

Editor's Introduction

Presently, heated discussions are going in America and Europe, in particular, about the question whether there is a so-called 'digital divide' or not. And when it is deemed to exist, the next question is whether it will close or widen in years to come. Most of this discussion is politically charged. Solid scientific research and analysis are scarce. In the mean time data of official statistics are beginning to appear, like those of the US Census Bureau, summarized in the NTIA's reports *Falling through the Net I, II, III and IV* and *A Nation Online*, the Eurobarometer and United Nations Development Reports. However, research and analysis based on these resources and other primarily descriptive statistics is inadequate for the following reasons:

- They only report the usual, rather shallow demographics of income, education, age, sex, race and ethnicity; the deeper social, cultural and psychological causes of the lack of access of particular categories do not come to the surface.
- Lack of longitudinal data prohibits the extrapolation of trends, a necessity for the interpretation of any digital divide. Too often the development of a simple S-curve of adoption is presupposed.
- The multifaceted concept of access is ill-defined. Most often it is limited to material access: the possession of a computer or network connection. Access in terms of skills, usability and actual use is underexposed.
- There is a clear lack of theory. Insufficient attempts of explanation by specific models of variables related to different kinds of access, multivariate analysis or by general theories of information inequality in an information society.
- There is a predominance of sociological and economic distinctions while contributions of communication studies and psychology are rare. Still, social and media networks, public opinion, attitudes towards technology and innovation, the communication of usage styles and many other factors are vital for any diffusion.

In this special issue of the EJC/RCE the authors will contribute to the filling of these gaps. There is multivariate analysis of potential causes of inequalities observed. There are longitudinal data. And there are contributions from communication studies and psychology, for instance elaborating the concepts of computer anxiety and communication apprehension.

In their contribution *The Digital Divide in the Netherlands*, Jos de Haan and Suzanne Rijken distinguish between the possession, skills and use of ICTs. They carefully analyse the respective weight of a number of background variables for these types of access. Their study shows that usage differences are smaller than the differences in possession. However, they also observe that differences in usage (frequency and above all type of usage) remain once the ICT products described have become widely distributed. This calls for a more complex picture of the digital divide than a mere look at access in the meaning of hardware possession and network connection. The authors have made this picture by systematically comparing differences in access, use and digital skills.

Han Woo Park has reached a comparable conclusion in *The Digital Divide in South Korea: Closing and Widening Divides in the 1990s*. Hardware possession and connection are improving, but the skills needed to use them and the usage opportunities in themselves are lagging behind. In 2001 four out of five Korean households possessed personal computers and 64.9 percent used the Internet. These figures match those in Northern America and Northern Europe. They were realized by persistent policies of technological diffusion by the Korean government and business world. However, insufficient digital skills and scanty usage opportunities remain among the Korean people. It is argued that they lead to new forms of digital divide. In particular, gaps in digital skills and usage appear. In any case this means that a technology push is not capable of closing all digital divides.

Usually, the adoption of new technologies is seen as a continuous upward movement. However, in this issue Steven Rockwell and Loy Singleton claim that one-third of US-homes is expected to reject the particular technology of ICT. And even after they have adopted it purchasing a computer or getting an Internet connection in one way or another, a large number of drop-outs appears. Their study suggests that psychological barriers such as computer anxiety and communication apprehension might offer some insight into the reasons of this rejection.

The last article in this issue stresses the remaining importance as a necessary condition of having computers and Internet connections, in this case in public schools. In *A Digital Divide in Maryland Public Schools*, Jacqueline Nunn, Robert Kadel and Allison Eaton-Kawecki show that schools having less access to computers and the Internet not only reveal less use of this technology by students and teachers for general and specific school tasks. They also show less proficiency among teachers in using this technology and less integration into instruction. One does not have to claim that digital technology improves education, to acknowledge that this means unequal access to opportunities anyway.

As an introduction to this issue the guest-editor provides a framework for digital divide research. He tries to make a number of conceptual clarifications. First of all the pitfalls of the metaphor called digital divide are explained. Then he distinguishes four types of access: mental, material, skills and usage access. He arranges them in a model of successive types of access. Finally, he describes aspects of a future agenda of digital divide research presenting a comprehensive causal model of causes and effects of these types of access to be tested in the years ahead.