



DIGITALIZATION AND THE GENDER GAP: EVIDENCE FROM RUSSIA

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Digitalization has been increasingly attracting the attention of researchers and policymakers

- Current developments in the field of new digital technologies (AI, machine learning, robotics) have a strong potential to change labor markets
- Remote work has become more wide-spread since the start of the COVID-19 pandemic
- The effects are both destructive (technology replaces workers in certain occupations) and productive (technology increases productivity and creates new jobs).
- Occupations differ in their potential for digitalization
- Gender differences in occupational employment structure (occupational segregation) suggest that digitalization may have differential impacts on the employment and wages of men and women.

ICT skills: evidence from developed countries. These disparities hold in Russia

- In primary and secondary school, girls demonstrate a higher level of ICT skills in computer tests (Siddiq, Scherer, 2019) BUT boys have a higher self-assessment of the level of ICT proficiency (Cai et al., 2017)
- Boys spend more time at the computer, but mainly because of computer games (Drabowicz, 2014).
- PIACC: the proportion of adults with no computer experience is about the same among men and women (OECD, 2019).
- Women are less likely to use the Internet, register less frequently on freelance and remote work sites, use less online financial services, and have a narrower range of online activities (OECD, 2018).
- Women are employed in occupations that, on average, require a higher level of digital skills. Occupations with very high and low digital requirements are dominated by men (OECD, 2019; Muro et al., 2017).

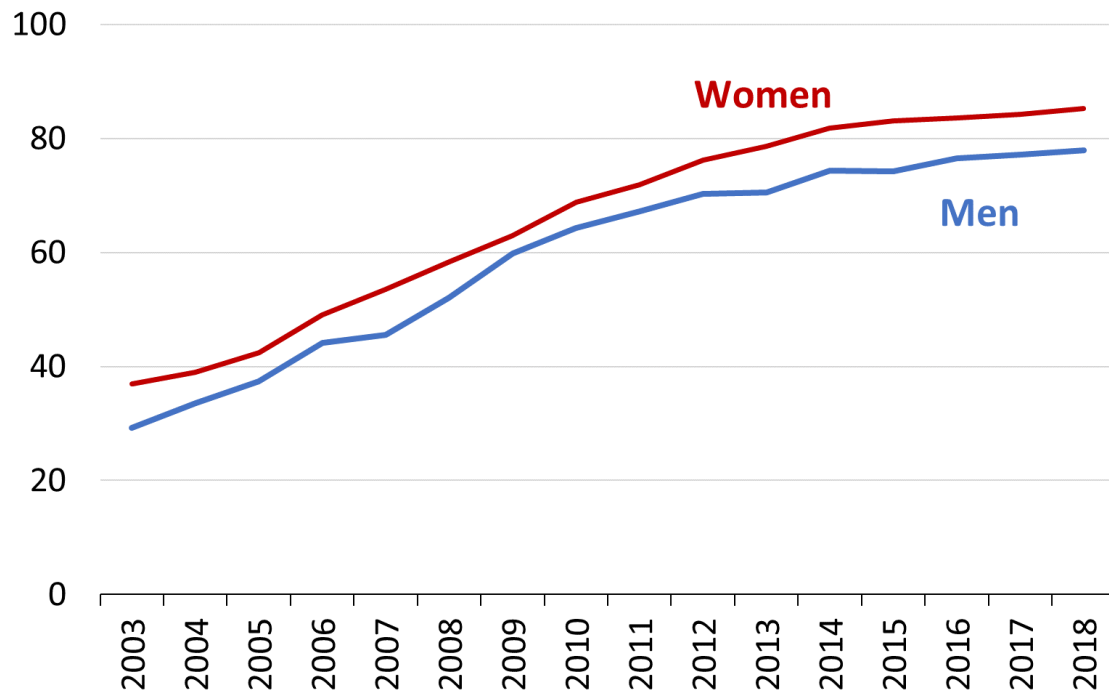
Lukyanova A. (2021). Digitalization and the Gender Wage Gap in Russia, *Ekonomicheskaya Politika*: 16(2)

- 2013-2018
- Data on personal characteristics. earnings. computer and Internet use come from the Russian Longitudinal Monitoring Survey – HSE (RLMS HSE)
- Occupation-specific digital scores are based on O*NET:
Digital scores account for the knowledge of computers and electronics, programming and the use of computers for tasks with varying complexity

