

THE GENDER WAGE GAP IN THE HUMAN CAPITAL FRAMEWORK: A CROSS-NORDIC ASSESSMENT BASED ON PIAAC

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Abstract

This paper studies the role of human capital in gender wage disparities. Despite increasing convergence of male and female human capital attainments, substantial differences remain. We focus on the human capital dimensions specific for a certain gender as additional drivers of the pay differential. Relying on PIAAC (the Program for the International Assessment of Adult Competencies) data, we incorporate both formal educational attainment and actual cognitive skills in the definition of human capital. The results showed that the association between higher skill and formal education is particularly low for Estonian men, whereas wage returns for these skills are remarkably high in Estonia, compared to other Nordic states. It suggests that factors other than formal education play a substantial role in human capital accumulation in the case of Estonian males but not so remarkable in the case of Nordic countries.

Keywords: human capital; gender wage gap; non-parametric decomposition; PIAAC; Nordic countries, Estonia

JEL: J31, J71, J16, J24, C14

1. Introduction

The issue of gender wage disparity, its nature and possible drivers have been thoroughly studied over recent decades. The focus has been on several interdisciplinary research aspects, including gender discrimination issues as well as possible economic consequences of gender wage disparities on labour market developments and family policies. However, despite high research attention, resulting in enriched model specifications and rapid development of analytical tools to assess the gender wage gap, the issue is still topical, especially in the case of small and developing economies (Polachek 2009, Ņopo 2012, Anspal 2015), where labour markets are particularly sensitive to any gaps in labour market returns labour. A better understanding of the gender wage gap provides additional information for development of labour market institutions as well as family policies to facilitate improvement of labour market returns, particularly in the case of small economies with a tense demographic situation.

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The issue of the gender wage gap already has been widely studied by Estonian and foreign researchers, namely Rõõm and Kallaste (2004), Masso and Krillo (2011), Anspal et al (2010 and 2015), Christofides et al (2013), Vassil et al (2014), Meriküll and Mõtsmees (2015), Anspal (2015), and Halapuu (2015). The results on the explained fraction of the pay gap on average varied between 10 and 44 percent in various model specifications, controlling for individual demographic, educational characteristics, and occupation variables. However, a substantial share remained unexplained and mostly assigned to potentially important factors, which are not captured by the data or are provided in insufficient detail (Anspal et al 2010). The variability of the previous research results also indicates that the issue of gender wage disparity requires additional research attention, incorporating the implementation of several methodological approaches and using information from various databases.

An alternative approach to gender wage gap assessment, followed by DiNardo et al 1996, Nopo 2008, Fortin et al 2010, Nicodemo and Ramos 2012, and Anspal 2015, assumes that male and female profiles cannot be directly compared, as distribution of these characteristics differ significantly among men and women. Hence, estimates of the wage gap for mean characteristics are not robust enough (DiNardo et al. 1996, Fortin et al 2010). Non-overlapping distributions of male and female characteristics have to be considered when comparing men's and women's earnings and decomposing gender wage gap, e.g. the so-called "support problem" has to be accounted for (Fortin et al 2010). Following this line of argumentation, our research extends wage gap estimation by focusing on human capital profiles specific² for either males or females. Applying matching on a set of human capital characteristics, including cognitive abilities, we found that a significant share of males has no counterpart among females with respect to specified human capital control variables and vice versa. This finding provides evidence that a certain combinations of abilities are more often reached by either males or females, embodying male- and female-specific human capital profiles.

Due to the limitation of relevant data about an individual's cognitive skills, previous studies focusing on examining gender wage disparities in the Estonian labour market mainly relied only on the information on the educational level of individuals beside several of their socio-demographic characteristics. This paper aims to better understand the possible reasons behind gender wage disparities in Estonia as a small, quickly developing economy with a high rate of women's labour participation,³ also taking into account an individual's skills (e.g. skills in literacy, numeracy and problem solving in technology-rich environments). We believe that the given study will allow the making of certain generalizations for other relatively quickly developing economies, where women's labour participation rate is high

² Terms "male-" and "female-specific", "-exclusive" and "-unique" are used interchangeably in the paper

³ The rate of female employment was 72% of female population aged 15-64 years which is remarkably higher compared to 66% average participation over Euro area in 2013 (Estimated by the World Bank. Source: <http://databank.worldbank.org/data/reports.aspx?source=283>)

and/or has a tendency to increase.

Whereas the key focus of the research is on Estonia, we compare Estonia-specific findings with the findings for other Nordic countries, namely Finland, Denmark, Norway, and Sweden. Due to numerous economic, political and cultural links, these four countries along with Estonia are often referred to as the Nordic region. Thus, cross-state comparison is particularly beneficial in this context. Moreover, persistent differences in economic and social outcomes add more value to the comparative approach. Estonia has also been previously analysed in the framework of the Nordic region in the PIAAC-based report by Friedberg et al 2015.

The empirical part of our study relies on PIAAC (the Program for the International Assessment of Adult Competencies) national databases for Estonia and four Nordic countries. The country-specific data files include a random sample of individuals aged from 16 to 65 years. We will limit our research sample solely to full-time employed respondents in order to eliminate a bias arising from gender selection into full-time and part-time employment. We are aware of several limitations of the PIAAC data, compared to databases provided by more advanced surveys, e.g. the European Labour Survey (ELS) and the European Social Survey (ESS). Nevertheless, the PIAAC database has a considerable advantage, as it allows information on individual cognitive abilities to be linked with a wide range of background information on various socio-demographic characteristics of respondents.

The rest of the paper is organized as follows. Section 2 presents a short overview of the theoretical framework for gender wage gap analysis. Section 3 gives an overview of PIAAC data, followed by Section 4 explaining the research methodology. Section 5 presents the main results on matching-based gender pay gap decomposition, female- and male- specific characteristics and their wage returns in Estonia compared to some Nordic countries, followed by the summary and discussion of key findings in Section 6.

2. The Gender Wage Gap in the Framework of Human Capital Theory

A majority of studies analysing the gender wage gap and possible explanations for this ever-green socio-economic phenomenon rely on human capital theory. Additionally, several theories of discrimination (statistical discrimination, allocative discrimination, taste-based discrimination)⁴ as well theoretical approaches considering the role of various non-cognitive characteristics (risk aversion, competitiveness, gender identity, etc.)⁵ are implemented for explaining reasons and possible consequences of the gender wage gap.

⁴ Influential examples include Munro 1988; Neumark et al 1996; Altonji and Blank 1999

⁵ See, for instance studies by Grove et al 2011; Blau and Kahn 2016

Human capital theory has its roots in Adam Smith's theory (1776) about compensated wage disparities between workers with different education, skills and experience backgrounds. This theory considers education as an investment of current resources for future returns that, through knowledge, skills and different abilities, can raise a person's employability, productivity and wage. The links between human capital, employment, productivity and wages are evident but are not always straightforward. Wages depend on a person's productivity, whilst productivity is influenced by the investments into human capital that include costs related to schooling and on-the-job training but also to medical care, migration and collecting information about possible income and prices (Becker 1962). Human capital theory tries to provide grounds for making the decision for how much to invest in human capital in order to get the best labour market returns. However, reasons for accumulating different amounts of human capital may be different across genders (Mincer and Polachek 1974; Erosa et al 2016).

The implementation of human capital theory for analysing individual labour market returns and gender wage disparities is remarkably widened with the well-known contributions of Mincer (1958) and Becker (1962, 1964). Studies on the gender wage gap describe the relation between choices regarding investment into human capital and their effect on productivity and earnings, focusing on the explanation of wage differences between men and women. Human capital theory forms a baseline for studies seeking explanations for differences in human capital formation and returns and also shows empirical attempts to demonstrate discrimination or differential returns for human capital.

Gender wage gap studies are also tightly related to theoretical and empirical considerations on the division of labour within the family, pioneered by Becker (1981, 1985). An implication of specialization and division of work within the family often results in women staying partly or even fully away from the labour market. Eventually, women also accumulate less human capital in the form of labour market experience (Erosa et al 2016). Although Becker's model predicts the division of labour in the form of women's staying away from the labour market completely, it can also take the form of, e.g. working part-time. Even if women work full-time, their productivity and investments into human capital through experience and training may be negatively affected by the household labour division, as female burden of household work is often higher comparing to men (Bertrand et al 2015).

