



Chapter X

The Influence of Socioeconomic Factors on Technological Change: The Case of High-Tech States in the U.S.

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ABSTRACT

This paper examines the technological level of 74 counties in technologically advanced states in the United States at the end of the 1990s. The conceptual framework is that selected socioeconomic dimensions influence the level of technological development for advanced communities; i.e., technology does not develop by itself but in concert with pre-disposing characteristics of the environment. The influence of socioeconomic factors was studied through correlation and regression analysis. The findings reveal that, on a national basis, factors that are important across several technology sectors are college education, ethnicity, income, and federal grant funds. There are distinctive

influences for high-tech counties in the “rust belt” versus the “sunbelt.” Taken together, the results highlight the association of socioeconomic factors with the per capita magnitude of the technology sectors. The findings are discussed relative to research literature and data collected, and policy and ethical implications are presented.

INTRODUCTION

Over the past century, technological development has been reshaping the material basis of U.S. society and economy at an ever-increasing pace. Especially the rapid development and diffusion of the new information technologies have altered the process of production, raised productivity, and improved living standards. This transformation is taking place on a global basis. Yet, there is evidence that this revolution is still in its beginning stages and its effects are not yet well understood and predictable. But there is general consensus that the advances in the information technology are global, irreversible, and will continue to transform the way we live and work.

As the complexity of technological change accelerates, the need to maximize its benefits and minimize its risk increases. In recent years, the subject of technological change and information technology has received a great deal of attention from economists, sociologists, and psychologists (Stein, 1995, p. 38). One issue, which frequently surfaces, is the question of how these sweeping changes will affect the fabric of our lives. Will the revolutionary advances of the information and communication technology (ICT) widen the “digital divide” and increase the gap of inequality, which already is prevalent throughout societies, or will we be able to direct these forces to work more equitably for the benefit of everyone? This is the daunting challenge the global economy and U.S. economy now face (ILO, 2001).

The aims of this paper are to better understand the relationships between socioeconomic factors and technological change within U.S. high-tech states, to raise some relevant questions that may help policy makers and experts to identify and address potential and already developing social and economic problems based on the recent changes, and to increase the social dialogue and partnership amongst employers, workers, government, and civil society.

In the next section, we briefly review some of the existing theories about technology and its impact on wage inequality, the “digital divide,” business ethics and corporate social responsibility, and present our research questions. In the following section, we turn to the methodology used in this paper. The chapter then looks at the empirical evidence and explains the findings. This is followed by a discussion on the research results and a discussion of the review policy implications and ramifications for future research. The final section presents the conclusion of this study.

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