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Specialization: Global studies

## MASTER'S THESIS

Title of thesis: Gender wage inequalities. Analysis and comparison of the situation in Poland and Italy in the last decade

Title of thesis (in Polish): Różnice płacowe między kobietami i mężczyznami. Analiza i porównanie sytuacji w Polsce i we Włoszech w ostatnim dziesięcioleciu

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## **ABSTRACT (IN POLISH)**

Ta praca ma na celu określenie, czy Polska i Włochy zmagają się z problemem różnic płacowych między kobietami i mężczyznami i jeśli tak, jaka jest skala tego problemu. Wnioski powstały po dogłębnym przeanalizowaniu zbioru danych, który tworzony jest przez jedną z komórek Unii Europejskiej i ma na celu zbieranie informacji o przychodach oraz warunkach życia mieszkańców Unii Europejskiej. Dane dotyczące polskiego społeczeństwa odnoszą się do lat 2006-2014, a jeśli chodzi o Włochy, to udostępnione dane dotyczą lat 2008-2014. Pierwsza część pracy nawiązuje do istniejących teorii dyskryminacji, które najogólniej można podzielić na neoklasycystyczne i instytucjonalne. Dalej na podstawie danych udostępnionych przez Eurostat opisana jest aktualna sytuacja ekonomiczno- gospodarcza Unii Europejskiej jako całości wraz z indywidualnymi opisami sytuacji panujących w Polsce i we Włoszech. Pod uwagę są brane, przede wszystkim, czynniki i wskaźniki, które zarówno pośrednio jak i bezpośrednio mogą mieć wpływ na różnice płacowe między kobietami i mężczyznami. Ostatecznie przeprowadzona jest mikroanaliza zbioru danych z użyciem dekompozycji Blinder-Oaxaca. Głównym założeniem tej techniki jest określenie, czy problem różnic płacowych istnieje i wyróżnienie dwóch części składowych- wyjaśnionej i niewyjaśnionej. Pierwsza składowa pokazuje jaki odsetek różnicy płacowej wynika z indywidualnych różnic między kobietami i mężczyznami z założeniem traktowania ich w ten sam sposób. Kolejna odpowiada na pytanie jaka część różnicy wynika z nierównego traktowania pracowników różnych płci zakładając, między innymi, że ich poziom wykształcenia jest jednakowy i pracują identyczną ilość godzin. Wyniki analizy pokazują, że różnice płacowe istnieją w obu państwach. Skala problemu jest większa w Polsce i tam różnica wynosi 4,3%. Jeśli chodzi o Włochy to średnio mężczyźni zarabiają 3,47% więcej niż kobiety. Dodatkowo warto wspomnieć, że średnia płacy we Włoszech jest ponad trzy razy wyższa niż w Polsce. Podsumowując, jednym z najważniejszych wniosków, które można wysnuć na podstawie dostępnych danych jest to, że negatywna część wyjaśniona i stosunkowo duży procent części niewyjaśnionej świadczą o tym, że skala problem nierównych wynagrodzeń kobiet i mężczyzn jest dużo większa niż tak, na którą wskazują liczby wspomniane powyżej.

**Słowa kluczowe:** dyskryminacja, różnice płacowe , Blinder-Oaxaca dekompozycja

**Dziedzina Nauki i Techniki,** zgodnie z wymogami **OECD:**

<nauki społeczne>, <ekonomia i biznes>

## **ABSTRACT (IN ENGLISH)**

This thesis attempts to determine whether Poland and Italy face the problem of the gender wage gap and if so, what is the extent of the discrimination issue. In order to draw the conclusions the European Union Statistics on Income and Living Conditions (EU-SILC) database has been used. As far as Poland is concerned, statistics from years 2006-2014 are available. In case of Italy analysis has been conducted on the observations from the years 2008-2014. At the beginning the description of the existing theories of discrimination has been made and basically these can be divided into neoclassical and institutional. Later on, on the basis of the Eurostat statistics, overview of the current situation in the European Union, Poland and Italy is described. Into account are taken factors and indicators that both directly and indirectly can influence the gender wage gap issue. Finally, micro analysis of the dataset was made with the use of the Blinder-Oaxaca decomposition. The main aim of this technique is to determine the extent of the gender wage gap and to distinguish in this gap two parts- explained and unexplained. The first one shows to what extent the difference explained by the individual characteristics while women and men are treated equally. The following, usually associated with the discrimination phenomena, indicates how big part of the gender wage gap is a consequence of the unequal treatment of female and male workers despite the fact that they are equally educated and work the same amount of hours, to name only but a few. It has been found out that the issue of the gender wage gap does exist in both countries. The extent of the problem is higher in Poland where the gap amounts to 4,3%. In Italy the average value is 3,47%. In addition, it is worth to mention that the average wage in Italy is more than three times higher than the Polish one. Finally, the most striking conclusion drawn on the data used in the analysis is that the negative explained part and relatively high unexplained one of the gender wage gap mean that the real discrimination level is much higher than the ones mentioned above.

**Keywords:** discrimination, gender wage gap, Blinder-Oaxaca decomposition

**Field of Science and Technology,** as required by **OECD:**

<social sciences>, <economics and business>

## TABLE OF CONTENTS

Abstract (in Polish) .....	3
Abstract (in English) .....	4
Table of contents .....	5
List of important symbols and abbreviations .....	6
Introduction .....	7
1. Theories of discrimination .....	9
1.1. Neoclassical Approach of Discrimination .....	10
1.1.1. The Theory of Human Capital .....	10
1.1.2. The Prejudice Preference .....	13
1.1.3. The Overcrowding Hypothesis .....	14
1.1.4. Statistical Discrimination .....	15
1.1.5. Monopsonistic Market .....	16
1.2. Institutional Approach of Discrimination .....	16
1.2.1. Theories of Segregated Labour Markets. ....	17
1.2.2. Neomarxist Theories. ....	18
1.3. Literature review. ....	19
1.4. Conclusions .....	22
2. Gender wage inequalities in the European Union with emphasis on Poland and Italy.....	23
2.1. Extent of gender inequality in the European Union.....	23
2.2. Extent of gender inequality in Poland. ....	28
2.3. Extent of gender inequality in Italy. ....	32
2.4. Conclusions .....	36
3. The micro analysis of gender wage gap based on data from EU-SILC.....	38
3.1. The Oaxaca-Blinder decomposition as a tool of measurement inequalities .....	38
3.2. Data selection.....	39
3.3. Application of the technique .....	41
3.4. Conclusions .....	50
Summary .....	52
Bibliography.....	54
List of figures .....	60
List of tables .....	61
List of appendices .....	62

## **LIST OF IMPORTANT SYMBOLS AND ABBREVIATIONS**

EU – European Union

EU-SILC – European Union Statistics on Income and Living Conditions

IQ – Intelligence Quotient

PL – Poland

IT – Italy

OECD – Organisation for Economic Co-operation and Development

ILO – International Labor Organization

PPP – Purchasing Power Parity

## INTRODUCTION

The present work attempts to determine whether the European Union, and especially Poland and Italy, face the phenomenon of the gender wage gap. For the time being it is considered to be an important issue bearing in mind that the role of woman in the society has changed drastically in the last 50 years. Women started to be present in the social sphere, they went out from home and, in fact they as well began to perform “typically men’s” tasks. What is more, they got access to education, knowledge and services. Steady although constant growth of women’s importance in the world unsurprisingly led to the moment where women want to be treated, but as well rewarded equally with men. Consequently this paper will try attempt to answer the following research questions: how existing theories of discrimination address the inequality issue? Which theory explains the gender wage gap best? To what extent education influences the level of earnings? Are Polish and Italian societies more similar or different? And finally, does the gender wage gap in the mentioned countries exist? What is the scale of this phenomenon?

In order to introduce the topic of the gender wage gap in general there is given a description of the most known and important theories of discrimination. The first group of theories are the neoclassical ones. In short they assume that the only explanation for the discrimination is the unequal level of productivity among workers. As far as the institutional approach goes, the factors that stand behind the issue of the gender wage gap are institutional and social effects.

In the second chapter there is included information about current situation in the European Union in general, in Poland, and in Italy. Discussed are factors and indicators that may have an influence, either direct or indirect, on the existence and the level of the gender wage gap in the mentioned regions. Although it cannot be clearly stated that, for example, particular amount of “early leavers” from education and training positively influences the appearance of the gender wage gap, undoubtedly such indicators can at least partly explain the phenomenon or give an overview of the situation in a particular country.

Finally, the last part contains the Blinder-Oaxaca decomposition made on the EU-SILC database. Not only it allows to estimate the wage differences between genders, but also there is given a division into explained and the unexplained part. The first one accounts for differences in individual characteristics meaning that provides rational explanation why people on the same position may not be paid equally. Contrary the second one by default assumes that two people are “the same” in characteristics relevant for the job itself however their earnings are not at the same level. In such a situation it is assumed that a particular group of employees is discriminated. The awareness about the existence of the gender wage gap is crucial to take measures, however it is necessary to know, first of all, whether it is due to the differences in characteristics or because discrimination is present. Understandably, not everyone has to be paid equally, nonetheless there must be given some reasonable explanation behind.

On the basis of the general knowledge, it is supposed that all the regions considered do grapple the problem of the gender wage inequality. Still women are not only paid less at their jobs, but also quietly limited as far as the access to some professions as far as the access is considered and finally, they are expected, more than men, to perform unpaid jobs or stay at home

to bring up children or take care about relatives in need. Even though Poland and Italy are at rather different economic and social development levels it might be presumed that the disparity when gender wage gap is concerned will not be very big.



## 1. THEORIES OF DISCRIMINATION

Although gender inequality is not such a big problem as it was in the past, there is still a lot to do in this area because girls and women in every part of the world keep suffering due to discrimination and violence. United Nations through one of Millennium Development Goals strives to achieve gender equality and women's empowerment. It is crucial to remember that this gender equality, except being a fundamental human right, is a foundation for a world where everybody can enjoy peace, prosperity and sustainability. First and foremost, females should be provided with equal access to decent work, education, health care and representation in economic and political decision-making processes. Gender-based discrimination can be terminated only with implementation of appropriate legal frameworks and eradication of harmful practices.

Over recent decades there was a constant search for explanation of the phenomenon of gender discrimination and along the time several theories have been created. Gender inequalities may appear in the form of numerous different aspects but the analysts tend to group them depending whether they are related to the determinants of the women labour participation or the unfair treatment of female employees at work (or in the process of employee selection).

With relation to the second issue of unequal treatment it is possible to distinguish gender discrimination that takes place before the entrance to the workforce and after the entrance. Considering the first type, pre-labour discrimination, in the majority of the cases it comes from entrenched stereotypes about the social roles of both sexes and social archetypes that are believed to influence the educational and professional choices women make (Mousourou, 2003).

Nonetheless, female workers may as well experience professional and wage discrimination and it occurs when they already constitute part of the workforce. Professional discrimination can be observed when women despite having the same qualifications as their male colleagues are concentrated in the low profile job positions and their promotions in the company hierarchy are at least infrequent, if not impossible. In addition, top management positions with high earnings occupied mainly by men or female layoffs during economic crises periods are as well considered as professional discrimination. Wage discrimination occurs simply when female workers receive lower salaries performing the same type of job and in the same dimension as males (Ostroff and Atwater, 2003).

Attention given to the investigation of prejudices faced by women at work after entering the labour market resulted in creation of many theories and these ended up being categorized as belonging to the Neoclassical Approach or Institutional Approach. The difference that exists between them is based on the methodological context that they use and the school of economic thought that they come from (Pavlidou, 1989). Basically, two of them are based on productivity of workers. Nevertheless, in line with Neoclassical Theory these differences in productivity are caused by the differences between individuals, their inherent abilities and because some of them decided to invest more (or less) in their human capital. Institutional Theory states that jobs created by institutions are characterised by unequal productivity so employees simply adjust to the level that is required from them in order to get and perform a particular job (Anker, 1997).

It is important to distinguish between labour market discrimination and labour market disadvantage as these are two different things. With regard to discrimination, it applies only to differences among workers that are not related to objective characteristics which influence the workers' productivity or the job they are doing. On the other hand, labour market disadvantage refers to all the differences between experiences of employees of different industries or occupations such as: likelihood of unemployment, differences of pay or differences due to the occupational segregation, to name only but a few (Green, Owen, 1996).

### **1.1. Neoclassical Approach of Discrimination**

As far as the Neoclassical Approach of Discrimination is concerned, the theories that belong to this line of thought are primarily trying to explain and interpret gender wage gaps and, on the second place, gender occupational segregation. The analysis starts with the rational person that tries to maximize the profit with the best usage of limited resources, in the most optimum way. As a rule, demand and supply are equal and the equilibrium can be achieved in the long-run. From the Neoclassical point of view all the factors that in the labour markets may possibly disturb the equilibrium obtained in the long-run are treated as exogenous and temporary. As a consequence, at some time perspective market will again come back to the equilibrium point in order to be able to employ all the available resources fully (Alchian, Kessel, 1962).

According to the Neoclassical Theory competitive firms in their profit-maximisation considerations ensure that their workers receive marginal revenue product. Subsequently, if there is a group of employees that is paid less than their co-workers the explanation for this inequality is that these people must differ in their productivity. In case of the same level of productivity and different salaries the issue of discrimination appears. Consequently, the phenomenon of discrimination takes place because of the failure of competition when non-profit maximising behaviour persists (Edgeworth, 1922).

In the belief of Neoclassical economists if the world had more characteristics of the Neoclassical model of perfect competition, it would be possible to get rid of many problems. For example, increased competition would force discriminating employers to go out of the market and more information about individual employees would serve as a useful tool to eliminate statistical discrimination. In such a case companies would not need to base their decisions whom to select having only access to the stereotypical group characteristics (Arrow, 1973).

#### **1.1.1. The Theory of Human Capital**

In line with labour economics, workers' skills can be understood as a form of capital in which they make different investments. This kind of understanding helps explain not only investment incentives, but also the structure of earnings and wages (Becker, 1962).

Generally speaking, any kind of knowledge worker has or personal characteristics (innate or acquired) that have an influence on the broadly understood productivity refer to human capital. Such a wide definition has its advantages and disadvantages. As long as the advantages are concerned, due to its broadness, there can be taken into consideration, as part of human capital investments, both years of schooling and a variety of characteristics, such as training received,

quality of the school and attitude towards work, to name only but a few. Along with this way of reasoning, it is possible to understand why differences in earnings between workers exist and that these may come from other factors than schooling differences. On the other hand, trying to understand the phenomenon of human capital with the definition provided above may cause that every single observed difference in remuneration will be explained as due to the human capital. All in all, even though some may try to assume that all wage differences have relation with skills possessed it is not completely correct way of reasoning because there exist numerous exceptions. Just to mention some of them there are, for example:

- compensating differentials- it may happen that one employee is paid less because part of their compensation is given in the form of hard-to-observe job characteristics such as more pleasant work conditions, better amenities or lower effort requirements (Brown, 1980);
- taste-based discrimination- pay difference is caused by worker's race, gender or because of other prejudice that the employer has (Becker, 1957);
- labour market imperfections- sometimes job performed by two people with equal human capital differs in terms of productivity (high productivity job and low productivity job) and this is why they are paid different wages (Kamalich, Polachek, 1982).

To interpret differences in wages well (taking into consideration investments in human capital and the incentives for such an investment) it is crucial to find the balance between compensating differentials, unobserved heterogeneity and labour market imperfections.

Human capital understood as a set of skills and/or characteristics that influence the scale of employee's productivity is a standard approach (Random House Unabridged Dictionary, 2019). Nonetheless, there exist additionally alternative ways of perceiving human capital:

- the Becker view (1962): in short, human capital is helpful when considering production process. Therefore, using human capital worker can increase the productivity in all different tasks, situations and organizations. Even though there is a sort of complexity included, still human capital can be represented by, for example, stock of knowledge or skills (unidimensional object) being this stock a part of the production function;
- the Gardner view (1983): by contrast, according to this point of view, human capital is composed of many dimensions of skills' types. For instance, mental vs. physical abilities should be considered as different skills. Consequently, one person considered as a genius can at the same time be relatively "unskilled" in another dimension;
- the Schultz/Nelson-Phelps view (1975): this view perceives human capital as a capacity to adapt. In changing environment human capital helps to deal with uncertainty and "disequilibrium" situations;
- the Bowles-Gintis view (1976): from this perspective human capital allows to accept hierarchy, life in capitalist society and orders. Schools are supposed to imbue certain approach towards life and ideology;

- the Spence view (1973): human capital and how it is observed and measured is more a signal of ability than pure characteristics that are used in the production process.

