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Nordic Institute for Studies in
Innovation, Research and Education

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Moving people and knowledge in an open innovation paradigm

Facts on circulation of knowledge, ideas and people in European research

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Technology Transfer
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Chesbroughs definition of Open Innovation

- “...*the purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively*” (Chesbrough et al 2005:1)
- Includes...
 - Collaboration within and beyond value chain
 - R&D purchases
 - Search for information and ideas
- But extends into...
 - Processes occurring in the equity market
 - Acquisitions as supplement to/substitute for internal R&D
 - Spinning out as alternative means of commercialization

Open innovation characteristics

- Collaboration, increased R&D purchases, networking, user-interaction etc.
- Chesbroughs does point towards the (neglected) role of equity markets in
 - Constraining strategies of large, publicly listed enterprises
 - Absorbing externalities from industrial and public research
 - Enabling technological experimentation through new-firm formation
- But fails to account for...
 - Other institutional differences across countries, in particular regarding framework conditions for flexible labour markets and high-skill labor mobility.
 - Emerging new patterns of knowledge circulation at micro in the context of changes in global stocks and flows of high skilled personnel, in particular researchers

The MORE project (2008-2010) – EC DG RTD

Study on mobility patterns and career paths of EU researchers



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- Survey of the Higher Education Sector (WP3/WP4)
- Industry survey (WP6/7)
- US mobility survey (WP5)
- Research institutes survey (WP3/WP4 contd.)
- IISER-indicators
- Final report

Lessons learned – mobility of researchers and knowledge circulation

- Specificities of scientific labour markets: Internationalised, comparatively smaller and specialised and with relatively higher mobility than other labour markets – both in the public and the private R&D bases.
- No commonly accepted definitions of how to measure «mobility of researchers»- MORE project:
 - International mobility (including research visits of three months or more)
 - Sectoral mobility
 - Intrasectoral mobility
- Other forms of knowledge circulation in research:
 - Academic networks (including publication channels, conferences and workshops)
 - Collaborative projects
 - R&D services
 - Secondments in academia and industry
- Mobility of students is an important explanatory variable of researcher mobility
- What is the role of networks and researcher connections in shaping mobility processes?
- Effects of mobility on individual careers and on the national research systems as a whole – in general brain circulation is the prevailing model for understanding these issues.

IISER – Integrated human R&D resources indicators - IISER

A. Indicators on researchers' stock and career phases

Indicator 1: Stock of researchers in the European Union (IISER)

Indicator 2: Number of researchers in the training phase and post-docs (IISER)

B. Indicators on researchers' mobility

Indicator 3: Number of researchers recruited under a permanent contract in R&D

Indicator 4: Average time from graduation to a first regular employment contract in R&D (MORE)

Indicator 5: Intra-EU mobility of researchers (IISER)

Indicator 6: Mobility of researchers out of the EU (IISER)

Indicator 7: Researchers coming into Europe (IISER)

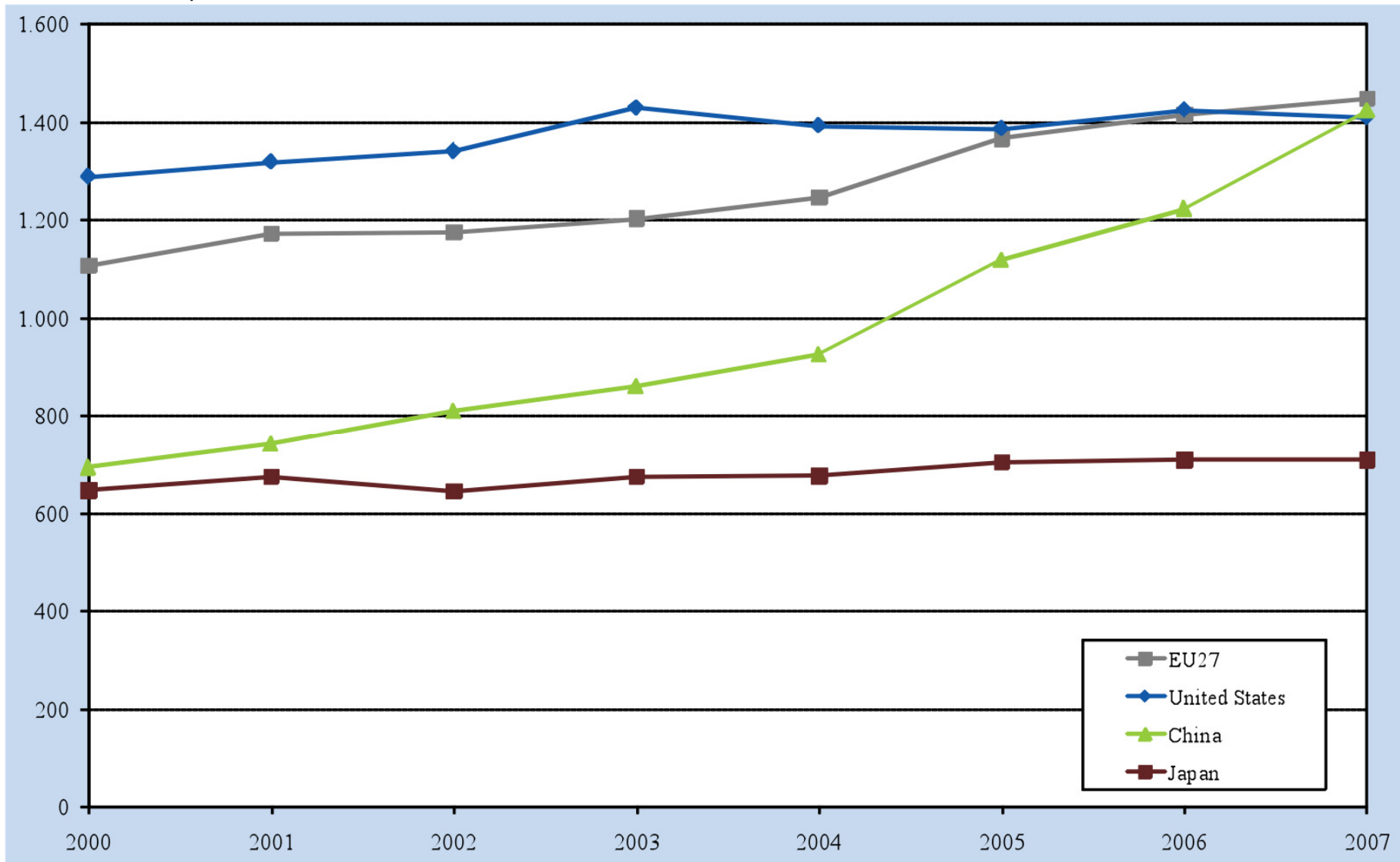
Indicator 8: Circulation of researchers between public and private sector - MORE

