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Are employees really satisfied with ICT?

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The dissemination of Information and Communication Technologies (ICT) within firms induces organizational changes which modify employee perceptions of working conditions. This article aims to evaluate the effects of the use of cell phones, computers and the Internet on job satisfaction, striving to distinguish between direct effects (due to ICT) and indirect effects (due to ICT combined with organizational changes). We have used the results of a survey by the INSEE (French national statistic institute) on standards of living in French households, conducted in October 2005. Econometric results show that these three technologies have complementary and globally positive impacts on job satisfaction, especially the computer. As for the cell phone, it has ambivalent effects, as it is also a source of stress for the employee. Finally, our results clearly show the existence of direct and indirect effects of ICT, effects which can sometimes cancel out or reinforce each other.

Introduction.

The dissemination of information and communication technologies (ICT) in companies over recent years has been accompanied by numerous organizational changes (just in time production, quality assurance...) Investments in ICT often trigger or speed up the reorganization process (Brousseau & Rallet, 1997). ICT as a tool for managing and circulating formalized information contributes to the performance of the firm. Several empirical studies have shown that the use of ICT combined with more decentralized organization can lead to gains in productivity (Askenazy & Gianella, 2000; Brynjolfsson & Hitt, 2000; Black & Lynch, 2001; Bresnahan, Brynjolfsson & Hitt, 2002; Bertschek & Kaiser, 2004).

The dissemination of ICT and the organizational changes that they induce also modify the perception employees have of their working conditions. By transforming the content and organization of work, ICT have repercussions on employee motivation and the means of control and incentives available to the employer. Do employees who use ICT benefit from greater job satisfaction?

Salary is often considered the determining factor of job satisfaction. However, job satisfaction depends on other elements such as interest for work, autonomy, variety of tasks or chances for career advancement (Clark, 2005). From this standpoint, ICT has ambivalent effects: the employee can see ICT as a means of improving work (more autonomy, more interesting work), but technologies can also increase pressure and stress.

The aim of this article is precisely to measure the impact of ICT on several aspects of job satisfaction (job enrichment, work under pressure, responsibility for handling incidents, chances of promotion), while distinguishing, on the one hand, between the effects of using a computer, the Internet or a cell phone, and, on the other hand, breaking down the direct (inherent in these technologies) and indirect effects (ICT combined with organizational changes). To do this, we used a study by the INSEE (French national statistics institute) on the living conditions of French households carried out in October 2005. Our results demonstrate that these three technologies have complementary positive effects on job satisfaction, especially the use of computers. Cell phones are, however, also a source of stress for employees. Furthermore, our results clearly show the existence of direct and indirect effects of ICT. By breaking down these effects we can demonstrate that, for example in the case of cell phones, stress factors are exclusively caused by indirect effects (use of a cell phone combined with flexible hours). Our study completes existing literature on the impact of ICT on working conditions (Greenan & Walkowiak, 2004; Askenazy & Caroli, 2006). Its originality consists in seeking to distinguish between inherent effects and effects combining the

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organization of work with the use of a cell phone, computer and the Internet on job satisfaction.

In the first part we will discuss the potential effects of ICT on working conditions. In the second part we will present the conceptual framework used to separate the inherent effects of ICT and those linked to organizational changes. We will describe, in the third part, the methodology used. Our results are presented in a fourth part. The final part summarizes key results and presents other avenues for further research.