

# Information on resources made available as part of the third edition of the Polish Graduate Tracking System (ELA)

The material presented below has been organized in the following order:

1. New elements in the third edition of the ELA system.
2. A description of the assumptions and limitations of analysis contained in automatic reports.
3. A description of the structure of the automatic reports in the third edition of the ELA system.
4. Characteristics of the applied indicators.

## 1. New elements in the third edition of the ELA system

This year's edition of the ELA system encompasses a number of changes to last year's first edition. The new study includes three cohorts of graduates: those who graduated in 2014, in 2015 and in 2016, respectively. Graduate groups from 2014 and 2015 were already the subject to monitoring in the previous year. The fates of graduates from 2016 were examined this year for the first time.

### 1.1. A longer monitoring period of new graduates' activity on the labour market

The first, most obvious change is the extension, from two years to three, of the career monitoring period for individuals who graduated in 2014, and from one year to two for graduates from 2015. This has enabled a comparison of their situation on the labour market in the years following graduation. The fate of individuals from 2016 was analysed in the present edition of the research throughout the course of their first year after graduation. Subjecting individuals who graduated a few years ago to analysis enables, among other things, the comparison of the situation of graduates of similar faculties from different years during their first year after graduation (for graduates from 2014, 2015 and 2016); it also allows for a comparison of the situation of graduates from similar faculties during their second year after graduation (for graduates from 2014 and 2015). The use of relative indicators in the ELA system (discussed in further detail in Chapter 4 of this paper) allows for comparisons that take into account changes that happen over time in economic indicators in Poland as a whole, as well as in individual *poviats*.

Next year, the study is planned to cover four cohorts of graduates: for graduates from 2014, the monitoring will encompass four years after graduation, and for graduates from each subsequent year, up to 2017, there will be one year more to study after graduation.

### 1.2. A new form of presentation of the result - infographics

This year's edition of the ELA system introduces a new, more user-friendly way of presenting the results – interactive infographics. Infographics outline the most important indicators for a selected group of graduates, including their wages in PLN (including in relation to the level of earning in their places of residence), as well as information on their activity-based budget, i.e., what proportion of the period immediately after graduation is spent at work, on continued study, on childcare, unemployed and in other ways. These data have been supplemented with information on the number of graduates, number of faculties in a selected category, the percentage of women and men among the graduates, the percentage of graduates who continued to study after obtaining a diploma and the number of them who obtained a subsequent diploma.

Users can select a group, and the specific results of this category will be revealed. This may be done through selecting the year of graduation, or a specific higher education institution and a specific area or field of study.

### 1.3. Redesigned reports

In previous editions of the ELA system, the reports described the examined target groups in their entirety. This edition introduces thematic reports devoted to particular aspects of new graduates on the labour market. These include:

- Job search and unemployment,
- Wages,
- Work and further studies,
- Geographical diversification of the economic situation of graduates

This new solution facilitates a search for users interested in a specific aspect of the situation of graduates.

In addition, the thematic reports have an updated, user-friendly layout.

## **1.4. Overviews of areas, fields of study, higher education institutions and faculties**

In the third edition of the ELA system, the "Overviews" tab consists of reports comparing indicators which describe the activity on the labour market of graduates who belong to specific labour groups. At the level of higher education institutions, the relative indicator values of unemployment and wages for graduates from a given institution who belong to groups distinguished by their major (programme), area and field of study are presented. At the national level, indicators for individual higher education institutions as well as areas and fields of study are presented. Wages and unemployment indicators for graduates of particular areas and fields of study are presented in charts and tables. The same indicators for individual majors and higher education institutions are presented only in tabular form - there are usually too many of them to fit into diagrams.

## **1.5. Indicators of continuing studies**

This year, for the first time, one of the graduate cohorts has been monitored for more than two years. This means that it will be possible to observe the process of some of them completing second degrees. Therefore, two new indicators have been introduced for first-cycle studies graduates:

- The percentage of graduates who undertook second-cycle studies after graduation,
- The percentage of graduates who undertook and completed second-cycle studies after graduation.

A new indicator was introduced for the remaining groups of graduates:

- The percentage of graduates who completed further studies after graduation.

## **2. Description of the assumptions and limitations of analysis contained in automatic reports**

### **Administrative data as a research source**

Automatic reports constitute the basis for the system of monitoring the professional fates of graduates in Poland. The use of administrative data for the conduct of research on educational and occupational processes is a proven practice, applied successfully in many European countries,

including in Scandinavia, Spain, Austria, Lithuania, and Hungary. The Polish automatic reporting system is an innovative solution on the European scale and is widely recognized by European researchers.

The main source of information presented in the reports is administrative data from the Social Insurance Institution system and from the POL-on system. This solution has multiple advantages, though it does also have certain limitations, which should be remembered when reading these reports.

