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Abstract

Authors present the occupational structure of Polish lands at the turn of 20th century on the basis of censuses carried out in Germany (1895), Russia (1897) and Austria (1900). Our research provides corrections to the errors of the censuses, to a considerable extent. As a result, we present an occupational structure that allows a more complete the picture of the economic situation in the Polish territories at the end of the 19th century. The conducted research has created an opportunity to partially verify the assumption, which is common in Polish economical historiography, that a technological turning point and an industrial revolution occurred in Polish lands already in the 1870s and 1880s. Revised census data demonstrated that the extent of industrialization in Polish lands was still very limited in 1900.

Keywords:
economic history, Polish lands, occupational structure, industrialization, backwardness

JEL:
N33, J22, J43, J44

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Introduction

In recent years, one of the most discussed issues in the economic history is the great divergence. The origins and the course of very rapid growth of Western economies and the underdevelopment of the rest of the world gives rise to many controversies and polemics, which are far from being resolved (Pomeranz 2000; Clark 2007; van Zanden 2009; Acemoglu, Johnson and Robinson 2005; Allen 2009). The absence of verifiable and complete data, especially for the peripheral economies, is one of the most important obstacles one must overcome in order to understand the process of economic development in pre-modern times and even during the 19th century.

Due to the lack of credible data, researchers assessing domestic output utilize other indicators to measure the level of economic development. Economic historians try to assess the position of a particular country in the hierarchy of economic development throughout various periods, relying on intermediate categories, such as the level of industrial production, the level of urbanization or the extent of the implementation of new technologies (e.g. the number of working steam engines). One of these indicators, more commonly used in recent years, is occupational structure, which allows researchers to present quantitative relations for the main branches of economy.

The occupational structure of European countries (including the Polish territories) in the main sectors of the economy in the second half of the 19th century can be evaluated thanks to data gathered in censuses (Shaw-Taylor 2010; van der Heuvel, van Nederveen Meerkerk 2006; Buyst 2007). As a result of the Cambridge Group for the History of Population and Social Structure initiative, a more complex probe of occupational structure changes in various European countries in the 19th century has been conducted in recent years. This research will determine the course and the pace of changes occurring in different regions of Europe in the 19th century and at the beginning of the 20th century, including occupational structure at a local level.

Polish economic historians have also used census data to evaluate the occupational structure, although they usually focused only on either one region of Poland, for example, Congress Poland or Greater Poland, or on one sector of the economy, for example, industry. They rarely attempted to compare the differences in development of each partition (Misztal 1970; Pietrzak-Pawłowska 1970), especially at a local level. As a result, their research doesn't provide a detailed picture of the occupational structure in the Polish territories; hence it doesn't allow one to draw general conclusions about the overall level of economic development in the late 19th and early 20th century.

This work aims to provide an assessment of the occupational structure of the Polish territories in the late 19th century at three different levels: first for a basic administrative entity, second for each partition of Poland in particular (Congress Poland - Russian, Galicia - Austro-Hungarian Empire and Prussian) and third for all partitions together. This assessment is based on: the census in Russia (1897), the census in Austria (1900) and the economic census in Germany (1895). The Russian census in 1897 was the first complete census conducted in the empire and the first which allows for a relatively credible reconstruction of the occupational structure at that time. This is why our analysis refers to the turn of the century period. Our contemporary understanding of the labor market differs from the one at the turn of the centuries. A different data classification follows, in addition to the differences between the partitions. We found it necessary to modify some of the categories. Due to the inaccuracies of the censuses, it was crucial to adjust the size of the labor force in some of the occupational groups[1]. The estimated data was compiled in the PST system of classifying occupations (*Primary-Secondary-Tertiary*), which is one of the most common methods for classifying occupational structure in historical research (Wrigley 2010). New estimates of the occupational structure allow us to better understand the processes of industrialization in the Polish territories and they also create an opportunity to compare them with other regions of Europe in the late 19th century.

This paper is divided into five parts. The first part presents a short analysis of late 19th century Polish territory economic research, with special emphasis on the issue of occupational structure. The second part deals with the geographical scope of the research and the third presents census data and standardizes the occupational categories. At the same time, we present the occupational structure without any adjustments. The fourth part deals with making the necessary adjustments and presents the adjusted occupational structure of Polish territories for each of the examined administrative units. In the final part, we compare the occupational structure of Polish territories with analogical data summaries from other countries and we present the conclusions of this analysis.

State of the art

Economic historians of the 19th century Poland tried to identify the turning point in the evolution of the economy. They attempted to capture the moment of technological breakthrough to provide evidence for the industrial revolution. Industry in the 19th century was closely examined, stressing both – the failed attempt of top-down industrialization in the first half of the 19th century (Jedlicki 1964) and highlighting the

1 Stefan Szulc stressed the necessity of data adjustment, especially in the Russian census from 1897 (Szulc 1920).

rapid growth of manufacturing industries in the second half of the century, especially in the provinces governed by Russia (Łukasiewicz 1963; Puś 1984).[2]

During the 1960s and 1970s, in the wake of the growing interest in the origins of the industrial revolution in the Polish territories, a series of publications evaluated the ongoing development of the manufacturing industry, including an increase in the number and the importance of factory workers (Jesierski et al. 1961; Bajer 1958). As a result, the structure and the growth of the industry were carefully examined. Studies were carried out researching each partition, with particular attention paid to Congress Poland (Puś 1984, Puś 2013) and to a lesser extent, Greater Poland (Łuczak 1970; Łuczak 2002). As a part of these studies, research was conducted on the occupational structure of industry which was divided into particular sectors. The studies did not analyze the entire workforce (including agriculture and services) (eg. Kalabiński 1978), and only a few of them include a comparative analysis of employment in all three partitions (Żarnowska 1974).

A picture of the economy in the Polish territories starts to emerge from these works quickly reveals flourishing business centers in Łódź, Dąbrowa Baisin and Warsaw, with a rapid industrialization encompassing not only the textile industry, but also the mining and metallurgy, engineering and metal industry (the last two were mainly in Warsaw). The growth was accompanied by a swift change in the occupational structure and the growing importance of factory workers. The Prussian and Austrian partitions were developing significantly slower in terms of industrial progress. These conclusions became a basis for the assertion about the insular development of industry (and industrial revolution) in the second half of the 19thcentury in Poland, dominated by three, rapidly growing centers, which have been mentioned above.

Foreign analyses of the Polish territories rarely include any information about industrial progress which includes the occupational structure. Nonetheless, some statistics from the end of the 19th century that include occupational structure data are used by researchers studying Poland's economic history from earlier periods. Robert Allen's analyses are the most recognized studies of agricultural economy in pre-industrial Europe. According to Allen, 46% of the population of "Russian Poland" lived off agriculture in 1897 (Allen 2000:7), and this number seems improbable taking into account the actual labor productivity in agriculture. A comparable level of employment in agriculture was achieved in the United States, for example (Olivetti 2013:29). Allen extrapolates this data, although it probably already contains some serious errors. He claims that agriculture sustained not more than 60% of the population of the Polish territories, which is less than in France or Germany at that time. Moreover, his data is also interpreted incorrectly and the category of "agricultural population" (people who live off agriculture) is treated equally with people employed in agriculture (cf.

[2] Juliusz Łukasiewicz wrote about the brisk increase in the number of steam engines in Congress Poland and the rapid expansion in the size and number of industrial enterprises (Łukasiewicz 1963; Łukasiewicz 1988).

Malinowski 2013). This may lead to a further reduction in the percentage of the population belonging to the first sector of the economy.

In our opinion, both Robert Allen's research, as well as the conclusions drawn by Polish researchers regarding the state of Poland's economy at the end of 19th century might be biased with some serious flaws. A source of these errors is the lack of adjustment to the source data. Allen based his research on data provided and published in the consecutive editions of *International Historical Statistics. Europe* by Brian B. Mitchell (2003). The occupational structure of Poland is provided only for the year of 1897 and based on the works of Paul Bairoch (Bairoch 1968). This data includes the year 1897 and refers only to Congress Poland (the Russian census being the source data). In turn, Polish researchers used census data gathered by the governments of the three partitions but they used it without applying the necessary corrections.

As the analyses of census data from Russia, Germany and Austria indicate, such an approach may raise serious doubts. Even during the interwar period in Poland, Stefan Szulc pointed out systematic errors in the Russian census of 1897. Obviously, the industrial share was overestimated and the agricultural share was underestimated in the overall occupational structure. A similar error in the German census from 1895 was mentioned by Walther Hoffman (1965:183), and the opposite error – the overestimation of the number of people employed in agriculture - was indicated by Max Schulze (2007:212-213), based on the Austrian census. The use of the original data might have led to and most probably did, to some wrong conclusions.