Taking a look at the alternative approaches to human capital, Becker, Gardner and Schultz seem to have a similar opinion that human capital has positive correlation with firm's profits. Actually, many labour economists' point of view is a mixture of these three approaches. To some extent Bowles-Gintis view can be as well compared to the three mentioned above due to the fact that companies may possibly be willing to pay more to educated employees as they better obey orders and can be described as more "reliable" as firm's hierarchy members. Only the last view is relatively different from the other mentioned, however still the possession of "high level" of human capital may suggest that this person has more useful abilities than the one with "low level" of human capital and this fact can serve as a ground for better reward (bigger salary).

Before investing in the human capital it is crucial to consider what are the sources of differences that exist among people:

- innate ability: people may be simply born with different amount of skills and human capital as a consequence of possession of IQ component that is genetic in origin. Whether this component has an influence on worker's productivity may be a topic for discussion, but nevertheless it is necessary to assume that there might exist heterogeneity in human capital even among people who have equal both investment opportunities and economic constraints. What is more, particularly in empirical applications, there must be found the way to deal with differences caused by innate ability because these may have correlation with other variables of interest (Mincer, 1974);
- schooling: due to the fact that this element of human capital investments is one of the easiest to observe there are many studies that focus on it. Nevertheless, researches suggest that differences in schooling account for rather small fraction of earning differences implying relatively small importance of schooling in comparison to human capital. Still, bearing in mind that forces affecting schooling investments may possibly influence as well non-schooling investments analysis of schooling in general is likely to provide useful information especially due to the fact that patterns of schooling investments are easier to observe than those of non-schooling ones (Mincer, 1974);
- school quality and non-schooling investments: it may happen that two people with the same background, grown up in the same environment, who attended the same schools and studied the same amount of years end up with unequal human capital. The reason for such phenomenon may be the fact that each of them decided to invest in different components of their human capital (one of them worked harder or studied more and it made them better at communicating or more assertive). In fact, these soft skills are crucial to understand the wages structures and their changes, however in order to so good data (in terms of quality and quantity) is necessary (Behrman, Birdsall, 1983);

- training: this part of human capital is the practical application of the knowledge acquired during years of schooling and worker usually controls the amount of investment they want to make. Nonetheless, it is more complex than the schooling itself and the difficulty lies in the fact that employee cannot make training investments alone. It is the company that invests in their workers and frequently at least the majority of the costs lie with the company's side. The role of the employer in the employee's training becomes even bigger taking into account that after training provided the worker will possess knowledge and abilities that can be very useful for the development and advancement of the enterprise (Barron, Berger, Black, 1998);
- pre-labour market influences: peer group of the individual, to which they belong before entering labour market, affects their human capital. For instance, the environment in which children are brought up shapes their better or worse pre-labour market influences (Neal, Johnson, (1996).

### 1.1.2. *The Prejudice Preference*

In "The Economics of Discrimination" (1957) Gary Becker attempts to observe and interpret the effects of discrimination from the point of view of the free market economy. Even though there are described mainly ethnic and race differences, the outcomes can refer as well to other kinds of discrimination. Becker in his work assumes that there exist a phenomena of "taste for discrimination". It happens when one person shows that they are willing to pay for being associated with one group of people instead of the others. The payment itself may take place in the direct form or through, for instance, reduced income. Bearing in mind the conventional economic analysis with individuals maximizing the utility and firms maximizing the profits, Becker described the model in which women belong to the segregated workforce due to the fact that employers, co-workers and customers exhibit the taste for discrimination. All in all, women and men are paid differently due to the prejudice preferences and these are as follows:

- the employers' preferences: managers might not want to employ female workers because of own prejudice or ignorance. Women can be hired as secretaries but employers are reluctant to employ them as, for example, constructors;
- the employee's preferences: fellow workers (especially males) do not feel comfortable with women, for instance, on higher hierarchically positions. Still, usually it is not the case when women are placed on subordinate positions;
- consumers' preferences: some customers do not want to be served by females. Although people may like to buy groceries or flowers from female workers there is high chance that they will not fully trust women selling cars.

As far as the first case is concerned, employers tend to propose higher wages to candidates that come from their own selection just to avoid having in their team some specific individuals. If male worker receives better salary than female colleague of the same productivity it is a pure example of gender discrimination and employer is said to be biased against women workers. In such a case so called "discrimination factor" appears. Nevertheless, from the view of neoclassical theory, existence of perfect competition does not allow businesses to act with bias

according to women workers because if they do so high employment costs appear and the companies end up out of the market (Arrow, 1973). One of the drawbacks of the theory of discrimination is that it does not interpret and explain fully the creation and existence of discrimination as it treats them as shocks that are exogenous and only temporary. What is more, it lacks consideration of the gender occupational segregation which assigns women and men to separate occupational sectors.

### *1.1.3. The Overcrowding Hypothesis*

Along with the hypothesis proposed by Barbara Bergmann (1974) women are concentrated around limited occupations as a result of the denied access to others. The phenomenon of occupational segregation by gender may be even viewed as a tool to lower earnings in some jobs where crowding policy is present. Explanation provides analysis of labour supply – demand curve. Reasonably, when demand exceeds supply salaries are at the relatively high level. The situation may be opposite as well. With supply exceeding demand employees will receive low earnings. Nonetheless, market always approaches equilibrium so none of the situations presented above will last in the long-run. From this analysis it seems that the law of supply and demand explains easily the crowding effect. Nevertheless, the phenomenon itself is not that easy to describe. Mainly because it is assumed that surplus of female workers supply leads to their low wages but does not justifies why it applies only to predominantly female occupations. Provided that law of supply and demand is not gender biased by default, else being equal, earnings should be lower in all types of jobs, both predominantly female and predominantly male. Still, according to the crowding hypothesis men employed on “female” positions will be also paid less. Some of them, due to different reasons such as lack of information about alternative opportunities, strong preference or possession of particular skills, decide to take a job that is considered to be “female” job and at the same time they accept to receive lower earnings. Described theory is a very clear example of gender inequality in a labour market, however it does not provide any explanation for the phenomenon of crowded typically female occupations.

On the other hand, crowding model can be as well understood in a way that women’s discrimination by employers appears because they exclude them from positions considered as “men’s jobs”. There are few women hired into such jobs as these are viewed to be exclusively for men. Along with this line of thought, female workers tend to be crowded into limited number of occupations, typically defined as “women’s jobs”, because the demand for them in “men’s jobs” is very limited. Unsurprisingly, when supply of female workers in these limited jobs increases, the wages become reduced. For the sake of simplicity, it is assumed that employees of both sexes have the same skills and abilities so that with no discrimination their pay should be equal. The emerging prediction is that the discrimination segregates women and men allocating them in different occupations and in general earnings of workers that perform “women’s jobs” are lower than the ones who are employed in “men’s jobs” despite the fact that everyone is well qualified for both occupations (Bythell, 1993).

Nonetheless, again, the process of the discrimination formulation is not fully explained in this model. First of all, there is no information regarding how a particular job happened to be

dominated by women or men. What is more, the theory does not provide explanation for the reason why even with competitive pressures the discrimination in the long-run still exists. Still, it has to be highlighted that, Overcrowding Hypothesis explicitly shows how occupational segregation is matched with lower wages in jobs dominated by female workers although it is frequently omitted in other models.

#### *1.1.4. Statistical Discrimination*

The following model was created as an effect of the investigation conducted by Edmund Phelps (1972). He claims that women individually are judged by potential and current employers on the basis of the “average group characteristics”. The reason why it happens is that frequently companies do not possess enough information and they are uncertain about the potential candidates’ skills and qualifications. In such a case they draw conclusions from the data available which is true on average but may not reflect the real aptitudes of individuals. Managers might be often concerned that female employees do not treat their job as seriously as males and as a consequence they assume that women will quit as soon as they decide to have children or due to family obligations, for example. The risk and danger related to the issues above mentioned makes companies more willing to employ male workers. In addition, if in general it is believed that women are less stable workers or they are less productive, the statistical discrimination appears and as a result they receive lower wages despite having the same qualifications and working with the same productivity as their male colleagues.

Literature about statistical discrimination describes it in two main strands. One of them tries to explain what is the correlation between prior beliefs related to the productivity of the candidates and decisions about hiring and salaries. Important thing to consider is whether the biased stereotypes may be self-confirming when the return on hard-to-observe worker investments is dependent on employer’s belief. This matter was addressed by Arrow (1973) and Coate and Loury (1993) conducted about it deeper analysis in their work. Another literature strand analyses how the differences about groups influence the precision of the information available for the employers in order to assess the individual productivity. In this case, Aigner and Cain (1977) are trying to address the issue and they are followed by Lundberg and Startz (1983) and Lundberg (1991). If it occurs that companies have difficulty to discern the real productivity of a group of workers, for example due to the cultural differences, it may end up with three implications:

- the more the productivity is dependent on the quality of match among worker’s skills and job requirements the lower will be the productivity expected by the employer if they are relatively uncertain about a certain group (Aigner, Cain, 1977);
- if the employer’s information is of different precision the differences between groups in exchange for job matching may appear (Oettinger, 1996);
- a group of workers might be paid less than they deserve for their performance due to the fact that the company does not “see” their productivity. As a consequence this group does not have any incentive to develop their skills and such a situation may end up with an equilibrium where members of one group are on average less

productive than the members of other group despite the fact that all of them are characterised by equal distribution of innate ability.

#### **1.1.5. Monopsonistic Market**

In the view of Monopsonistic Market Theory perfect competition in the labour market does not exist and labour supply constituted by women is wage inelastic. Monopolistic position of the employer (lack of competition) makes them tempted to offer low price for labour. Company gains monopsony power when on the particular market they can be described as relatively large buyer of labour. Female workers are facing monopsonistic situations because they are not as wage elastic as their male colleagues as a consequence of limitations due to family obligations, for instance. In short, women are thought to have weakened negotiating power and it makes them more vulnerable in case of exploitation and there is a high chance that potential employers will try to offer them lower wages (Robinson, 1934).

For the first time the idea of monopsonistic wage discrimination or “Robinsonian discrimination”, after the name of its author, appeared in Joan V. Robinson’s work “Economics of Imperfect Competition” (1969). Actually, it was the first attempt to present consistent analytical framework for labour markets that are imperfectly competitive. At the same time, she was the pioneer as long the name of “monopsony” for the demand-side counterpart of the monopoly is considered. Finally, with the use of the findings of her framework, Robinson as a first economist gave an explanation for gender wage discrimination from the point of view of employers that are trying to maximize their profits in imperfectly competitive labour markets.

According to Robinson, provided that women are less driven by salaries than men when taking a decision if supply labour to a particular employer or not, employers in general have bigger wage-setting power over female employees and are able to enlarge their profits by offering them lower earnings (maintaining all other factors constant). Consequently, monopsonistic wage discrimination can be used to provide economic explanation for gender wage differentials which last even if differences in workers’ productivity exist (does not matter whether comes from worker or their workplace characteristics). It is possible that the phenomenon of monopsonistic wage discrimination that women have to face will become widespread and continue over the time due to the fact that employers clearly profit from it. What makes this type of discrimination different from other conventional approaches (like, for example, Becker’s “taste-based” approach) is that there is nothing about employer’s prejudices against female workers. As a consequence, even if the prejudices against this group of employees were about to elapse, it is still more probable to be present.

#### **1.2. Institutional Approach of Discrimination**

Discrimination in the labour markets can be as well analysed with the use of comparative approach of the institutions. The underlying assumption is that inequality between wages is caused by institutional and social effects. Salaries are determined in institutional context meaning that there are certain characteristics like system of collective negotiation or system of wage



protection that may possibly influence the pay gap. With regard to the social effects, what actually matters is how the particular profession is valued in the society and what is the structure and functioning of the labour markets. All in all, different productivity of the workers does not have much influence in this case when considering wage inequality between women and men. Institutional Approaches act as an answer to the Neoclassical Approaches in which individual characteristics and personal choices were the only factors influencing earning differences (Marshall, 1974).

Institutional economists argue that these are the structural causes that lead to the labour market disadvantages. They are simply an integral part of the institutions of the economy so the only solution is to tackle the poor working conditions and low pay that characterise the secondary market jobs. Competition itself neither will help workers trapped in “bad” jobs of secondary market to get the “better” ones nor will it solve the problems mentioned above. Advocates of institutional approach believe that direct government intervention could be helpful by introduction of equal pay legislation or promotion of affirmative action. Summing up, for institutional causes of disadvantages on the labour market the best seem to be institutional solutions (Cain, 1986).

#### *1.2.1. Theories of Segregated Labour Markets.*

In line with these theories labour market consists of separate markets based on employees' specific characteristics. What is more, labour demand is analysed in the context of imperfect labour market and productivity is not considered to be an individual worker's attribute anymore. It should be rather understood as one of the characteristics of the particular job position. Contrary to the Neoclassical Approach, wage differences and decreased workers' mobility are viewed as permanent and endogenous elements of the labour market.

One of the most popular theory of the segregated markets is “Dual Labour Market Theory”. Even though the main aim of the investigation was to explain the race differences in the United States, it can be used to provide the interpretation of the wage and employment inequalities between genders as well. In the core of this approach lies the assumption that there are two separate markets, primary and secondary. They are different with regard to employment environment, wages, stability of the employment, personal development opportunities and training, to name only but a few. Still, there are three general hypotheses on which the model rests:

- there are two sectors in the economy: as already mentioned there is primary high-wage sector and secondary low-wage sector. Individuals and firms behave in different ways depending in which of them they act so various theoretical explanations are required;
- instead of focusing on skilled and unskilled workers the economic analysis is based on good and bad jobs;
- employees acting on the secondary market instantly deal with job instability, frequently moving into and out from unemployment participating in labour force only temporary.

In the secondary market there is “enough” work for everyone, however these are low-paid, unattractive and unstable occupations. Importantly, it is not the absence of own human capital that makes some of the workers frozen out of the primary sector but rather institutional restraints (for example discrimination) or simply lack of jobs. In other words, labour market disadvantage occurs due to the characteristics of the job performed and not because of the characteristics of an employee. As a consequence, workers forced to stick to the secondary sector are affected by underemployment (Piore, 1970).

The analysis of the primary market focuses on the description of the “internal labour market” and according to the main hypothesis the efficiency itself plays a relatively small role in it. It is mainly a custom, not productivity, that influences the distribution of the jobs and wage rates. What is more, the amount of skilled, primary jobs does not necessarily coincide with the availability of the skilled workforce. This assumption is exactly opposite to the Neoclassical Approach implicating that developing human capital may not help improve the existing job structure. Dualists argue that there is scarcity of skilled jobs and it is necessary to create, either in private or public sector, more such jobs.

On the secondary market the dual approach is manifested through four hypotheses:

- utility of the primary and secondary sector dichotomy of the economy;
- employment mechanisms and wage differ on the primary and secondary market;
- mobility between sectors is significantly limited so those who are trapped in the secondary market will most probably stay there;
- pervasive underemployment dominates secondary sector due to the fact that even people who could be trained for better jobs at relatively low cost are confined to “bad” jobs (Doeringer, Piore, 1971).

### *1.2.2. Neomarxist Theories.*

Marxist theories state that it is the value of labour power that socially determines average earnings. With regard to the value of the labour power there are taken into consideration two factors. First is the culture, for instance social habits pertaining to reproduction. The second one is the balance of power among capital and labour and it depends on institutions and unemployment (Reich et al., 1973).

So called Marxian framework of capitalist competition serves as a tool to establish the equation to determine occupational wage level. In general, the structure of occupational wage is dependent on the relative value of the labour power related to different occupations, however in this framework it is affected by intra- and inter-industry capitalist competition. All in all, it helps define the upper bound of the average salary that firms or industries are willing to pay. Nevertheless, determination of the wage level with Marxian framework does not take into account all issues that have an influence on the occupational and industrial wage structure. For instance, it omits the impact of relations among genders. In fact, wage structure is affected by gender segregation of industries and occupations and when women start to dominate one industry or

occupation the average salaries go down there immediately. Consequently, it should be stressed that gender constitutes an integral part of pay determination.

