

International Journal of Latest Trends in Finance & Economic Sciences

E-ISSN: 2047-0916

Volume 6 No. 2

June 2016



Copyright © ExcelingTech Publisher,
United Kingdom

Web: excelingtech.co.uk

ojs.excelingtech.co.uk/index.php/IJLTFS

Impact of Information Technology Investments on Firm Productivity in Peripheral Countries: The Case of Portugal

António Guerreiro¹, Gertrudes Saúde Guerreiro²

Departments of Management and Economics, Universidade de Évora, Largo dos Colegiais, n.º2,

Portugal and CEFAGE-UE

¹ahmg@uevora.pt

²gdsg@uevora.pt

Abstract - IS/IT investments are seen as having an enormous potential impact on the competitive position of the firm, on its performance, and demand an active and motivated participation of several stakeholder groups. The shortfall of evidence concerning the productivity of IT became known as the 'productivity paradox'. As Robert Solow, the Nobel laureate economist stated "we see computers everywhere except in the productivity statistics". An important stream of research conducted all over the world has tried to understand these phenomena, called in the literature as «IS business value» field. However, there is a gap in the literature, addressing the Portuguese situation. No empirical work has been done to date in order to understand the impact of Information Technology adoption on the productivity of those firms. Using data from two surveys conducted by the Portuguese National Institute of Statistics (INE), Inquiry to the use of IT by Portuguese companies (IUTIC) and the Inquiry Harmonized to (Portuguese) companies (accounting data), this study relates (using regression analysis) the amounts spent on IT with the financial performance indicator Returns on Equity, as a proxy of firm productivity, of Portuguese companies with more than 250 employees. The aim of this paper is to shed light on the Portuguese situation concerning the impact of IS/IT on the productivity of Portuguese top companies. Empirically, we test the impact of IT expenditure on firm productivity of a sample of Portuguese large companies. Our results, based on firm-level data on Information Technology expenditure and firm productivity as measured by return on equity (1186 observations) for the years of 2003 and 2004, exhibit a negative impact of IT expenditure on firm productivity, in line with "productivity paradox" claimants.

Keywords - *Information Technology investments, Firm Productivity, Return on Equity.*

1. Introduction

The introduction of information systems/information technology (IS/IT) in organizations is likely to have a significant impact within the organization. IS/IT can be used in restructuring organizational activity, in

strengthening the competitive position of the firm (Ward & Peppard, 2002), and to transform entire business processes (Al-Mudimigh et al 2001; Brynjolfsson & Hitt, 1998).

In the 1980s IS/IT was heralded as a key to competitive advantage (McFarlan, 1984; Porter & Millar, 1985). Porter and Millar (1985) concluded that IS/IT has affected competition in three ways: it has led to changes in industry structure and competition, it was used to support the creation of new business, and companies using IT outperformed their competitors. Earl (1989) suggests that IS/IT has the potential to be a strategic weapon in at least four ways: to gain competitive advantage, to improve productivity and performance, to enable new ways of managing and organizing and to develop new business.

In peripheral countries, as the case of Portugal, IS/IT can play a central role, bringing companies to the centre of international markets and reducing the distance barriers to the capability to connect with suppliers, customers and potential investors.

Despite increasing expenditure on IS/IT (Ballantine & Stray, 1999; Ryan & Gates 2004, Willcocks & Lester 1999) and the belief that IT has a significant impact on organizational performance (Osey-Bryson & Ko, 2004), the effect of such investments on firm productivity has been unclear (Dasgupta et al., 1999; Farbey et al. 1999) and has given rise to a 'productivity paradox' (Love & Irani, 2004). Many organizations find themselves in a "Catch 22", for competitive reasons they cannot afford not to invest in IS/IT, but economically they cannot find sufficient justification for it (Willcocks 1992).

During the past four decades a great deal of attention has focused on the impact of IT investment. However, studies have frequently generated controversial or inconsistent results. Several empirical studies have failed to find any positive relationships between extensive use of IS/IT and organizational efficiency, performance and success (Kivijärvi & Saarinen, 1995).