The results of previous empirical studies focused on examining the gender wage gap are profoundly summarized in the work of Anspal (2015). We agree with the statement that, although the explanatory power of human capital theory in the gender wage gap analysis has somewhat declined – as men's and women's human capital endowments have become more equal – the variables suggested by the theory are still relevant for empirical testing. Human capital theory remains an important channel through which other theoretical approaches and explanations may operate. For instance, if there is discrimination in a labour market, the human capital framework can be used for explaining the situation through the mechanisms and specific issues of human capital accumulation. To what extent human capital theory

is able to explain a gender wage gap also depends on the situation of men and women in a particular country as well as on the country's institutional framework, including labour market regulations.

Empirical studies on assessment of human capital and exploration of the gender wage gap often rely on a definition of human capital developed by the OECD. In the OECD report published in 1998, human capital was defined as the knowledge, skills, competences and other attributes embodied in individuals that are relevant to economic activity (OECD 1998; Westphalen 1999: 4). The later report of the OECD, focusing on the relations between human capital and well-being, defined human capital as "the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being" (OECD 2001; Boarini et al 2012: 10). Thus, human capital encompasses more dimensions, but education is arguably the most important component. It enhances individual well-being not only by opening broader economic opportunities, but also through non-market benefits such as improvements in health, fertility, opportunity for self-fulfilment, enjoyment and development of individual capabilities.

Educational measures are important proxies, not direct measures of human capital. Assessment of human capital often relies on measuring education output like average years of schooling, formal degree completed and field of specialization. Additionally, estimates of individual cognitive skills and abilities are used to approximate a human in Mincer-type wage equations (Heckman et al. 2006; Hanushek et al 2015). However, recent studies showed that on-job training and work experience are important factors of human capital accumulation, along with formal education (Olivetti 2006).

The International Adult Literacy Survey (IALS) conducted by the OECD in the 1990s is among the earlier data sources allowing assessment of individual skills, as it tested people's actual skills (literacy, numeracy, problem solving) and provided international comparisons. Following the IALS structure, the Adult Literacy and Life Skills (ALL) Survey was later developed in New Zealand. It investigated certain skills and abilities among people aged 16 to 65. Both these surveys were conducted across a number of countries, allowing cross-country comparison of human capital assessment results. However, these earlier studies do not include information about Estonia.

Data on Estonia are available in the survey conducted by the OECD within the Program for the International Assessment of Adult Competencies (PIAAC). PIAAC is a cyclical, large-scale study in which adults were surveyed in 24 participating countries in 2011-2012 and in 9 additional countries in 2014. The goal of PIAAC is to assess and compare the basic skills and the broad range of competencies of adults around the world. The assessment focuses on cognitive and workplace skills needed for successful participation in 21st-century society and the global economy. Specifically, PIAAC also measures relationships between individuals' educational background, workplace experiences and skills, occupational attainment, use of

information and communications technology, and cognitive skills in the areas of literacy, numeracy and problem solving.

A number of earlier PIAAC-based studies, which can be synthesized and create a background for a gender wage gap analysis is still rather scarce. The results of a cross-country study by Hanushek et al. (2013) based on PIAAC data show that assessed skills have a straightforward relation to wages: e.g. a one-standard-deviation increase in numeracy skills is associated with an average 18% wage increase among prime-age workers (p. 2). The results of this study also show considerable heterogeneity across countries, again confirming that wage returns are remarkable depending on countries' socio-economic and political situation as well as on their institutional framework. A recent study by Lindemann (2015) explored a variation in male and female use of numeracy skills at work across all countries participating in the PIAAC survey, finding that females apply their numeracy skills systematically less than males.

Several aspects of skill assessment and their possible outcome in the Estonian labour market are profoundly discussed in seven thematic reports conducted by the Estonian Ministry of Education and Research.⁶ The results of the study on gender and ethnic wage disparities (Halapuu 2015) once again confirmed that there is a remarkable unexplained gender wage gap in Estonia even if the information on individual skills and other background characteristics is taken into account.

In conclusion, relying on theoretical framework and previous empirical evidence, we follow an opinion that variation of human capital characteristics across males and females is the main determinant of gender differences in labour market outcomes. However, men and women not only differ in the set of individual characteristics in average terms, but also the distributions of these characteristics and respective proxies as explanatory variables hardly overlap, inducing a "support problem". Non-comparability of human capital profiles across genders may be one of the objective sources of male-female wage disparity (DiNardo et al. 1996; Fortin et al. 2010). Once a certain gender possesses more characteristics valuable in the labour market compared to the opposite gender, the average returns for those are higher. Therefore, instead of the usual reference to the observable male-female difference in characteristics, the extraction of human capital components that do not overlap across genders can provide a novel insight and more profound explanation to the unexplained wage gap between men and women.

3. Data

The data used in our analysis comes from the Survey of Adult Skills, collected within the Programme for the International Assessment of Adult Competencies (PIAAC), run by the Organization of Economic Co-Operation and Development (OECD). Respondents were assessed in the domains of literacy, numeracy and

⁶ Available at <https://www.hm.ee/en/activities/statistics-and-analysis/piaac>

problem solving in a technology rich environment. Thus, PIAAC is the first source of data on individual skill measures of adults. A wide range of respondents' background characteristics, educational attainments and labour market profiles are provided along with skill estimates. In addition, the survey assessed the extent to which respondents use key information-processing skills at work and in everyday life (OECD 2012 and 2013).

Since we aim to conduct a comparative analysis of Estonia with four other Nordic countries, the research is based on Estonian, Finnish, Danish, Norwegian and Swedish public use data files. The country-specific data files include a random sample of individuals aged from 16 to 65 years; however, we focus our research on full-time employed respondents. The wage variable measuring monthly earnings, excluding part-time workers, will limit a possible bias arising from expected difference in the number of male and female working hours. Thus, we address the previously studied fact that women's shorter work hours are one of the factors explaining the male-female earnings differential (Erosa et al. 2016) by limiting the sample to full-time employed respondents. Since the PIAAC survey was conducted as either a computer- or paper-based assessment, the measure of the problem-solving skill is accessible only for computer-based responses, namely: 68% of the total sample for Estonia, 82% for Finland and Denmark, 84% for Norway and 88% for Sweden. These data restrictions left us with a sample of 4,347 respondents for Estonia, 3,079 for Finland, 3,721 for Denmark, 2,843 for Norway and 2,486 for Sweden. Given that a variable of monthly earnings is available for all countries except Sweden, the latter will be omitted in the wage gap estimation.

To proxy individual cognitive abilities in the literacy, numeracy and problem-solving domains, we use the first plausible value, similar to Hanushek et al. (2015) and Anspal (2015). Every individual result in three skill domains was scaled from 0 to 500 points. Thus, the initial continuous skill variables were recoded to interval variables, grouping respondents according to their test achievements in the following categories: below 176, 176-226, 227-276, 277-326, 327-376 and above 376 points. Analysing the gender-specific descriptive characteristics across countries, we recognise that there are differences in male and female profiles within countries, as well as across the Nordic region. It gives an advantage in terms of the comparative cross-Nordic analysis.

The average age of both male and female respondents is quite similar in all five countries, ranging between 41 and 46 years. The fraction of those living with a partner is the lowest among Estonian females (75.6%) and males (85.3%), compared to other Nordic countries, with the highest in Finland (89% among women and 93.8% among men). The share of the first-generation immigrant population is considerably smaller in Estonia (11.3% among females and 9.6% among males), compared to Denmark (17.3% and 16.7% respectively), while the lowest rate is observed in Finland (3.4% of females sampled and 2.6% of males). The same pattern applies to the presence of children variable, reporting 80.9% of Estonian women and 74.9% of Estonian men to have at least one child, surpassed only by Danish respondents (81.3% and 79.6% among women and men respectively).