From the Marxist point of view to determine the wage level with the use of an analytical framework it is necessary to take into account two equations that are created along with two groups of factors, the microeconomic and macroeconomic, as they have an influence on both wage structure in general and individual wage. First equation makes reference to the occupational wage in whole industry and the other to the wage of an individual worker. It is necessary to highlight that in order to determine the second one occupational wage has to be created first because the individual one appears as a deviation from the first one. Deviation means that what is additionally taken into account are several individual characteristics of the worker, the company they are working for, the job they perform and their bargaining power, to name only but a few. For every equation there are three levels of analysis. At first, for industry wage, there are identified factors that determine intra- as well as inter-industry wage differentials between workers that possess comparable skill and education levels. The second level, with regard to the occupational wage, makes reference to the factors necessary to determine the occupational wage levels in the same industries. Finally, third level is used to analyse how the individual wage is determined and taken into account are factors that make individual wage and occupational wage within industry different. Such a reasoning stems from Marx's analysis of capitalist competition both within and between industries described in "Capital" (1894/1993) and his value theory of labour power. Provided that gender relations have an influence on wage-setting, they as well influence both equations mentioned above. Average occupational wages within industries are affected by employment segregation by gender and undervaluation of women's work meaning that these depend on the gender composition of occupations. In order to observe and analyse well the gender wage gap it is necessary to create two equations, one for women and one for men, for individual wages (Semmler, 1984).

### **1.3. Literature review.**

Although there can be found quite a lot of literature that makes reference to gender wage gap in general, the amount of studies that directly measure the role of the differences in job motives based on gender is rather limited. Lack of data may lay among the most important causes. Still, Mas and Pallais (2016), on the basis of the field experiment conducted in order to find out more about compensating differentials, reveal that women, especially those who have children, are more willing than males to resign from higher salaries if in exchange they are able to work from home and get rid of any disruptions to the work schedule. Although the role of the compensating differentials on the pay gap is not investigated directly, it is suggested that it is rather unlikely that compensating differentials themselves can fully provide explanation to the gender wage differential. Alternatively, McGuinness et al. (2011) investigates to what extent the motives provide explanation of the gender pay gap among part-time Irish workers. Additionally, there is given an information about the reasons why people are employed part-time and it can be because of either family commitments, disability, financial security, inability to work full-time, earning enough with part-time job or other reasons. Researchers found that females and males

work part-time for very different reasons. While women indicate mostly family commitments, men tend to do it because they are not able to find full-time job. It is worth to mention that decomposition of the part-time gender wage gap with mentioned motives incorporated significantly diminishes the unexplained component.

In some other studies, to approximate the role of decisions around job choice on the gender pay gap, motivational values have been used. According to Swaffield (2007), controlling for attitudes that relate to labour market aspirations, family related labour constraints or work-home orientation provides reduction of the gender wage gap. Nevertheless, these attitudinal controls are relatively broad and rather do not have direct influence on an individual's motivations for job acceptance. Chevalier (2004) provides similar study using British dataset that contains information on individual's long-term values like job satisfaction, career development, respect, status and information on person's self-reported ambition level. What was found is that mentioned factors do provide explanation on the gender pay gap. Evaluation of the risk aversion in the gender wage gap has been made through hypothetical lottery questions included in the Korean labour market surveys (Jung, 2017). According to the results obtained female workers are more risk averse and, at least with reference to the Korean labour market, some of the wage gap can be attributable to job sorting that is based on preferences influenced by risk attitudes. For instance, risk averse person will probably accept lower wage preferring to work in public sector as it is considered to be more stable and of limited risk in comparison to the private sector or self-employment. Finally, Flier (1985), on the basis of the 1977 Quality of Employment Survey investigated in the US how the gender wage gap can be influenced by compensating differentials. He found out that some part of the pay gap can be explained by female and male workers having significantly different working conditions.

Available literature considers even more aspects that can be treated as potential explanations for the unexplained pay gap. In Niederle and Vesterlund (2007) view female employees being less competitive than their male colleagues can be underrepresented on competitive positions while Babcock and Laschever (2003) suggest that one of the reasons of unequal wage can be the fact that women bargain less effectively when discussion about higher pay takes place. Nonetheless, Manning and Saidi (2010) present contradictory opinion saying that these competition effects have rather limited roles in explaining pay differences among women and men. Recently Quintana-Garcia and Elvira (2017) have been trying to investigate the relationship between females and males compensation in management positions and external labour market hiring. What has been found is that females hired externally experience disadvantages as far as the compensation is considered and additionally there is given evidence proving that mentioned disadvantages can be mitigated by having more women in top management positions. At the same time, Abendroth et al. (2017) mention that the phenomenon of more female employees in management positions does limit the gap for jobs where low qualifications are required but it does not help to reduce this gap for jobs where highly qualified workers are needed. Through the examination of the effects of organizational practices that target gender inequality on gender pay inequality Huffman et al. (2017) reveal the positive influence of

policies like workplace childcare which allow to maintain the work-family balance on gender wage gap reduction.

Another approach suggests that earnings differences appear due to the fact that the number of women in better-paid upper levels of organizations is limited. Female employees concentrate in lower-echelon positions as they are initially hired at the entry level and there is no upward mobility in the organizational structure (Guy, 1993). Nevertheless, it is necessary to consider whether it is completely true that majority of women remain at lower-level positions, why they enter low-level positions and why they do not get promoted along the time. In the study conducted by Mani in 1997 in federal senior service clerical positions were in 85% performed by women and Senior Executive Service positions in 13%. Some researchers pointed out that the gender wage gap could be influenced by occupational status by 50 to 66% (Groshen, 1991). In fact, in the past, lower ranks in the public sector were giving women access to the labour force (Guy, 1993). Actually, he highlighted that “social pushes and pulls result in women gaining entrance to administrative positions while wage gap continues to reveal the relationship between gender and salary”. Most of the barriers women face are caused by gender typing and it has been found out that female workers who turned out to be successful in typically male jobs were personally derogated and less liked with higher frequency than their male colleagues (Heilman et al., 2004). What is more, the negative feelings described above were affecting their wage levels. In relation to the picture of woman as a leader the problem is that females are often considered as caring and sensible individuals while leadership is associated with “masculine” characteristics. Consequently, women end up segregated in certain agencies, occupations or positions because of either gender typing or socialization (Stivers, 1993).

Although women’s promotion in an organizational ladder may help reduce gender segregation as female workers occupy high-level positions and receive better wages there are numerous both organizational and sociocultural factors that withhold them from upward mobility. It has been observed that domestic constrains made women more handicapped than men as long as their career advancement was concerned and females were given lower wages (Newman, 1993). Surprisingly, even though wives were performing twice as much housework as their husbands, both women and men admitted that the distribution of the workloads was fair (Rosenfield, 1994). In another study it has been shown that one-hour increase in the housework performed by women resulted in 0.3% lower salary. At the same time no wage difference has been observed for men (Noonan, 2001).

It has been observed that women’s ability to progress in organization is affected as well and the among the organizational barriers can be mentoring, workplace policies or career-development patterns (Guy, 1993). For instance, in spite of having the same level of education and work background female managers were not enjoying equal salary increases to their male colleagues (Stroh, Brett, Reilly, 1992). Similarly, in Kelly et al. (1991) point of view, men’s mobility into elite positions is much frequent than when female workers are concerned. The same found out Guy (1993) that not only men tend to be better at climbing the ladder, but also women

apparently are less adept. Summing up, wage growth and pay levels turn out to be more achievable for male employees regardless type of job concerned (Kelly et al., 1991).

#### **1.4. Conclusions**

Numerous theories of discrimination described above provide a useful base for the analysis of the current situation on the labour market. In fact, all of them, no matter how many years ago created, to some extent make reference to the present. The Theory of Human Capital at the first glance seem to explain perfectly why people are paid differently and it simply shows that there are numerous factors, often unobserved or omitted, that in a particular situation may provide a complete explanation for the existence of unequal pay phenomenon. As far as the Prejudice Preferences Theory goes, it could be considered to be the most obvious reason for the appearance of the discrimination. Nonetheless, while from the theoretical point of view it could be true, in a real world such prejudices are in the majority of the cases rather visible so under the pressure of the society lead either to the eradication of the unfair practices or the discrimination victim quits from the job. When analysing the model of Overcrowding Hypothesis it cannot be omitted that the existence of typically “female” and “male” jobs is widespread. As a consequence, it is true that it can provide explanation for the discrimination just because there may be limited number of jobs for women and because of the supply exceeding the demand workers on such positions are not paid as much as people on positions that are to some extent “unique”. Nevertheless, an important factor is missing and it is related to the explanation why such a distinction for “female” and “male” jobs appeared in general. Sadly, Statistical Discrimination is inevitable, mainly due to the fact that it is the easiest explanation for the lack of information. When a particular decision has to be made and the existing information is not sufficient or there is no information at all, statistics and average group characteristics will be the most convenient justification. Monopsonistic Market Theory is strongly related to the discrimination itself, however it is not particularly focused on the distinction between women and men. As long as employers are simply profit maximising they will “abuse” women because they are believed to have weaker bargaining power when wage setting takes place (women are not so much driven by salaries as men). It can be true, however it cannot be omitted that the individual situation of the potential candidate matters and then both, females and males, can be equally determined to negotiate their wages.

Institutional Theories in general can be even more explanatory as the Neoclassical ones simply because they can be easily adjusted to the constantly changing environment. Although there will always exist professions valued in the society by default, new jobs appear and the scope of the others is changing. At the same time they assume that nothing depends on individual characteristics, because these are institutions that determine the wage level. It means that the system can be accused of being responsible for the entire discrimination issue which is probably not completely true just because the problem is more complex and undoubtedly in every case there are at least a few factors that contribute to the appearance and the level of the discrimination.

## **2. GENDER WAGE INEQUALITIES IN THE EUROPEAN UNION WITH EMPHASIS ON POLAND AND ITALY.**

As OECD (2019) defines on their webpage, gender wage gap is “The difference between median earnings of men and women relative to median earnings of men. Data refer to full-time employees and to self-employed”. There are substantial differences among EU countries and the lowest rates of gender pay gap of roughly 8% can be observed, for example, in Belgium, Italy, Luxembourg, Poland, Romania and Slovenia. At the same time Austria, the Czech Republic, Germany Estonia and United Kingdom are characterised pay differences between women and men of more than 20% (Eurostat, 2018). The most up to date information about the level of gender wage gap is provided by Eurostat which provides detailed statistics about European countries.

Nonetheless, wage inequalities are just one of the several differences that exist between women and men when inequalities in a general context are concerned. What is more, there are numerous factors that can possibly have an influence on the existence itself and extent of the pay gap. Importantly, although international organizations, as well as countries individually, try to combat these differences significant dissimilarities among regions remain.

### ***2.1. Extent of gender inequality in the European Union.***

Person's life is said to be marked by several “milestones” and not surprisingly there exist differences among women and men in these cases as well. First of all, women tend to leave parental home earlier than men (in the age of 25 in comparison to 27). On average women get married earlier too. The difference can range from more than 3 years for Bulgaria, Greece and Romania (data for 2016) to less than 2 years for Ireland, Portugal and United Kingdom (as for 2015). On average, first child is born when women is 29 (2016), however in countries such as Bulgaria or Romania this age is lower (roughly 26) and In Spain or Italy higher (oscillates around 31). One more important difference among females and males can be life expectancy. Everywhere in EU women are said to live longer and the averages for 2016 were 83.6 years and 78.2 years. Nonetheless the differences between sexes can be as high as 10-11 years (observed in Latvia and Lithuania, for instance) and as low as less than 4 years (Denmark, Ireland, Malts, the Netherlands, Sweden and United Kingdom) according to the data provided by Eurostat.

As long as the education is concerned, basically there is almost no difference among women and men in the European Union at the level completed when the lower education level is considered. It is due to the fact that most of the European education systems have set age when compulsory education starts and students are required to remain in education until some age, depending on the country they study in (European Commission, 2018). Nevertheless, different patterns can be observed for the higher levels. In 2017 among Europeans aged 25-64, 22% of women and 23% of men had (at most) completed the low level of education. Regarding the medium level of education (understood as upper secondary or post-secondary non-tertiary) 44% women and 48% men in the EU had completed successfully in 2017 this level. Such a trend was dominating in great majority of Member States. Finally, tertiary education has been completed by 33% females and 30% males. In almost all Member States there could be observed majority of females with this level of education. The biggest differences among women and men existed in

Slovenia, Finland, Sweden and Baltic countries. Figure 2.1 shows the shares of men and women that achieve different levels of education.

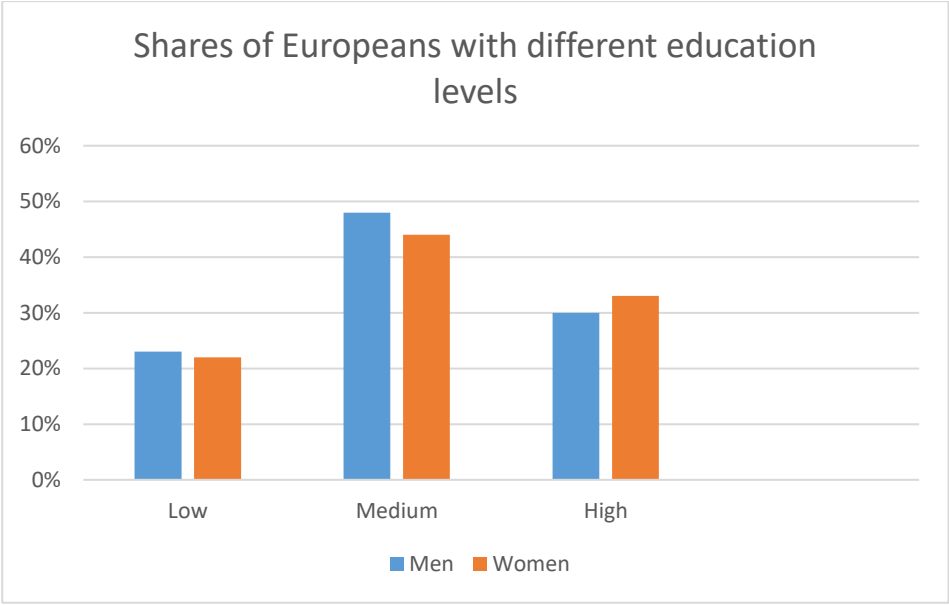


Fig 2.1. Shares of Europeans with low, medium and high levels of education. Source: The life of women and men in Europe; A statistical portrait; 2018 Edition, Eurostat

Among European citizens there can be observed employment patterns and in general the more children, the bigger the dispersion of the employment rates between women and men. Great majority of Member States reveal similar values and on average in the European Union men have higher employment rate than women (73% and 62% respectively in 2017). Interestingly, in the same year, 66% of women and 74% of men with no kids where employed. At the same time, the rate increased to 71% for women with one child and to 86% for men with one child. Not a huge difference has been observed for women with two children because the rate increased only to 72%. For men it amounted to 90%. For both sexes the rate of employment decreased when possession of three or more children was considered and it was 57% for women and 85% for men. The explanation for such a trend may possibly be found in the national systems of parental leave. In great majority of Member States there is actually only maternal leave with only a couple of days of paternal leave. Depending on the nationality fathers can enjoy as little as 2 days paid at full salary (for example, Dutch, Greek, Italians or Maltese) or as much as 12 months to be split between mother and father while two month are compulsory for both of them (Euronews, 2017). On the figure 2.2 can be observed employment rate of Europeans depending how many children they have.



