

Chapter 12

Gender and Industrial Creativity in Poland

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ABSTRACT

The chapter deals with the problem of seeking possibilities to utilise patent databases in the research on dynamics and development directions in science, technology, innovation activity as well as on structural changes in economy, taking into account gender aspect. The key research objectives include: drawing a statistical picture of creative industry activity in Poland in the years 1995 - 2013, taking into account gender aspect; assessing the convergence as regards the patents obtained by men and women; identifying technological areas where women are present. The chapter, for the first time, presents a statistical picture of industrial creativity of men and women in Poland in the period of economic transformation, based on patent statistics.

INTRODUCTION¹

The philosophy of socio-economic development, confronted with the image of the contemporary reality allows distinguishing two main logical axioms of modern development. Firstly, the creation of knowledge and its effective use in the manufacturing processes determine the ability and competitive position of economies at all levels and areas of impact on the environment. We can say of the companies based on the creation and absorption of knowledge in their ongoing manufacturing processes; What's more, the concept of the global economy based on knowledge as a distinctive feature of the modern internationalization process is a quite commonly used term. Secondly, it is reasonable to transpose this issue at the macroeconomic level. Industrial Creativity matches well this axiomatic system.

Creativity has a large number of connotations. It is associated with artistic, scientific, technical, business, and other activities. The importance of creativity for the economy (including for the increase of total-factor productivity) is not only noticed, but widely recognised. Social psychology seeks sources of this type of creativity in features of character, motivation, and in social and cultural environment (Rotter, 1966; Sternberg, 1999; Shane, Locke, & Collins, 2003). Hence, creativity is a multi-dimensional category.

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The importance of industrial creativity (encompassing: creating industrial knowledge and subsequent transfer and utilisation of this knowledge) for creative processes is an issue present in economic research since the beginnings of their development. At first, the mechanism of contamination of industrial creativity, its impact on total-factor productivity and utility, and on the economic value generated through the knowledge accumulation process was not noticed. Yet, the second half of 20th century, in particularly the turn of 1980s and 1990s, mainly due to dynamic structural changes in global economy, was the time of more detailed reflection on the possibilities to describe and include in the theory of economics the problem of knowledge and its utilisation in manufacturing processes. A major contribution to the output of the intellectual deliberations on the subject constitute the works devoted to: (1) inclusion of human capital in the new theory of growth (Lucas, 1988; Baro & Sala-i-Martin, 2004), (2) recognition of technological advancement as a endogenic factor stemming from research and development activity (Romer, 1990), or (3) introduction of the concept of *knowledge spill-over* in the new theory of growth (Tondl, 2001).

In other approaches, creativity is described as a (measurable) social process. What matters here is not only economic evaluation of the results of creativity, but also the very sequence of creative activities via interaction of social, cultural, human, structural, and institutional capital (UNCTAD, 2008).

Recently, the concepts such as “creative economy” (UNCTAD, 2004; Florida, 2005, 2010; Peters, 2010), “creative city” (Florida, 2003; Davis, Creutzberg, & Arthurs, 2009) or “creative class” (Florida, 2003; Eikhof & Haunschild, 2006) have been gaining popularity. The theory of “social capital” is being replaced by the theory of “creative capital” which is a derivative of the “human capital” theory claiming that the driving force of economy is creative people and that the places they live in (talent clusters) develop more dynamically and can attract even more creative persons.

In its crudest form, the concept of creative economy boils down to the view that industrial economy is gradually giving place to creative economy based on the growing importance of ideas and virtual value (Peters, 2010). This is, however, unjustified simplification. Industry, also the traditional one, is based on broadly understood creativity which is best physically manifested in a patent description (structured form of creativity).

Drawing on: (1) arguments in support of the use of patent statistics in economic research found in the works of Griliches (1990), Pavitt (1978), Jaff, Trajtenberg, Foray (2000), Schmoch (1999, 2008), Bassecoulard, Zitt (2004), Cohen, Merrill (2003) and in OECD (2001, 2007, 2008, 2009) manuals; (2) growing needs for the exploitation of knowledge contained in patent data (setting research directions, identification of smart specialisations, evaluation of results of R&D works.); (3) growing need for research on dynamics and directions of men’s and women’s involvement in scientific and technological as well as innovation activities (European Commission, 2003), this paper for the first time² presents a statistical picture of industrial creativity of men and women in Poland in the period of economic transformation, using patent databases.

The research objectives are: (1) synthetic presentation of arguments in favour of the use of patent databases to measure creativity, taking into account gender aspect; (2) drawing a statistical picture of creative industrial activeness in Poland in the years 1995-2013, taking into account gender aspect; (3) determining the level of interest in obtaining patent protection in Poland by foreign entities; (4) assessing the convergence effect as regards patents obtained by men and women; (5) indicating technological areas in Poland, where women’s presence is noticeable.

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