Our research provides corrections to the errors resulting from the inaccuracies of the censuses, to a considerable extent. As a result, we present an occupational structure that allows revision and a more complete the picture of the economic situation in the Polish territories at the end of the 19thcentury. Although the occupational structure doesn't fully reflect differences in levels of development, due to the differences in productivity within the sectors, still – as existing analyses show – this is a valuable approximation (Franck 1994, Caruana-Galicia 2011). This reconstruction of the regional occupational structure has allowed for a relatively credible identification of the areas of faster economic development in the Polish territories. Compared with the analogical data from other European countries, it allowed us to approximate the levels of development of the Polish territories in relation to other economies - both developed and underdeveloped.

The conducted research has created an opportunity to partially verify the assumption, which is common in Polish economical historiography, that a technological turning point and an industrial revolution occurred in the 1870s and 1880s. This event should have led to an increased number of the labor force in industry, when compared to the other sectors of economy. A credible estimation was possible only for one moment in history and we have not been able to determine how rapid the dynamics of change were, in particular, an increase in the employment rates in the industrial sector

and a decrease in the agricultural share in the occupational structure. However, the data presented here is sufficient to show the relative size of employment in the agricultural and industrial sectors at the turn of the century.

The very nature of census errors influenced the interpretations and conclusions based on that original data. The results of our research should, to some extent, verify those findings. The development of the Polish territories proceeded in a cycle described by researchers in the 1960s and 1970s. However, in our opinion, the technological breakthrough occurred about twenty years later. The technological revolution that occurred in the seventies and eighties of the 19th century was superficial and affected only a small part of the economy. It is true that the number of steam machines used increased rapidly in the 1870s and 1880s (Łukasiewicz 1963). However, this extensive growth was primarily a consequence of the low number of steam engines used earlier. The development of the Polish economy was therefore late, not only when compared to the other industrialized regions in Europe. It was also much slower compared to the other new economies that experienced rapid structural changes in the second half of 19th century. The breakthrough in Polish economy ensued at the very end of the century and the changes did not become significant until the end of the 19th century. This relative backwardness is particularly evident in comparison with other countries undergoing rapid economic structure transitions during that period (e.g. Sweden).

It is important to mention that our analysis leading to the correction of the census data and the construction of a credible occupational structure does not provide all the answers to many crucial questions regarding the economic situation of the Polish territories in the late 19th century. First of all, the PST structure does not show the internal division into parts, within general categories and that, in turn, does not allow us to capture the internal structural changes in each sector of the economy - industry, services and agriculture. Perhaps, – in agriculture, for example – a fundamental change in the management structure took place, with a relatively limited decline in employment. As a result, the economic breakthrough within the first sector of the economy might have taken place, without any rapid change in the structure of employment and without the emergence of a strong industrial economy.

We can – following Alexander Gershenkron's research (1968:9) – hypothesize that, changes in the occupational structure in the main economic sectors were slow, but a technological breakthrough did happen and resulted in a swift growth in productivity, with a relatively low increase in employment. As a result, we would have to deal with the rapid growth of industrial production, which according to Alexander Gershenkron, would be a better tool to measure the breakthrough then the increase in income or occupational structure changes. Resolving these issues, however, goes beyond the scope of this paper and requires more detailed research on the occupational structure, capital ownership, size of enterprises, farms and so on.

Geographical scope of the research

Determining the relevant area of research for the Polish territories during the partition period is complicated due to a number of factors and it requires certain arbitrary decisions. First of all, by the decision of the governing countries, the old Polish territories were incorporated into new administrative entities, not always corresponding to the previous administrative division. Secondly, Poland, due to its turbulent past, had undergone numerous border changes for the previous three centuries. This began in the 18th century when Poland was divided into three partitions. As a result, Poland as an independent state, disappeared from the maps of Europe. Following the Napoleonic Wars and the Congress of Vienna, the Duchy of Warsaw and the Polish Kingdom were created and the borders were changed. This happened again after World War I, as well as with establishment of the Second Republic. Once again, the borders changed as a result of the agreements after World War II. In these circumstances, determining what territory should be regarded as the Polish is extremely difficult, if not impossible.

Even if we assume some specific borders of the Polish territories, a new problem arises – the difficulty of isolating fixed territorial entities, for which statistics would be available, and the corresponding data, which would allow one to carry out relevant research. In fact, the least changed and most constant component when it comes to borders, was *powiat* (equivalent to a county) (cf. Leszczyńska 1992), but available data at this level is not complete for all the partitions and a reliable comparison is nearly impossible. Therefore, we have decided to use a restrictive criterion for selecting areas of research, limiting them to unambiguously designated territories, allowing for a reliable research within comparable administrative units.

The study is based on data gathered from three partitions governed by three states: the German Reich, the Russian Empire and the Austro-Hungarian Empire. The objects of our study are, comparable in size, territorial units: the regions in Germany (Regierungsbezirke), governorates in the Russian partition and the chambers of commerce in the Austrian partition. In the case of the German (Prussian) partition, this study includes 4 regions of 2 provinces: Poznań (Provinz Posen) and West Prussian (Provinz Westpreussen). These regions were: Bydgoszcz (Regierungsbezirk Bromberg), Poznań (Regierungsbezirk Posen), Kwidzyń (Regierungsbezirk Marienwerde) and Gdańsk (Regierungsbezirk Danzig). The researched regions in the Russian partition were parts of Congress Poland, as established during the Congress of Vienna in 1815. Congress Poland consisted of 10 provinces (governorates): Piotrków, Warsaw, Siedlce, Lublin, Radom, Kielce, Kalisz, Łomża, Suwałki and Płock. In the case of the Austrian partition, we have included the lands of Galicia into our study. In that area, we selected three chambers of commerce (in the absence of adequate administrative subdivisions): Lvov, Kraków and Brody. The economic statistics in Galicia were grouped based on the chambers of commerce.

Therefore, the selected areas do not cover all of the Polish-Lithuanian Commonwealth territories, annexed by the partitioning states. We do not take into account some areas annexed by Russia – the governorates directly incorporated into Russia. We do not take into account any areas under Austrian rule that were not a part of Galicia (Cieszyn Silesia as a part of Austrian Silesia), and several Warmia counties belonging to the German partition that remained within the limits of the East Prussian province.

Our study does not include all the lands within the Second Republic borders (and even more so, within the confines of the current Polish borders). In addition to the areas listed above, we do not analyze areas of Upper Silesia, incorporated into Poland after World War I. On the other hand, the counties of Poznań and West Prussia provinces that fell within the borders of the German Reich or the Free City of Danzig after 1918, were included in our research.

When compared to the current Polish borders, the differences are even larger. The Reich provinces located today mostly within Polish borders remain outside the area of our research: Pomerania, Silesia, East Prussia and a part of province of Brandenburg. We do not examine the parts of the province of Grodno (with Białystok) which was located outside Congress Poland but we have included the eastern part of Galicia, which after World War II became a part of the Soviet Union.

Researchers using data concerning the occupational structure of Poland, usually employ estimates for the territory within Congress Poland, excluding territories accepted by us – the areas of the Austrian and Prussian partition. In Polish literature, the data on the individual partitions is reported in a disaggregated way. Therefore, the data we present here, though not fully covering contemporary Polish territory, is the most comprehensive attempt to present the occupational structure of the Polish territories to achieve a coherent and comparable database, constructed on the level of basic administrative or economic units (Governorates, Chambers of Commerce in Galicia and the Regency in Germany).

The basis for choosing these territories for investigation, except for the practical reasons previously mentioned above, has different justifications. First of all, the joint territories of Galicia, Congress Poland and two Prussian provinces - Poznan and West Prussia, correspond approximately to the territory of the Polish Kingdom until the Union of Lublin (1567), the core lands of Poland during the pre-partition times. Secondly, most of the economically important areas of Poland after World War I (with the exception of an important district of Upper Silesia) were located in the selected regions. Thirdly, the vast majority of the ethnically Polish population lived in those areas at that time. In the regencies: Bydgoszcz, Gdańsk and Kwidzyn and in Eastern Galicia (Brody HBK, HBK Lvov), Poles were the second largest ethnic group, in the other analyzed areas – the majority (Eberhardt 2003:92). The inclusion of Poland's current territory raises some serious methodological problems, associated with its former ethnic structure, the impact of two

World Wars and the consequences that followed and influenced the structure of employment, (e.g. massive migrations after World War II). It seems that these arguments reinforce and to some extent validate our selection of areas to analyze employment in the Polish territories in the late 19th century.