#### Limitations of administrative data in research devoted to the graduate activity

- The basic source of limitations when it comes to the informative content of administrative registers is the obvious fact that they serve administrative purposes for the institutions managing them. Their content and structure are therefore adapted to administrative tasks and not to research purposes.
- When conducting studies based on information from administrative registers, it is necessary to limit the scope of analysis to the content of the register. This makes it impossible, for example, to include in the opinions of graduates and their employers, since such data are not kept in administrative registers. Therefore, the opinion survey on, for example, the level of satisfaction of graduates with their studies or professional situation must be conducted through other means such as research institutes or higher education institutions themselves.
- Another limitation is related to the scope of employment data collected by the Social Insurance Institution. It does not keep records of various kinds of work contracts that students may sign: *contracts for specific work*, *contracts of mandate* (unless either of these two kinds of contract are signed with an employer who employs a graduate on an employment contract) or contracts concluded abroad; data on work without a formal contract is also not recorded. Persons insured in the Agricultural Social Insurance Fund may also not be included in the Social Insurance Institution's registers. It is not possible to distinguish these cases on the basis of the available data. When interpreting the results, it should therefore be taken into account how many of the graduates covered by the report are listed in the Social Insurance Institution's registers. In addition, based on the information gathered by the Social Insurance Institution, it is impossible to determine the amount of wages earned by self-employed persons, because the contributions they pay are independent of the company's income. Information on income from business activity is instead included in Tax Office registers.
- The POL-on system does not collect information on grades obtained, including diploma grades, so this data could obviously not be included in the reports.

## The advantages of using administrative data while researching graduate activity

- Despite these limitations, the use of administrative data while conducting analysis on the fates of graduates of higher education institutions has a number of advantages. First of all, on the basis of this information, **reliable indicators of success on the labour market** were constructed, allowing for a comparison of the situation of graduates who studied different majors in different periods covered by the study. This was not previously possible by conducting research with opinion surveys on graduate activity.
- Administrative data are not burdened with irregularities that can result from the imperfect memory of respondents or their inclination to round up numbers or exaggerate.
- Indicators constructed on the basis of strictly formulated administrative definitions can be interpretable with a great degree of precision and resist speculative interpretation.
- The fact that analysis is based on information from administrative registers means that it is not necessary to contact graduates for research purposes. This allows for a significant reduction in the cost of the nationwide survey and reduces nuisance for the respondents.
- With the exception of some graduates of military academies, the study covered the entire population of new graduates. This would be virtually impossible with a different research method. Statistical error for randomly selected subjects is reduced to zero.
- Due to the use of information from the Social Insurance Institution registers, which also includes monthly insurance contributions, it is possible to analyse the dynamics of processes involving new graduates on the labour market.

## Personal data protection in studies on graduate activity

It should be emphasized that the procedures provided for in the act regulating the monitoring of graduates' professional careers using administrative data from the Social Insurance Institution and POL-on guarantee that the individuals covered by the study are fully anonymous. There is no personal information in the analysed data and graduates are distinguished with the use of a random number that does not allow particular individuals to be identified. Because graduates do not need to be contacted during the monitoring, their privacy remains intact.

In addition, for the protection of the personal data of graduates during the generation of automatic reports, two rules were adopted limiting the presentation of results for groups that were too small (e.g., graduates of particular majors or higher education institutions). First of all, according to the provisions of the Act on Higher Education, reports for groups of less than 10 people are not generated. Secondly, results are not presented for subgroups consisting of less than 3 people. For groups with less than 3 members, the indicators' values are replaced by hyphens. Charts are generated only when all the groups they describe consist of at least 3 people.

**Thanks to this solution, it is not possible to link the values of indicators with individuals covered by the study.**

## **The specificity of automatic reports on the professional fates of graduates**

Reports concerning economic aspects of the graduates' fates made available as part of the monitoring system are generated automatically with the use of dedicated software. Their goal is to promote relatively simple and easily understood information on the situation of graduates of various majors on the labour market (this information is to be targeted at, in particular, representatives of higher education institutions, graduates, students and potential students). The presentation of the results should enable them to be compared for different majors or higher education institutions.

The reports are generated with the use of homogeneous templates. In an effort to make reading these results easier, reports contain simple, reader-friendly indicators with comments that provide the necessary interpretations and indicate application-related limitations. These reports have been designed to provide comprehensive, in-depth analysis of the fates of graduates from selected majors on the labour market; they are also intended to enable the major indicators characterizing the economic aspects of the fates of graduates to be identified.

## **The importance of the situation on the local labour market**

The professional career paths of graduates depend on multiple factors – not only on the quality of higher education institutions, but also on the conditions of the local labour market and the economic situation of a given country. Therefore, when presenting indicators for graduates, it is necessary to include information on the situation in their respective *poviats* of residence. For this purpose, data provided by the Statistics Poland have been used. They allowed to compare the values of indicators characterizing the situation of graduates with the local background and to construct easily interpretable relative indicators, the definitions of which have been presented in the subsequent part. This comparison allows for a better assessment of the quality of graduates in the context of local labour markets.