C. Indicators on researchers' motivation and satisfaction

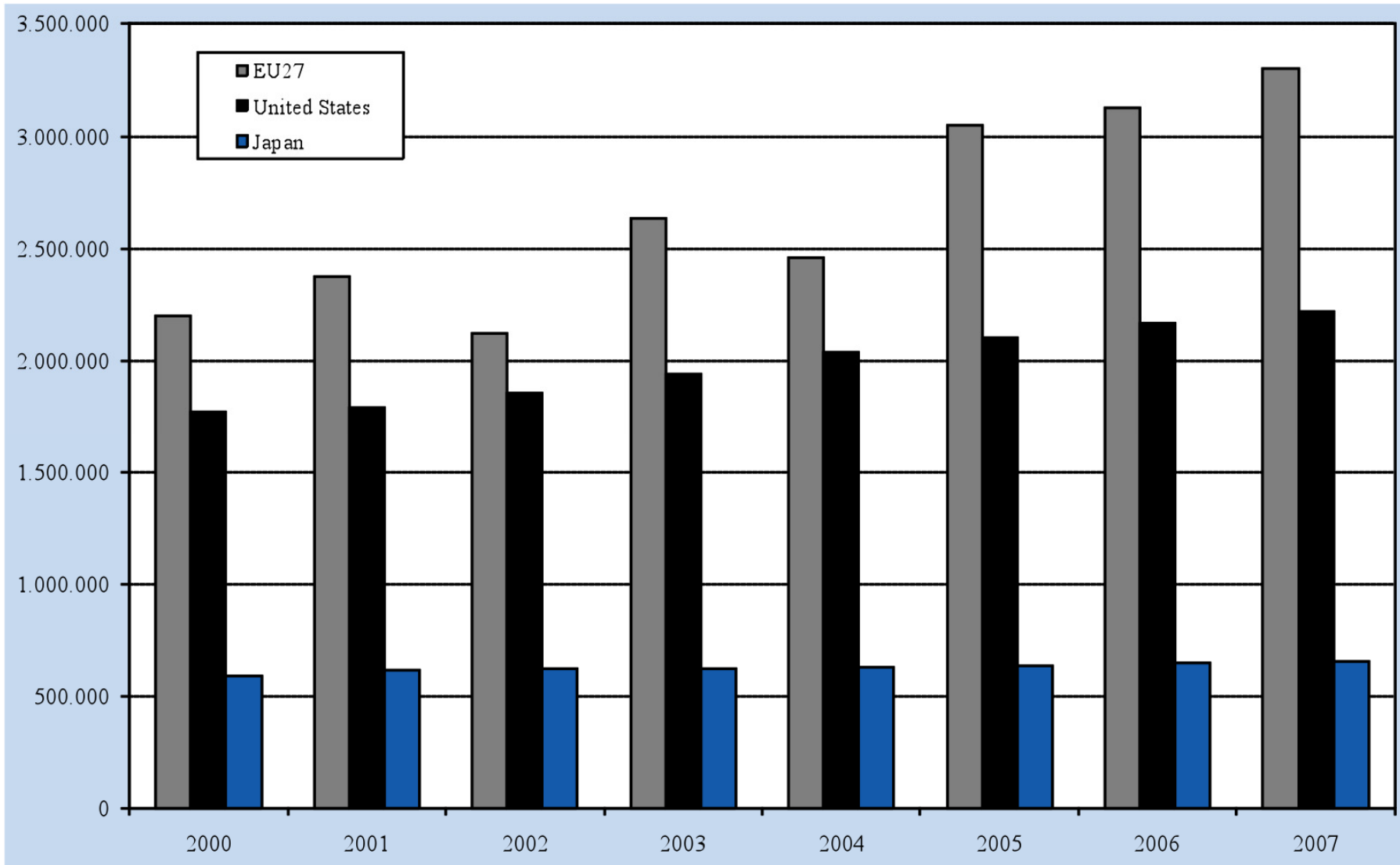
Indicator 9: Motivations for choosing a research career (qualitative) (MORE)