Census data

Comparing employment structures in different parts of the Polish territories at the end of the19th century is based on the data collected in the censuses conducted by the three partitioning empires. For the Russian partition, this is the only available data, gathered by the only census in the Russian Empire which was carried out in 1897. In our research, we use data for each province, in relation to the employment rate in the main sectors of the economy. Most of the Governorates in Congress Poland had between 500 000 to 1000 000 residents. Lublin, Piotrków and Warsaw were bigger. The latter had approximately two million inhabitants. For the Prussian partition, we use the economic census data from 1895, collected at the district (Regierungsbezirk) level. During that period, the population of the Prussian partition ranged between 600 000 to 1100 000 people. For the Austrian partition, we utilize rely on the census data from 1900, collected at the chambers of commerce level. In this case, the population size was slightly higher than the largest regencies and governorates (numbered between 1600 000 – 3300 000 residents) [3].

The employment data gathered in the censuses conducted by each state were presented in a similar but not identical manner, so the information gained from all three censuses required standardizing in order to be comparable. For this purpose, as the first step, we have adopted categories used by the German statistical office, due to the more advanced statistical methodology of the Reich and Prussia, compared with the Russian and Austrian one. We have distinguished six basic occupational categories, which were similar to the German classification: agriculture (A - German documentation), industry and crafts (B), commerce and transport (C), services (D), public services and freelancers (E), without a profession (F). The census distinguished several categories of workers and people living off their income. We have examined the workers, and in some cases, refer to the people living off the income earned in one of these sectors; we have divided the entire population based on their main source of income.

In order to assimilate the researched data with a modern perception of the labor

[3] *Obszczij swod po Imperii rezultatow razrabotki dannych pierwoj wsieobszczej pieriepisi naslenija proizwiediennoj 28 janwaria 1897 goda* .vol. 2, S. Petersburg 1905.; Berufsstatistik der Bundesstaaten nach der Zählung vom 14. Juni 1895, *Statistik des Deutschen Reichs*, Neue Folge, vol. 104(1897); Berufsstatistik nach den Ergebnissen der Zählung vom 31.XII.1900, *Österreiche Statistik*, vol. 66, h. 11, Wien 1903.

market, it was necessary to change the classification of some categories. Furthermore, some of the categories were classified differently by various statistical offices. First of all, when it comes to the Prussian and Austrian partitions, we separated people working as servants at patron's homes, who were classified as the same professional category as the head of the family[4]. We assigned these people to the general category of servants (D). This approach was also used in the analysis conducted by M. S. Schulze, among others (Schulze 2007).

The German census of 1895 grouped two professions into a single category, garment industry workers and all the professions related to the maintenance of sanitation (laundresses, public bath employees, etc.). The German statistical office added these professions to the "industry" category (B). Therefore, we have decided to do the same for Congress Poland, by moving those occupations related to the maintenance of sanitation into the general category of "Industry and crafts". In the case of data from the Austrian census, that type of category was not even mentioned. These changes are significant simplifications, nonetheless, the size of this industry was relatively small and it had no impact on the overall state of employment statistics for all partitions.

In the next part we used the PST method, aggregating the collected data into three main sectors of the economy (Wrigley 2010). PST is one of the most popular ways to analyze historical occupational structure today, hence its application that allows us to compare results of our research with results gathered for other countries. In this system of categorization, the first sector includes all the sectors assigned to the general category of agriculture and this includes – mining which is somewhat surprising. A. Wrigley explains that the first sector should include all areas that are related to supplying the market with raw materials. However, the researchers analyzing occupational structures are not consistent in this matter and some of them, such as Leigh Saw-Taylor (2009), follow the tradition used by statistical offices and classify mining as a second sector. This could be justified by the changes in the mining industry during the Industrial Revolution. The second sector includes all professions assigned as an industry and crafts category. The last - third - sector is made up of all kinds of services: transport and trade, finance, health, public administration, army and freelancers.

People without an occupation or those that have a an ambiguous type of profession are left uncategorized. This group includes people such as pensioners, the chronically ill, inmates and residents of nursing homes. Although some authors analyzing occupational structure create a separate category of the "other" sector (Van den Heuvel, van Nederveen-Meerkerk 2006), most of them prefer to limit the number to these three groups. This seems reasonable, since treating these people as an active part

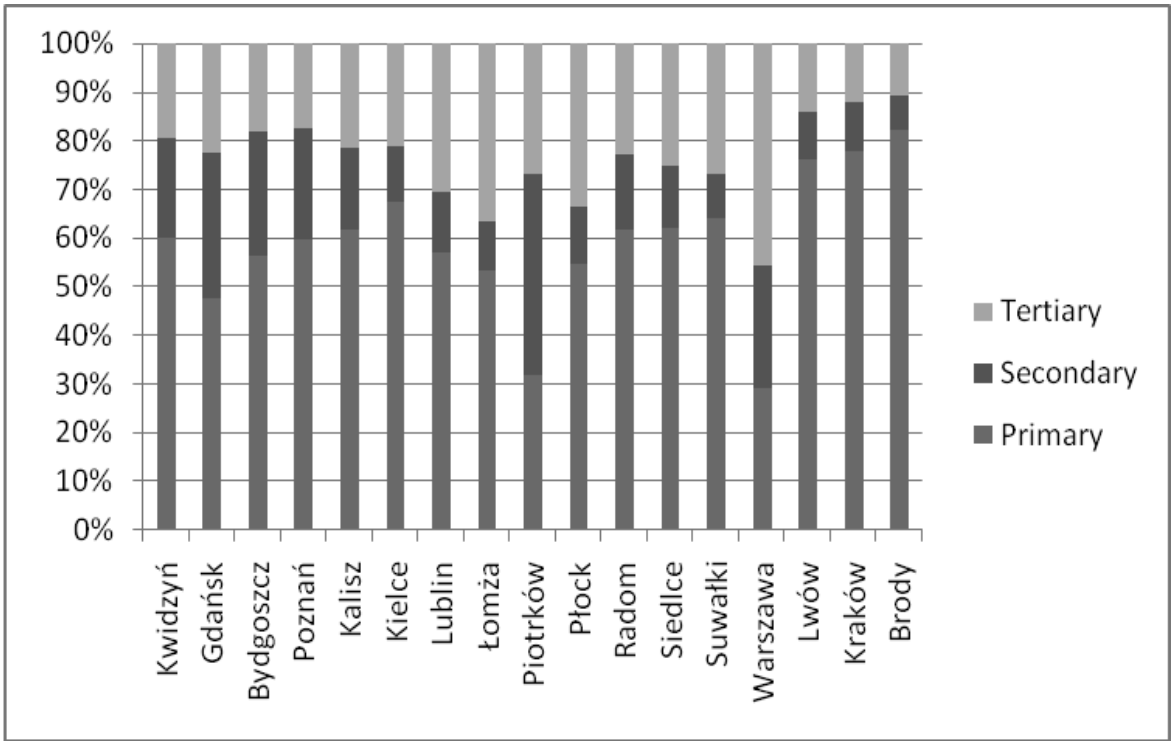
[4] E.g. the servants, who worked for and lived in carpenter's home, were classified in German and Austrian censuses as carpenters.

of the labor force is tricky and their presence can distort the results of the analysis. For this reason, we have excluded this segment from further analysis.

As a result of the introduced adjustments and amassing the data of each cumulative category, we received aggregated results for the ten provinces of Congress Poland, the four districts of the Prussian partition and the three chambers of commerce in Galicia. In further analysis, we considered only the people who qualified as workforce (professionally active), categorized in all researched censuses as “employed". In the case of the Austrian data, people directly involved in helping the main employee were added to the number of employed. In the German and Russian censuses there was no distinction for this type of category.