In this year's edition of the monitoring of professional careers of graduates, the form of data about the place of residence available from the registers (the first 3 digits of the postal code) often does not allow for a precise indication of the graduate's *poviat* of residence<sup>1</sup>. As a result of the adopted solution, in most cases was possible to establish the correct *poviat* of residence, while in other cases the broader area of residence was determined, which encompassed several nearby *poviats*.

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<sup>1</sup> This is a consequence of the current regulations contained in the Act on Higher Education.

## The specificity of the situation of graduates entering the labour market

It should be remembered that it is graduates often only start their activity on the labour market after obtaining a diploma. This may translate into unfavourable indicator values characterizing their professional circumstances. As a consequence, the occurrence of such indicator values does not necessarily constitute a failure of graduates on the labour market. On the one hand, it can be expected that graduates at the beginning of a career will not do any better on the labour market than the majority of residents in their *poviats*. On the other hand, however, their professional situation will evolve more rapidly than the situation of the local community as a whole. As a consequence, the value of the Relative Indicator of Wages in the first year after graduation is usually lower than 1, but its value increases over time.

### 3. Description of the structure of reports

The ELA system consists of thematic reports devoted to various aspects of graduates' situations.

The topics of these reports include:

- a. Job search and unemployment,
- b. Wages,
- c. Work and further studies,
- d. Geographical diversification of the economic situation of graduates

The above reports are available on three levels of analysis:

- a. Programme of studies,
- b. Higher Education Institution,
- c. Poland.

In addition to these thematic reports, a report with an overview of indicators describing the situation of graduates in particular areas and fields of education as well as the majors they studied is prepared at the higher education institution level. A corresponding report is created at the national level, listing the indicators which describe the situation of graduates of particular areas, fields of study and higher education institutions. These reports can be found in the "Overviews" tab.

**The basic level of the analysis is a study programme.** Providing the public with information on the professional fates of graduates of individual study programmes is the key goal of this project. Reports prepared at the level of higher education institutions, as well as those at a nationwide level, are only a supplement to the information on particular majors. They should be considered mainly as the background for phenomena illustrated in reports at the lowest level of aggregation.

In the case of higher education institutions, their graduates usually consist of individuals who have completed different majors (highly specialized higher education institutions are the exception here), and thus they function on very different labour markets. For example, Polish language scholars and IT specialists rarely apply for the same positions, even if they graduated from the same higher education institution. **Therefore, it is necessary to exercise considerable caution during the combined analysis of graduates of all majors of a given higher education institution.** For the same reasons, it is difficult to use the analytical category “graduate of a Polish higher education institution” without reservations. Serious caution should also be exercised when drawing conclusions regarding all graduates of higher education institutions.

All types of reports are generated separately for graduates of individual degrees (levels), that is, separately for the first and second cycle and for uniform Master’s studies.

### **Description of the structure of the “Job Search and Unemployment” report**

**The initial part of the report** consists of information on which group of graduates is covered by the report (major, higher education institution, Poland) along with the level and year of graduation. It presents a general description of the report's content and information on the number of graduates to be analysed, as well as how many of them are listed in the Social Insurance Institution’s registers.

In addition, this section presents information on how many graduates participated in another programme of study after obtaining their degree and on the average time spent in post-graduate education. The comparisons listed in the following sections of the report refer to these categories.

**The first part of the report** presents information on the time graduates spent searching for a job. Information on the time spent on searching for *any* job and the time spent on searching for *employment* are presented separately.

Information on the average length of job a search is complemented by slightly more detailed data showing five groups, representing those people who have been searching for a job for the shortest time to those who have been searching for a job for the longest. If the vast majority of people looked for a job for the same amount of time, information about the percentage of these people is provided.

The last subsection of this part is generated only for study programmes and higher education institutions that focus specifically on preparing students for careers in the uniformed services.

This subsection presents information on the percentage of graduates who, during the period covered by the study, have experienced work in the uniformed services as well as the mean and median amount of time they spent looking for a job in these services.

**The second part of the report** presents information on the *stability of the work* of monitored graduates, including:

#### Unemployment

- Percentage of people who have experienced being unemployed at least once during the period covered by the monitoring.

This information is presented both for the entire period covered by the study and for subsequent individual years after graduation (in this edition of the study, information on graduates from 2014 is provided for the first three years; for graduates from 2015 – for the first two years; and for graduates from 2016 – only for the first year). The percentage of graduates who have experienced unemployment should not be confused with the risk of unemployment among graduates.

- The risk of unemployment: the mean percentage of months in the period covered by the study during which graduates were registered as unemployed.

The unemployment risk indicator is calculated for the whole period covered by the study and for subsequent years after graduation, both in terms of whole periods as well as for individual months in which graduates were not studying (students of full-time programmes cannot be registered as unemployed). These indicators are combined with information on the unemployment rate in Poland in the calendar years covered by the monitoring. This information is supplemented by the relative indicator of unemployment (RIU), which shows the unemployment risk for graduates in relation to the unemployment rate in their *poviats* of residence. This indicator is provided for all periods for which the risk of unemployment is calculated.

The information on unemployment concludes with a chart illustrating the dynamics of the relative indicator of unemployment in the months following graduation.