Indicator 10: Satisfaction of researchers with their jobs and careers (qualitative) MORE

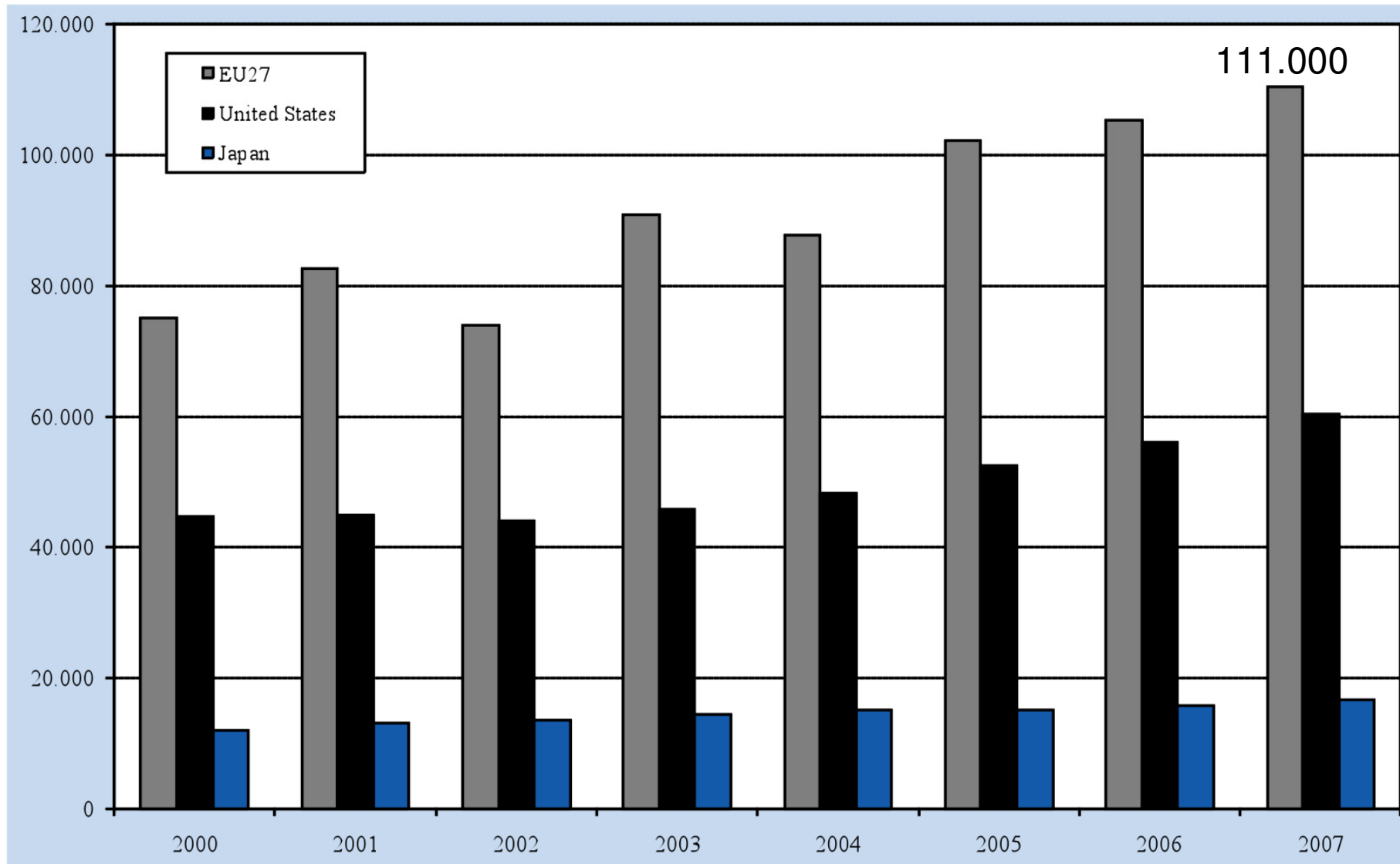
Number of researchers (FTE), in the EU27, U.S., Japan and China, 2000-2007 (in thousands). OECD, EUROSTAT,



