

Katharina Frosch:

The Innovative Capacity of an Aging Workforce

Beiträge zur Personal- und Organisationsökonomik,

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In times of sweeping demographic changes, policy makers and business executives in mature economies perceive workforce aging as one potential threat to the capacity for innovation and technological progress. However, evidence for age-dependency in innovative performance is still scarce. Pressing questions in this context are for example:

- Does workforce age affect the innovative capacity of firms and regions, and if so, how and through which transmission channels do these effects occur?
- What are the sources of possible age-dependency in innovative performance, in particular with respect to innovation-relevant human capital?
- What are the policy implications of the interplay between workforce age and the capacity to produce technological advances in times of future workforce aging?

Starting from a comprehensive survey and critical discussion of existing studies about the interplay between workforce age and innovation, this book suggests a new conceptual framework to study the age-dependency of innovation. Based on this, three empirical studies investigate how the age composition of a workforce affects inventive performance in European regions, to what extent certain staffing patterns experienced by German firms boost innovative performance and how a region's entrepreneurial capacity relates to the age composition of its working-age population.

Key words: aging workforce, innovation, entrepreneurship, human capital, demographic change

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To Elisabeth and Karl,
and all others, who brighten my life

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Abbreviations

EPO	European Patenting Office
EU	European Union
EU-15	The 15 member states of the European Union before 1 May 2004
FE	Fixed effects
GMM	General method of moments
GVA	Gross value added
HR	Human Resource
IAB	Institut für Arbeitsmarkt- und Berufsforschung (Research Institute of the German Federal Employment Agency)
IABS	Employment Sample provided by IAB
ILO	International Labour Organisation
IPC	International Patenting Classification
IV	Instrumental variable (IV estimation = Instrumental variable estimation)
LFS	(European) Labor Force Survey
LIAB	Linked employer-employee panel dataset for Germany provided by IAB
NUTS	Geocode standard (nomenclature d'unités territoriales statistiques)
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares regression
RIS	Regional Information System of the German Federal Statistics Office
R&D	Research and development
SOEP	Socio-Economic Panel
S&T	Science and technology
UN	United Nations
US	United States of America

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Chapter 1

Introduction

Population aging poses a workforce dilemma for both economies and organizations. Thirteen countries are expected to have "super-aged" populations where more than one in five people is 65 or older by 2020, up from just three in 2014.⁵ These include major economies such as the United States, the United Kingdom, Japan, Germany, France, and South Korea. The new challenges of an aging workforce. The transition toward older talent can present challenges. Older workers may have specialized workplace needs and can attract resentment from younger workers, and they often enjoy higher salaries because of their tenure. Aging workforce challenges & solutions The impact of the aging workforce FAQ. Aging workforce statistics. First off, a couple of aging workforce statistics to give you an idea about the extent of the problem. In the US alone, 10 000 baby boomers turn 65 every day. According to an article by Arlene S. Hirsch, M.A., LCPC, for SHRM, this is something that started in 2011 and will continue until 2030. Since the average retirement age of a baby boomer lies somewhere between 61 and 65, it's not hard to see that this so-called silver tsunami is going to create some serious challenges for HR; the In times of sweeping demographic changes, policy makers and business executives in mature economies perceive workforce aging as one potential threat to the capacity for innovation and technological progress. However, evidence for age-dependency in innovative performance is still scarce. Pressing questions in this context are for example: - Does workforce age affect the innovative capacity of firms and regions, and if so, how and through which transmission channels do these effects occur? - What are the sources of possible age-dependency in innovative performance, in particular with respect to innovation Rapid aging will leave its mark on the workforce population. The share of working-age population (15-64) in the region will no longer grow and plateau at around 67% from 2017 to 2030. Raising Productivity of Aging Workforce via Technology. The key channel through which countries can harvest the longevity dividend is raising the productivity of seniors in their workforces. Elderly people are better educated than in the past, so they can carry out high value-adding tasks and work with complementary technologies. Old curricula need a thorough review to incorporate an element to build the capacity of workers to "learn to learn" new skills.