#### Experience of work

- The percentage of graduates who have experienced: any kind of work, employment, self-employment.

These indicators are presented for the entire period covered by the study and for the successive years after graduation; they are given separately for periods when graduates continued studying and for when they did not study.

#### The percentage of months spent at work

- The percentage of months after graduation during which graduates: had any job, had employment, were self-employed.

These indicators are presented for the entire period covered by the study and for successive years after graduation; they are given separately for periods when graduates continued studying and for when they did not study.

The number of employers

- The average monthly number of employers.

This information is given both in the form of the average monthly number of employers providing employment, and in the form of more detailed information on the monthly number of employers in five equal groups, ranging from people who had the fewest employers, to those who had the largest number of employers. In the case of the vast majority of people having the same monthly number of employers, information about the percentage of these people is provided.

- Number of cases of employment termination

This information complements the number of employers described above. There is information on both the average annual number of cases of employment ending, as well as more detailed information on the annual number such cases in five different groups, ranging from persons who have terminated their employment the lowest number of times to those who have experienced the highest number of such situations. Where the number of terminations of employment happened to the vast majority of graduates, information about the percentage of these people has been provided.

**The third part of the report** presents basic methodological information. In this part, sources of data used in the study are provided, general guidelines on the interpretation of the report are presented, and the rules for limiting the presentation of results due to the insufficient number of members of a group are described.

### **The structure of the “Wages” report**

**The initial part of the report** consists of information about the group of graduates covered by the report (major, higher education institution, Poland) along with the level and year of graduation. It presents a general description of the report’s content, information on the number of the graduates analysed, as well as the number of the graduates listed in the Social Insurance Institution’ registers.

In addition, this section presents information on how many graduates participated in another programme of study after obtaining their degree and on the average time spent studying after graduation. The comparisons listed in the following sections of the report refer to these categories.

**The first part of the report** presents information on the wages received by graduates subjected to monitoring.

Information on average wages alone can be misleading because it does not reflect the complexity of the situation and may lead to inaccurate interpretations. Therefore, this part of the report is the most extensive and it presents more detailed presentations as well as simple indicators. Information on wages for *all forms of work* and for *employment* are presented separately.

The report does not present information on the earnings of self-employed graduates, as this data is not present in the Social Insurance Institution's records. The only information on self-employed graduates regards the percentage of self-employed graduates.

The mean and median of monthly wages of graduates for *all forms of work* are indicated for the entire period covered by the study and for successive years after obtaining a degree, as well as separately for periods when graduates continued their studies and for periods when they did not. These results are compared to the information on average monthly wages in Poland in the calendar years covered by the monitoring.

Information on wages in *all forms of employment* is also given in a more detail – for five different groups, ranging from graduates whose wages were the lowest to those who earned the most.

Information on wages from employment are presented in the form of mean and median averages, supplemented with more detailed information – for five different groups, ranging from graduates whose wages were the lowest to those who earned the most.

This information is presented in the form of a histogram. In a situation when fewer than 3 graduates represent one bar in the chart, the chart is not generated. This is due to one of the rules concerning the data protection of the graduates.

The section with information on wages concludes with information on the relative indicator of wages (RIW), and presents the earnings of graduates in relation to the earnings in their *poviats* of residence.

These indicators are presented for the entire period covered by their study and for subsequent years after graduation, separately for periods when graduates continued studying and for when they did not study.

In addition, a chart illustrating the monthly dynamics of the relative indicator of wages in the following months after graduation is presented.

**The second part of the report** presents basic methodological information. In this part, sources of data used in the study are provided, general guidelines on the interpretation of the report are presented, and the rules for limiting the presentation of results due to an insufficient number of members of a group are described.

## **Description of the structure of the “Work and further studies” report**

**The initial part of the report** consists of information on the group of graduates covered by the report (major, higher education institution, Poland) along with the level and year of graduation. It presents a general description of the report's content and information on the number of graduates analysed, as well as what part of them is listed in the Social Insurance Institution's registers.

In addition, this section presents information on what proportion of the graduates participated in another programme of study after obtaining their degree and on the average time spent studying after graduation. The comparisons listed in the following sections of the report refer to these categories. In addition, information is presented on the percentage of graduates of first-cycle studies undertaking a second-cycle studies, as well as the percentage of graduates who graduated from these programmes. For graduates of other levels of study, the information on the percentage of persons who obtained another diploma is given.

**The first part of the report** presents selected information about chosen indicators of the situation of graduates in the labour market during periods when they continued studying after obtaining a diploma and also when they did not study.

**The second part of the report** presents basic methodological information about the report. In this part, sources of data used in the study were provided, general guidelines on the interpretation of the report were presented, and the rules for limiting the presentation of results due to an insufficient number of members of a group were described.

## **Description of the structure of the “Geographical diversification of the economic situation of graduates” report**

**The initial part of the report** consists of information on which group of graduates the report refers to (major, higher education institution, Poland) along with their level and year of graduation. It presents a general description of the report's content and information on the number of graduates to be analysed, as well as on how many of them are listed in the Social Insurance Institution's registers.