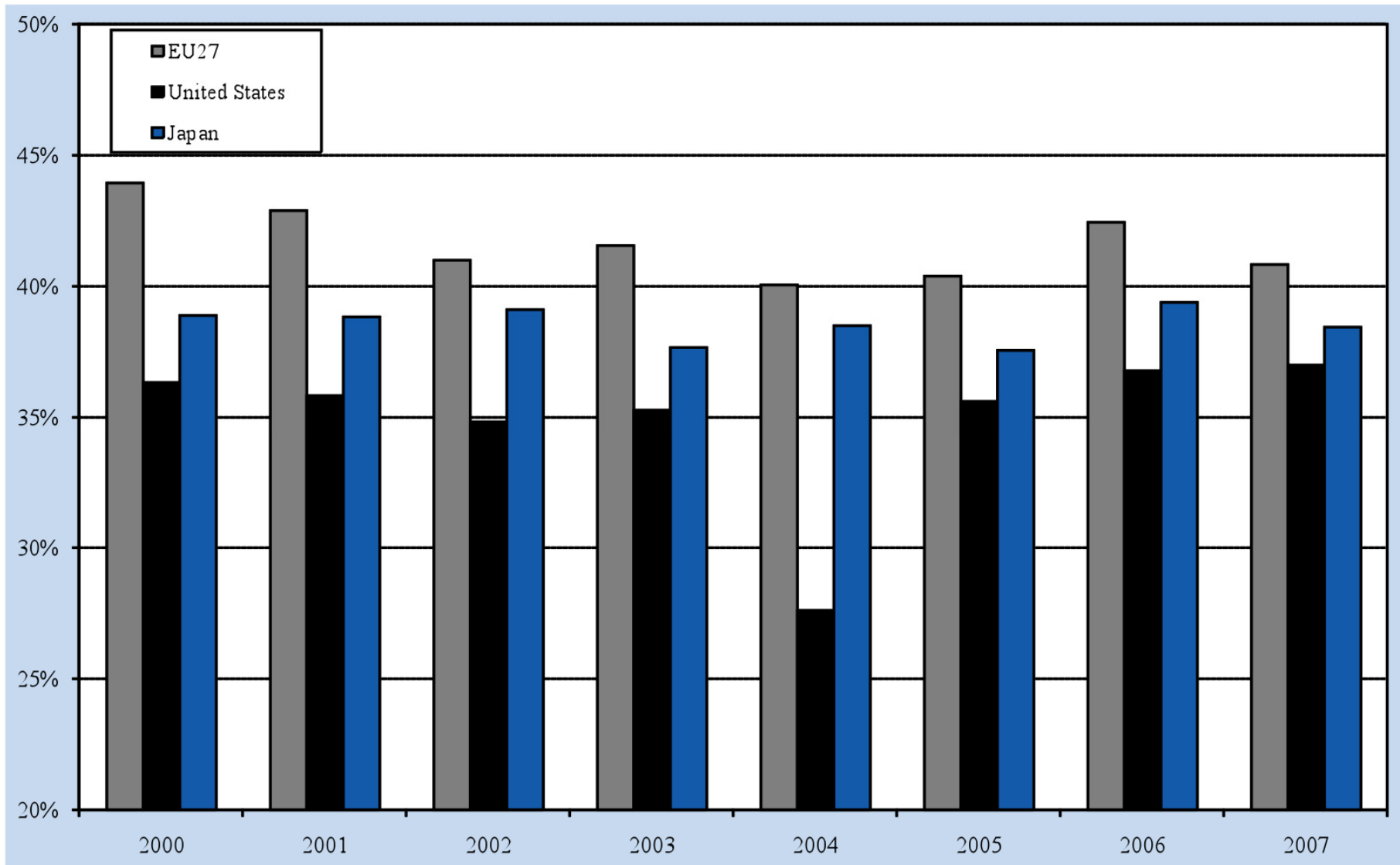
Number of tertiary degrees with academic orientation in the EU27, U.S. and Japan (2000-2007)



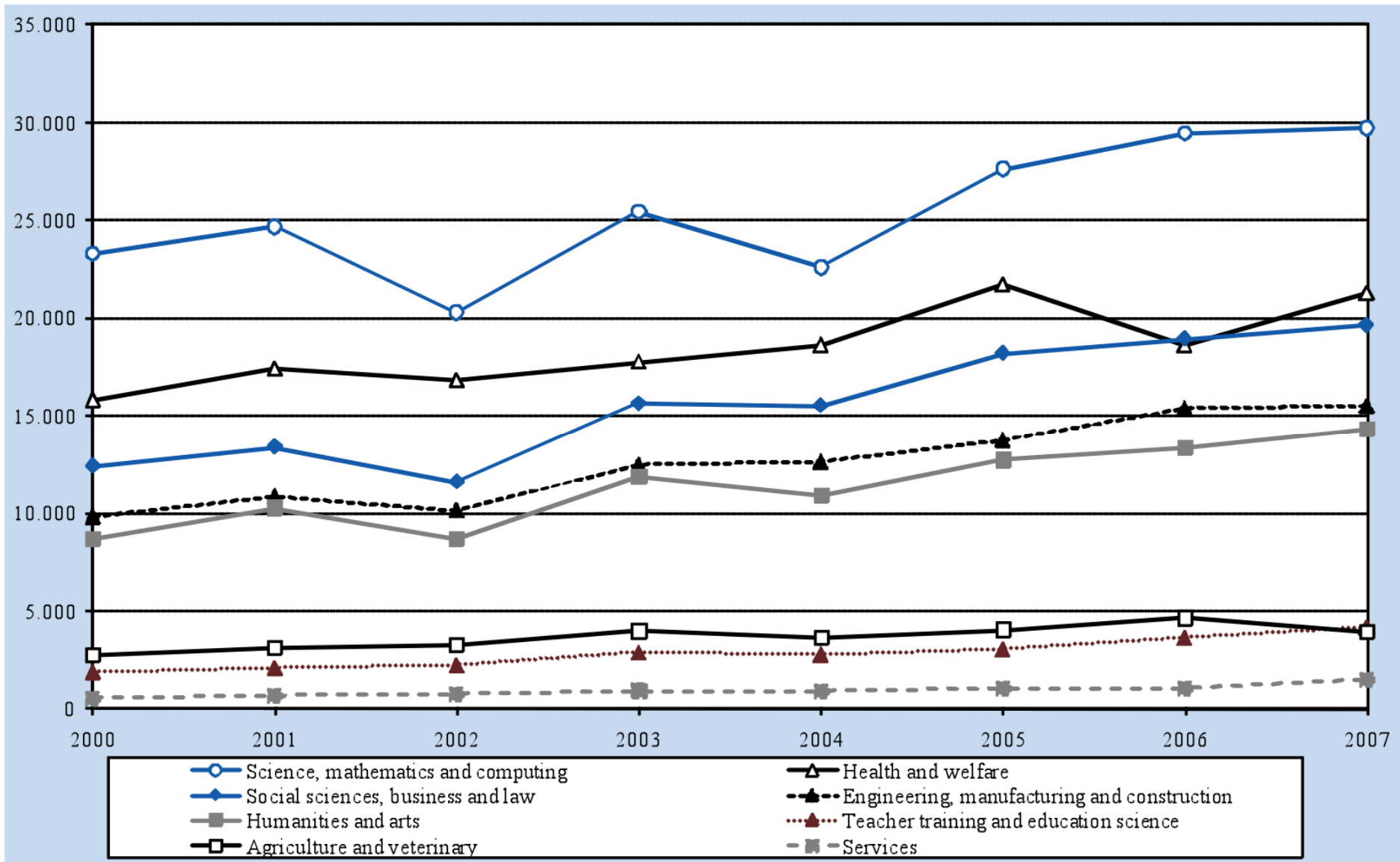
Number of doctoral degrees (ISCED 6) in the EU27, U.S. and Japan (2000-2007).