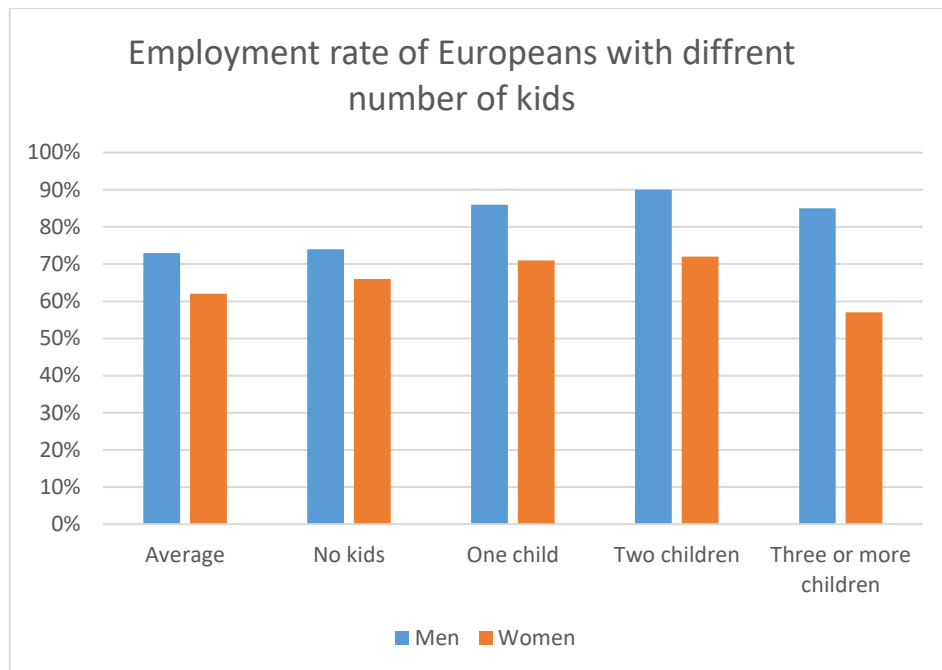


Fig 2.12. Employment rate of Europeans with different number of kids.  
 Source: The life of women and men in Europe; A statistical portrait; 2018 Edition, Eurostat

Significant amount of European workers decide to work part-time in order to maintain work-family balance. Nonetheless, the phenomenon is not spread equally between female and male workers either. While almost one-third of women were working part-time in 2017 (32%), only 9% of men were employed on such contracts. Values differed among Member States as well. The highest shares in the European Union regarding women could be observed in the Netherlands with 76%, Austria with 47% and Germany with 46%. With respect to men (considering the EU countries) again the Netherlands represented the biggest percentage (27%). On the second place there was Denmark with only 16%. The smallest value could be observed in Bulgaria where barely 2% (of workers of both sexes) were working part-time. Graphical representation of this phenomenon is shown on the Figure 2.3. Not surprisingly, these are women who are in majority constituting part-time workforce as they, as mothers, are in need of finding relatively flexible job after having children. First after giving birth they are allowed, and sometimes forced, to stay longer at home with a baby than the father (due to parental leave system) and later on, in order to combine work and childcare, they can only manage these two taking temporary job (TheGuardian, 2018).

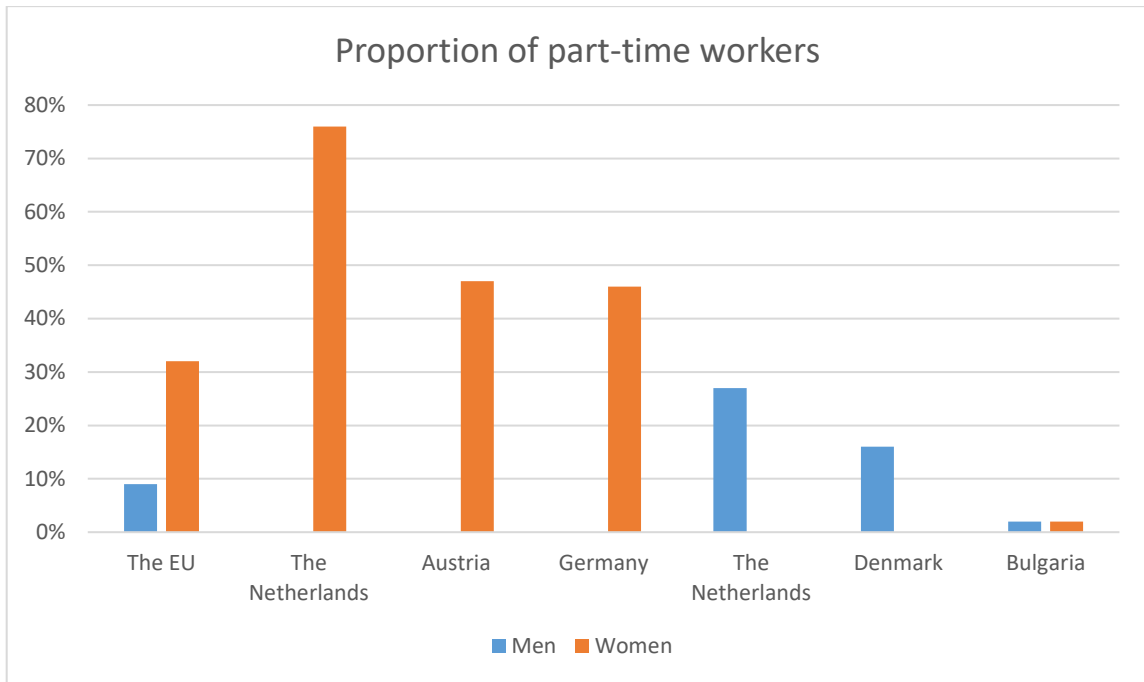


Fig 2.13. The EU countries with the biggest proportions of part-time workers.  
 Source: The life of women and men in Europe; A statistical portrait; 2018 Edition, Eurostat

The value for the EU unemployment rate in 2017 was 7.9% for females and 7.4% for males. Generally, thirteen countries had higher rate for women, twelve for men and in three of them it was even. The biggest disparity where more women than men were unemployed existed in Greece (26.1% unemployed women and 17.8% unemployed men) and Spain (19% and 15.7% respectively). Contrary situation with higher male unemployment was observed in Lithuania (8.6% for men and 5.7% for women) and Latvia (9.8% and 7.7% respectively). The values of unemployment rate for the European Union and selected Member States (with highest values for both sexes) are presented on the Figure 2.4. It has been observed that career disruption can have an impact on the wage level and as a consequence may provide an explanation for the existence of the gender pay gap. Generally speaking, unemployment ends up with the phenomenon of wage penalty meaning that people who remain without a job for a longer time deal with penalties after returning to the workforce. What is more, the longer the career disruption, the higher the wage penalty and this value ranges from 3.4% for those who were unemployed for less than three months to 7.3% when unemployment lasted for more than one year. With reference to the issues already mentioned, as these are women who are mainly forced to leave their jobs if there is a need to, for instance, take care of a child or family member they are as well more affected by unemployment penalty (PayScale, 2018).

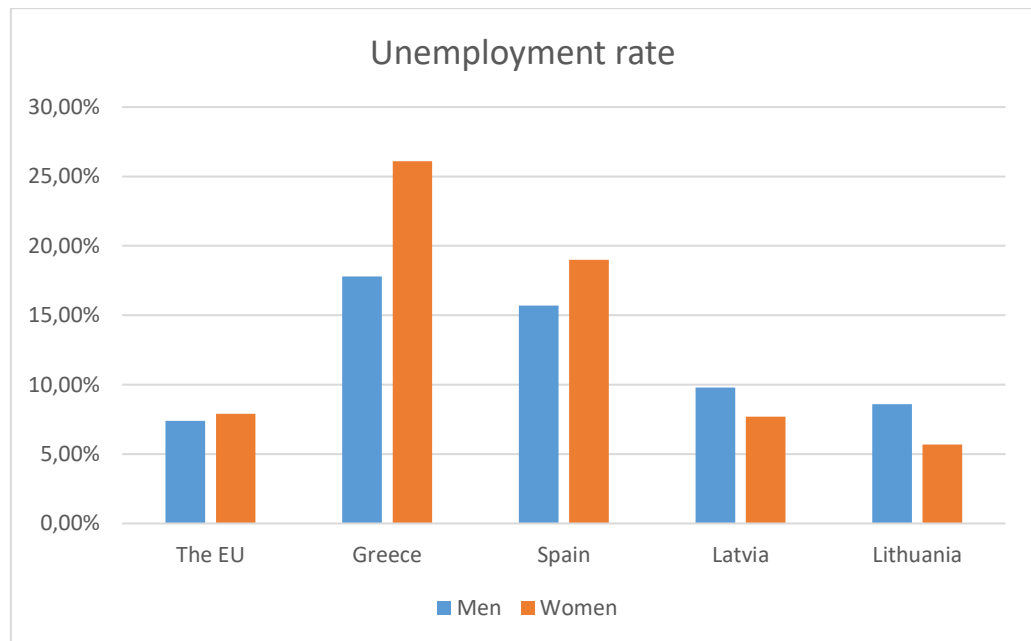


Fig. 2.4. The EU average and the EU countries with the highest unemployment rate.  
Source: The life of women and men in Europe; A statistical portrait; 2018 Edition, Eurostat

As already mentioned before, higher positions are dominated by men. In 2017 one third of managers (exactly 34%) in EU were women. In fact, the rate did not exceed 50% in any of the EU country. The highest proportion represented Latvia (46%), Poland (41%) and Slovenia (41% as well). 39% of management positions were occupied by women in Bulgaria, Estonia, Hungary, Lithuania and Sweden. The lowest shares were noticed in Luxembourg (19%), Cyprus (21%), Czech Republic (25%). The Netherlands, Denmark and Italy achieved to have 27% of top management positions occupied by women. The EU average share of women managers together with countries that represent the biggest and the smallest shares are shown on the Figure 2.5. On the basis of the data presented, several conclusions can be drawn. First of all, as managerial positions are in general connected with higher earnings, gender pay gap and inequality between female and male workers exist because there is much less women whose earnings are high as a consequence of their status inside the company (Huffman, Velasco, 1997). What is more, it is worth to consider what is the situation of “low-level” workers under women’s management (Denmak, 1993). As managers by default possess certain level of authority they may be willing to reduce the inequality that exist in an organization (Nelson, Bridges, 1999). Nevertheless, in order to do so women managers have to be motivated enough to help their subordinate colleagues and they have to have certain level of power that would allow them to make real change in their subordinates’ lives. Still, women usually reveal some homophily (Ibarra, 1992) and the tendency to hire woman if the decision-making person is woman as well, known as homosocial reproduction, is visible on the labour market (Elliott, Smith, 2004). Finally, it is believed that if it is woman who decides whether or not to hire another woman her decision will not be influenced by pregnancy-related bias (Halpert, Wilson, Hickman, 1993). All in all, share of women on managerial positions can have a strong influence on the extent and level of the gender wage gap.

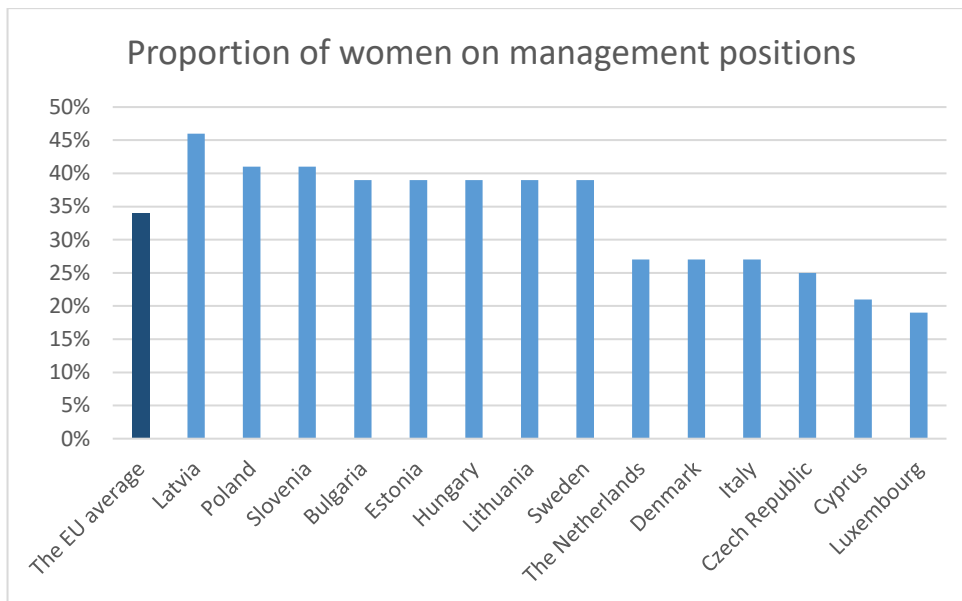


Fig. 2.5. Proportion of women on management positions.  
Source: The life of women and men in Europe; A statistical portrait; 2018 Edition, Eurostat

## 2.2. Extent of gender inequality in Poland.

Gender wage gap is a very complex issue. In order to be able to understand it fully it is necessary to take into consideration and analyse all the factors that could possibly influence the value of the mentioned phenomenon. As far as the general employment rate is considered, 70,9% of people in age 20-64 were employed in 2017. Nonetheless, it is worth to highlight as well the distribution of this employment rate. Exact difference in percentage points between the employment rates of female and male workers is presented on the Figure 2.6. As already mentioned, there are numerous possible factors that influence the existence of the different levels of employment rates between genders. Nevertheless, exposition of women to more frequent and longer periods on unemployment is higher than that of men (Steiner, 1989) and it is more difficult for them to find a job (Katz, Meyer, 1990).

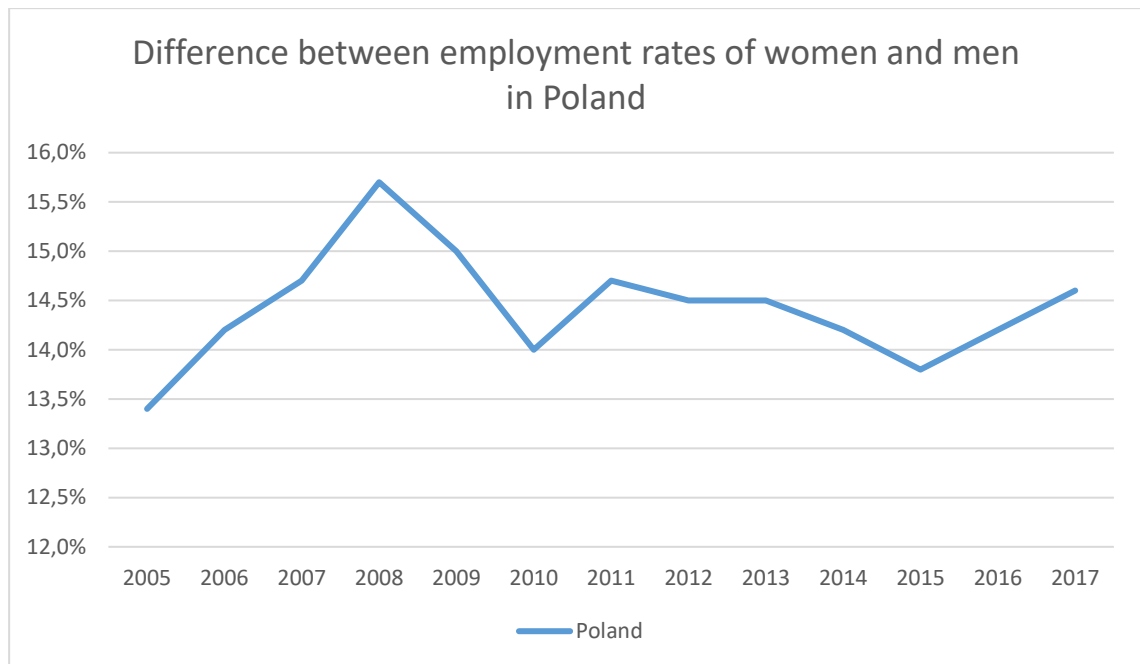


Fig. 2.6. Difference between employment rates of women and men in Poland.  
Source: Eurostat, 2018

At the same time the unemployment rate among young people reached 14,8% and it was even lower than the EU average (16,8%). In these kind of statistics Poland usually oscillates around the average reaching levels similar to the majority of Member States. Nonetheless, the youth unemployment rate is not equal among women and men. Low economic activity of young women is mainly conditioned by poor access to childcare services like nursery schools and kindergartens. Additionally, Poles admit that the discrimination against mothers exists (Szelewa, 2012).

Taking a look at the data from 2016, life expectancy at birth was 82 for women and 73,9 for men. In this case Polish citizens achieved mediocre results somewhere in the middle between those with highest and lowest average life length against other EU countries. Interestingly, Poland is characterised by one of the highest percentages of total population aged 18-34 living with parents. In 2016 more than half of women from the mentioned age group were living like this (54,2%). The value for men was even higher and that year amounted to 66,5%. In both cases there are only a couple of Member States that achieve bigger values for this statistic.