**The first part of the report** presents selected information about the place of residence of graduates. The tables present information on the number of individual categories, according to the size of a place of residence and the distance between it and the institution from which an individual graduated.

**The second part of the report** presents information on selected indicators of the situation of graduates in the labour market in the form of subgroups distinguished on the basis of chosen socio-demographic features.

Information on graduates of a given major or institution is presented in reports broken down by the size of their place of residence and the distance between their place of residence and the institution they graduated from. Two tables show the values of selected indicators for particular subgroups.

**The third part of the report** presents basic methodological information about the report. In this part, sources of data used in the study were provided, general guidelines on the interpretation of the report were presented, and the rules for limiting the presentation of results due to an insufficient number of members of a group were described.

### **Description of the structure of the “Comparison of study programmes, areas of study and academic disciplines: wages and unemployment” report**

**The report is available in the "Listings" tab.**

**The initial part of the report** provides information on the name of higher education institution that an individual graduated from (including the level of study and the year of graduation). It presents a general description of the report content and information on the number of graduates to be analysed.

**The first part of the report** at the higher education institution level presents the values of relative indicators of unemployment and wages for graduates of a given higher education institution who belong to groups distinguished by their major (programme), area of study and academic discipline in the last year covered by the study. This means that for graduates from 2014, information describing their third year after graduation is provided, for graduates from 2015 – information for the second year after graduation, and for graduates from 2016 – this information covers only the first year after graduation. The presentation of the results is preceded by a short description of relative indicators and guidelines on their interpretation.

**The first section of the first part** presents information on the relative indicators of unemployment and wages among graduates of a given higher education institution, broken down by areas of study of the higher education institution. This information is presented in a chart. The coordinates represent the values of these indicators. The exact values of the indicators together with the information on the size of individual groups can be found in the table below the chart.

Due to the clear presentation of this data, the chart will facilitate the comparison of the professional situations of graduates of particular areas of study.

A better situation for graduates is indicated by lower values of the relative indicator of unemployment and higher values of the relative indicator of wages. Points representing groups with such features are closer to the upper left corner of the chart, while points representing groups with a higher relative indicator of unemployment and a lower relative indicator of wages are closer to the bottom right corner of the chart.

**The second section of the first part** presents information on the relative indicators of unemployment and wages among graduates of a given higher education institution, broken down by academic discipline. The presentation of the results is similar to the previous section.

**The third section of the first part** consists of a tabular list of study programmes presented according to didactic units. It contains information on the number of graduates of particular programme, the percentage of graduates listed in the Social Insurance Institution's registers and the values of relative indicators of unemployment and wages.

**The second part of the report** presents basic methodological information about the report. Here, sources of data used in the study are provided, general guidelines on the interpretation of the report are presented, and the rules for limiting the presentation of results due to an insufficient number of members of a group are described.

### **Description of the structure of the "Comparison of higher education institutions, areas of study and academic disciplines: wages and unemployment" report**

**The report is available in the "Listings" tab.**

The structure of this report is almost identical to the above-described structure of the "Comparison of study programmes, areas of study and academic disciplines: wages and unemployment" report, except for one section:

**The third section of the first part** contains a tabular list of higher education institutions and information on the number of graduates, the percentage of graduates listed in the Social Insurance Institution's registers and the values of the relative indicators of unemployment and wages.

## **4. Characteristics of the indicators used**

Descriptions of the indicators used in the automatic reports are presented below. Due to the complexity of the construction and non-obvious properties of indicators, some of them are described in more detail. In these cases, apart from the description of how an indicator is constructed, examples facilitating the interpretation of values adopted by indicators are presented.

Particular attention should be paid to two terms used in the description of the construction of the indicators: "employment" and "employment in the uniformed services". The following assumptions have been made on the basis of the Social Insurance Institution's codes.

People who can be characterized by at least one of the following descriptions, regardless of their type of employment, were recognized as **in employment**:

- an employee covered by social and health insurance,

- an employee covered by social insurance and, under special regulations, not covered by health insurance,
- a juvenile employee,
- an employee covered by social and health insurance, paying premiums for their own insurance as specified in art. 109 of Council Regulation (EEC) No 574/72 of 21 March 1972 laying down the procedure for implementing Council Regulation (EEC) No 1408/71 on the application of social security schemes to employed persons, to self-employed persons and to members of their families moving within the Community,
- an employee covered by social insurance and, under special regulations, not covered by health insurance, entitled by a foreign employer not having its registered office in Poland to pay contributions for their own insurance,
- an employee working under a tolling agreement,
- a Member of Parliament or a senator receiving emoluments,
- a clergyman who does not conduct non-agricultural economic activity and pays a contribution from the minimum basis of assessment,
- a clergyman who does not conduct non-agricultural business activity and pays a contribution from the declared excess over the minimum basis of assessment,
- a clergyman who does not conduct non-agricultural economic activity and is a member of a cloistered contemplative order or is a missionary, paying a contribution from the minimum basis of assessment,
- an officer in the candidate service or a trainee soldier,
- a professional soldier,
- a Police officer,
- an officer in the Internal Security Agency or the Foreign Intelligence Agency,
- a Border Guard officer,
- an officer in the State Fire Service,
- an officer in the Customs Service,
- an officer in the Central Anticorruption Bureau, the Military Counterintelligence Service, the Military Intelligence Service or the Government Protection Bureau,
- an officer in the Prison Service,
- a person on parental leave,
- a person receiving maternity benefit,
- a person who is caring for a child and was covered by retirement and pension insurance as a clergyman directly before the provision of care,
- a mother on maternity leave – special code, only when the payer is the Social Insurance Institution,
- a mother on parental leave – special code, only when the payer is the Social Insurance Institution,