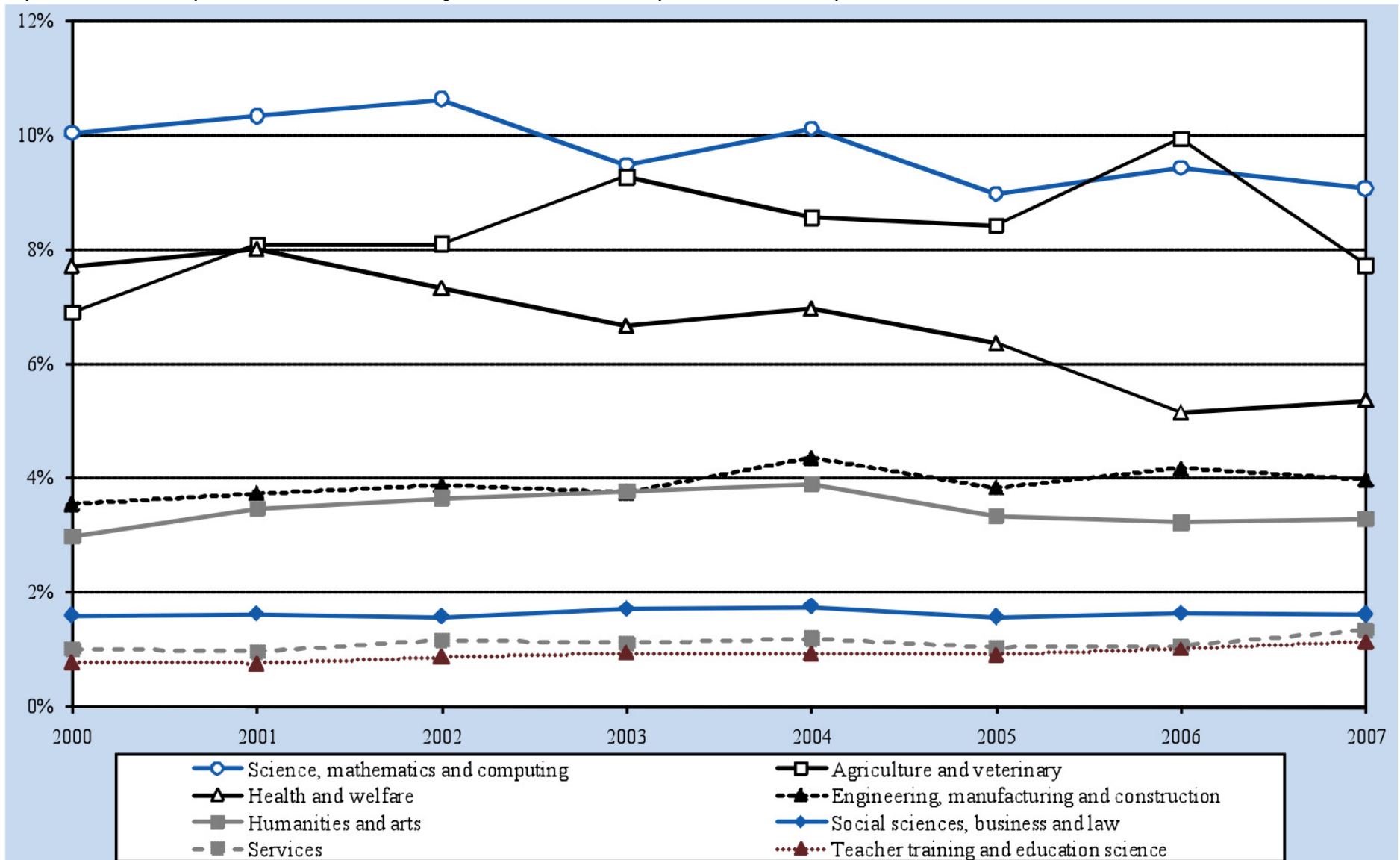
The number of science and engineering doctoral degrees as a per cent of the total number of doctoral degrees (ISCED 6) in the EU27, U.S. and Japan (2000-2007).