Analysing the population aged 15-24 as a percentage of total population (in 2017) in Poland there was actually the same amount of young people as on average in the European Union (11% in Poland and 10,9% in the European Union). Simultaneously, people aged 80 or older constituted only 4,2% of the total population and it was one of the smallest percentages in the EU. Among people aged 30-34, in 2017, 45,7% of population had attained tertiary education, which is more less 5% more than EU average.

With reference to the rate of Polish citizens aged 18-24 who could be considered as early leavers from education and training it has never (at least in the last two decades) been a real problem. During the time period mentioned before it has not exceeded 10% in any year, however

male's share has always been bigger than the women's one. The exact values for the time period from 2002 to 2017 are presented on the Figure 2.7 below. In fact, there can be found some correlation between this statistics and the fact that Polish young women are better educated than their male colleagues (when the amount of people with university degree is considered). For example, according to the data from 2014, 43% of women comparing to 29% of men in the age 25-34 has tertiary education (OECD, 2014).

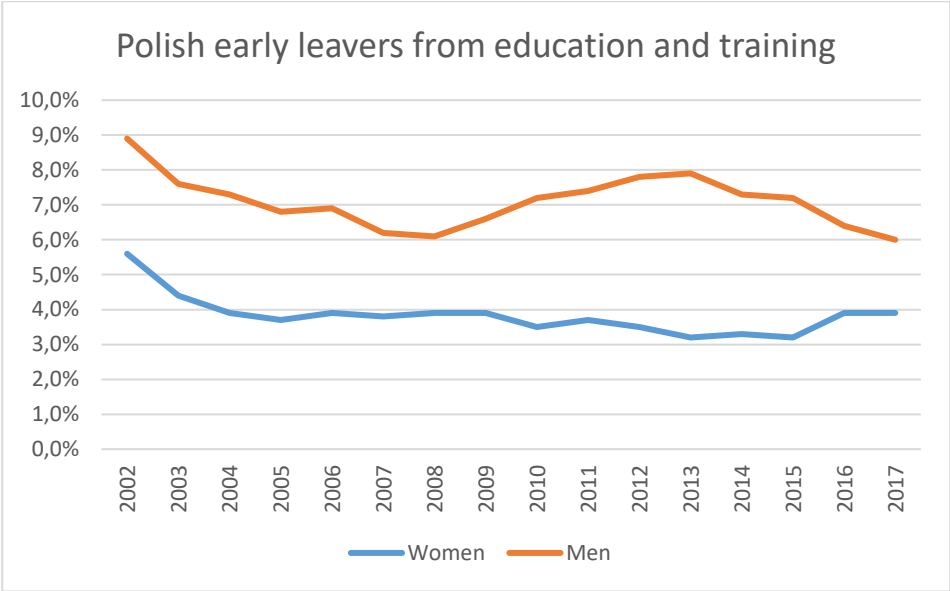


Fig. 2.7. Polish early leavers from education and training.  
Source: Eurostat, 2018

Additionally, it is worth to take a look at the amount of people that remain inactive due to caring responsibilities. As expected, there is a huge difference between the values for women and men meaning that predominantly these are women who resign from the career (or at least take a break) in order to bring up the children. Gender pay gap is just the direct consequence of temporal labour inactivity, however there are more repercussions of this phenomenon. For instance, after longer time it is much more difficult for women to come back to work. Not only the position they were holding in the past is already occupied by another person, but additionally there are others who are more up-to-date with current issues that take place in an organization (Kliff, 2018). More such obstacles are numerous. Referring to the described statistics, into account are taken women and men aged 20-64 and the details are presented on the Figure 2.8.

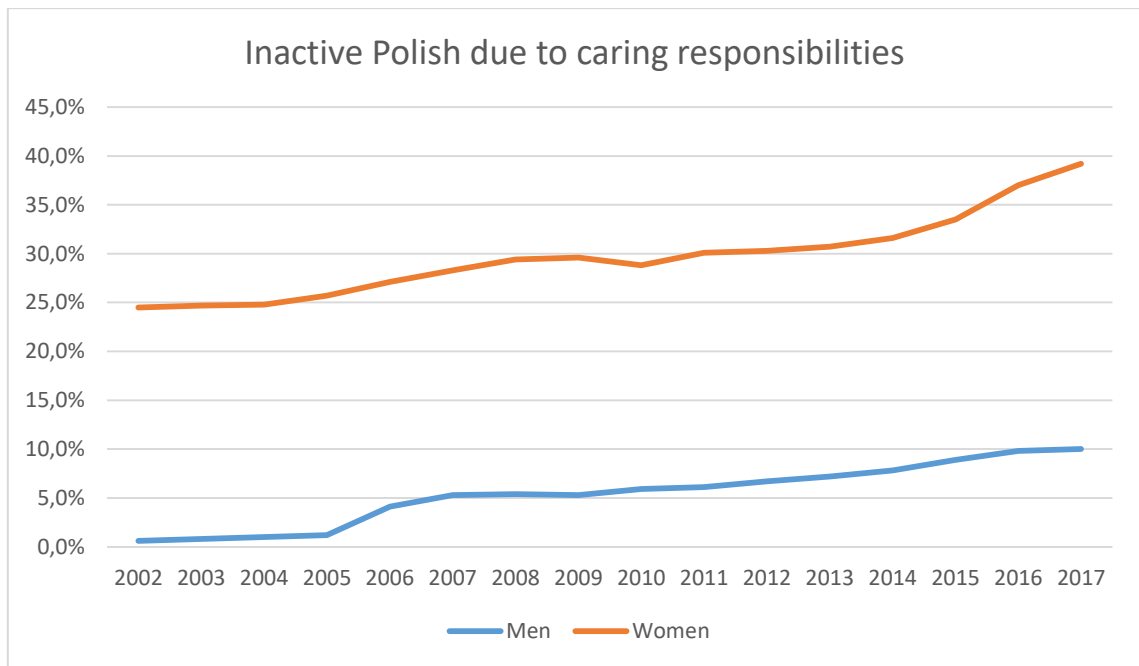


Fig. 2.8. Inactive Polish citizens due to caring responsibilities.  
Source: Eurostat, 2018

Somehow related to the last statistics is another indicator showing time spent in paid and unpaid work. Part of population is simply forced to leave their career (at least for some time) in order to take care of children or family members but there is great majority of people who on a daily basis combine job and family life trying to maintain balance between these two. As far as the time spend in unpaid work is considered, there must be mentioned activities such as shopping, housework, care for household and non-household members, travel related to household activities and volunteering, to name only but a few. Apparently these can be performed by both sexes, however the time spent on the is significantly different between women and men. Figure 2.9 shows how much time women and men spend in total work with division for unpaid and paid one. Units used are minutes per day.

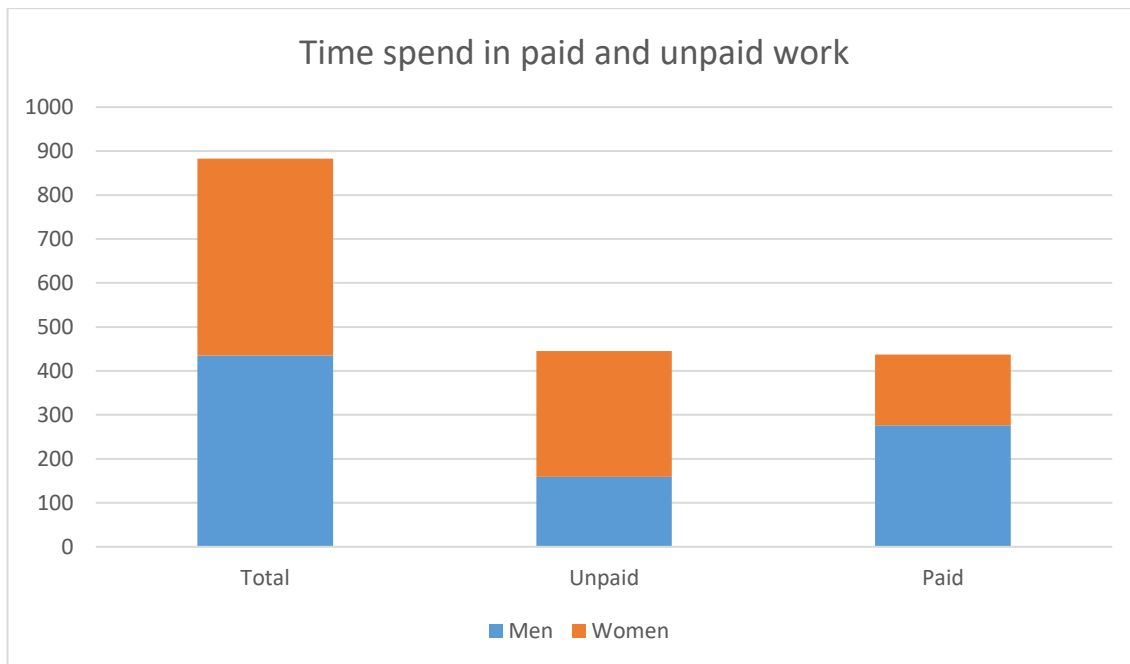


Fig. 2.9. Time spent in paid and unpaid work.  
Source: OECD, 2018

### 2.3. Extent of gender inequality in Italy.

For the values of the employment rate, Italy is the second EU country with the smallest share of people aged 20-64 who are employed. In 2017 it amounted to 62,3% being lower than the EU average by 10%. Except the general value for both sexes it might be useful to know what is the difference between women and men regarding this statistics. The changes of the trend over last years are presented on the Figure 2.10 below. What is more, taking into account women in working age only 35% of them are employed. It may seem a good news that as little as 5% belong to unemployed, however 61% of women are completely outside of the labour force meaning that they are not even looking for a job (ILO, 2017). Mentioned values simply confirm that Italy have not fully recovered after being hit by economic crises yet (OECD, 2017).



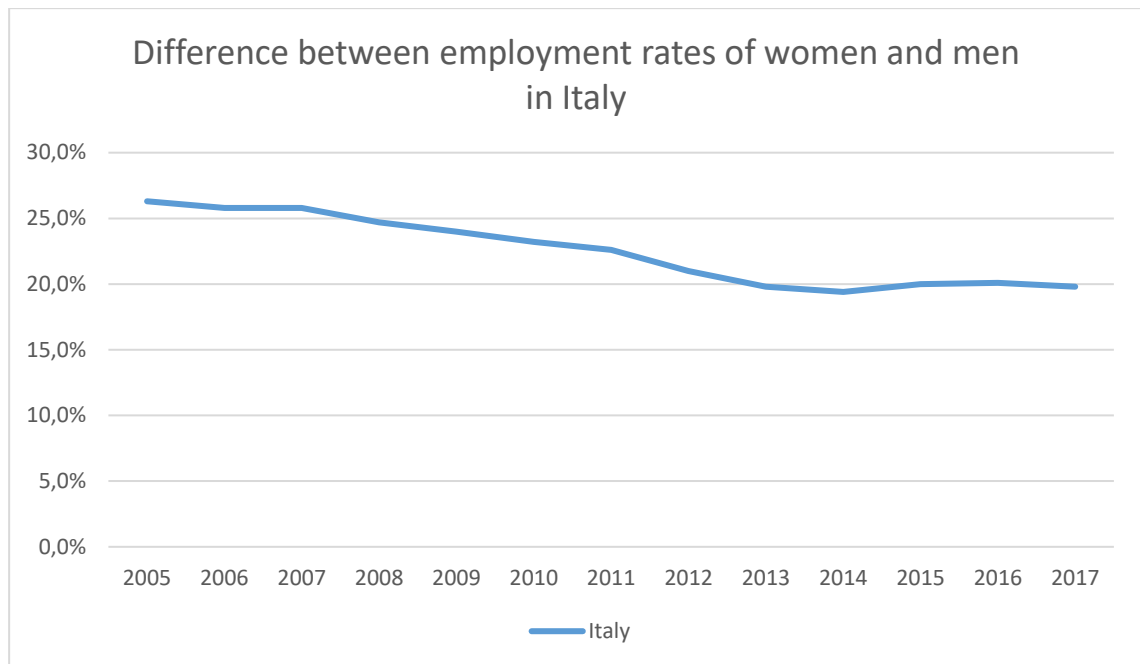


Fig. 2.10. Difference between employment rates of women and men in Italy.  
Source: Eurostat, 2018

Regarding youth unemployment rate Italy was again stepping out being the third Member State with the highest value of 34,7%. It means that more than one-third of young Italians under 25 years were unemployed. High unemployment level is directly connected with the long transition period between school and permanent employment. As the explanatory factors there are mentioned relatively poor both secondary and tertiary education, very rigid education system, lack of an appropriate vocational training system, lack of contact between world of education and labour market and no intermediation between demand and supply when qualifications are concerned (Quintini, Martin, Martin, 2007).

The trend of Italy being located somewhere at the extremes continues when life expectancy of both women and men is considered. According to the data from 2016, women's life expectancy at birth was 85,6 years and men's 81 years. The highest values for other Member States were only slightly higher- 86,3 years and 81,7 years respectively. Italians are as well among leaders of Europeans aged 18-34 living with parents. Such a phenomenon was observed, as the data from 2016 reveals, for 59,5% young women and 71,9% young men. There are at least three factors associated with this phenomenon: already mentioned above high youth unemployment, low and declining fertility rates and the same trend for migration trends (Manacorda, Moretti, 2005).

In 2017 people aged 15-24 years constituted only 9,7% of Italian population, while the lowest value was observed in Bulgaria and it was 9,3%. Not surprisingly, as long as the life expectancy it at relatively high level, population aged 80 and over constitutes significant share of the population as well. In 2017 exactly 6,8% of total population was elderly. Finally, only Romania has lower tertiary educational attainment than Italy in 2017. Understood as share of total population aged 30-34 in Italy it was 26,9%.

In last two decades there could be observed decreasing trend for early leavers from education and training. While at the beginning of the millennium the more than 20% of Italians had completed at most a lower secondary education and were not willing to continue further neither education nor training the most recent data (from 2017) shows that the rate dropped by roughly ten percentage points. In general, women tend to be more into education and personal development as their share as early leavers was always significantly smaller than the one of men. More data and the behaviour of the statistic can be found on the Figure 2.11. In here it is worth to mention that the logical consequence of women becoming more educated should be visible reduction of gender wage gap. Nonetheless, occurring reduction of rewards of education causes the gender wage gap only slightly affected by females becoming more educated (Blau, Khan, 1997).

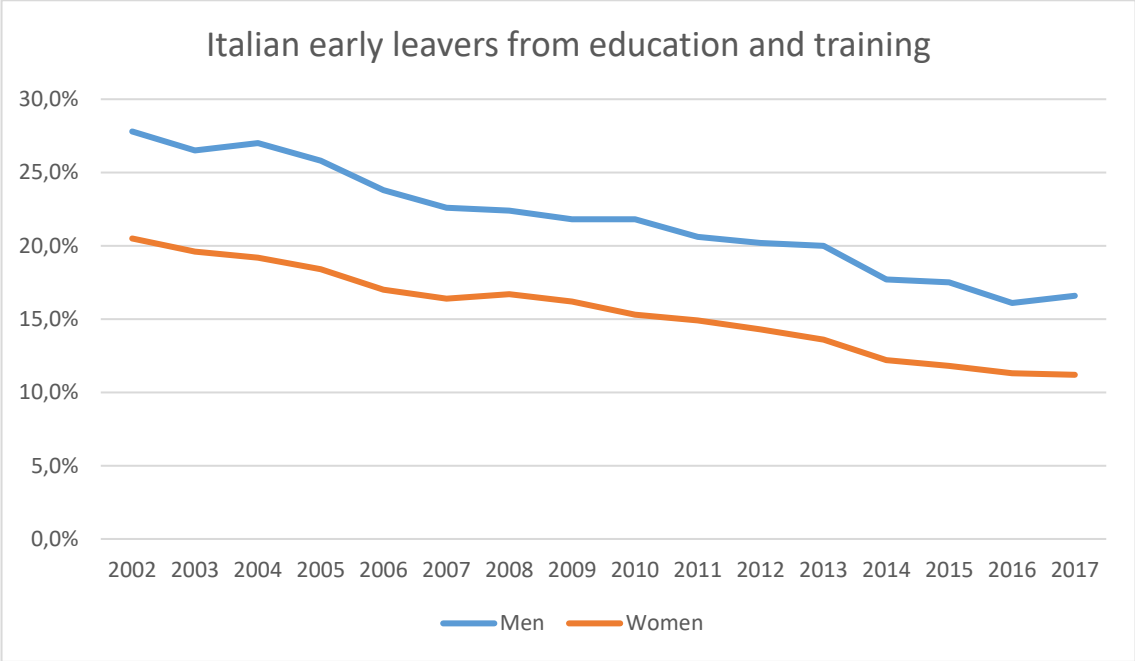


Fig. 2.11. Italian early leavers from education and training.  
Source: Eurostat, 2018

Although in the last years there have been observed increasing trend as far as the inactivity due to caring responsibilities is considered (in case of women), still there is a huge difference comparing to what was the situation 15 years ago. Obviously the share of men who decide or is forced to stay at home to take care of children is significantly lower than the women’s one and, what is more, in last a few years it started to decrease. Detailed information about this trend in Italy is described on the Figure 2.12. Again, similarly as in Poland, women suffer from lack of access to affordable and good-quality childcare and in many cases it makes them forces to stay at home for a longer time (OECD, 2017).