- a person who, on the basis of separate provisions or collective agreements, receives social benefits paid while they are on leave, other than leave for railway workers,
- a judge,
- a prosecutor, a court juror, a trainee in the National School of Judiciary and Public Prosecution,
- a member of the supervisory board covered only by health insurance,
- a member of the supervisory board covered by retirement, pension and health insurance,
- a member of the supervisory board, covered by retirement and pension insurance and not covered by health insurance.

People who can be characterized by at least one of the following descriptions, regardless of the employment dimension, are recognized as persons **employed in the uniformed services**:

- an officer in the candidate service or a candidate for a professional soldier,
- a professional soldier,
- a Police officer,
- an officer in the Internal Security Agency or the Foreign Intelligence Agency,
- a Border Guard officer,
- an officer in the State Fire Service,
- an officer in the Customs Service,
- an officer in the Central Anticorruption Bureau, the Military Counterintelligence Service, the Military Intelligence Service or the Government Protection Bureau,
- an officer in the Prison Service,
- a retired person who receives military emoluments.

### **The number and percentage of graduates who were registered in the Social Insurance Institution**

When interpreting the results, it should be taken into account how many graduates covered by the report are listed in the Social Insurance Institution's registers. The reasons for not being listed in the Social Insurance Institution's registers can be varied. For example, they may:

- have not yet been active on the labour market,
- have only worked in forms not registered in the Social Insurance Institution (e.g. under a contract for specific work),
- have only worked abroad,
- have been covered by the KRUS (the Agricultural Social Insurance Fund) insurance.

However, people registered as unemployed, people in employment and people conducting non-agricultural business activity are listed in the Social Insurance Institution's registers. Therefore, even if some graduates are not in the Social Insurance Institution's registers, the monitoring system enables the calculation of indicators describing such elements as registered

unemployment, employment and self-employment within the entire group of people covered by the study.

#### **Percentage of graduates who had the experience of studying after graduation**

The indicator provides information about the **scale** of the continuation of study by students after graduating from their first degrees. Cases of both the continuation of study commenced before obtaining a degree as well as study undertaken after graduating are taken into account.

#### **Percentage of months after graduation during which an average graduate studied on a different study programme**

The indicator supplements the information provided by the percentage of graduates with the experience of studying after obtaining a diploma. It provides information about the **intensity** of the phenomenon of continuing studying by graduates after obtaining a diploma – i.e., what part of time after diploma an average graduate spent on further studies.

This is important when we take into account the experience of post-graduate study in the description of the professional activity of graduates, as studying affects the functioning of graduates on the labour market.

#### **Percentage of graduates who after graduation began second-cycle studies**

This indicator is determined only for graduates of first-cycle studies. It provides information on how many of the graduates undertook second-cycle studies after graduating from their first-cycle studies. It indicates the scale of the phenomenon of continuing education to the next level. In contrast to the indicator "the percentage of graduates who have experienced studying after graduation" it only takes second-cycle studies into account, and solely studies undertaken after graduating.

#### **Percentage of graduates who after graduation began and completed second-cycle studies**

The indicator is determined only for graduates of first-cycle studies. It provides information on how many graduates graduated from second-cycle studies undertaken after completing their first-cycle studies.

#### **Percentage of graduates who after graduation completed another study programme**

The indicator is determined only for graduates of second-cycle studies and uniform Master's studies, for whom the previous two indicators were not determined. It provides information on what part of the graduates completed another study programme after graduation. The completion of other study programmes undertaken both before and after graduating is taken into account.

#### **Time needed to find a job**

For every graduate who worked after graduation, the **number of months** between the month of graduation and the month of when they undertook their first job after graduation is determined. Graduates who have not undertaken a job after graduation are omitted.

The value of the indicator equals zero only if the graduate was working in the month they graduated and continued to be employed in the same place in the subsequent month.

#### **Time needed to find an employment**

For every graduate who worked in employment after graduation, the **number of months** between the month of graduation and the month they undertook their first employment after graduation is determined. Persons who have not undertaken a job under a contract of employment after graduation are omitted.

The value of the indicator equals zero only if the graduate was working in employment in the month of their graduation and continued to be employed in the same place in the next month.

#### **Percentage of persons employed in the uniformed services**

This indicator provides information on what percentage of graduates from the group covered by the study were employed in the uniformed services at any time during the period of analysis.