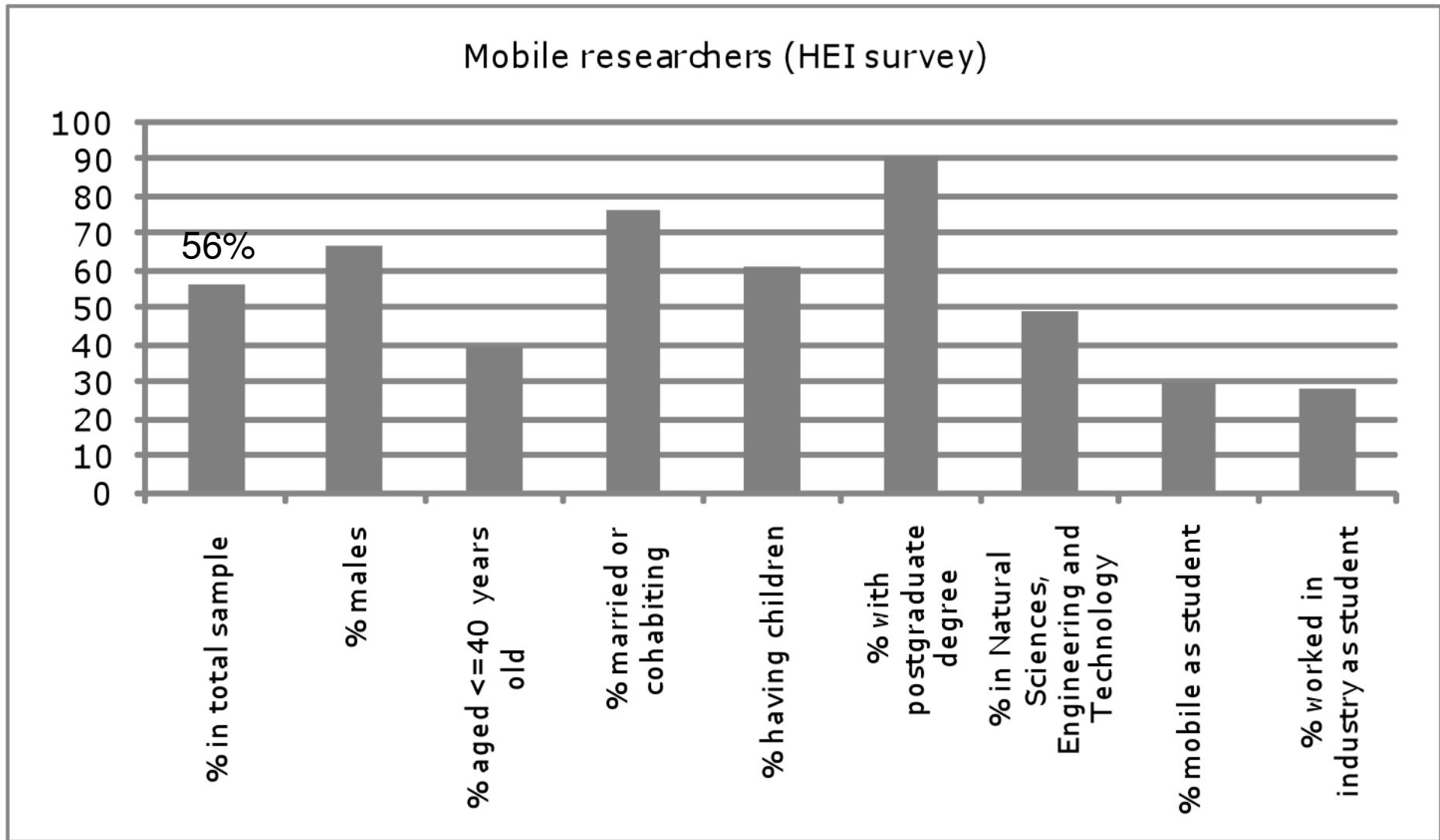
Number of doctoral degrees (ISCED 6) in the EU27 by main fields (2000-2007).