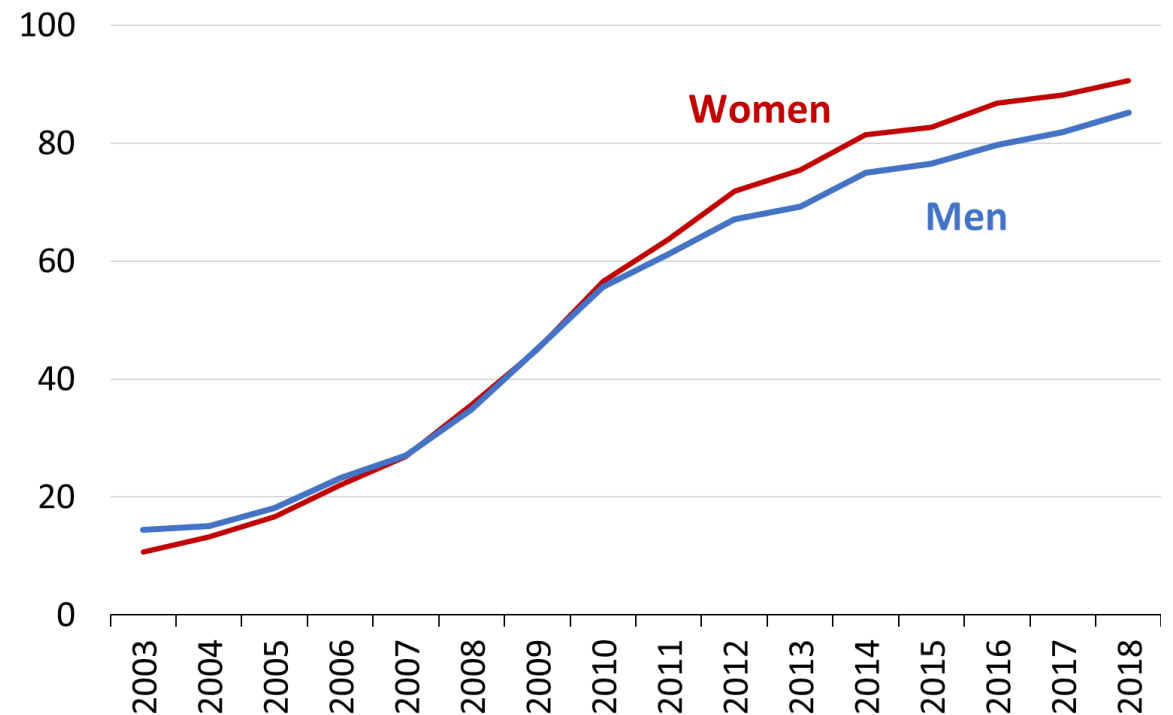
O*NET = The Occupational Information Network. O*NET surveys workers in every occupation in the US to collect information about work activities they perform and knowledge, skills, technology, education required at their jobs.