Figure 1

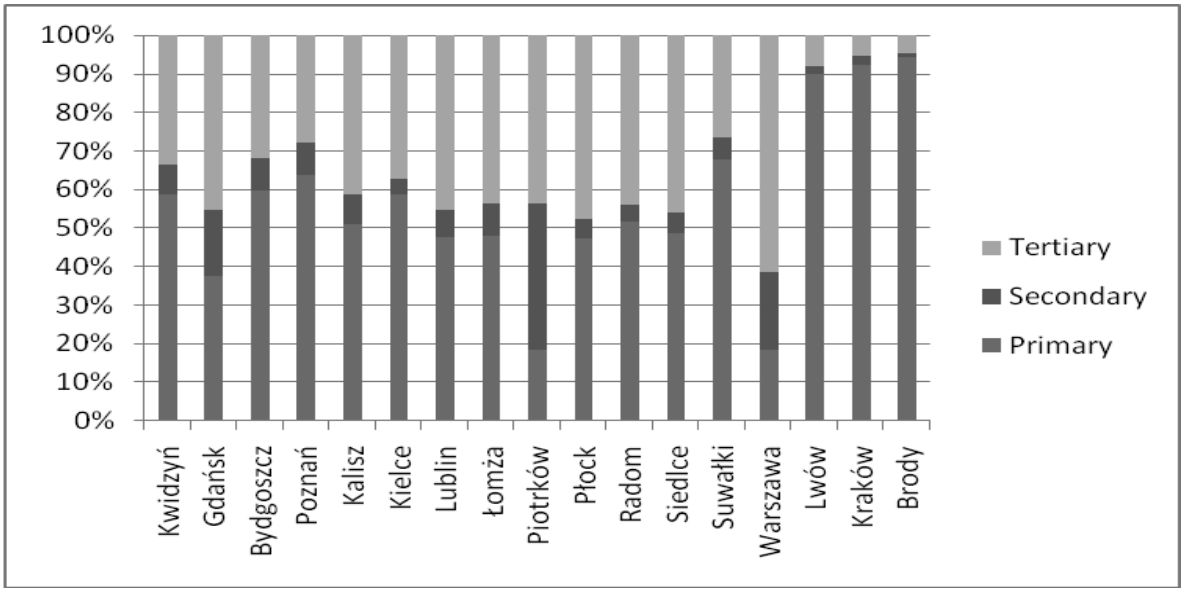
The occupational structure of the male population in the Polish territories according to the original census data



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

Figure 2

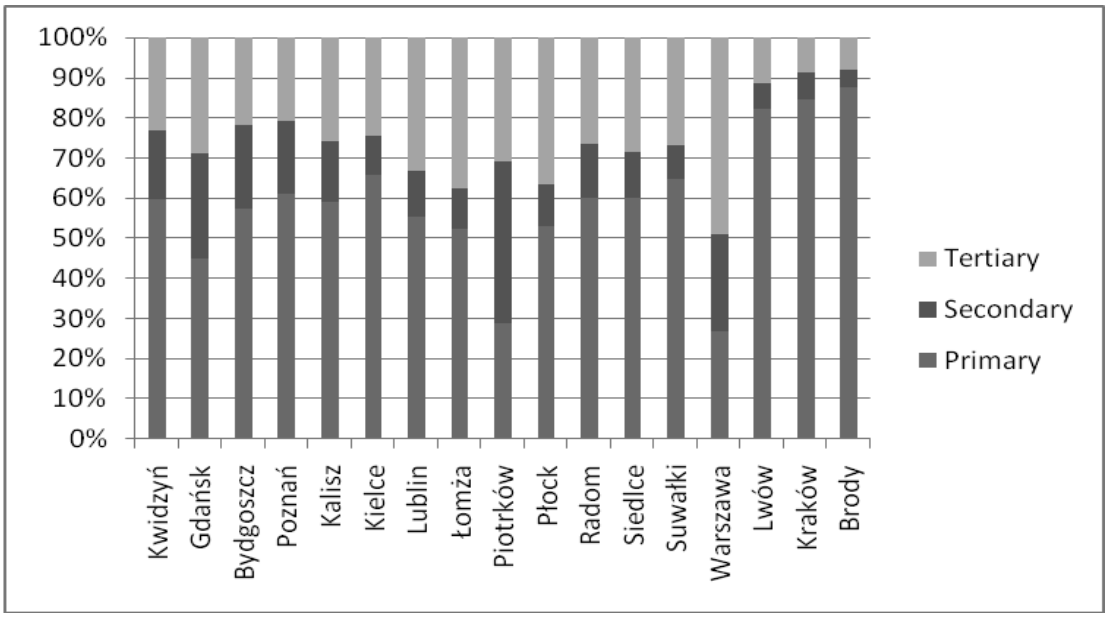
The occupational structure of the female LF in the Polish territories according to the original census data



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

Figure 3

The occupational structure (total LF) according to the original census data



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

Table 1

The occupational structure of the Polish lands (total LF) according to the original census data

Region	Economy sectors		
	Primary	Secondary	Tertiary
Bydgoszcz	57.35	20.87	21.78
Gdańsk	44.92	26.37	28.72
Kwidzyń	59.73	17.16	23.11
Poznań	60.91	18.39	20.70
Warszawa	26.84	24.06	49.10
Piotrków	28.97	40.29	30.73
Łomża	52.43	9.82	37.75
Płock	53.04	10.24	36.72
Lublin	55.41	11.47	33.12
Kalisz	59.20	14.81	25.99
Radom	60.00	13.40	26.60
Siedlce	60.10	11.44	28.46
Suwałki	64.89	8.33	26.79
Kielce	65.70	9.77	24.53
Lwów	82.33	6.16	11.51
Kraków	84.67	6.56	8.77
Brody	87.57	4.44	7.99

Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

Figures 1-3 and Table 1 present the occupational structure in Polish territories based on the original census data employed in this research. If we assume the census

data is fully credible, the levels of employment in Galician agriculture (the Primary sector of the economy) would be higher than 80%, and reaching 90% in the most eastern region, according to the Chamber of Commerce in Brody. The number of people working in agriculture in the other two partitions was significantly lower, reaching 50-65%, depending on the province or regency, with the three most industrialized regions standing out: the Gdańsk regency, the Warsaw Governorate and Piotrków Governorate, where agricultural workers comprised 45%, 27% and 29% respectively.

The percentage of people employed in industry and crafts (the Secondary sector of the economy) look significantly different. Most of the people that fall into this category, more than 40%, lived in the Piotrków Governorate. All of the Prussian districts and the Warsaw Governorate also had a significant number of people working in this category (more than 17%). The other regions of Poland were less industrialized (less than 15% of the population worked in industry), with Galicia being particularly far behind with the percentage of people working in industry ranging between 4.4-6.5% depending on the chamber of commerce.

In the light of the presented data, the Polish territories were, for the most part, a very backward region of Europe and this term refers particularly to Galicia, where almost the entire labor force worked in agriculture, while industry and services were completely marginal. Compared to other European countries - including others that lagged behind (such as Spain where the number of people employed in agriculture was less than 70% (Olivetti 2013) at the end of 1880s) the occupational structure of Galicia reflected the state of the century's economic underdevelopment. The most economically advanced parts of Poland, although a little bit behind when compared to the rest of Europe, were located in the German territories. Although they were agrarian in nature, a presence of industry and services was clearly noticeable (especially in the district of Gdańsk). Most provinces of Congress Poland had a similar percentage of the workforce employed in agriculture when compared to the Prussian part, although the share in industry was smaller. The Warsaw Governorate and especially, the Piotrków Governorate are truly distinct, as the share of people employed in industry and crafts (40%) is comparable to the share of that category in the United Kingdom (43%) (Olivetti 2013). If we assume that this data is correct, we could follow with the conclusion that the development gap between Galicia and the other Polish territories was enormous. As far as the Polish lands under Russian and Prussian jurisdiction were peripheral to European economy, Galicia would have to be considered as a periphery of a periphery.

Census data corrections

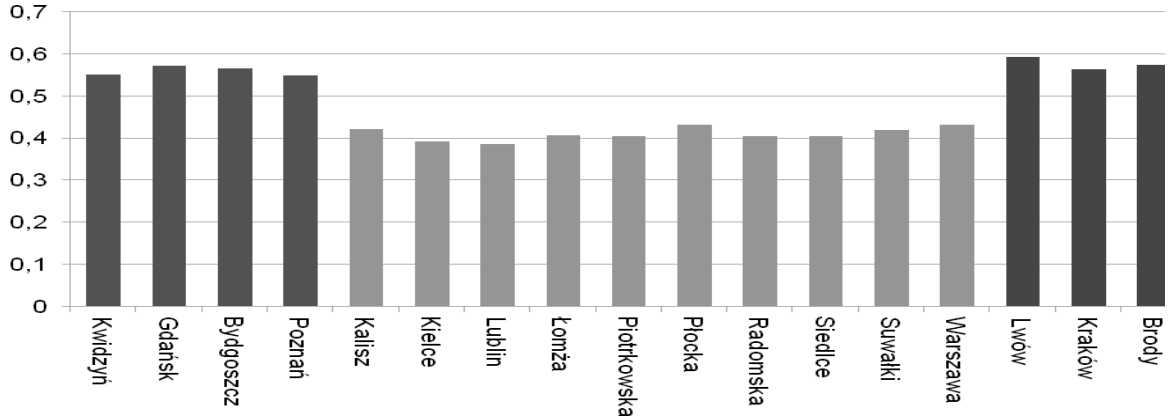
The discussions presented above have raised many questions. First of all, it seems that such a range of differences between Galicia and other Polish territories is unlikely.