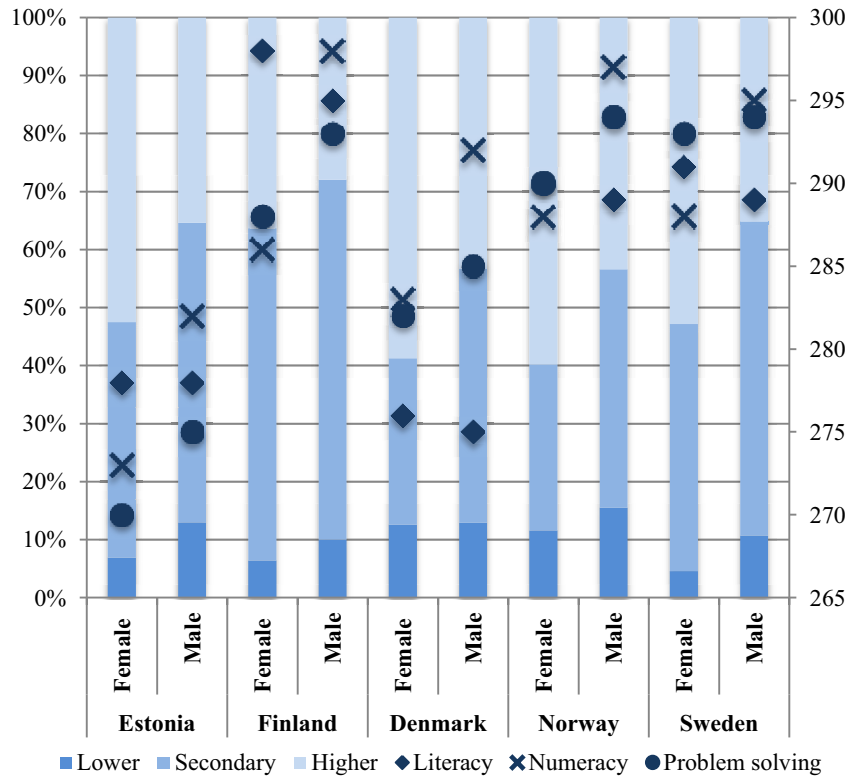


Figure 1. Educational profiles and average skills of males and females across Nordic countries.

Source: authors' calculations based on PIAAC data

Regarding education level, there are significant male-female as well as cross-country differences (see Figure 1). The largest gender gaps in educational profiles are observed in the total Estonian sample. While 52.5% of females hold a higher education degree, only 35.4% of males are highly educated, yielding a 17.1 p.p. statistically significant gender difference. In line with this evidence, the share of Estonian females with a low level of education is 6.1 p.p. lower than for males. Similar educational profiles across gender and male-female gaps are reported for Sweden, whereas in Denmark and Norway gender differences in education are marginally smaller with an average larger share of highly educated among both males and females. The Finnish PIAAC sample of full-time employed respondents reported the lowest share among all analysed countries of highest degree holders – 36.3% among females and 27.9% among males.

Following descriptive evidence, the highest scores in all three skills domains for both males and females were observed in Finland. The same evidence was found by Torben et al (2015) in their PIAAC-based report on adult skills in the Nordic region. Among all compared countries, Estonia is the one with the lowest attainments in both numeracy and problem solving in both genders, outperforming only Denmark in the literacy score. The male-female score gaps in the Estonian sample are statistically significant for numeracy and problem solving (men outperform women on average by 9 and 5 points respectively). The largest gender gaps are detected for Finland (12 and 5 points in favour of men in numeracy and problem solving respectively).

As anticipated based on previous findings (Anspal 2015; Halapuu 2015), Estonia is characterized by the largest raw gender gap in earnings – 58.7% of female average earnings rate. The same measure is almost three times lower in Finland and more than three times lower in Denmark and Norway. Such a drastic difference in male-female wage outcomes and skill attainments in Estonia relative to other Nordic countries sets up a particularly interesting context for evaluation of the role of gender-specific characteristics as a possible determinant of wage level.

4. Methodology

In this section we describe the empirical approach used to assess the human capital diversity across men and women and estimate its contribution to the gender wage gap. In order to disentangle a set of human capital characteristics observed in both genders from those evidently over-represented among either males or females, we first match males and females in a set of characteristics. The implemented matching procedure follows Nopo (2008) and resamples all females without replacement, matching them to a synthetic male with average characteristics of men from the original sample having a similar profile to a chosen woman.

The strong advantage of a specified matching procedure is that it does not rely on propensity scores, but performs matching on observable characteristics. Moreover, those females having no male counterpart and vice versa are retained in the sample after matching is completed. Thus, the matching outcome eventually comprises both matched (“in-common-support”) and non-matched (“out-of-common-support”) men and women. The latter part of the sample is of key research interest, as it includes respondents possessing characteristics specific for their gender.

The baseline matching procedure controlled for age, immigrant status and skills in three domains. Choosing this set of characteristics allows for solely emphasizing the gender difference in human capital attainments. Relying on the measures of cognitive abilities, we oppose men and women, extracting those for whom a counterpart with a similar set of skills was found in the opposite gender and those for whom there was no match. It allows a comparison of male and female capabilities in literacy, numeracy and problem solving as key components of human

capital (Becker 1964; Hanushek 2015). By controlling for age we ensure that age effect on accumulation of cognitive skills is accounted for.

First-generation immigrant status was also considered when performing matching, as it eliminates a bias arising from cross-country differences in educational endowment and a possible discriminative approach towards foreign-born respondents. Albeit educational attainments are known to be a key determinant of human capital (Lutz et al. 2008), we did not include those in our matching procedure for two reasons. First, education is strongly correlated with inner ability and thus skills themselves (Cawley et al 2001). Second, the effect of education accumulation over time is captured by the age variable. Moreover, by excluding any occupation-related characteristics, we eliminate a possible discrimination source, referred to as “pre-labour-market discrimination” (Oaxaca 1973).

Subsequently, we performed a non-parametric Nopo-type decomposition to get an insight into the gender wage gap issue in the cross-Nordic context. The functional form of decomposition is as follows:

$$\Delta = \Delta_M + \Delta_x + \Delta_O + \Delta_F. \quad (1)$$

Thus, overall wage gap, denoted by Δ is split into four components, namely:⁷

- Δ_M represents a part of the gap arising from a difference in characteristics of males with a male-female matched profile and those with a male-specific profile, thus comparing “out-of-common-support” and “in-common-support” males. A positive sign of the component indicated superior earnings of men with a male-specific profile relative to males with male-female matched characteristics;
- Δ_x captures the fraction of the wage gap explained by the observable difference in male and female characteristics, hence solely estimated on the “in-common-support” sample of males and females;
- Δ_O represents the share unexplained by observable characteristics and attributed to both difference in unobservable characteristics and discrimination, measured on the “in-common-support” sample similarly to the previous component;
- Δ_F part of the wage gap resulting from a difference in “in-common-support” and “out-of-common-support” female characteristics. A positive sign of the component indicated superior earnings of women with a woman-specific profile relative to males with male-female matched characteristics.

To check the hypothesis that distributions of male and female characteristics do not fully overlap, we focus on “out-of-common-support” or non-matched respondents. We first descriptively analyse their profiles and second estimate a number of wage regressions to quantify aggregate returns to male- and female-specific profiles and to

⁷ For a detailed description of the derivation procedure and the functional form of wage gap components, see Nopo 2008.

separate components of gender-specific profiles. Namely, we start wage returns estimation with the following Mincer-type OLS wage regressions:

$$\begin{aligned} \log W_i &= \alpha_i + \beta_1 UM_i + \gamma' X_i' + \varepsilon_i \text{ and} \\ \log W_i &= \alpha_i + \beta_1 MM_i + \gamma' X_i' + u_i, \end{aligned} \quad (2)$$

where W_i denotes monthly earnings, UM_i and MM_i are dummy variables taking values 1 if the respondent is, respectively, an “out-of-common-support” or “in-common-support” male, X_i' is a vector of other controlled variables included in the regression with respective estimated coefficients γ' , while ε_i and u_i are residual terms. The coefficients of primary importance are UM_i and MM_i , as they capture wage return for male-specific and male-female matched human capital for men, relative to “out-of-common-support” and “in-common-support” women, respectively.