#### **Time needed to find a job in the uniformed services**

For every graduate who worked in the uniformed services after graduation, the **number of months** between the month of graduation and the month when they undertook their first job in the uniformed services after graduation is determined. Persons who have not undertaken a job in the uniformed services after graduation are omitted.

The value of the indicator equals zero only if the graduate was working in the uniformed services in the month of their graduation and continued to be employed in the same place in the subsequent month.

#### **Percentage of graduates who experienced unemployment after graduation**

This indicator provides information on what percentage of graduates from the group covered by the study was ever registered as unemployed in the period considered, even if they were registered for a very short period of time. This indicator should not be confused with the risk of unemployment for graduates.

#### **Risk of unemployment**

This is the mean percentage of months in which graduates were registered as unemployed following their month of graduation.

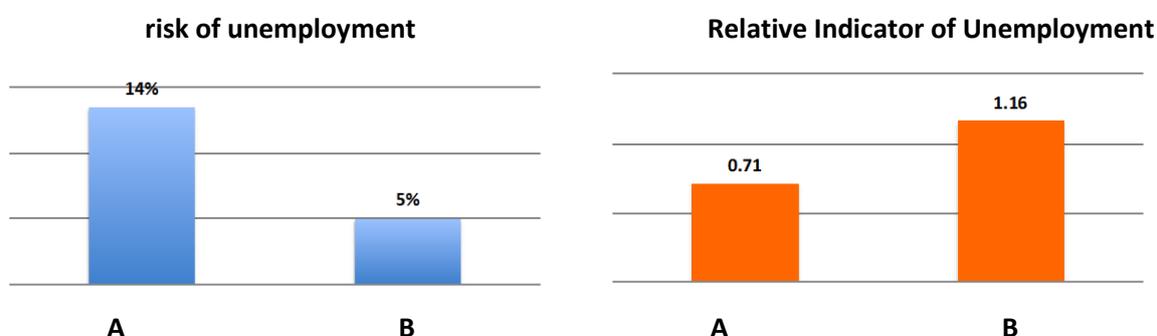
For each graduate, the percentage of months in which they were registered as unemployed following the month they graduated is determined. In order to determine the unemployment risk

for a group of graduates, e.g. graduates of a given study programme, the average value of individual percentages of months of unemployment is determined.

### Relative Indicator of Unemployment (RIU)

For each graduate, the ratio of the individual risk of unemployment to the average indicator of registered unemployment in their *poviats* of residence is determined for the period covered by the study. The value of the indicator presented in the report is equal to the mean of these ratios for particular individuals.

This indicator can be interpreted in a very simple manner. Values below 1 mean that on average the risk of unemployment for graduates is *lower* than the unemployment rate in their *poviats* of residence, while values above 1 mean that on average the risk of unemployment for graduates is *higher* than the unemployment rate in their *poviats* of residence. The interpretation value of the relative unemployment rate is well illustrated by the example below.



The charts show completely opposite indications for relative and absolute indicators characterizing the risk of unemployment for graduates of study programmes A and B from higher education institutions located in regions with different local economies. Although graduates of study programme B are less often unemployed than graduates of study programme A, the relative risk of unemployment for graduates of study programme B is higher than the relative risk of unemployment for graduates of study programme A. Graduates of study programme A must deal with a more difficult labour market. Therefore, it can be said that, in terms of the local labour market, they are coping better than graduates of study programme B.

### Percentage of graduates who had experience of any job

This indicator informs for what part of graduates any contribution for work was paid.

### Percentage of graduates who had experience of employment

This indicator informs for what part of graduates any contribution for work in employment was paid.

### Percentage of graduates who had experience of self-employment

This indicator shows us for what part of graduates any contributions was paid in connection with their self-employment.

### **Percentage of months spent working in any form**

This is the average percentage of months spent at work by graduates during the analysed period. This indicator provides information about the duration of having a job.

### **Percentage of months spent in employment**

This is the average percentage of months spent in employment by graduates during the analysed period. This indicator provides information about the duration of being in employment.

### **Percentage of months spent in self-employment**

This is the average percentage of months spent in self-employment by graduates during the analysed period. This indicator provides information about the duration of self-employment.

### **Average monthly number of employers**

For each graduate, the average monthly number of entities from which graduates received payment for employment in the months in which they were in employment during the analysed period is determined. The value of the indicator presented in the report is equal to the average of the values for all graduates (excluding those graduates who weren't in employment in the analysed period).

When interpreting the value of this indicator, it should be remembered that a large monthly number of employers does not clearly indicate a favourable or unfavourable situation for a graduate, as it may be the result of different circumstances – favourable (the graduate's conscious strategy, high demand on the labour market for a specific type of employee), neutral (the specificity of some professions), or unfavourable (the need to supplement low wages).

### **Average annual number of cases of termination of employment**

For each graduate, the average annual number of cases of the termination of employment in the analysed period is determined. The value of the indicator presented in the report is equal to the average of the values for all graduates (excluding those graduates who weren't in employment in the analysed period).

