

ESSAYS ON ICTS, EXPECTATIONS AND SUBJECTIVE WELL-BEING

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Abstract

This doctoral thesis investigates how emerging ICTs affect individuals' expectations and their subjective well-being. The European Union's Digital Agenda for Europe has in the last few years led to massive investments to improve digital infrastructures and skills, in order to ensure that European nations have the necessary endowment and know-how to compete in an increasingly digital world economy. The Digital Agenda policy program includes initiatives to foster high-speed broadband network rollout, digital skills development, and the formation of public-private partnerships to stimulate innovation in emerging technologies such as high-speed internet, robotics and artificial intelligence. The ongoing digitalization process and related policies represent important structural changes that are disrupting existing social and economic activities, and represent the background and empirical setting that provide the foundations of this thesis.

Much scholarly effort has been devoted to investigating the economic effects of ICTs, such as, for instance, in the literature studying the productivity and growth effects of the internet, and the more recent strand of research on the employment effects of automation and robotics. However, extant literature has not yet investigated the possible subjective welfare effects of these emerging ICTs, and in particular the impacts on individuals' expectations and well-being. This thesis engages with this research gap by presenting novel empirical studies on how the internet and automation influences individuals' expectations and their subjective well-being. This is important because it allows a more comprehensive evaluation of the socio-economic effects of the current process of digitalization by focusing on the perspective of those who are directly exposed to this change—namely individual users and workers.

The dissertation consists of four essays that empirically investigate how ICTs affect individuals' expectations and subjective well-being, by making use of micro-level survey data for a large number of individuals and workers in European countries. Two of the papers study the effect of internet use on subjective well-being, and how these differ for individuals of different age groups. The other two papers contribute to the recent growing literature on automation and the future of work by investigating how the introduction of industrial robots in local labor markets affects workers' fear of replacement, future job prospects, and current life and job satisfaction.

These analyses highlight three main sets of findings. First, ICTs affect individuals' expectations about their personal future. Our studies of the internet show that its use is associated with optimism regarding future life conditions, work and economic prospects. Our studies of automation indicate that people working in regions with a greater historical presence of industrial robots are more likely to anticipate that they themselves will compete with smart machines for work in the future. Second, expectations about the future informed by ICTs in turn influences

individuals' current subjective well-being. Specifically, the internet and its available services provide users with information that raises aspirations about desirable outcomes, e.g. through online social networks that encourage social comparisons. However, aspirations are often overly optimistic and induce people to focus more on outcomes that will not materialize rather than those that will. Such unmet aspirations depress individuals' subjective well-being. In the case of automation, anticipating technological competition generates a fear of replacement in workers that is detrimental to their current life and job satisfaction. Third, ICT-shaped expectation formation and its effects on well-being are experienced differently for individuals depending on their age and skills. Young individuals are especially exposed: they are susceptible to developing overly optimistic expectations that are not easily satisfied later in life; and in their working life, their fear of being displaced by automation technologies depresses their present well-being. The threat of automation is also felt more strongly by workers with low education who perform repetitive tasks. These propensities become less pronounced at older ages.

The thesis lies at the intersection of two strands of research that have so far developed as separate literatures: the economics of subjective well-being and the economics of innovation and ICTs. The work contributes to the former strand of research by introducing ICTs and digitalization as new explanatory factors explaining individuals' well-being (which have so far mostly been neglected in happiness studies). And it contributes to the latter strand of studies by investigating effects of ICTs on individuals' subjective well-being (whereas most previous research has focused on the economic effects of ICTs on e.g. productivity, growth and employment).

This theme of research and the findings of this dissertation have societal relevance and potentially important policy implications. Policy makers who promote public support for digitalization must be informed of the ways in which this process affects individuals' expectations and subjective well-being. As pointed out in the thesis, the relevant effects can be positive or negative depending on whether the technology is perceived to improve or deter future prospects, and depending on individuals' personal characteristics such as age and skills. On the whole, digitalization policies should take these empirical findings into account, and seek to foster positive effects for some individuals and age groups, and at the same time limit the negative effects on others.