Finally, we will address the question of individual contributions of gender-specific human capital components on earnings of males with a male-specific profile and females with female-specific characteristics. It will allow us to see whether returns for gender-specific characteristics are heterogeneous and which of these are associated with the highest earnings on the national labour markets. We will apply an OLS wage regression of the following form:

$$\log W_i = \alpha_i + \sum_{k=1}^3 \beta_k CS_{ik} + \beta_4 EM_i + \beta_5 EH_i + \gamma' X_i' + v_i. \quad (3)$$

Here CS_{i1} , CS_{i2} and CS_{i3} denote individual literacy numeracy and problem-solving skills, respectively, whereas EM_i and EH_i represent medium and higher educational degree. The model will be estimated in samples of “out-of-common-support” and “in-common-support” males and females in Estonia, Finland, Denmark and Norway.

5. Empirical Results

5.1. Matching-based Wage Gap Decomposition and Assessment of Male-Female Human Capital Disparities

We first perform a matching-based non-parametric wage gap decomposition of the type discussed in Section 4. Decomposition results are enclosed in Table 1. Since the wage variable is not available in the Swedish data, we performed only male-female matching in the sample of Swedish respondents. For the rest of the countries, both matching and wage gap decomposition steps were done.

The initial step of the analysis again proved Estonia to be the country with the highest gender pay disparity: 58.7%, compared to 24.2% in Finland, 15.6% in Denmark and 20.4% in Norway, whereas the unexplained part of the wage differential is the highest in Finland (0.276 p.p. or 114% of total gap) and Estonia (0.612 p.p. or 104%). Apparently, the model estimated in Table 1 does not control

for a set of traditional covariates in wage gap analysis, including education, occupation or industry of employment. However, the major focus of our research is not on estimating the wage gap itself, but on extracting females having no match in a set of human capital characteristics among males and vice versa, wage regression encounters only characteristics necessary for the matching procedure.

Table 1. Matching-based Nopo decomposition of gender wage gap in four Nordic countries

Country	Wage gap decomposition ¹					Matched females		Matched males	
	Total	Δ_O	Δ_X	Δ_F	Δ_M	%	N	%	N
Estonia	0.587	0.612	-0.061	-0.115	0.151	44.2	1087	48.2	950
Finland	0.242	0.276	-0.025	-0.020	0.012	34.4	630	33.9	717
Denmark	0.156	0.085	0.012	0.016	0.043	38.8	840	39.1	1144
Norway	0.204	0.079	0.009	0.033	0.083	35.3	589	30.3	803
Sweden	-	-	-	-	-	56.3	557	54.1	810

¹ Matching was done on age, immigrant status, literacy, numeracy and problem solving skills. Dependent variable is log monthly earnings for Estonia, Finland, Denmark and Norway. Source: authors' calculations based on PIAAC data

Another noteworthy result of matching-based decomposition is the sign of components, corresponding to a wage difference of “out-of-common-support” and “in-common-support” males (Δ_M) and females (Δ_F). In Estonian and Finnish samples both males having no counterparts among females and vice versa, benefit, relative to those having matching profiles. Moreover, in Estonia the endowments are higher (15.1 p.p. of overall wage gap for males and 11.5 p.p. for females). It gives evidence of positive returns for both female-unique and male-unique characteristics. In Denmark and Norway the male-unique profile solely yields positive wage returns, while females with a set of characteristics non-matched to males earn on average less than women with male-matched profiles.

As the matching-based decomposition disentangles matched and non-matched males and females, we next focus on “out-of-common-support” or non-matched respondents. Table 1 reports that across analysed countries Estonia has the second largest proportion of “in-common-support” respondents (44.2% among females and 48.2% among males), exceeded only by the Swedish sample (56.3% and 54.1%, respectively). The remaining shares of respondents are referred to as non-matched country-specific male and female samples. Since for men and women included in non-matched samples there was no counterfactual found among the opposite gender with respect to a set of matching characteristics, their average profile is referred to as male- or female-unique.

Analysing the descriptive characteristics of both matched and non-matched samples, we found that matched males and females are much less different from each other with respect to characteristics controlled for in the matching procedure (age,

immigrant status and cognitive skills), compared to non-matched males and females. This observation supports the reliability of the applied matching technique. The key variables of interest when evaluating gender-specific human capital are measures of cognitive abilities and educational attainments. Hence, we further focus on these and compare across matched and non-matched samples.

As it is shown in Figure 2, there is a substantial difference in educational and skill profiles of males and females having no counterparts in the opposite gender and those with counterparts found. If considering Estonian men, those who have females matched in a set of controlled characteristics are holding a marginally better educational degree relative to those who are non-matched. Namely, the share of those with the lowest degree in the matched sample is 11.9%, while in non-matched it is 18.2%, although the share of the most highly educated is 34.6% and 33%, respectively. The extensive difference is revealed when comparing matched and non-matched educational profiles of males relative to respective females. Surprisingly, gaps in education of non-matched men and women are drastically larger: among “out-of-common-support” females, 59.5% hold the highest degree, yielding 26.5 p.p. statistically significant difference with “out-of-common-support” men, while among “in-common-support” women, 44.9% hold a complete university education, implying only a 10.3 p.p. statistically significant differential from “in-common-support” men. Thus, females non-comparable to males in a set of human capital characteristics on average have a remarkably better formal education profile.

If limiting the analysis with formal education as a key measure of human capital, previously discussed evidence would suggest that Estonian females more often reach high human capital attainments than males. However, that would not recognize the fact that despite a positive correlation of cognitive abilities and educational attainments, higher education does not inevitably result in better cognitive skills and vice versa. Thus, we rely on PIAAC estimates of literacy, numeracy and problem-solving capacities to get a more robust proxy of human capital endowments.

Remarkably, non-matched Estonian males show a considerably higher average numeracy score than both their matched peers and non-matched females. Despite lower educational attainments, “out-of-common-support” men have an average score of 287 points, being 11 points higher than among “in-common-support” men and 19 points higher relative to “out-of-common-support” women. These patterns offer evidence that Estonian males possess high numeracy abilities not often reached by females. Moreover, the non-matched female average numeracy score is 8 points lower than among females having a male counterpart (268 to 276 points). Thus, while male-specific human capital is characterized by a higher numeracy score relative to gender-matched, female-specific has lower numeracy endowments. Moreover, non-match males are using numeracy skills to a larger extent (2.7 points) than both matched men (2.3 points) and non-matched females (2.5). This additionally supports the conclusion that men’s outstanding capability in the numeracy domain is the source of their male-specific human capital. The same education-skill pattern holds in Denmark, Norway and Sweden, while in Finland the male-specific profile still implies a high numeracy score but higher formal

educational attainments relative to both matched male peers and non-matched females.

Regarding skills in literacy and problem solving, non-matched Estonian males generally perform worse than matched, however, still significantly better than non-matched females (7 points' difference in literacy and 10 points in problem solving in favour of the male-specific profile relative to the female-specific). A similar pattern appears in other countries, with literacy and/or numeracy skills lower in the male-specific profile than in matched, but always higher than in female-specific.

Eventually, observed male-specific characteristics raise a question of wage returns for them. In the Estonian sample the wage differential of males and females is higher in the non-matched sample (65.6% of non-matched female wage) than in the matched one (55.9% of matched female earnings). The larger disparity here is driven by superior earnings of men with a male-specific human capital profile, relative to matched (on average 1,293 to 1,118 euros per month). Given the generally lower educational attainment of males with a set of characteristics that do not overlap with females, substantial absolute and relative to female average earnings non-matched males provide interesting inferences. It suggests that on the Estonian labour market, formal education is valued somewhat less than actual abilities, particularly in the numeracy domain. Thus, wage returns for a formal degree are lower to account for numeracy capability. This yields objectively higher earning rates for men possessing the male-specific profile, embodied in frequently higher numeracy skills relative to women's numeracy ability.

A similar wage gap pattern was observed in the Danish (19% in "out-of-common-support" sample and 13.3% in "in-common-support") and the Norwegian samples (23.3% to 18%). However, in the case of Denmark and Norway, an excessive earnings gap in non-matched samples relative to matched is, at the largest extent, driven by lower earnings of non-matched females relative to matched. The latter observation may arise from substantially worse educational and cognitive characteristics of the female-specific profiles, resulting in lower earnings relative to those having a profile matched to a male. Regarding returns for male-specific characteristics in Denmark and Norway, lower formal education accompanied by higher numeracy skill does not imply higher earnings relative to matched men with a better education record, but lower skills in almost all domains. All in all, it indicates that formal education yields higher wage returns in Denmark and Norway than in Estonia, whereas the actual numeracy skill is valued in the Estonian labour market the most.

