

# **Computer literacy, Labour Market Destinations and Earnings:**

## **An Empirical Analysis**

by

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### **Abstract**

Computer literacy represents one of the most important basic skills to function in advanced industrial countries. The spectacular rise of electronic mail, internet services, and telecommunications offers unprecedented opportunities to access instant information, and reach new markets. Computer technology has changed the way we live and work. However, information technology requires expensive computers, telephone access and literacy skills. Accordingly, there is a great risk that information technology will exclude some groups in society especially the poor, and making the gap between the rich and poor wider.

After almost a century of decline, wage inequality in the U.K. has steadily widened since the mid-1970s. The root cause of these changes remains controversial. The two leading explanations that have emerged to explain the rapid changes in the structure of wages over the last three decades are (1) increased international competition in several industries which has hurt the economic position of the low-skilled (2) technological change favouring highly skilled workers. Several authors have come to view technological change as brought on directly by the computer revolution. The evidence used to test these hypotheses has been mainly indirect, relying primarily on aggregate industry-level or time-series data. Few studies have shown a direct link between an individual's technological-oriented skills and labour market earnings.

The primary objective of this research is to examine the determinants of computer literacy and to explore the relationship between computer skills and labour market destinations and earnings. In addition, the extent to which computer skills have reduced some of the disadvantages women confront in the labour market is of particular interest. The data that shall be used in this study comes from two micro-data cohort surveys for the UK, namely the NCDS and the BCS70. These data contain rich information on the use of computers at home and in the workplace. Most specifically the data tells exactly what tasks the computers have been used for and the degree of IT skills acquired by the individual. This level of detailed data is unprecedented in previous surveys.

The main methodological problem which has be-deviled the estimation of the effect of IT skills on earnings has been the endogeneity issue that suggests that the most educated are also those with the highest IT skills. Hence it is potentially difficult to determine whether it is the improved education leads to higher earnings and IT skills or whether the IT skills *per se* have a direct effect on earnings over and above the influence of education. This paper attempts to tackle this issue head on with three different methods. Firstly, to use home computer use and other key variables (like the willingness to use the CAPI survey instrument to respond personally) as instrument variables to predict IT competence and model this endogenously with earnings. Second to use difference in difference estimation techniques relating to the two cohorts we have one of which (NCDS) left school before computers were introduced into all secondary schools in the UK and one (the BCS) were all introduced into schools whilst they were still in school. Thirdly to use the two different cohorts in the way we have suggested to match each person in the NCDS with a similar person in the BCS and compare these 'like' individuals having conditioned for all other factors.

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