The large number of cases of termination does not explicitly indicate a favourable or unfavourable situation for a graduate, because termination of employment may occur for different reasons: job loss, voluntary departure, change of employer, change from employment to a civil contract, etc. In some cases these changes are desirable by graduates and they are the result of their deliberate actions.

### **Average monthly wage**

For each graduate, total wages from all forms of employment undertaken in the analysed period are determined. This sum is divided by the number of months in which the graduate was working.

The report presents the means, medians and quintiles of these values (excluding those graduates who did not work in the analysed period).

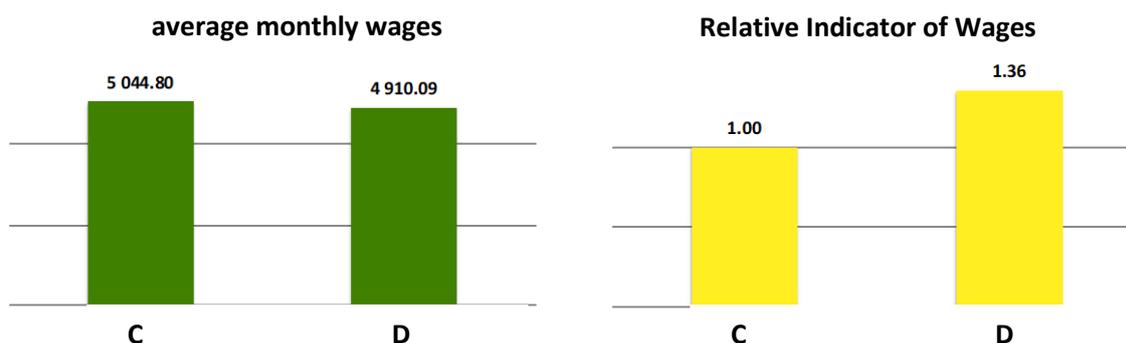
### Average monthly wage from employment

For each graduate, total wages from employment undertaken in the analysed period are determined. This sum is divided by the number of months in which the graduate was in employment. The report presents the means, medians and quintiles of these values (excluding those graduates who did not work in employment in the analysed period).

### Relative Indicator of Wages (RIW)

For each graduate, the ratio between their average wages and the average wages in their *poviats* of residence is calculated for the period covered by the study. The value of the indicator presented in the report is equal to the average of these figures.

This indicator can be interpreted in a very simple manner. Values above 1 mean that, on average, graduates earn above the average wages in their *poviats* of residence, while values below 1 mean that, on average, graduates earn below the average wages in their *poviats* of residence. The interpretation value of the Relative Indicator of Wages is well illustrated by the example below



Although graduates of both study programmes earn on average the same amount of money, graduates of study programme D are much richer when compared to their statistical neighbours. Graduates of study programme C live in a richer region in which it is easier to get a well-paid job. The relative indicators allow us to establish that, taking into account the local labour market, studying programme D can better help a graduate on the labour market when compared to studying programme C.

### THE 'BUDGET' OF GRADUATE ACTIVITY

This section contains a list of indicators that **appear only in the infographics** in the part: "The 'budget' of graduate activity". Other indicators included in the infographics are the same indicators that appear in the reports.

The variables in this section are constructed as follows: for each graduate, the percentage of months following graduation in which the graduate undertook certain activities is determined. If

during this period the graduate did not undertake any activity of this kind, he spent 0% of the time after graduation on this activity. The indicator is equal to the average of the per-month percentages for individual graduates.

Graduates can undertake many different activities at the same time. Therefore, the activity 'budget' does not have to total 100%.

#### **The percentage of time spent working**

This is the percentage of months in which graduates were working (excluding codes for childcare).

#### **The percentage of time spent in employment**

This is the percentage of months in which graduates were working in employment (excluding codes for childcare).

#### **The percentage of time spent in another type of work**

This is the average percentage of months in which graduates worked having a contract other than a contract of employment (excluding codes for childcare).

#### **The percentage of time spent in self-employment**

This is the average percentage of months in which graduates were self-employed (excluding codes for childcare).

#### **The percentage of time spent on further studies**

This indicator is equivalent to the indicator described above – the percentage of months in which an average graduate undertook other programmes of studies after graduation.

#### **The percentage of time spent on studies combined with work**

This is the average percentage of months in which graduates studied another programme of study and worked at the same time (excluding codes for childcare).

An element complementing this indicator is the percentage of time spent on studying not combined with working. For example, if in a certain group an average graduate spent 60% of their time on continued study and 20% on studying combined with working, they spent 40% of the time on studying not combined with working.

#### **The percentage of time spent on childcare**

This is the average percentage of months in which a contribution for childcare was paid to the Social Insurance Institution on behalf of a graduate.

#### **The percentage of time spent in unemployment**

This indicator is equivalent to the indicator for the risk of unemployment described earlier in this document.

**The percentage of time spent in another way**

This is the average percentage of months in which graduates were not working, studying, on childcare, or registered as unemployed.