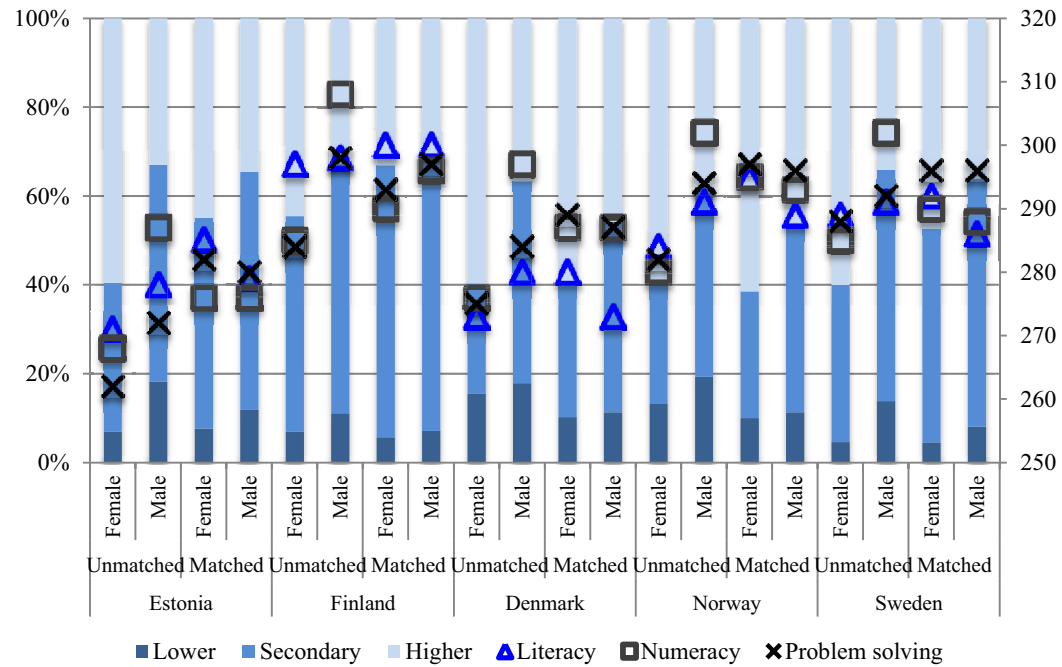


Figure 2. Non-matched and matched male-female skill differences across countries.
 Source: authors' calculations based on PIAAC data

5.2. Quantifying Wage Effects of Male- and Female-Specific Human Capital

The results discussed in the previous section suggested that higher wage returns for male-specific human capital than for female-specific or matched across genders in the Estonian sample are mostly due to a high numeracy score. High numeracy scores are more often achieved by men and rarely observed among women in the Estonian sample. However, the high numeracy capability of males is not accompanied by high educational attainments. Thus, we next aim to investigate wage effects of both education and skills on earnings.

As described in Section 4 we first analysed overall wage returns for male-specific and male-female matched human capital by estimating the ordinary OLS wage regression separately in “out-of-common-support” and “in-common-support” samples across four countries. Table 2 reports wage coefficients of non-matched and matched males, along with returns for education and four domains of skills in the “out-of-common-support” and “in-common-support” samples.

Following the regression results, males possessing the male-specific human capital profile earn on average 41.6% more than females possessing female-specific characteristics, whereas male-female matched human capital is associated with a 40.1% wage gain for males relative to their peer females with a similar male-female matched profile. Thus, controlling for a number of characteristics, including age, immigrant status, formal education, skills in three domains and occupation, male-unique human capital is still attributed to slightly higher wage gain than male-female matched, however, only in the Estonian sample. Despite the difference in absolute terms, the difference in wage effects is rather small. It is in line with our previous assumption of a superior wage effect for the male-specific profile relative to matched.

Another noteworthy finding is that a statistically significant wage return to formal education in Estonia is observed in the “out-of-common-support” sample and solely for higher education (11.5% wage increase for those holding a university degree). However, across other states, positive returns for education were found in both “out-of-common-support” and “in-common-support” samples and in the case of Denmark and Norway for both secondary and higher education degrees. It motivates us to further analyse in more detail individual contributions of formal education and three skill domains on earnings of males and females possessing characteristics exclusive to their gender profile or male-female matched characteristics.

Thus we next turn to the analysis of the individual educational attainments and skill scores' contribution to earnings in the case of males and females possessing either the male-female matched human capital profile or the one specific for their gender. This part of analysis is conducted in order to check a previously stated assumption that higher earnings of Estonian males are driven by higher numeracy scores rather than by their formal education. Table 3 presents the coefficients of educational attainments and skill domains as the ones of primary interest.

Table 2. OLS wage regression coefficients of male-specific and male-female matched human capital in Nordic countries

Independent variables	Estonia		Finland		Denmark		Norway	
Unique male	0.416 0.037***		0.206 0.021***		0.164 0.022***		0.158 0.026***	
Matched male		0.401 0.034***		0.209 0.020***		0.162 0.018***		0.174 0.018***
Number of observations	1292	1112	1009	1069	1237	1605	1041	1022
Adjusted R-squared	0.319	0.325	0.411	0.468	0.372	0.36	0.461	0.366

Note: Dependent variable is log monthly earnings. Standard errors are estimated using Jackknife replication methodology. Coefficients and standard errors are reported. The model additionally controls for age, age squared, immigrant status, formal education, cognitive skills in literacy, numeracy, problem solving and occupation.

Source: authors' calculations based on PIAAC data

Table 3. OLS wage regression coefficients of formal education and skills across “out-of common-support” and “in-common-support” samples in Nordic countries

Variables	Estonia				Finland			
	<i>Non-matched sample</i>		<i>Matched sample</i>		<i>Non-matched sample</i>		<i>Matched sample</i>	
	M	F	M	F	M	F	M	F
Lower education (base)								
Secondary education	0.02	-0.033	-0.143	-0.026	0.022	0.074	0.016	0.055
Higher education	0.076	0.065	0.137	0.096	0.046	0.045	0.111	0.077
Literacy	0.06	0.126	0.027	0.088	0.144	0.183	0.125	0.205
Numeracy	0.091	0.068*	0.145	0.108	0.061**	0.050***	0.123	0.089**
Problem solving	-0.038	0.046	-0.078	0.058	0.031	-0.013	0.037	0.018
	0.042	0.026*	0.047	0.044	0.021	0.023	0.035	0.033
	0.07	0.038	0.131	0.041	0.011	0.047	0.019	0.079
	0.037*	0.025	0.048***	0.04	0.024	0.020**	0.027	0.028***
	0.078	0.044	0.065	0.091	-0.005	0.024	-0.011	-0.018
	0.034**	0.023*	0.044	0.053*	0.025	0.02	0.028	0.024
Number of observations	530	762	512	600	533	476	562	507
Adjusted R-squared	0.175	0.301	0.227	0.267	0.39	0.375	0.41	0.455

Variables	Denmark				Norway			
	<i>Non-matched sample</i>		<i>Matched sample</i>		<i>Non-matched sample</i>		<i>Matched sample</i>	
	M	F	M	F	M	F	M	F
Lower education (base)								
Secondary education	0.083	0.107	0.069	0.018	0.119	-0.005	0.139	0.06
	0.038**	0.041**	0.041*	0.056	0.030***	0.044	0.044***	0.048
Higher education	0.165	0.217	0.146	0.108	0.148	0.027	0.185	0.11
	0.042***	0.049***	0.042***	0.058*	0.034***	0.048	0.048***	0.053**
Literacy	0.055	0.029	0.038	0.09	-0.005	0.001	-0.09	0.024
	0.023**	0.022	0.020*	0.027***	0.022	0.017	0.028***	0.036
Numeracy	0.04	0	0.031	0.001	0.052	0.035	0.066	0.006
	0.020**	0.024	0.017*	0.023	0.026*	0.012***	0.024***	0.028
Problem solving	-0.011	0.051	0.046	0.036	0.046	0.052	0.063	0.078
	0.025	0.027*	0.022**	0.024	0.022**	0.018***	0.029**	0.026** *
Number of observations	659	890	578	715	603	438	566	456
Adjusted R-squared	0.367	0.354	0.329	0.329	0.406	0.486	0.345	0.319

Note: Dependent variable is log monthly earnings. Standard errors are estimated using Jackknife replication methodology. Coefficients and standard errors are reported. The models additionally control for age, age squared, immigrant status and occupation.
Source: authors' calculations based on PIAAC data

The OLS regression results for Estonia reveal that, indeed, education does not have a statistically significant effect on either men with male-specific characteristics or on males with a male-female matched human capital profile. The only sub-sample experiencing a positive effect of higher education on earnings is women with female-specific characteristics (12.6% higher wage among those holding a university degree relative to those with basic education). Considering the exceptionally high share of highly educated non-matched females (see Figure 2), the positive effect of that on the wage rate is quite natural. In terms of returns for cognitive abilities, the model revealed an expected positive effect of numeracy skill on earnings for both matched and non-matched males. For females, no statistically significant effect was found, supporting our initial assumption that there is a weaker association between formal education and earnings, than between genuine numeracy skills and earnings, among Estonian males.