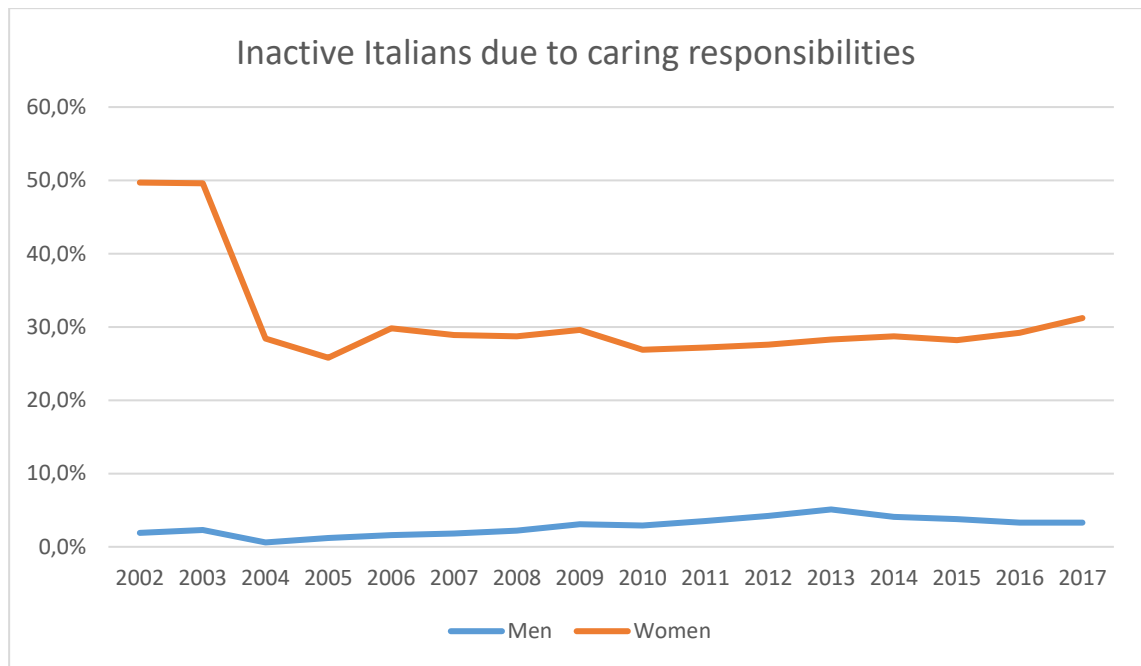


Fig. 2.12. Inactive Italians due to caring responsibilities.  
Source: Eurostat, 2018

Men are not only inactive due to caring responsibilities in much lower percentage than women. If they decide to combine job and family responsibilities the share of unpaid work understood as, for example, childcare is as well significantly smaller. What is more, Italian males in general tend to work less than Italian women, roughly hour and a half less per day. Detailed statistics regarding this issue are shown on the Figure 2.13. and the unit of measurement used are minutes per day. As a matter of fact, given an equal level of skills and abilities, it is believed that the likelihood of females choosing less competitive and less rewarding pay schemes is much higher than for men (Niederle, Vesterlund, 2007). It directly suggests that women tend to be more risk averse and in general they do not like negotiation.

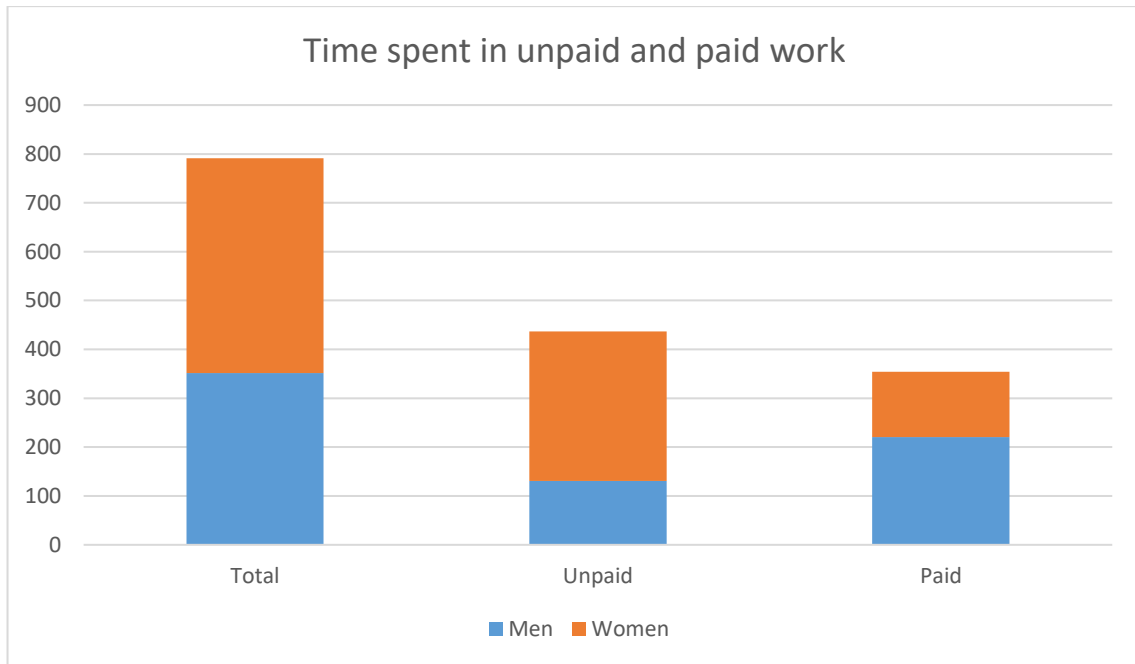


Fig. 2.13. Time spent in unpaid and paid work.  
Source: OECD, 2018

#### 2.4. Conclusions

Taking a look at the statistics of the genders in the European Union first of all, while a lot of women possess all the necessary characteristics to occupy the high management positions (such as higher education completed, for example) they are still in the minority. At the same time they are first to stay at home if such a necessity appears and more women than men are performing unpaid jobs. In here close correlation between some theories described in Chapter 1 and statistics from Chapter 2 is visible and numbers often confirm given assumptions.

As far as the Polish-Italian comparison of employment rates between genders goes, these two countries are rather different. In Poland these values were much lower during the entire period on time considered, however were more fluctuating.

Poles much less often can be described as the early education leavers and additionally while who does it more frequently in Poland are men, the situation in Italy is quite opposite – as much as 30% of Italian women do terminate their education before obtaining certain degree.

Similar trend can be found when inactivity due to the caring responsibilities is observed. The disparity between women and men who “stay at home” is enormous regardless of the country of origin. In fact, Poland and Italy are very alike.

Finally, women spend more time than men on unpaid jobs, while in case of paid jobs these are men who dominate. Not only the trend itself, but as well the values that characterise Poland and Italy are quite similar. Nevertheless, it can be observed that in total Poles are on average working more hours than Italians.

Summing up, it is rather impossible to conclude unambiguously that certain trend observed in the society leads to the discrimination. While Polish and Italian societies seem to be very similar when one characteristic is concerned, they are completely different under another.

Simultaneously focusing solely on the characteristics such as level of education, for example, it seems that women should have higher wages than men. Nevertheless, as it has been already mentioned, many different factors must be taken into account when analysing the issue and this is why both Polish and Italian societies face gender wage discrimination.

### **3. THE MICRO ANALYSIS OF GENDER WAGE GAP BASED ON DATA FROM EUSILC**

In order to find out what are the roots of the gender wage gap there is frequently applied some decomposition technique that is expected to reveal to what extent the difference is caused by differences in women and men characteristics which can be observed and to what extent it is caused by unequal rates of return that refer to the same characteristics. Along the time the overall magnitude of the gender wage gap has declined, nonetheless due to the gender convergence in wage enhancing characteristics the part of the gap explained by differences in characteristics between women and men decreased as well (Blau, Kahn, 2006, 2016; Duraisamy, 2016; Goldin, 2014; Kassenboehmer, Sinning, 2014).

For the time being, gender wage differentials cannot be explained with some characteristics like job tenure or educational attainment anymore. Recently researchers tend to search for other factors, which can be observed, and potentially explain at least some part of the gap that remains. As a consequence, is considered that compensating differentials might reveal one component of this remaining part of gender wage gap (Goldin, 2014). For example, there are numerous well-paid jobs in which individuals have to spend long hours in their offices. This kind of job can be relatively difficult, if not impossible, to combine with family life (having in mind parents with young children, for instance). These people, being caregivers, are forced to give up job characteristics like mentioned high earnings for some other characteristics that allow them to maintain work-family balance. As women keep being viewed as the ones that in many households play this care giving role in the first place (McCrae, 2003), the compensating wage differentials can constitute an important factor used to explain the remaining wage gap in the international arena. Finally, Goldin (2014) mentions that possibly the policies that influence the job's structure (like greater flexibility) can cause the reduction of the gender wage gap.

#### ***3.1. The Oaxaca-Blinder decomposition as a tool of measurement inequalities***

The Oaxaca-Blinder decomposition technique is an useful tool that can be applied for identification and quantification of separate contributions of group differences in characteristics that can be measured such as marital status, experience, education and geographical differences to gender or racial gaps in outcomes (Fairlie, 1999). If necessary, mentioned decomposition can be used as well to identify the causes of time period, geographical (rural/urban/cross-country) and other categorical differences in outcomes. Nonetheless, the technique cannot deal with binary outcomes like teenage pregnancy, college attendance or employment, to name only but a few. It is because the coefficients come from logit or probit models and the standard Oaxaca-Blinder decomposition will not work with such coefficient estimates.

Application of the technique divides the wage differential among two group into one part which is "explained" by group differences in characteristics related to the productivity, for example work experience or education. In this part the same treatment of the groups is applied however because of the different characteristics earnings of people belonging to different groups are not equal. Second part is the "unexplained" one. This part cannot be analysed with the application of wage determinants differences but frequently serves as a discrimination measurement. Although

two workers possess, for example, the same level of experience and education they are not having the same salaries. Discrimination and labour market literature contains various examples where the technique was applied (Stanley, Jarrell, 1998; Weichsellbaumer, Winter-Ebmer, 2005).

### **3.2. Data selection**

In order to analyse gender wage inequalities in the European Union with the focus on Poland and Italy data European Union Statistics on Income and Living Conditions (EU-SILC) instrument has been used. It consists of timely collected cross-sectional longitudinal multidimensional microdata on income, social exclusion, living conditions and poverty. The institution responsible for the data collection and aggregation is the European Statistical System (ESS) that exists as a partnership among Eurostat and national statistical institutes of each Member State. The creation of the EU-SILC took place in 2003 and it was a “gentlemen’s agreement” between Austria, Belgium, Denmark, Greece, Ireland and Luxembourg. Its first publication in 2004 consisted of statistics about the EU-15 (without Germany, the Netherlands and United Kingdom) but with the data about Estonia, Iceland and Norway. Later on, as the new Member States were joining the EU they were systematically added to the dataset (Eurostat, 2019). The microdata for this paper have been obtained from Eurostat and refers to EU-SILC, 2004–2014 (grant agreement 64/2013-LFS-EU-SILC-SES).

As already mentioned, applying the standard Blinder-Oaxaca decomposition wage gap is divided into one part where given determinants such as work experience or education provide explanation and another one which cannot be explained in such a way (The Stata Journal, 2008). Selection of appropriate variables to be analysed is crucial so they have to be deterministic when the level of wage is considered. As far as the dependent variable is considered (gross per hour wage), it is calculated on the basis of the individual gross earnings and the time every person works, both included in EU-SILC dataset. The methodology used relies on multiplication of the weekly working hours by 4.2 and division of the monthly earnings (gross) by the monthly working hours calculated before (Schäfer, Gottschall, 2015). Given there is no information about income for one period, it can be obtained alternatively from the gross annual earnings, total amount of hours worked per week and information on employment status collected monthly over the period of income reference year (Engel, Schaffner, 2012). In the analysis given below several variables have been taken into account. Age suggests what is the extent of disparity between women and men if they are in the same age. In addition, age squared variable has been added in order to check whether the impact of the variable changes along with the time. It is as well checked whether marital status can have an influence on the gender wage gap. The following variables correspond to the level of education. They indicate how much more earn people who achieved medium or high education level with reference to those who end up their education on the low level. In addition, it is worth to group people according to the type of the firm they are employed in. As a consequence, there is three-fold division. MicroFirm for those working in companies of maximum 11 people employed and SizeMed if the company consists of between 11 and 49 people. BigFirm is when there are more than 49 employees. Type of contract is of an importance too. Observations are distinguished between those having permanent contract and not. If a

person is on managerial position has been taken into account as well. In addition, Task GMS A and Task GMS S variables have been created in order to divide observations depending on the sector of employment. As a consequence, according to the type of tasks that dominate in a given occupation, workers are classified into these two categories. Task GMS A applies when there is low in routine and high in abstractness and service task importance. Task GMS S refers to the low in routine and abstractness and high in service task importance. Finally, as long as the statistics have been provided from 2005 (or 2007 in Italian case) to 2014 there can be observed the trend of the wage increase (or decrease) and how it has been changing along the time. As for Poland, there are different numbers of observations in the sample ranging from 88332 to 84155 when the pooled sample is concerned. In order to analyse Italian sample between 88922 and 85048 people were taken into account depending on the variable considered. Table 3.1. and 3.2. contain exact values of the descriptive statistics for Poland and Italy.