ICT-skills of workers: the use of computers and Internet

Percentage of employed persons aged 20-60 using a computer

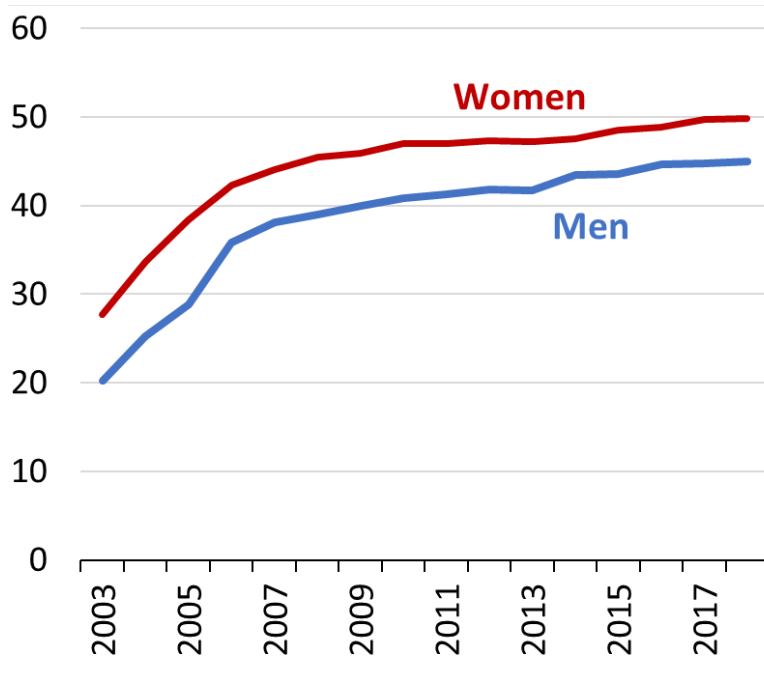


Percentage of employed persons aged 20-60 using Internet

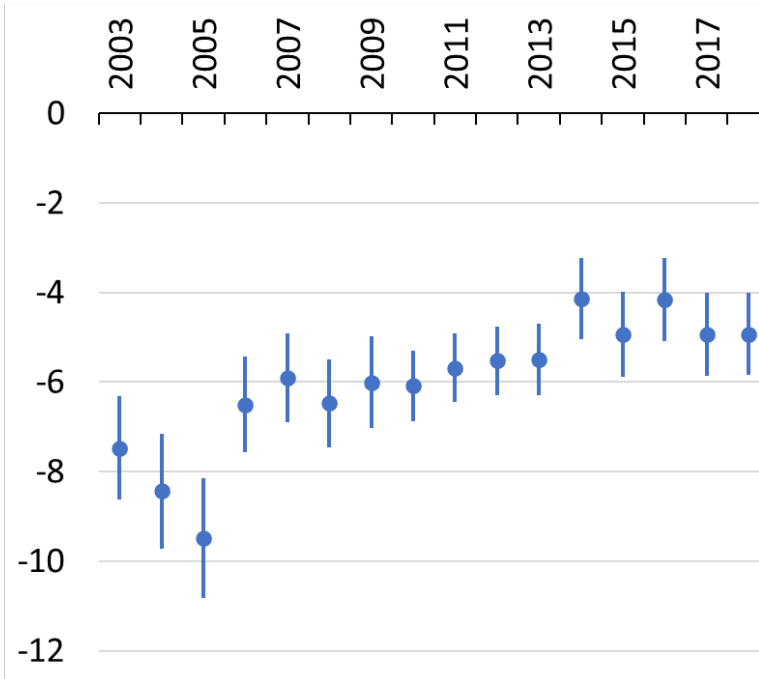


ICT-skills of workers: occupational digital scores

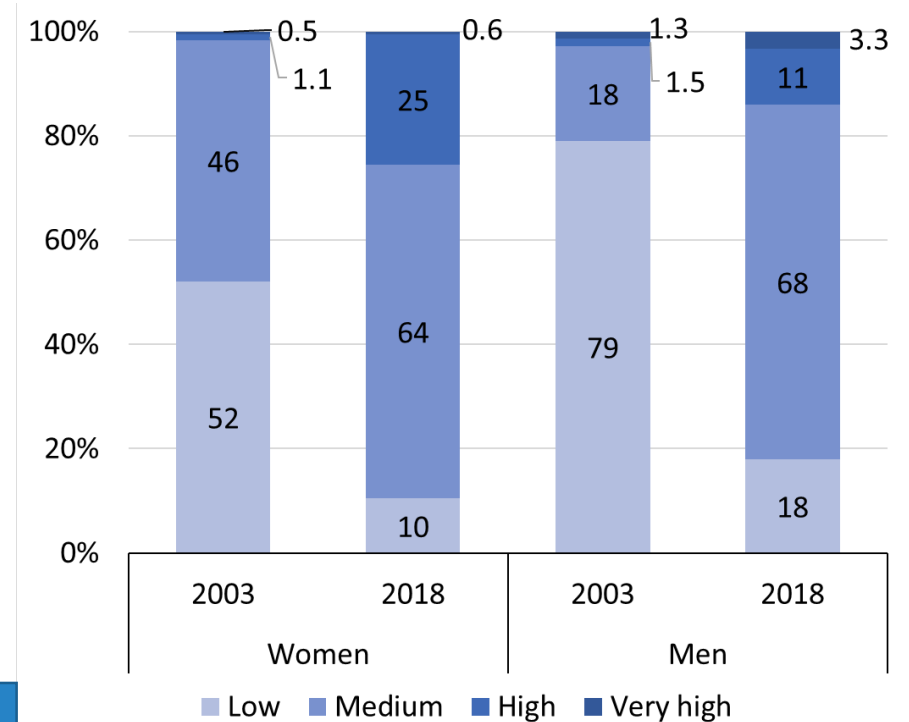
Digital scores: levels



Digital scores: gaps



Employment by levels of digitalization



Most changes occurred WITHIN existing occupations, not because of new occupations or changes in the occupational mix in favor of IT-occupations

Returns to digital skills in wage equations

	Women	Men
	Coef.	Coef.
Digital score of the occupation	0.003***	0.003***
Personal use of a computer	0.199***	0.179***
Other controls: education, age, location, firm size, ownership, time dummies.		

- Computer use is associated with higher salary
- Average earnings are higher in occupations with a higher level of digitalization
- The correlation between computer use and earnings has weakened over time as basic computer literacy became wide-spread.
- The relationship between earnings and the digital score of the occupation has increased over time

Decomposition of the gender pay gap

	Explained	Unexplained
Overall pay gap: $y^M - y^F$	0.251***	
Aggregate decomposition	-0.060***	0.311***
Detailed decomposition:		
Occupational digital score	-0.016***	0.017
Computer use	-0.012***	-0.013

- Adding digital variables to the Oaxaca–Blinder decomposition widens the conditional gender pay gap at the mean
- Women overperform men in terms of computer use
- Controlling for other characteristics women tend to work in more digitalized occupations
- Digitalization has not become a new source of discrimination against women
- The results are robust to changes in model assumptions and equation specifications

Policy recommendations

- Collect gender-disaggregated data to inform digital policy
- Keep track of gender-specific effects of digitalization on jobs
- Put more efforts to get more women and girls engaged in STEM-education and STEM/ICT-related jobs
- Skills which are in highest demand in digital intensive sectors (e.g. self-organisation, managing and advanced numerical skills) are more frequently displayed by men than by women. Digital skills and relevant soft skills should be developed jointly to ensure that women succeed in STEM/ICT-related careers