However, this suggestion holds solely for Estonia. Across all other countries male returns for formal education are positive and statistically significant, implying higher earnings for those holding a secondary or higher degree relative to low-educated respondents. Thus, there is a clear positive association between higher education and higher earnings for men in countries other than Estonia. The numeracy skill yields a statistically significant positive effect on earnings in Denmark and Norway, similarly to Estonia. The only country with an insignificant effect of numeracy on earnings for both matched and non-matched males is Finland. Remarkably, females in the Finnish sample are those benefiting from a higher numeracy ability (4.7% wage increase with the next higher score level for non-matched females and 7.9% for women with a male-female matched human capital profile).

6. Conclusions and Discussions

This paper addresses the issue of the gender wage gap in the context of gender-driven human capital disparities. While the classical human capital theory focuses on the increasing comparability of male and female characteristics, we pursue an assumption that characteristics specific for either men or women remain. Once those are highly valued on the labour market, they will lead to objectively higher earning rates for the respective gender group. Gender-specific human capital may be one of potential explanatory factors in the gender wage gap analysis, while traditional decomposition methodologies suppress this notion.

Relying on the PIAAC data, we built up a cross-Nordic comparison of gender variation in human capital profiles, accounting for both formal education and skills. Following the research task, we applied the matching technique to disentangle initial country-specific samples into four sub-samples: with respect to gender and the possession of a male-/female-specific or male-female matched profile. The results showed that across all analysed countries, human capital profiles differ among males and females; moreover, certain characteristics are mostly observed among either males or females. We found that in Estonia the male-specific human capital profile

is characterized by high numeracy scores, albeit a low formal educational profile. A similar pattern was detected in the Danish, Norwegian and Swedish samples.

Surprisingly, the results revealed that despite worse educational attainments, the male-specific profile is associated with considerably higher earnings than female-specific and marginally higher than female-male matched. However, in the Nordic countries there was no substantial wage return for the male-specific profile detected. The empirical evidence yields that superior earnings for men with a male-specific profile are to a large extent driven by high numeracy scores, which are rarely reached by females. Our finding also suggests that the Estonian labour market rewards the actual skills of males, especially in the numeracy domain, somewhat more than formal education, compared to other Nordic countries, whereas in Denmark and Norway wage returns for formal education are substantially higher.

All in all, the findings give evidence of a weaker association between formal education and earnings versus numeracy skills and earnings for Estonian males relative to other Nordic states. Low association between formal degree and actual skills in the case of men may be enforced by other factors of the human capital accumulation process, including on-job training and work experience, which are known to be strong driving forces of human capital/skills accumulation. However, this situation may be exploited by men to a higher extent than by women, due to labour supply decisions and gender roles. This pattern requires further in-depth investigation with a special focus on the role of formal education in the human capital accumulation of males and females. Recent studies showed on-job training and labour market experience to be significant factors of human capital accumulation, potentially orthogonal to formal education attainments. However, considering substantial gender differences in labour supply decisions, along with other factors by gender roles, it appears quite natural that on-job human capital accumulation is more important for men. This channel of human capital accumulation could play a role in our analysis and explain a dramatic gap between formal education and actual skills observed for Estonian males, but not for females.

Acknowledgements

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SOOLINE PALGALÕHE TÄISKASVANUTE OSKUSTE UURINGU PIAAC TULEMUSTE RAAMISTIKUS: EESTI PÕHJAMAAD VÕRDLUSES¹

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Tartu Ülikool

Kuigi soolist palgalõhet Eestis on palju uuritud (Rõõm, Kallaste 2004; Masso, Krillo 2011; Anspal et al 2010; Vassil et al 2014; Meriküll, Mõtsmees 2015; Anspal 2015; Halapuu 2015), on uurimisprobleem jätkuvalt aktuaalne. Palgalõhe tagamaade põhjalikum avamine annab täiendavat infot lõhet alandavate meetmete väljatöötamiseks, aga ka selleks, et olukorda paremini mõista ja tolereerida, kui palgalõhe selgitused selleks veenva aluse annavad.

Käesolevas töös ei keskenduta palgalõhe suuruse kvantitatiivsele täpsustamisele, vaid püütakse Majanduskoostöö ja Arengu Organisatsiooni (OECD) poolt käivitatud täiskasvanute oskuste uuringu PIAAC (*Programme for the International Assessment of Adult Competencies*) andmeid kasutades põhjalikumalt avada soolise palgalõhega seonduvaid tagamaid, mis seonduvad inimeste oskuste ja nende kasutamisega tööturul. Töö eesmärgiks on tuginedes infole töötajate kognitiivsete oskuste ja nende tööalase rakendamise kohta anda hinnang soopõhisele inimkapitalile Eestis tuues välja ka selle võimalikud eripärad võrdluses Põhjamaadega (Soome, Rootsi, Taani ja Norraga).

Uurimistöõ teoreetiline raamistik tugineb inimkapitali teooriale, mille kohaselt palgana avalduv hinnang inimkapitalile on olulisel määral seotud inimese hariduse, töökogemuse ja oskustega. Erinevalt enamusest varasematest Eesti kohta tehtud soolise palgalõhe uuringutest on selles töös lähtutud seisukohast, et soolise palgalõhe uurimisel ei peaks piirduma vaid keskmistega, vaid arvesse tuleks võtta ka seda, et nii palkade kui sellega seonduvate taustatunnuste jaotus on meeste ja naiste puhul reeglina erinev. Seetõttu on käesolevas uurimuses lisaks inimkapitali teooriast lähtuvalle Mincer (Mincer 1958) palgavõrrandi hindamisele kasutatud ka mitteparameetrilist sobitamismeetodit (Ńopo 2008). Mitteparameetriline sobitamismeetod võimaldab inimkapitali alusel jaotada töötajad kahte gruppi eritamaks neid, kelle sotsiaal-demograafilised jm tunnused on omavahel võrreldavad (*matched*) ja teiseks neid, kellel ei leidunud vastassoost võrdlusisikut (*non-matched*). Esimesel juhul on tegemist mittespetsiifilise, teisel juhul spetsiifilise (*unique*) inimkapitaliga mees- ja naistöötajatega. Meeste ja naiste erinevatest rollidest perekonnas, aga ka muudest põhjustest tulenevalt on naiste seas reeglina rohkem osa-ajalist tööhõivet ning see võib otseselt või kaudselt kajastuda ka

¹ Artikkel “The Gender Wage Gap in The Human Capital Framework: A Cross-Nordic Assessment Based on PIAAC” asub publikatsiooni CD-1

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töötasus (vt ka Erosa et al 2016). Seetõttu on käesolevas uuringus võetud vaatluse alla vaid täistööajaga töötajad.

Täiskasvanute oskuste uuring PIAAC on käivitatud OECD poolt 2000. aastate keskel. Praeguseks kõige värskemaid andmeid pakkuv uuring viidi läbi 2011.aasta augustist 2012. aasta aprillini 24 riigis ning esmakordselt osales selles uuringus ka Eesti (OECD 2012). Uuringu põhjal on tehtud Eesti kohta mitmeid sisukaid kokkuvõtteid, mis on lugejatele kättesaadavad Haridus- ja teadusministeeriumi kodulehel³ ning neid on diskuteeritud ka 2015 aasta juunis ministeeriumi poolt korraldatud konverentsil.