The level of underdevelopment in the Austrian partition is not surprising, however, the degree of that underdevelopment seems at least questionable. Moreover, the data provided for the Governorates in Congress Poland is highly unlikely. Is it possible that the provincial Suwałki Governorate had a similar percentage of the population working in agriculture as did the Poznań regency? Could the agricultural Governorates of Siedlce and Lublin have had employment rates in industry two times higher than those of the Kraków and Lvov chambers of commerce? Was the level of industrialization of the Piotrków Governorate really as high as in the most industrialized regions of Europe?

All of these problematic issues led us to examine the census data more closely, especially in Congress Poland and Galicia. In the researched period, data was gathered in regards to men in the labor force, especially when it came to the traditional sectors of the economy, such as agriculture, trade, crafts and so on. Most of the information on women in the labor force was imprecise, not systematic and usually underestimated in many European countries. Figure 4 highlights extremely important differences in the participation (or activity) level for agriculture (considered as a percentage of the labor force within a group of people living off a particular sector of the economy, not only within the 14+ age group). The differences in the rates of activity, in relation to the entire population can be explained by the differences in the methods of registering working women. It is impossible though, to explain the differences in the percentage of professionally active men. In the Prussian and Austrian partitions they made up 55-59% of the entire male population, in the Russian partition - in each governorate - less than 44%. We can assume that almost 100% of adults (excluding the elderly and the disabled) in the underdeveloped agricultural sector were professionally active, which is around 60% of the male population (see Figure 5).

Figure 4

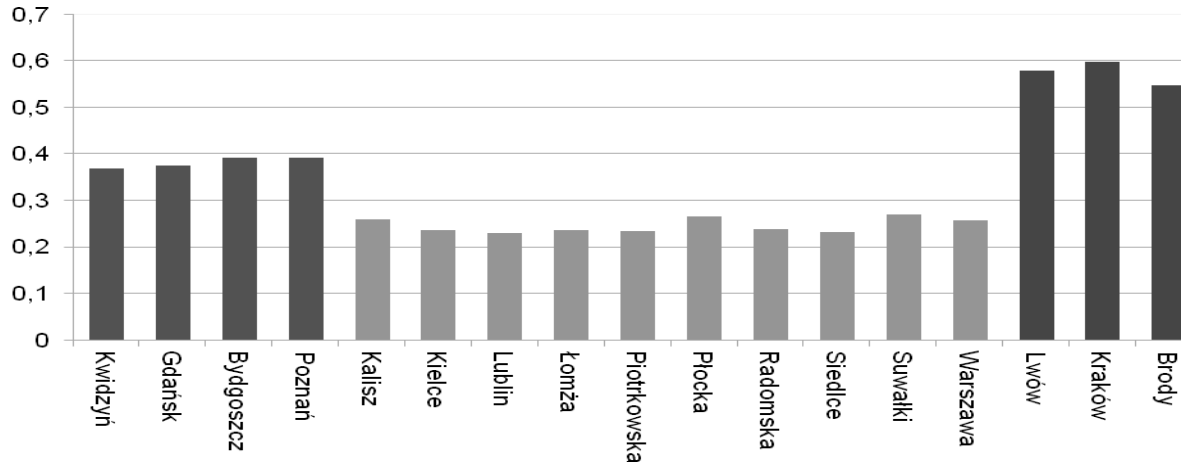
Male agriculture LF as a share of agriculture population.



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

Figure 5

Total agriculture LF as a share of total agriculture population



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

The differences in the structure of farms and in the level of technological advancement in agriculture, especially between the Austrian partition and Congress Poland can be ignored. The differences in the model of land ownership were insignificant. The ownership structure was slightly different in the Grand Duchy of Poznań (German: Großherzogtum Posen; Polish: Wielkie Księstwo Poznańskie) and, to a large extent in the Prussian partition, where farms were bigger and the percentage of farm workers was higher, due to solutions adopted during the process of the transition from serfdom.

Table 2

Age structure of the population of Polish lands

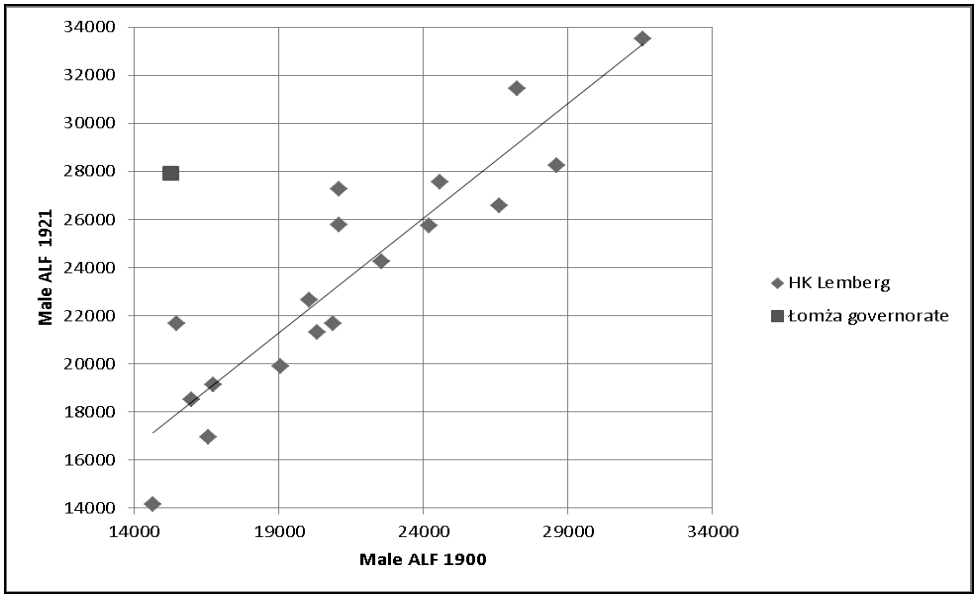
Regions	**Age categories**		
	0-14	**15-59**	**60+**
Congress Poland (1897)	39.3	54.6	6.1
PoznanProvince (1910)	40.2	52.1	7.7
Galicia (1900)	38.9	55.2	5.9

Source: Zamorski 1991: 64.

The reasons for these discrepancies in professional activity, based on our adopted definition, might have been caused by demographical differences. If, for either exogenous or endogenous factors, the age structure in Congress Poland was different from that in the Prussian or Austrian Partition, it could be a premise for the explanation of the differences in the levels of professional activity. Some potential factors could be migrations, or moving from a village to the city (observed in every partition, with the highest rates in the Prussian partition) or the differences in fertility and mortality rate. Urban data does not indicate that the rates of migration from villages to cities in that period were, in Congress Poland, significantly different from the other remaining Polish territories. Similarly, the demographical structure in each individual partition does not point towards any significant differences, as illustrated in Table 2. In each partition, the share of the population 14+ ranged from 59.8% (Poznan province) to 61.1% (Galicia). It reached 60.7% in Congress Poland. The percentage of the population aged 15-59 does not suggest that military duty, mandatory to a greater degree than in other partitions, had a significant impact on the population structure (however, data suggests there was a shortage of men who were of age to serve in the army but this number is low enough to ignore).

Figure 6

Men working in agriculture in the years 1900 and 1921 in agricultural *powiat*s of the Lvov district (previously part of HBK Lemberg districts) and in the Łomża Governorate (in 1897 and 1921)



Source: censuses Austrian (1900), Russian (1897) and Polish (1921)

Moreover, contrary to the level of employment in industry, trade and services, the number of workplaces in agriculture between the period investigated and at the beginning of the Second Republic of Poland (census from 1921) seems very constant. It was limited by the access to land (the farms were divided into smaller units as a result of

inheritance generation after generation) and the number of farms - there were no adequate conditions for a significant increase in employment in agriculture. This stability is confirmed by the partial analyses we have conducted. Figure 6 presents the relationship between the number of men employed in the agricultural territorial units (counties) within the Lvov district in 1900 and 1921 (their borders remained largely unchanged). The correlation is very strong; the rate of employment in agriculture in 1921 is clearly determined by the level of employment before World War I. Compared to that, the Łomża Governorate (as shown in the picture), was significantly different, pointing towards the underestimation of the Russian census (the population in 1921 was recreated on the basis of the *powiat* data from the census; the numbers from the governorate are divided by 5 to retain the scale). There are no historical accounts that provide proof for such a rapid increase in employment levels in agriculture in the Łomża Governorate in 1900 and 1921, especially with the relatively stable levels of population and the number of people living off agriculture.