Tab. 3. 1. Descriptive statistics for Poland

Variable	Obs	Mean	Std. Dev.	Min	Max
Natural log of wage	88332	1.25	0.59	-0.6	2.98
Sex	88332	0.54	0.5	0	1
Age	88332	40.31	10.83	18	65
Age squared	88332	1742.56	887.81	324	4225
Married (1=married)	88332	0.71	0.45	0	1
If higher education completed	88310	0.26	0.44	0	1
If medium education completed	88310	0.69	0.46	0	1
If employed in micro firm	88313	0.27	0.45	0	1
If employed in medium size firm	84155	0.27	0.44	0	1
If employed in big firm	84155	0.27	0.44	0	1
If on permanent contract	86197	0.75	0.43	0	1
If on management position	86199	0.19	0.39	0	1
Task GMS A	88332	0.35	0.48	0	1
Task GMS S	88332	0.31	0.46	0	1

Source: Own elaboration on the basis of EU-SILC database

Tab. 3. 2. Descriptive statistics for Italy

Variable	Obs	Mean	Std. Dev.	Min	Max
Natural log of wage	88992	2.50	0.73	-1.93	3.91
Sex	88992	0.61	0.48	0	1
Age	88992	42.74	10.38	18	65
Age squared	88992	1935.06	879.28	324	4225
Married (1=married)	88992	0.59	0.49	0	1
If higher education completed	88426	0.19	0.39	0	1
If medium education completed	88426	0.77	0.42	0	1
If employed in micro firm	88922	0.31	0.46	0	1
If employed in medium size firm	85449	0.3	0.46	0	1
If employed in big firm	85449	0.3	0.46	0	1
If on permanent contract	85048	0.89	0.32	0	1
If on management position	85048	0.24	0.42	0	1
Task GMS A	88922	0.38	0.49	0	1
Task GMS S	88922	0.36	0.48	0	1

Source: Own elaboration on the basis of EU-SILC database



### **3.3. Application of the technique**

Estimation of the wage equation on the Polish individuals pooled together with separation for two groups- women and men- reveals that “being a man” increases the wage by 15% (holding other variables constant). Just to mention, all the variables included in the regressions are statistically significant and they contain individual year and industry fixed effects. No matter whether Polish individuals altogether or grouped by gender are considered, the older the person is, the higher their wage is. On average, with each additional year of age Pole from the sample earns 3.4% more (women 3% and men 3.4%). Nevertheless, the strength of the age variable is lessened when people get older. Marital status as well positively influences the wage of both sexes, however the impact is stronger for men. While married Poles receive 3.5% more than singles, married women can count only on 0.1% increase and married men on as much as 8%. Education, in all the cases considered, increases the wages of the Poles. Interestingly, in all the regressions the strength of the higher education is roughly three-times stronger than when one has only medium level of education completed. To clarify, both variables show what is the change in wage of people with high or medium education completed comparing to those who possess only low education level. In fact, education component has the strongest influence on the wage. Already having medium size education Poles receive 14% more than those without it and if women and men are analysed separately they can receive 15% and 12% more respectively. Higher education increases the wage by 41% in general and by 44% and 36% if women and men are considered separately. For the group of people included in the sample the employment in both micro and medium size company negatively affects their wage in relation to being employed in the large firm. Nonetheless, apparently the bigger the company, the less negative the impact is. What is more, size of the company affects to the bigger extent the men’s wage than the women’s one. Possession of the permanent contract has a strong positive influence on the earnings level. On average it increases it by 17% and the value for women is very similar (16%). Men can increase their earnings by 16% working on permanent contract too. The phenomena of being on a managerial position as well guarantees more money (at least in this model). Poles in general can receive 14% more while women 11% more and men 16% more. Additionally analysed was the sector of employment (NACE Rev 1.1 for 2005 – 2007 and NACE Rev 2 for 2008 onwards) and occupation (2 digit ISCO-88 classification till 2011 and ISCO-08 afterwards). On the basis of the information on occupation workers were classified into different categories that make reference to the type of tasks mainly used in a given occupation. First task category, AbsServ, is low in routine and high in abstractness and service task importance. Another, Serv, except still being low in routine is low in abstractness as well and only high in service task importance. Finally, Rout is highly in routine and low in both, abstractness and service, task importance. The methodology used for such a division was proposed by Goos et al. (2014). Poles performing tasks that require high abstractness and service (and low in routine) can count on 26% higher wage. Quite big difference exist when women and men are considered separately as the values are 34% and 22% respectively. When considering jobs in which tasks are low in routine and abstractness and high only regarding service people employed there are believed to earn

less – in general 7.9%. If taking a look at women only they are paid only 0.4% less, however men as much as 10% less. Finally, wages of all the groups considered along the years analysed (between 2006 and 2014) were rising. Different values ranging from 13% to 45% could have been observed, however the trend was always positive. Inclusion of industry-year fixed effects revealed that only some values were statistically significant. For instance, people employed in “information and communication” sector can earn as much as 25% more and those who work in “public administration and defence or compulsory social security” 21% more. If considering only women in above mentioned sectors they can count on 25% higher wage too and 20% higher respectively. In case of men their earnings rise by 23% in employed in the first mentioned sector and only 12% more in the second. Table 3.1 contains the regression outcomes on the Polish sample for both sexes grouped together and when women and men are observed separately. As indicated by the levels of p-values, practically all the variables are statistically significant.

Tab. 3.3. Regression outcomes on Polish sample (p-values in the brackets), EU-SILC 2016

Variable/Group	Pooled	Women	Men
Number of observations	82007	38477	43530
R-squared	0.41	0.47	0.36
Sex	0.15 (0.00)		
Age	0.034 (0.00)	0.03 (0.00)	0.034 (0.00)
Age squared	-0.0003 (0.00)	-0.0003 (0.00)	-0.0003 (0.00)
Married (1=married)	0.035 (0.00)	0.001 (0.842)	0.08 (0.00)
If higher education completed	0.41 (0.00)	0.44 (0.00)	0.36 (0.00)
If medium education completed	0.14 (0.00)	0.15 (0.00)	0.12 (0.00)
If employed in micro firm	-0.14 (0.00)	-0.104 (0.00)	-0.17 (0.00)
If employed in medium size firm	-0.11 (0.00)	-0.064 (0.00)	-0.16 (0.00)
If on permanent contract	0.17 (0.00)	0.158 (0.00)	0.16 (0.00)
If on management position	0.14 (0.00)	0.11 (0.00)	0.16 (0.00)
If low in routine, high in abstractness and service task importance	0.26 (0.00)	0.34 (0.00)	0.22 (0.00)

If low in routine and abstractness, high in service task importance	-0.079 (0.00)	-0.004 (0.656)	-0.1 (0.00)
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Notes: Individual year and industry fixed effects included in all the regressions

Source: Own elaboration performed in STATA based on the data from EU-SILC 2016

As long as the aim is to analyse and compare gender wage inequalities in two countries, Poland and Italy, the following part contains the regression results of the Italian workers. On the basis of the regression outcomes it turns out that in the Italian sample the wage increases by 8.3% only because of being a man. Like in case of Polish labour market, on average age positively influences the level of the salary, however the impact itself gets weaker when a person becomes older. Values for all three regressions are quite similar being 2.8%, 2.5% and 2.9% pooled, for women and for men respectively. Being married as well increases the wage level for women, for men and when they are analysed together as well. For men the value is the biggest and amounts to 5.4%. For women it is 3.8%. If all employees are grouped together this percentage would be of 4.7%. Again education component has a highly positive impact on the wage and the influence is stronger when higher education is considered in comparison to medium education. Those with higher education diploma can receive as much as 32% higher wage than those with low level of education. When division between women and men is done, females' earnings can increase even by 36% and men's by 31%. Medium education level completed allows to receive 18% more on average, but with the gender division women can enjoy 23% higher wage and men 15% higher. Similar behaviours of the variables related to the size of the firm are noticed in the Italian society. The bigger the firm, the smaller the negative impact of micro and medium size company. The most negative value related to this regression element is -24% from men employed in micro firm and the least negative is for women who work in the medium size company and is -8.9%. On the permanent contract women can expect to receive 23% while men 26%. For pooled both sexes the value is at the level of 25%. In general, managers (of both sexes) receive 17% more however women only 13% and men 19%. As far as the analysis of the occupation and sector goes, Italians who do the job that can be described as "low in routine, high in abstractness and service task importance" can receive 19.7% more. When taking a look at the genders separately women get twice as much as men being 31% and 15% more. Provided only high service task is performed, in general pay increases by 2.3%, for women it is 12% and for men the value is not only very small, but also statistically not significant. Finally, for the trend observed between 2008 and 2014 in majority of the cases the wages were decreasing with respect to the previous year, however in majority of the cases the outcomes were not statistically significant for this variable. For all the sectors observed the values prove to increase the employees' wages and all of them are statistically significant. For both genders pooled the biggest wage increase of 60.7% can enjoy those employed in "information and communication" while the smallest of 9.7% those performing accommodation and food service activities. Similar trend can be observed on the group of women who as well enjoy the biggest benefit of 62% higher wage in the first mentioned sector, however

the smallest pay increase remains at the level of 11.6%. Analysis of men workers shows that in the discussed sectors they can get 60.2% and 9.09% more respectively. Table 3.2. presented below contains exact numbers related to all the variables included in the regression. Again 0.00 level of all the p-values confirms that the outcomes are statistically significant.

Tab. 3.4. Regression outcomes on Italian sample, EU-SILC 2016

Variable/Group	Pooled	Women	Men
Number of observations	81212	32137	49075
R-squared	0.25	0.26	0.24
Sex	0.083 (0.00)		
Age	0.028 (0.00)	0.025 (0.00)	0.029 (0.00)
Age squared	-0.0002 (0.00)	-0.00016 (0.00)	-0.00021 (0.00)
Married (1=married)	0.047 (0.00)	0.038 (0.00)	0.054 (0.00)
If higher education completed	0.32 (0.00)	0.36 (0.00)	0.31 (0.00)
If medium education completed	0.18 (0.00)	0.23 (0.00)	0.15 (0.00)
If employed in micro firm	-0.23 (0.00)	-0.22 (0.00)	-0.24 (0.00)
If employed in medium size firm	-0.098 (0.00)	-0.089 (0.00)	-0.11 (0.00)
If on permanent contract	0.25 (0.00)	0.23 (0.00)	0.26 (0.00)
If on management position	0.17 (0.00)	0.13 (0.00)	0.19 (0.00)
If low in routine, high in abstractness and service task importance	0.197 (0.00)	0.31 (0.00)	0.15 (0.00)
If low in routine and abstractness, high in service task importance	0.023 (0.00)	0.12 (0.00)	-0.0045 (0.545)

Notes: Individual year and industry fixed effects included in all regressions

Source: Own elaboration performed in STATA based on the data from EU-SILC 2016

Use of Blinder-Oaxaca decomposition provides estimation on two group-specific regression models and in the third step their decomposition. By default the threefold

decomposition is performed (Jann, 2003). First panel consists of mean predictions by groups together with their differences. As for Poland it can be observed that mean of log wage for men is 1.278 and for women 1.235. Consequently, the wage gap is 0.043 or 4.3%. Changing the log wages into real values it turns out that on average men earn 3,60 EUR per hour and women 3,44 EUR per hour. Later on there are three more elements of the decomposition output. The first one indicates how much would change the disparity if women were treated in the same way as men and the wage gap would only be caused by differences in characteristics between individuals. In other words this is the difference in the observed characteristics of the two groups so basically the explained part of the decomposition. This value is -0.135 meaning that although the wage gap is 4,3% due to the characteristics that women have they should actually earn 13.5% more. The following term shows what would happen with the women's wage if a group of women and men with the same characteristic would be taken. As they are treated in a different way the disparity appears. It can be understood as the differences of the coefficients given the two groups have exactly the same endowments (unexplained part/discrimination). In such a case there should be observed an increase in women's wage of 0.118 or 11.8%. The last part, interaction, refers to the measurement of the simultaneous effect of differences in two terms mentioned before, endowments and coefficients. The fundamental assumption is that two groups analysed have both, endowments and coefficients, different. In this case it is 0.06 (6%).

Further decomposition of the endowments part reveals that the strongest influence on the explained share of the wage gap have the variable related to the occupation where performed tasks are low in routine, high in abstractness and service. There is a negative value of 7.4%. Interestingly, variable related to jobs where there is low in routine and abstractness and high in service task importance has a very small positive value of 0.08% and additionally is not statistically significant. Possession of higher education accomplished has the negative value of 7.09%. As far as the medium education level is concerned, there is a positive correlation of 2.09%. Another strong variable that contributes to the mentioned value of endowments in general is the age and lowers it by 1.4%. As long as the age squared has a positive value it means that when people get older the age variable influences their wage even more. Size of the company people are employed in matters as well. Apparently the bigger the firm is the higher the wages are. In the explained part of the wage gap for those employed in micro firm the wage increases by 0.07% and if medium size company is considered, the wage increases by 0.15%. Possession of permanent contract negatively affects explained part of the wage gap by 0.52% and if a person is on managerial position the wage raises by 0.34%. Dummy variable related to marital status is included in the decomposition as well, however in case of endowments part is not statistically significant. Although these endowments seem not to be statistically significant, an interesting observation could be made on the variable determining the trend how the explained part of the average wage has been behaving along the years analysed. Apparently, for the first 4 years between 2005 and 2009 if women were treated in the same way as their male colleagues they should earn more. The percentages were small however the trends were positive. Nonetheless, since 2009 the situation changed and for the remaining years the values were always negative.

Again not very significant, but still decreasing the wage. After the inclusion of industry-year fixed effects it turns out that there are values not statistically significant, however from the ones that are, it can be concluded that, for example, employment in “transportation and storage” sector positively influences the explained part of the gap by 1.3%

Taking a look at the second part of the decomposition with coefficients that determine the unexplained share of the wage gap which can be assumed to be related to the discrimination phenomenon the variable with the biggest value is described as `_cons`. In fact, this variable suggests that strong influence on the gender differences have variables that are unobserved in the decomposition. They account for as much as 18.6% of “discrimination” part. Considering women with exactly the same endowments as men, age variable suggests that female’s wage should be 16.6% higher. Nevertheless, due to the fact that the age squared has a negative sign it means that as women get older the effect of age is lessened. Only because of the unequal treatment women with exactly the same characteristics as men when higher education variable is considered receive 2.79% lower wage. In case of people who did not attend the university and finished their education at the medium level the negative difference is 2%. Marital status has a positive influence on the unexplained part of the wage gap and it account for 5.55%. Due to the different treatment of women in medium size companies despite having the same qualities as men they are discriminated by 2.78%. When micro firm are observed this value is as well negative, but smaller, 1.89%. Along with the data, when considering women and men with the same endowments, by the dummy variable related to the possession of the permanent contract the unexplained part is decreased by 0.27%, but this value is not statistically significant. When variable related to the managerial position is observed, for the unexplained part of the wage gap it positively accounts for 0.79%. As long as the task importance is concerned, low in routine and high in abstractness and service tasks have a negative value of 5.54% and low in routine and abstractness and high in service tasks negative 3.87%. Interestingly, the trend variable is already statistically significant in the unexplained part of the decomposition and has been positively influencing the value of this part during the entire period considered. For the industry variable again significant amount of outcomes is not statistically significant. Nonetheless, for instance, if employed in “transportation and storage” sector negative value of 0.51% appears.

Finally, the third element of the decomposition – interaction – accounts for the differences between endowments and coefficients when the explained and unexplained part coexist simultaneously (Jann, 2008). In here the most influential seems to be the occupation component. Given high in abstractness and service tasks there is a positive influence of 2.57%. If only high in service this value remains at the level of 1.92%. While the medium education as the highest level of education completed has a negative influence of 0.44% the higher education brings positive outcomes of 1.29%. Dummy variable that takes into account whether a person is married or not can increase the wage by 0.18%. When size of the company is analysed, those employed in micro firm can enjoy 0.05% higher wages and if one work in medium size company the increase would be at the level of 0.23%. When on a managerial position the wage is higher by 0.14% and if the type of contract is permanent the negative value of 0.01% can be found. In this case the

age variable is not statistically significant as well as the trend. The only statistically significant industry value is again for “transportation and storage” sector and it is negative 0.75%.

Blinder-Oaxaca decomposition on the Italian sample reveals that on average men log wage per hour is 2.56 while the women's is 2.52 per hour. In monetary terms men receive in the analysed period of time on average 12.94 EUR per hour while women 12.43 EUR per hour. As a consequence there is a difference of 0,03 or 3%. As far as the endowments part of the gender wage gap is concerned it is of a negative value of 7.04%. It means that assuming that women and men are treated in the same way, on the basis if the individual characteristics men should earn 7.04% less than women. It is due to the fact that women are characterised by other, “better” characteristics. Although the calculated wage difference is at the level of 3%, the unexplained part is higher (higher than the real wage difference). For the unexplained part of the gender wage gap the coefficients account for 6.7% so female's wage should actually be higher if only the same characteristics of women and men under different treatment were considered. The interaction term in case of Italy is at the level of 3.81%.

In the explained part of the gender wage gap the most influential is the occupation component. Provided there is low in routine and high in abstractness and service task importance there is a negative influence of 4.53%. In case of low in routine and abstractness and high in service task importance the outcome is negative as well, however less, because at the level of 1.67%. High education completed negatively influences the wage and because of the individual characteristics of women they are paid 4.22% less. If people with medium education are take into account this variable has a positive impact and wage should increase by 2.21%. Dummy variable indicating whether a person occupies a managerial position suggests that women should earn 0.95% more. At the same time if on permanent contract the wage should be 0.44% higher. Marital status as well positively influences the earnings suggesting that if married women should receive 0.24% higher wage. In the Italian society age negatively influences the explained part of the gender wage gap and lowers it by 0.75% and the positive value of the age squared variable suggests that when people get older the impact of age variable becomes stronger. Considering the size of the company when employed in the micro firm the wage should increase by 0.18% and if in medium size company this value drops to 0.07% however still remains positive. Variables related to the trend at the beginning (between 2007 and 2011) were negative and in the remaining years considered changed into positive (till 2014) nevertheless none of them is statistically significant. Among statistically significant values for industries variables the biggest one is the same as for Polish case and it is “transportation and storage” with a negative value of 2.3%.