Eestis küsitleti PIAAC uuringu käigus 7600 inimest. Uuring hõlmas 15-65 aastaseid inimesi ning küsitluse raames hinnati kolme liiki kognitiivseid oskusi: funktsionaalset lugemisoskust, matemaatilist kirjaoskust ja probleemilahenduoskust tehnoloogiarikkas keskkonnas ning lisaks neile ka lugemisoskuse aluseks olevaid baasoskusi. Oskusi on hinnatud skaalal 0 – 500 punkti kasutades skaalajaotust: alla 176, 176-226, 227-276, 277-326, 327-376 ja üle 376 punkti. Kuna probleemilahenduoskust tehnoloogiarikkas keskkonnas sai hinnata vaid nende vastajate andmete põhjal, kes andsid vastused küsimustele arvuti vahendusel, siis siit tulenevalt vähenes ka selles töös kasutatud valimi maht. Analüüsitud valimi suurus on 4347 inimest Eestis, 3079 Soomes, 3721 Taanis, 2843 Norras ning 2486 Rootsis.

Eesti valimis on naised 75.6% ning mehed 85.3%. Ligilähedaselt sarnane sooline jaotus on ka teiste riikide valimite korral. Joonisel 1 on toodud info meeste ja naiste hariduse ja PIAAC raames hinnatud kognitiivsete oskuste kohta.

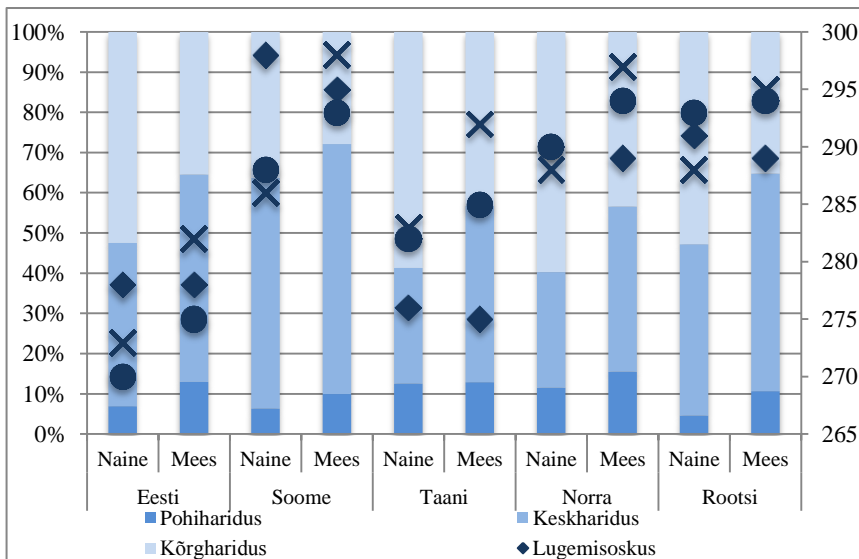
Nii Eesti kui Põhjamaade (v.a Soome) täisajaliste töötajate seas on kõrgharitud naiste osakaal meeste omast reeglina suurem. Põhjamaade võrdluses on Eestis soolised erinevused kõrghariduses suurimad - 17.1 protsendipunkti (52.5% küsitlitud naistest ja 35.4% meestest on kõrgharidusega). Erinevalt Eestist ja teistest Põhjamaadest on Soomes kõrgharidusega meeste osakaal naiste omast suurem (vastavalt 36.3 % ja 27.9%). Algharidusega naiste osakaal on kõigi Põhjamaades kui ka Eestis meeste omast väiksem.

Kõigilt hinnatavatelt oskustelt (funktsionaalne lugemisoskus, matemaatiline kirjaoskus ja probleemilahendamisioskus) on Soome töötajad analüüsitud riikide seas parimad. Selline tulemus on kooskõlas ka varasemate uuringutega (Friedberg et al 2015). Samas Soome puhul on ka erinevused matemaatilise kirjaoskuse ja probleemilahendamisioskuse osas meeste ja naiste vahel suurimad: 12 protsendipunkti matemaatilise kirjaoskuse ja 5 protsendipunkti probleemilahendamisioskuse korral. Sama kehtib ka Eesti puhul, kuid Eestis on see oskuste vahe mõnevõrra väiksem: 12 ja 5 protsendipunkti.

Mitteparameetrilise sobitamismeetodi rakendamisel on lisaks kognitiivsetele oskustele arvesse võetud ka vastaja vanus ning võimalik immigrandistaatus. Eristub kaks gruppi mehi ja naisi: need, kel on vastassooga võrreldavad tunnused ehk nn

³ Vt <https://www.hm.ee/en/activities/statistics-and-analysis/piaac>

mittespetsiifiline (*matched*) inimkapital ja need, kellel vastassoost võrdlusisikut ei leidunud ehk nn spetsiifiline inimkapital (*non-matched, unique*). Identsete taustatunnustega grupp on nii meeste kui naiste puhul suurim Rootsis (vastavalt 56.5% ja 54.1%, kokku 1367 inimest). Eestis on need osakaalud vastavalt 42.2% ja 48.2% (kokku 3037 inimest). Teiste riikide puhul varieeruvad osakaalud vahemikus 33-39%. Joonisel 2 on näha soolised erinevused kognitiivsete oskuste lõikes nii spetsiifilise kui mittespetsiifilise inimkapitaliga vastanute gruppides.

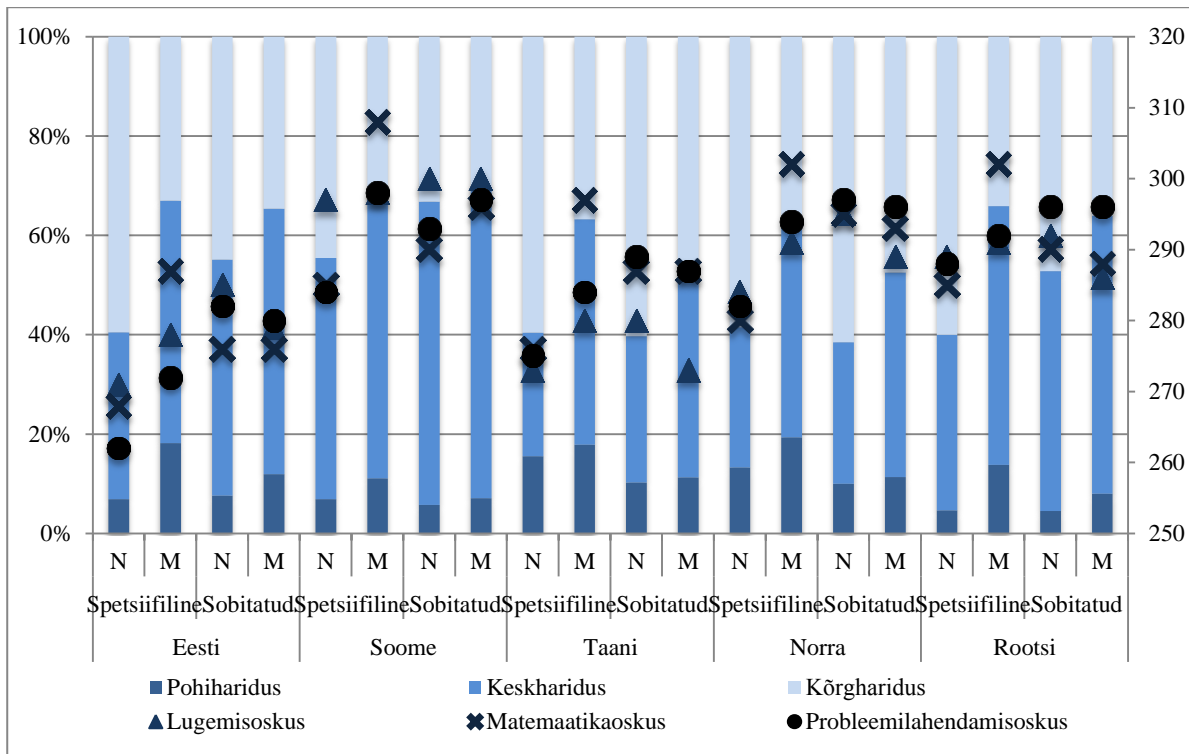


Joonis 1. Haridus ja oskused Eestis ja Põhjamaades PIAAC hinnangute alusel.