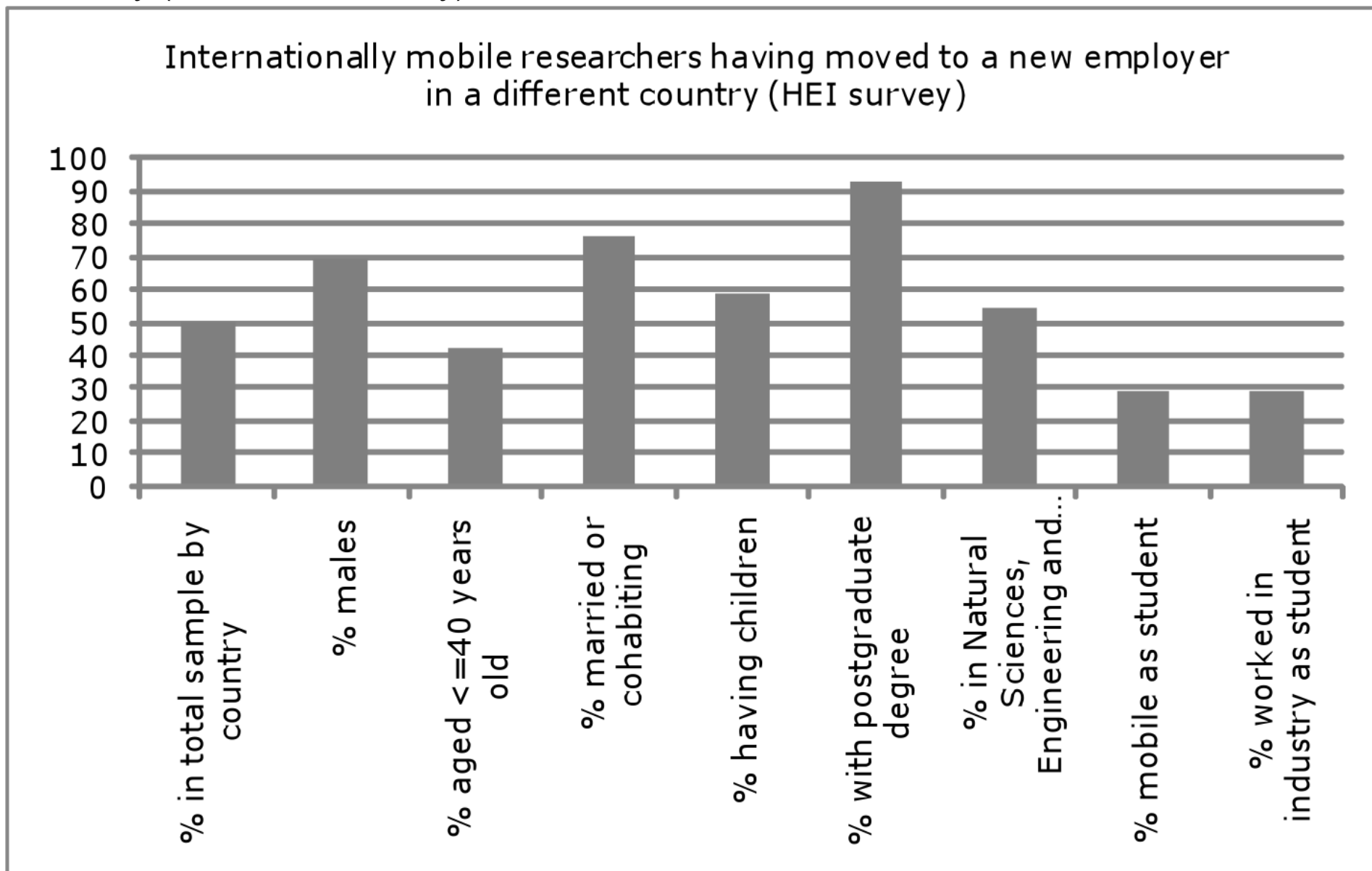
Ratio of doctoral degrees (ISCED 6) to tertiary degree with academic orientation (ISCED 5A) in the EU27, by main fields (2000-2007).



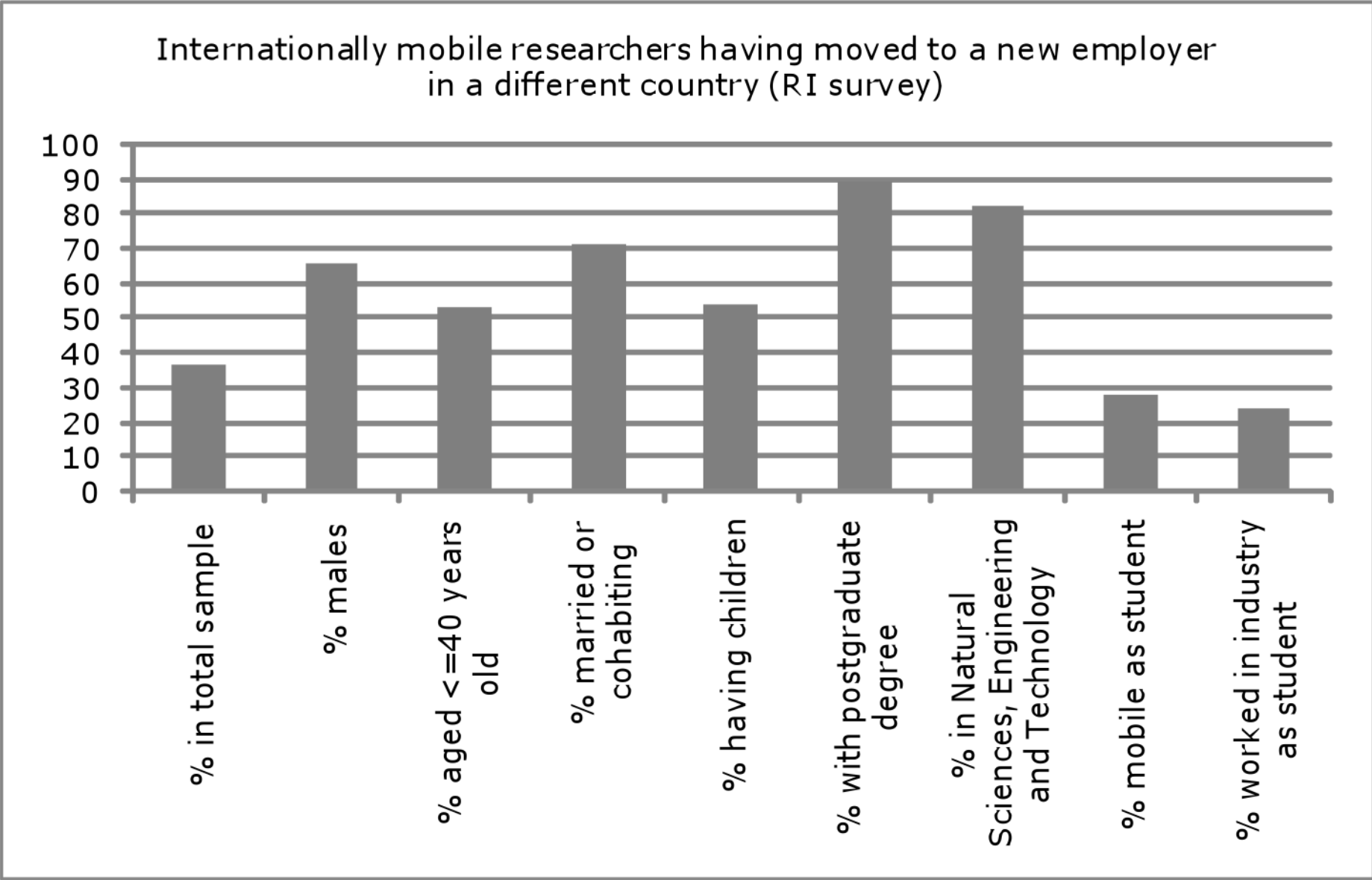
Characteristics of the international mobile researchers – MORE HEI-survey