As far as the coefficients are concerned, accomplishment of the university (possession of higher education level) negatively impacts the unexplained part of the wage gap by 1.38%. Taking a look at the medium education level this value is even higher, negative 5.63%. Employment in the medium size company as well has a negative influence of 0.56%. When employed in a micro firm – negative 0.69%. On managerial positions earnings should increase by 1.17%. If the wage gap appears only due to the fact that women and men despite having the same characteristics are treated differently, the women's wage who are having a permanent contract should be 2.2%

higher. The trend variable along all the years considered has a positive impact, however starts to be statistically significant from 2011 onwards. There is a positive impact of the age variable at the level of 16.2%, however the age squared is already negative so the impact gets lessened over time. If married variable positively influences the coefficients part by 0.92%. Taking a look at the task categories, employment in low in routine and high in abstractness and service jobs has a negative influence on discussed part of the gender wage gap by 7.45%. If low in routine and abstractness and high in service task importance is considered, negative value remain at the level of 5.7%. In here, above mentioned statistically significant “transportation and storage” industry negatively impacts coefficient part by 0.66%. Interestingly, in the discussed part majority of the variables turn out to be not statistically significant which is reflected in the table below with relatively high p-values.

In the interaction part that captures the difference between the explained and the unexplained part of the gender wage gap in fact only a couple of variables turn out to be statistically significant. Taking into account those who end up with the medium education level their wage should be even lower by 0.76%. If one the managerial position the wage increases by 0.44%. Low in routine and high in abstractness and service task importance positively impact the interaction part by 2.33%, while low in routine and abstractness and high in service task importance by 1.73%. None of the values related to trend seem to be statistically significant, and as far as the industries are concerned among statistically significant there is again “transportation and storage” with a negative value of 0.82%. Table 3.3. presents the detailed Blinder-Oaxaca decomposition outcomes for both countries analysed with p-valued indicating statistical significance in the brackets.

Tab. 3.5. The Blinder-Oaxaca decomposition outcomes of log wages with p-valued in the brackets, males – the reference group

Variable/Country	Poland	Italy
Number of observations	82007	81212
OVERALL		
Group 1	1.278 [3,6 EUR] (0.00)	2.56 [12,94 EUR] (0.00)
Group 2	1.235 [3,44 EUR] (0.00)	2.52 [12,43 EUR] (0.00)
Difference	0.043 (0.00)	0.035 (0.00)
Endowments (explained)	-0.135 (0.00)	-0.0704 (0.00)
Coefficients (unexplained)	0.118 (0.00)	0.067 (0.00)
Interaction	0.06 (0.00)	0.0381 (0.00)
ENDOWMENTS:		
Age	-0.014 (0.00)	-0.0075 (0.00)
Age squared	0.004 (0.026)	0.0037 (0.003)
Married (1=married)	0.00002 (0.842)	0.0024 (0.00)
If higher education completed	-0.0709 (0.00)	-0.0422 (0.00)
If medium education completed	-0.0209 (0.00)	0.0221 (0.00)
If employed in micro firm	0.0007 (0.029)	0.0018 (0.012)



If employed in medium size firm	0.0015 (0.00)	0.0007 (0.011)
If on permanent contract	-0.0052 (0.00)	0.0044 (0.00)
If on management position	0.0034 (0.00)	0.0095 (0.00)
If low in routine, high in abstractness and service task importance	-0.074 (0.00)	-0.453 (0.00)
If low in routine and abstractness, high in service task importance	0.0008 (0.656)	-0.0167 (0.00)
COEFFICIENTS:		
Age	0.166 (0.099)	0.162 (0.247)
Age squared	-0.16 (0.002)	-0.105 (0.159)
Married (1=married)	0.0555 (0.00)	0.0092 (0.081)
If higher education completed	-0.0279 (0.00)	-0.0138 (0.047)
If medium education completed	-0.05 (0.024)	-0.0563 (0.001)
If employed in micro firm	-0.02 (0.00)	-0.0069 (0.046)
If employed in medium size firm	-0.0279 (0.00)	-0.0056 (0.086)
If on permanent contract	-0.0027 (0.666)	0.022 (0.072)
If on management position	0.0079 (0.00)	0.0117 (0.00)
If low in routine, high in abstractness and service task importance	-0.0554 (0.00)	-0.0745 (0.00)
If low in routine and abstractness, high in service task importance	-0.0387 (0.00)	-0.057 (0.00)
INTERACTION:		
Age	-0.0019 (0.111)	-0.0011 (0.266)
Age squared	0.0013 (0.068)	0.0012 (0.188)
Married (1=married)	0.0018 (0.00)	0.001 (0.082)
If higher education completed	0.0129 (0.00)	0.0063 (0.048)
If medium education completed	-0.0044 (0.024)	-0.0076 (0.001)
If employed in micro firm	0.0005 (0.033)	0.0002 (0.119)
If employed in medium size firm	0.0023 (0.00)	0.0002 (0.151)
If on permanent contract	-0.0001 (0.666)	0.0005 (0.079)
If on management position	0.0014 (0.00)	0.0044 (0.00)
If low in routine, high in abstractness and service task importance	0.0257 (0.00)	0.0233 (0.00)
If low in routine and abstractness, high in service task importance	0.0192 (0.00)	0.0173 (0.00)

Notes: Time and industry fixed effects included in all specification

Source: Own elaboration based on data from EU - SILC

### **3.4. Conclusions**

To begin with, although the differences in wage levels between genders in both countries are not especially big, it cannot be denied that the inequalities do exist. Nonetheless, it is crucial to determine what is the basis of the disparity. Considering the data analysed above it can be observed that the unexplained part accounts for much bigger share than the explained one. The same observation can be drawn regarding both countries, Poland and Italy.

Another important observation drawn on the Blinder-Oaxaca decomposition is that the explained part is negative (both in Poland and Italy). The meaning behind this result is that women in comparison to men are better endowed in characteristics. As a consequence, the entire gap ends up being unexplained and there is no share of the gap that appears due to the differences in endowment between male and female workers. To illustrate this issue, provided women were remunerated appropriately according to their individual characteristics, their earnings would be higher than those of men.

In accordance with the data, the education, as well as the occupation variables seem to play the most significant role in the determination of the wage regardless the country of the observation or the gender of the employee. Solely obtaining higher education level the magnitude of the salary increases considerably. Nonetheless, the education component has a negative influence when both explained and unexplained parts of the gender wage gap are analysed. Apparently, provided women and men had the same level of education completed (higher education), the pay difference would be even larger. Consequently, as long as the possession of higher education positively influences the pay level and more women than men have higher education, eliminating this education advantage of women, the wage gap would get even bigger. As long as the task importance is concerned, similar dependence as in case of education is observed. Simple regression reveals that given more intellectually demanding job the wage increases significantly. Simultaneously, these variables have a negative influence on the endowments and coefficients of the gender wage gap. Arising conclusion is that provided women and men were treated equally, the wage gap would increase. Another implication is that an important share of the gender wage gap is simply caused by the circumstances that are not included in the analysis.

As far as the comparison of Poland and Italy is concerned, simply taking a look at the data it is pretty visible that they are quite different. To begin with, the average wage (no matter whether women or men are considered) in Italy is roughly twice as big as the one that can be received on the Polish labour market. Knowing the wages levels it is worth to compare them with the costs of living that exist in the mentioned countries. Purchasing Power Parity (PPP) allows to get an overview of the purchasing power with an elimination of inequalities in price levels (OECD, 2018). OECD data reveals that for the last 10 years the Purchasing Power Parity in Italy did not exceed 0.8. Contrary, Poland has always been at the level of 1.75 at least (OECD, 2019). It suggests that with the money earned in Poland people are able to buy there twice as much as Italians living and earning in Italy. Not surprisingly, on the basis of the user contributed data it is

hard to find goods in Italy that would be cheaper than in Poland. On average, prices are between 50% and 150% higher (Numbeo, 2019).

Focusing strictly on the gender wage gap although both values (for Poland and Italy) are not especially high, Polish wage difference is 0.8 percentage points higher than the Italian one (4.3% to 3.5%). The same trend applies to the value of endowments which for Poland is more or less 6.46 percentage points above the one in Italy (-13.5% and -7.04%). As already mentioned before, endowments refer to the explained part of the gap where under the same treatment the only differences can appear due to the differences in individual characteristics. In both countries these values are negative suggesting that the unexplained part of the gap accounts for a much bigger part of the wage gap and due to the fact that in Poland this disparity is bigger than in Italy consequently the discrimination issue is more severe in the first one.

## SUMMARY

The main aim of this research was to find out whether in Poland and in Italy the phenomenon of the gender wage gap does exist, and if so, what is the extent of this issue. In order to achieve this aim, at the beginning, profound analysis of the existing theories of discrimination in general was made. Later on there was conducted study of numerous statistics that might possibly have an influence on the appearance of the gender wage gap in the European Union as a whole and separately in Poland and Italy. Finally, on the basis of the data included in EU-SILC database Blinder-Oaxaca decomposition allowed to calculate exact value of the gender wage gap and find out what share can be explained by individual characteristics and how much of this gap is basically due to the discrimination.

While examining the theories of discrimination it has been found out that although they were created in the last century they are still valid and to some extent they do provide explanation for the gender wage gap phenomenon. It cannot be straightforwardly stated that a particular theory fully explains the issue, but each one can be associated with at least small part of the whole explanation. It is important to mention that they are divided into Neoclassical that make reference to the human capital in individual characteristics and Institutional which assume that these are institutions and societies that take the full responsibility for the wage inequality between genders. It means that while discrimination can be reduced by the self-improvement of an individual, there are always factors such as prejudices that shut some groups out. On the basis of the research conducted, best explanation for the issue of the gender wage gap are believed to provide Institutional Theories as they simply assume that there are several issues on which the employees do not have any influence and this is how men can be favoured even if they are not possessing "better" characteristics than women.

Statistics described in Chapter 2 clearly show that in terms of education women are frequently even better off than men so this factor definitely does not have any influence on the discrimination issue. It might seem that more educated people should earn more, however, although on average there are more females with high education they do not earn adequately more. At the same time there is no comparison between women and men in terms of money. Not only women are much more often performing unpaid jobs, but also in general they are less powerful when money is negotiated. Poles and Italians may not seem to be very similar at the first glance, however taking a look at the statistics even if the values themselves are slightly different, the trends of the phenomena observed were quite comparable.

Finally, Blinder-Oaxaca decomposition with the use of EU-SILC database allowed to calculate the gender wage gaps in both countries and additionally determine how much of it is simply related to the individual characteristics and to what extent it is due to the different treatment of women and men. What has been found out it that female's predisposition is often underestimated (both in Poland and Italy) and if they were treated in a same way as men they should not only earn more, but also their earnings would be even higher than men's. Interestingly, gender wage gap in both countries does exist and oscillates at the similar level (not very high but existing though). What is the most striking is the huge discrepancy when the level of the earnings

(regardless of the gender) is considered. Obviously it is strongly related to the cost of life in a particular region and surprisingly, according to the data, people earning and living in Poland possess bigger purchasing power than those who work and live in Italy.

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## APPENDIX 1. LIST OF SECTORS

NACE rev.2 section	
A	agriculture, forestry and fishing
B - E	mining and quarrying, manufacturing, electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities
F	construction
G	wholesale and retail trade; repair of motor vehicles and motorcycles
H	transportation and storage
I	accommodation and food service activities
J	information and communication
K	financial and insurance activities
L - N	real estate activities; professional, scientific and technical activities; administrative and support service activities
O	public administration and defence; compulsory social security
P	education
Q	human health and social work activities
R - U	arts, entertainment and recreation; other service activities; activities of households as employers; undifferentiated goods- and services-producing activities of households for own use; activities of extraterritorial organisations and bodies

Source: Own elaboration based on EC (2014), p.384 - 387

## APPENDIX 2. MAPPING BETWEEN OCCUPATIONS AND TASK CATEGORIES

EU-SILC code (ISCO-08)	Occupation	Task category*
1	Commissioned armed forces officers. MT:11-14 Legislators, senior officials & managers	Not in the sample
2	Non-commissioned armed forces officers. MT:21-26 Professionals	Not in the sample
3	Armed forces occupations, other ranks. MT:31-35 Technicians & associate professionals	Not in the sample
4	MT: 41-44 Clerks	Serv
5	MT: 51-54 Service workers and shop and market sales workers	Serv
6	MT: 61-63 Skilled agricultural and fishery workers	Serv
7	MT: 71-75 Craft and related trades workers	Rout
8	MT: 81-83 Plant and machine operators and assemblers	Rout
9	MT: 91-96 Elementary occupations	Serv
10	MT: 01 Armed forces	Not in the sample
11	Chief executives, senior officials and legislators	AbServ
12	Administrative and commercial managers	AbServ
13	Production and specialized services managers	AbServ
14	Hospitality, retail and other services managers	AbServ
21	Science and engineering professionals	AbServ
22	Health professionals	AbServ
23	Teaching professionals	AbServ
24	Business and administration professionals	AbServ
25	Information and communications technology professionals	AbServ
26	Legal, social and cultural professionals	AbServ
31	Science and engineering associate professionals	AbServ
32	Health associate professionals	AbServ
33	Business and administration associate professionals	AbServ
34	Legal, social, cultural and related associate professionals	AbServ
35	Information and communications technicians	AbServ
41	General and keyboard clerks	Serv
42	Customer services clerks	Serv

43	Numerical and material recording clerks	Serv
44	Other clerical support workers	Serv
51	Personal service workers	Serv
52	Sales workers	Serv
53	Personal care workers	Serv
54	Protective services workers	Serv
61	Market-oriented skilled agricultural workers	Serv
62	Market-oriented skilled forestry, fishery and hunting workers	Serv
63	Subsistence Farmers, Fishers, Hunters and Gatherers	Serv
71	Building and related trades workers, excluding electricians	Rout
72	Metal, machinery and related trades workers	Rout
73	Handicraft and printing workers	Rout
74	Electrical and electronics trades workers	Rout
75	Food processing, wood working, garment and other craft and related trades workers	Rout
81	Stationary plant and machine operators	Rout
82	Assemblers	Rout
83	Drivers and mobile plant operators	Rout
91	Cleaners and helpers	Serv
92	Agricultural, forestry and fishery labourers	Serv
93	Labourers in mining, construction, manufacturing and transport	Serv
94	Food preparation assistants	Serv
95	Street and related sales and service workers	Serv
96	Refuse workers and other elementary workers	Serv

Note: \*Rout - highly routine, low in abstractness and service task importance, Serv - low in routine and abstractness, high in service task importance, AbServ- low in routine, high in abstractness and service task importance

Source: own elaboration based on Goos et al. (2014), Routine Task Intensity indices.

**LIST OF FIGURES**

Fig 2.1. Shares of Europeans with low, medium and high levels of education ..... 24

Fig 2.2. Employment rate of Europeans with different number of kids. .... 25

Fig 2.3. The EU countries with the biggest proportions of part-time workers ..... 26

Fig 2.4. The EU average and the EU countries with the highest unemployment rate ..... 27

Fig 2.5. Proportion of women on management positons..... 28

Fig 2.6. Difference between employment rates of women and men in Poland..... 29

Fig 2.7. Polish early leavers from education and training. .... 30

Fig 2.8. Inactive Polish citizens due to caring responsibilities..... 31

Fig 2.9. Time spent in paid and unpaid work..... 32

Fig 2.10. Difference between employment rates of women and men in Italy ..... 33

Fig 2.11. Italian early leavers from education and training..... 34

Fig 2.12. Inactive Italians due to caring responsibilities ..... 35

Fig 2.13. Time spent in unpaid and paid work..... 36

## LIST OF TABLES

Tab. 3. 1. Descriptive statistics for Poland .....	40
Tab. 3. 2. Descriptive statistics for Italy.....	40
Tab. 3.3. Regression outcomes on Polish sample (p-values in the brackets), EU-SILC 2016... 42	
Tab. 3.4. Regression outcomes on Italian sample, EU-SILC 2016 .....	44
Tab. 3.5. The Blinder-Oaxaca decomposition outcomes of log wages with p-valued in the brackets, males – the reference group.....	48

**LIST OF APPENDICES**

APPENDIX 1. List of sectors ..... 57  
APPENDIX 2. Mapping between occupations and task categories ..... 58