Allikas: autorite arvutused PIAAC andmestiku alusel.

Selgemalt kui teiste riikide nähtub, et Eesti tööturul ei too kõrgharidus endaga alati kaasa paremaid kognitiivseid oskusi ning seda eriti just naiste puhul. Matemaatiline kirjaoskus ja probleemilahendamise oskus on Eestis reeglina kõrgem meeste puhul ja eriti selgelt avaldub see spetsiifilise inimkapitaliga inimeste grupis. Sarnased mustrid koos mõningate varieerumistega avalduvad ka Põhjamaade puhul. Seega leiab taas kinnitust seisukoht, et inimkapitali iseloomustamisel ei saa piirduda vaid haridust iseloomustavate tunnustega.

Eestis on soolised palgaerinevused reeglina suuremad spetsiifilise inimkapitaliga inimeste grupis, kus hea matemaatiline kirjaoskus, aga ka probleemilahendamisoskus on meestel võrdluses naistega tunduvalt enam väärtustatud vaatamata meeste sageli madalamale formaalsele haridusele. Sarnaselt Eestile on meeste palkade puhul oluline matemaatiline kirjaoskus ka Taanis ja Norras. Samas Soomes on hea matemaatiline kirjaoskus oluline just naiste puhul, andes palgalisa 4.7% spetsiifilise ning 7.9% mittespetsiifilise inimkapitaliga grupis.



Joonis 2. Oskused spetsiifilise ja mittespetsiifilise inimkapitaliga töötajate gruppides Eestis ja Põhjamaades.

Allikas: autorite arvutused PIAAC andmestiku alusel

Tabelis 1 on toodud hinnatud palgavõrrandite kordajad mõlema küsitlute grupi kohta st nii spetsiifilise kui mittespetsiifilise inimkapitaliga gruppide kohta. Eestis teenivad spetsiifilise inimkapitaliga täistööajaga mehed 41.6% rohkem kui naised; mittespetsiifilise inimkapitaliga grupis on palgalõhe mõnevõrra väiksem – 40.1%. Analoogne sooline palgalõhe avaldub ka teiste riikide puhul, kuid erinevused kahe grupi vahel ei ole kuigi märkimisväärsed. Suurim erinevus spetsiifilise ja mittespetsiifilise inimkapitaliga gruppide vahel avaldub Norra korral, kuid erinevalt Eestist on sooline palgalõhe väiksem just spetsiifilise inimkapitaliga grupis.

Lähtudes seisukohast, et töötajate kognitiivsed oskused ei tulene vaid haridusest ja sünnipärasest võimekusest, vaid need arenevad edasi tööturul, saab järeldada, et Eestis on naiste areng tööturul olnud meestega võrreldes mõnevõrra aeglasem. See on ilmselt selgitatav ka naiste perekondlike kohustustega ning seda eriti tingimustes, kus lapsetoetuste süsteem soodustab naiste ja eriti just kõrgharidusega naiste ajutist kõrvalejäämist tööturult. Seeläbi võib pidurduda ka tööks vajalike oskuste areng. Ka võib arvata, et konkurents häid kognitiivseid oskusi eeldatavatel töökohtadel on Eestis mõnevõrra väiksem just meeste puhul. Heade oskustega ja tööturu nõudmistega paremini kohanevad mehed on sagedamini tööl välisriikides (eelkõige Soomes) ning see suurendab veelgi nõudlust ja vähendab konkurentsi heade kognitiivsete oskustega meeste järele Eesti tööturul. Välismaal töötavad mehed toetavad majanduslikult Eestisse jäänud perekonda ning see võib omakorda olla põhjuseks, et naine jääb ajutiselt kõrvale täistööajalisest tööst, kuna on vajadus rohkem pühenduda perekonnaelu korraldamisele. Sellise elukorralduse tulemusena võib pidurduda tema kognitiivsete oskuste areng ning nende tulemuslik kasutamine tööturul.

Uuringutulemustest nähtub ka, et vaatamata Eesti inimeste keskmiselt kõrgele haridustasemele, ei esita Eesti tööturg ei meestele ega naistele piisavalt väljakutseid oma võimete ja oskuste arendamiseks. Vähemalt võrdluses Põhjamaadega võib sellise järelduse teha. Selline olukord võib muu kõrval tuleneda ka Eesti majanduse struktuurist ja kohast rahvusvahelises tööjaotuses, mis on seni ikka veel suures osas orienteerunud (või leppinud) madala lisandväärtusega majandustegevustele. Põhjuslikud seosed madala tootlikkuse ja töötajate oskuste vahel on mitmesuunalised. Tekkinud nõiaringist väljatulekuks on kahtlemata oluline ka see, et pakutav haridus oleks senisest rakenduslikum ja paindlikum ning võimaldaks ja ka innustaks inimesi oma oskusi arendama vastavalt tööturul toimuvatele muutustele.

Tabel 1. Palgavõrrandi hinnangud Eestis ja Põhjamaades

	Eesti		Soome		Taani		Norra	
Spetsiifiline (mitte-sobitatud)	0.416 (0.037***)		0.206 (0.021***)		0.164 (0.022***)		0.158 0.026***	
Sobitatud		0.401 (0.034***)		0.209 (0.020***)		0.162 (0.018***)		0.174 0.018***
Vaatluste arv	1292	1112	1009	1069	1237	1605	1041	1022
KohandatudR-ruut	0.319	0.325	0.411	0.468	0.372	0.36	0.461	0.366

Märkus: Sõltuv muutuja: log KUUPALK. Sulgudes on toodud standardvead, millele leidmisel on kasutatud Jackknife replikatsiooni (***- olulisuse nivoo 0.01). Selgitavad muutujad: kognitiivsed oskused (lugemisoskus, matemaatiline kirjaoskus, probleemilahendamisoskus) ning taustamuutujatena vanus, vanus ruudus, haridus, immigrandistaatus, tegevusala; fookusmuutuja on sugu. Rootsi kohta puuduvad palgaandmed.

Allikas: autorite arvutused PIAAC andmestiku alusel

Soolise palgalõhe vähendamise seisukohalt on oluline, et arendatakse välja ning rakendatakse senisest sihipärasema suunitlusega koolitusprogramme toetades eelkõige just naiste, kes reeglina perekondlikel põhjustel on jäänud mõneks ajaks tööst kõrvale, oskuste arengut. Lisaks spetsiifilistele koolitusprogrammidele on oluline rakendada ka muid meetmeid (sh lasteasutuste poolt pakutavad täiendavad teenused, vajadusel psühholoogiline nõustamine jm), mis aitaksid vältida olukorda, kus osa potentsiaalsest tööjõust on alakasutatud ning nende inimkapitali (eriti naiste) areng seeläbi pidurdunud. Kaaluda tasub ka senisest enam haridustaseme alaste nõuete esitamist teatud ametikohtadele (näiteks rangemad doktorikraadi ja magistrikraadi nõuded teatud ametikohtadele riigiasutustes), et seeläbi toetada ja tunnustada inimkapitali arengut. Soo- ja oskuste spetsiifilise inimkapitali arengut toetavate meetmete väljatöötamisel ja rakendamisel Eestis on kahtlematult toeks ka Põhjamaade kogemused.

Loomulikult ei tuleks soolise palgalõhe uurimisel edaspidi piirduda vaid inimkapitali teooriast tulenevate selgitustega. Analüüside läbiviimisel saab aluseks võtta ka mitmeid teisi, sh interdistsiplinaarseid teoreetilisi käsitlusi. Olulisi täiendavaid selgitusi ja infot kujunenud olukorra mõistmiseks ja vajadusel ka institutsionaalsete meetmete arendamiseks annavad kahtlematult ka kvalitatiivsete meetodite kasutamisele tuginevad uuringud, mis aitavad muu kõrval ka põhjalikumalt avada inimeste suhtumist soolisesse palgalõhesse ning ootusi palgalõhe dünaamikale. Ilmselt jääb jätkuvalt päevakajaliseks ka küsimus, kas kujunenud olukorda talereerida või sihikindlamalt rakendada meetmeid, mis soolist palgalõhet alandaksid. Võib arvata, et mõlemad lähenemised on vajalikud, et ühiskonna tasakaalustatud arengut selles vallas toetada.