In order to correct inaccuracies from the 1897 Russian census, it was necessary to take into account the real professional activity of men working in agriculture in Congress Poland - higher than the number recorded by the census. We have used the level of 60% which generally corresponds to the level of professional activity in Galicia and is slightly higher than the level in the Prussian provinces. Within the Prussian partition territory, there were insignificant differences in the age structure of the agrarian population, due to a high rate of work force migration to other more advanced provinces of Germany, (differences that are significant enough to notice across the entire level of population, see Table 2) – the movement of people who were of working age, led to the artificial "rejuvenation" of the population. With comparable fertility rates, the share of the population that was between 0-14 was higher and the group between 15-59 was lower than in the remaining partitions. When it comes to people of working age, the differences are particularly visible.

Another necessary correction refers to the number of women in agriculture. The differences in the rates of participation of women in the labor force in agriculture are even greater than in the case of men, with an extremely high disparity between partitions. In the case of the Prussian census data, women in 1895 constituted about 28-35% of labor force, depending on the regency. In Congress Poland, it was between 13-20%, reaching 25% in the Suwałki governorate. In the case of Galicia, it ranged from 48% to 52%. There are no convincing differences in the structure of agriculture or the type of the farming that would allow us to justify these fluctuations.

Walther G. Hoffman's research provided an important indication to apply adjustments to the 1895 German census results. He pointed towards the underestimated figures of the agricultural workforce in the censuses from 1882 and 1895 compared to the 1907 census. According to Hoffmann's calculations, the difference is significant (there were 1.5 million women not accounted for in Germany and this constitutes around 2/5 of the women employed in agriculture). These were mostly

women not counted as “supporting family members.” The difference probably stemmed from a different way of classifying women in that category in the 1882 and 1885 censuses. As a result, “only 43% of all household members [“Angehörige”], older than 14 helped on farms, while in 1907, the number suddenly jumped to 76%” (Hoffman 1965:183). Neither the German nor the Prussian partition historical records provide proof for such a rapid increase in women’s participation in the agricultural labor force.

Hoffman clearly suggests that the underestimations in the censuses from 1882 and 1895 should be corrected. Because there was no regional data provided, our corrections were based on those made for all of Germany. He added around 1.5 million people to the total workforce, which was roughly 24% women from the “household members” (Angehörige). To eliminate this error in our data analysis, we have added 24% of women counted as “household members” to the category of the number of women employed in agriculture as counted in the 1895 census. At the same time, we have subtracted the same number from the “household members” group. As a result, women’s participation in the labor force reached an average of 40% women living off agriculture. This correction could be seen as doubtful on regional level, because Hoffman’s correction was made for the all German Empire not for particular districts or provinces. We have validated our correction adopting Max S. Schulze assumption (concerning Austria in the same period) that women participation in the labor force reached an average of 40% women living off agriculture (Schulze 2007:212). As showed in table 3 the results are very similar.

Table 3

Structure of LF in German partition after corrections of ALF

Regierungsbezirk	Sector of the economy	Data corrected according to Hoffman	Data corrected according to Schulze
Kwidzyń	Primary	65,1	65,6
	Secondary	14,8	14,6
	Tertiary	20,1	19,9
Gdańsk	Primary	50,4	51,1
	Secondary	23,4	23,1
	Tertiary	26,2	25,8
Bydgoszcz	Primary	62,3	62,2
	Secondary	18,3	18,3
	Tertiary	19,4	19,5
Poznań	Primary	65,7	65,0
	Secondary	16,0	16,3
	Tertiary	18,3	18,7

Source: Own calculation, data from German census of 1895.

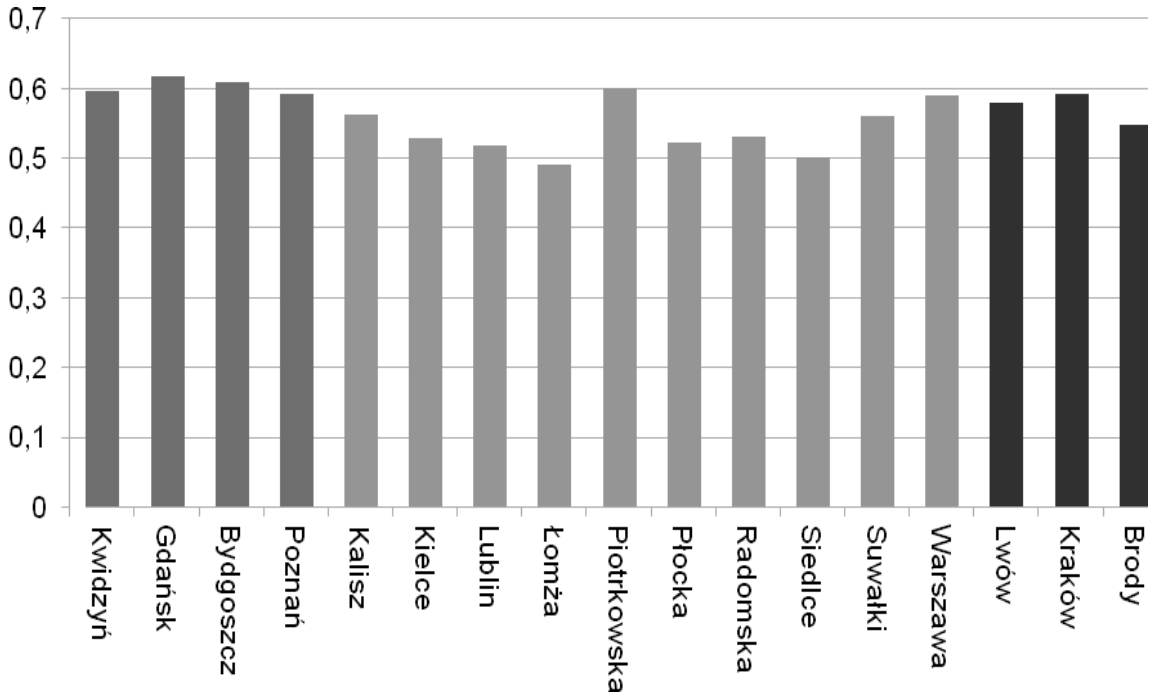
Max S. Schulze pointed out that the opposite mistake could have been made for Austria-Hungary, i.e. overestimation of female agriculture labor force. Following his interpretation, we have lowered the levels of participation in Galicia in such a way, that women alone would constitute 40% of the labor force in agriculture. Except for extraordinary situations that probably never occurred in the researched period in the regions of underdeveloped agriculture, the number of professionally active women probably reached that level. We are not aware of any interpretation that would allow us to estimate the level of women's participation in Congress Poland. There are no presumptions suggesting that those levels should be significantly different from the

Austrian and German data. In both cases, based on strong evidence, it is 40%, therefore we have used this level for Congress Poland too.

When it comes to industry and trade in Congress Poland, lower levels of participation are visible as well, although the differences are not as striking as in agriculture. Except for the highly industrialized governorates of Piotrków, Warsaw, Kalisz and Suwałki, this percentage is lower on average by about 10% compared to the other partitions. For industry and services there are also no large differences between Galicia and the Prussian partition – the participation rates in those two districts tend to be at a similar level, except for the least developed part of Galicia – the commerce chamber in Brody. If we look at the whole population, including women, deviations are not greater than 5%. It seems that in the less developed regions, the employment rates in crafts and (proto-industrial) manufacturing were not fully registered

