic evidence of the economic impacts of ERPs (Hunton et al, 2003; Nicolaou et al, 2003; Matolcsy et al., 2006 etc). The results of these studies find some proof of immediate or delayed increases in firm performance after ERPs adoptions. Moreover, *Engelstätter, B.* (2008)

found that the combined effects of adopting the different software systems without controlling for other obstacles interfering with enterprise system usage. Amer et al. (2012) also claimed the ERP implementation has a positive impact when a company employs a prospector business strategy, which enables the firm to achieve higher levels of financial performance.

3. Conclusions

However, while the academic literature has earlier claimed that the presence of EPRs leads to better economic performance and they are essential elements of well-functioning economies, others some unanswered dilemma has still remained. In this paper we have an objective to answer how EPRs might impact on labour productivity.

For instance, the usage of ERPs can be resulted in increased sales efficiency and the improved interactions in warranty services lead to satisfy the customers through providing lower quotations and increased awareness. The enhanced production and the less cost of inventories also improves the performance of organizations. Thus, Hu and Png (2012) demonstrated that more patent-intensive industries, such as ICT responded to stronger patent laws with higher growth, which resulted in increased GDP per capita.

An additional research direction has also emerged in this study. We argue that, such as (Rózsa, 2015) suggested, the changes in real value of the enterprises might impact on productivity and also critical to decision making. Hence, further researches, in accordance with this research perspective, could be fruitful.

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