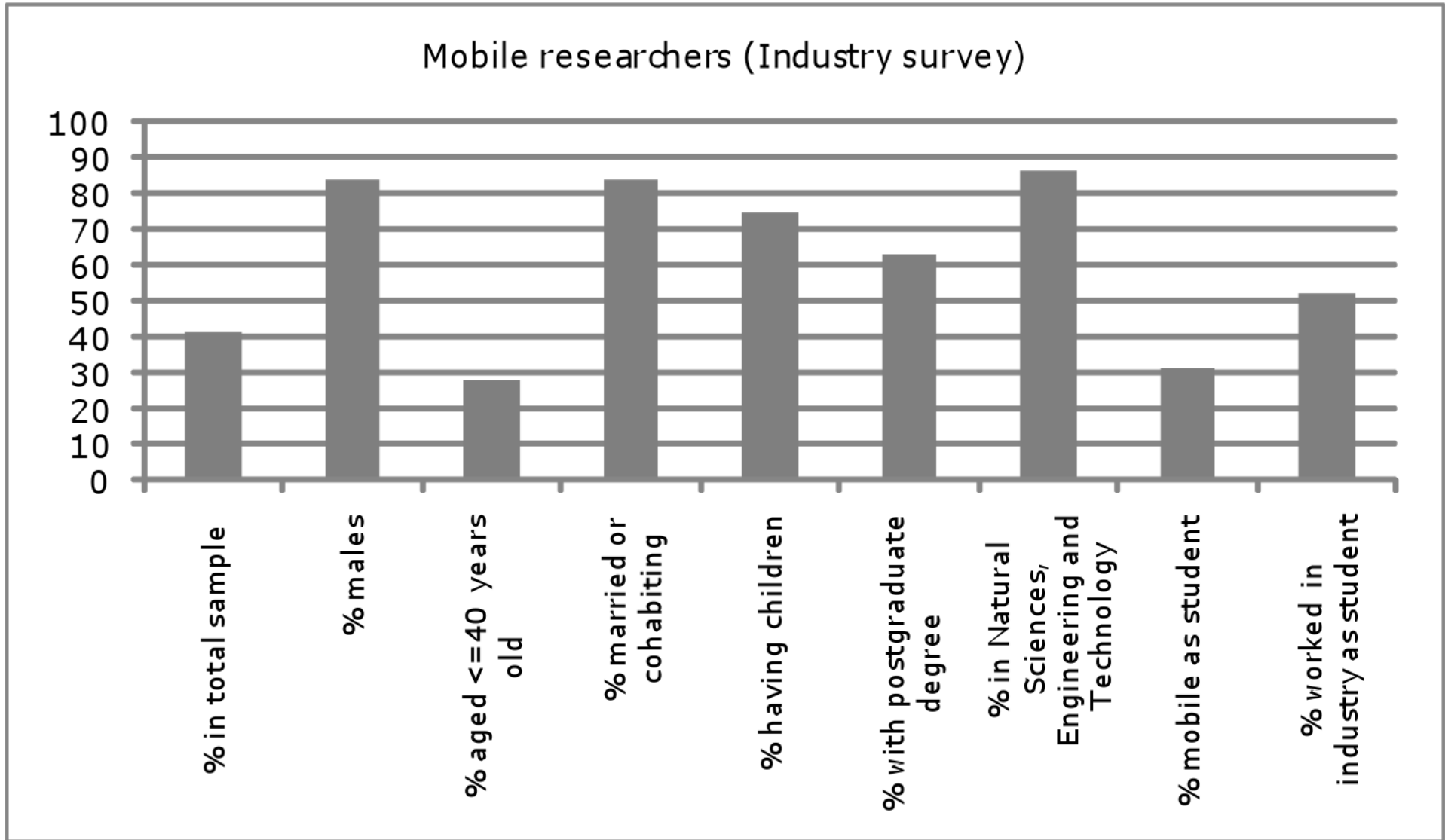
Characteristics of mobile researchers having moved to a new employer in a different country (MORE HEI survey).



Characteristics of mobile researchers having moved to a new employer in a different country (MORE RI survey).



Characteristics of the international mobile researchers – MORE industry-survey



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