Figure 7

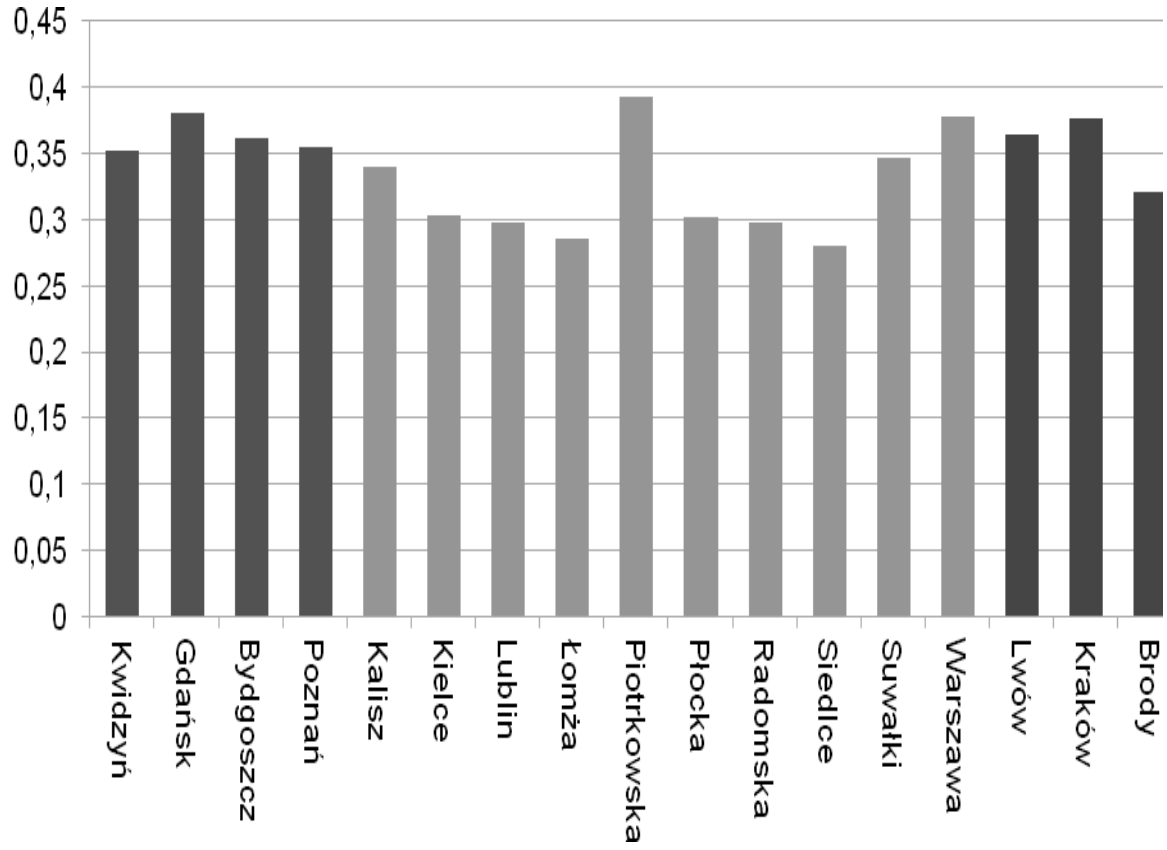
Men working in industry and crafts as a percentage of all men living off industry and craft



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

Figure 8

Individuals working in industry and crafts as a percentage of whole population living off industry and crafts



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

We made the decision to adjust the percentage (and the number) of men working in industry (and crafts) by raising it to 60% of male industrial (2nd sector) population, in those governorates in Congress Poland where it was drastically below 60% of the entire male population living off industry and crafts. We have done this because the original data must have been underestimated, in particular the number of men working in industry as a percentage of the entire male population living off industry is apparently too low (see Figure 7). We did not changed the size of female labor force.

Employment rates in this sector of the economy in the Prussian and Austrian partitions have been left unchanged. Employment in the third sector was also left unchanged, except for the men working in trade and transport. In that case, we have corrected the number of male LF in Congress Kingdom to the level observed in Galicia (participation rate equal to 50%). We did not correct the number of women working in industry and services because of the differences in women's professional activity observed between individual sectors of industry, industry and services, industry and crafts, and between industry and services in cities and in the countryside. We do not have any premise for such an adjustment but we noticed, that it may lead to substantial underestimation of the size of the female labor force.

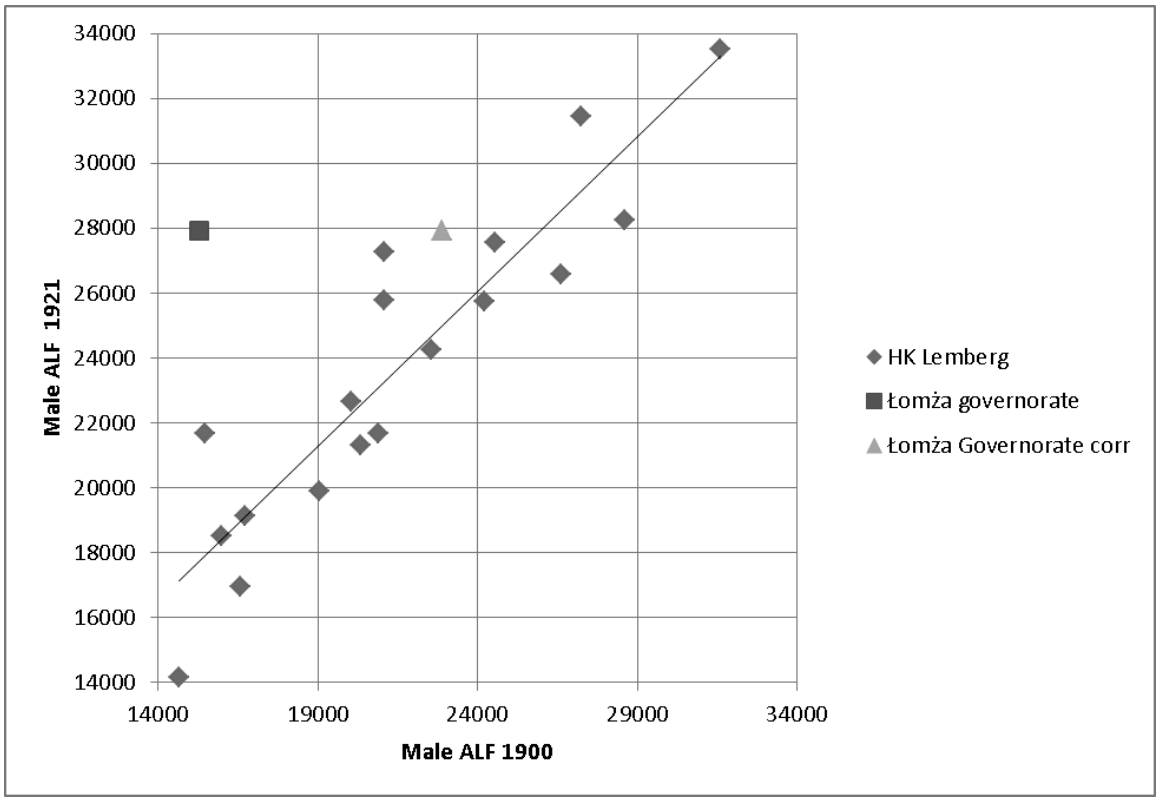
It is important to stress one specific feature of the occupational structure of Polish lands in that period. Despite the fact that it was a time of peace, 35% of men working in the third sector were soldiers (23% in this category in Galicia, and 50% in the Prussian partition and 43% in Congress Poland). In the Prussian partition, soldiers made up 10% of all professionally active men, in Congress Poland that number was 11%, while in Galicia it was only 3%. Moreover, the Russian army stationed in Congress Poland was the size of the entire German army stationed in the whole Prussian Kingdom in that period (with the population of Congress Poland at around 9 million and the Prussian Kingdom - 32 million). The total share of soldiers in the whole Russia was similar to German one and accounted for around 3% of the professionally active male population.

Results after correction

Employing these adjustment has led to a smoothing of the data, reducing the differences between partitions, and most of all to, intuitively justified, the reduction of disparities between the less developed governorates of Congress Poland and the chambers of commerce in Galicia, especially the more urbanized Galician regions, within the areas of Krakow and the Lvov chambers of commerce. The partial effect of this adjustment is shown in Figure 9.

Figure 9

Men working in agriculture in 1900 and 1921 in the agricultural *powiats* (counties) of the Lvov district (previously part of the HBK Lemberg district) and in the Łomża Governatorate, after the corrections (1897 and 1921)



Source: own calculation, census data from Russia 1897, Austria 1900 and Poland 1921.

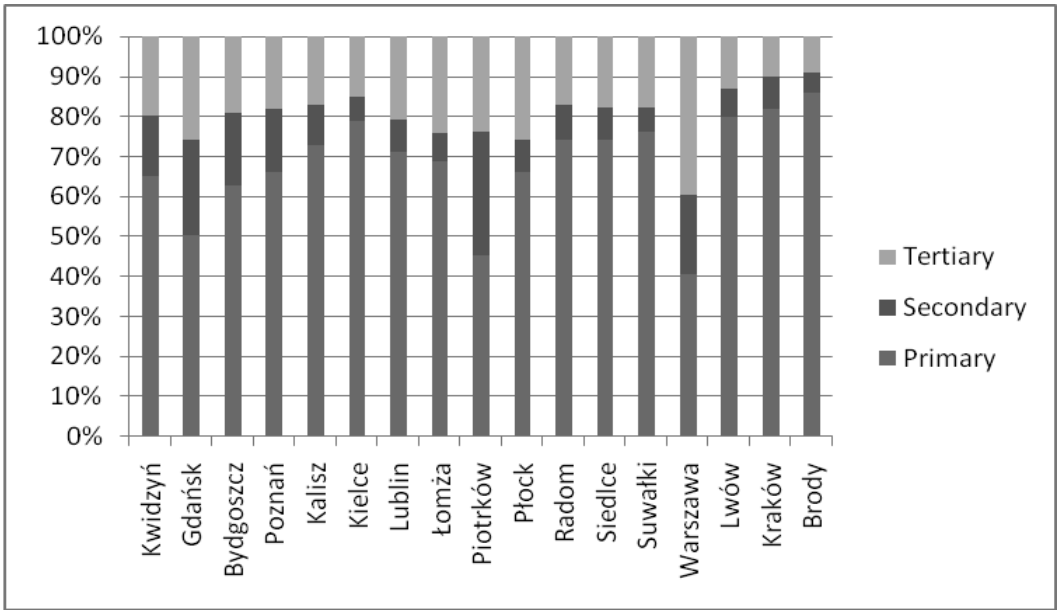
The territory of the Cracow Chamber of Commerce encompassed one of the most developed and the most urbanized areas of the old Commonwealth: a significant part of the old voivodship (wojewodztwo) of Cracow and Sandomierz. Data corrections improve its position in comparison to the less developed, eastern governorates of Congress Poland and bring the numbers closer to the Prussian partition which were once the most developed western provinces of Republic, also seem justified.

Agriculture remained the most important sector of the economy, not only in terms of employment numbers but also in terms of added value. Except for the two western governorates of Congress Poland, the Piotrków and Warsaw governorates, along with the Gdańsk district, the level of employment in agriculture everywhere else exceeded 60%, and in the seven governorates of Congress Poland as well as all the chambers of commerce in Galicia it topped 70%. The rates for professionally active men are different. The percentage males employed in agriculture exceeded 50%, with the exception of the

Gdańsk district, the Piotrków and Warsaw governorates, and for the seven Congress Poland governorates and in Galicia it was more than 60%.

Figure 10

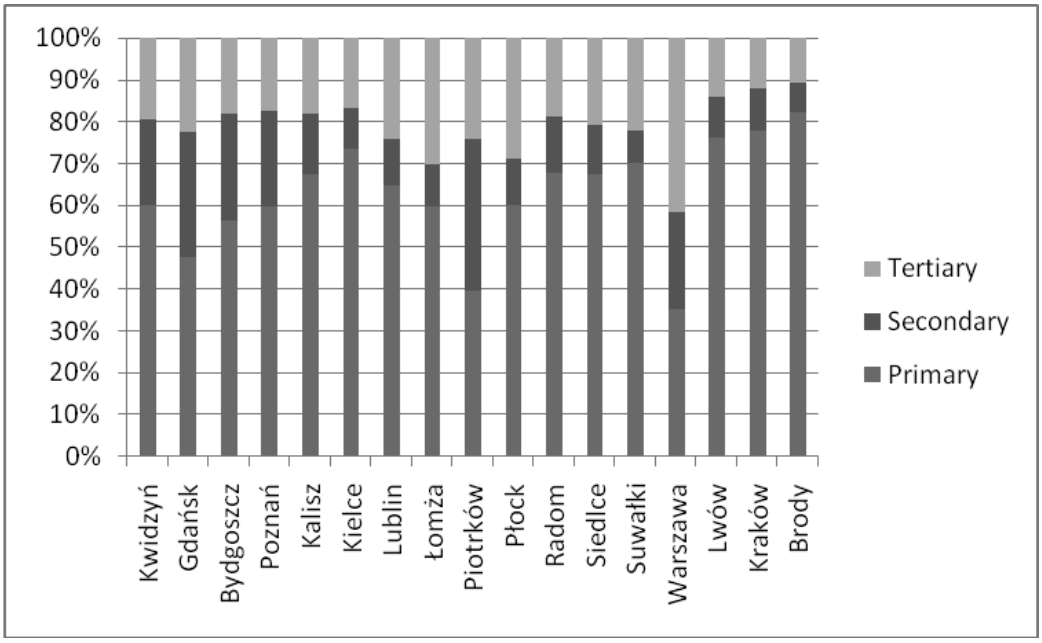
Occupational structure according to territorial units (adjusted data)



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

Figure 11

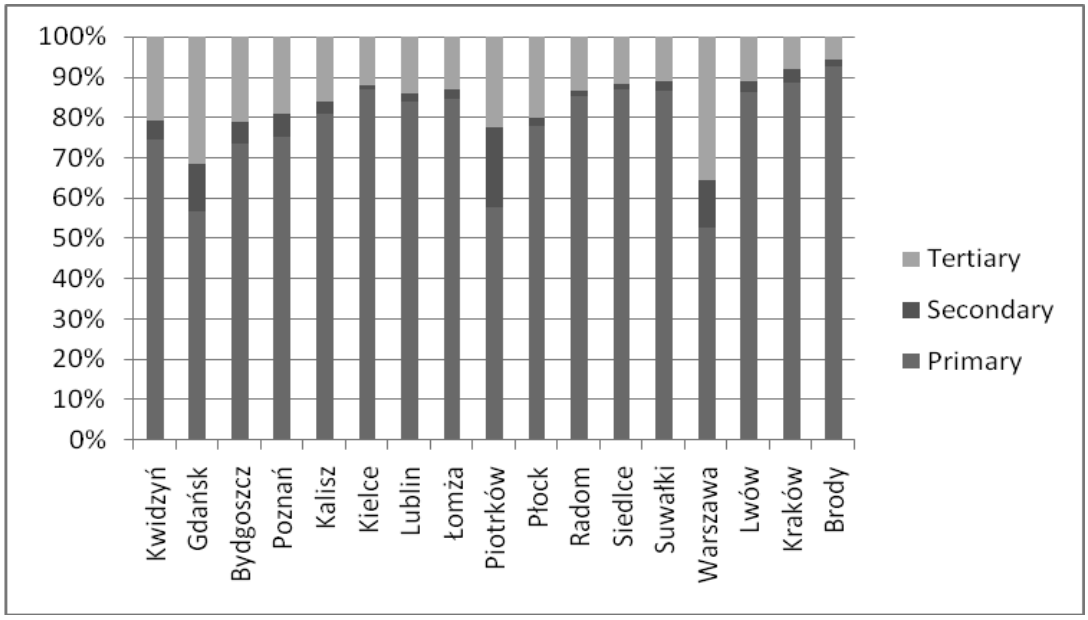
Occupational structure for men according to territorial units (adjusted data)



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

Fig 12.

Occupational structure for women based on territorial units (data adjusted)



Source: own calculation based on census data from Germany, 1895. Russia, 1897 and Austria from 1900.

For a substantial part of the Polish territories (and also a considerable part of the population), industry was really of no significance. Only in the Piotrków governorate and the Gdansk district, did employment in industry exceed 20% (25% for males), in other districts of the Prussian partition and the Warsaw governorate it exceeded 10% (15% for males). The level of industralization was unequal – industry consisted mainly of small workshops and large industrial plants were concentrated around just a few urban centers (Puś 1984, 1997, 2013). Industry is grouped with craft and mining in the presented data and this means that employment in industry alone was significantly lower. The size of the service sector was determined by the size of the military contingent. The relatively small size of this sector in Galicia is associated primarily with the much smaller size of the army.

An earlier analysis included regional data (e.g. Mitchell cited data for Congress Poland as data for the entire Polish territory, the same data used by Allen /2000/ and Malinowski /2013/), however, there was no comparative analysis covering the entire Polish territory, even in the scope we researched in this work. The data presented by Polish and foreign historians could not be compared with data from other countries because of its inaccuracy (especially, in the case of the Russian census). A certain way to work around this issue is to present data referring to the population living off the income earned in a particular sector of economy instead of the structure of the labor force (Jezierski, Leszczyńska 1997:158). That data is also hard to compare and does not include specific information on women's employment in agriculture.

The estimates presented above are clearly different from the data for individual regions of Poland cited previously in the available studies. Applying corrections and including the research on employment statistics from that period allowed us to develop a coherent data set which is listed in the annex. The acquired results create an opportunity to take a fresh look at the occupational structure in the Polish territories and compare them with the rest of Europe. They prove that the structure of employment in the Polish territories, at the turn of the century, was similar to that of Spain in the second half of the eighties during the 19th century. The occupational structure in Spain was very similar to the one in the Prussian partition, although the Prussian Partition had a somewhat larger service sector and a bit smaller agricultural sector. After considering the excessive number of soldiers in the army, maintained as a quasi-colonial contingent in Congress Poland, the occupational structure there, is similar to the one in Spain. Considering the most developed regions of Poland (the Piotrków and Warsaw governorates, along with the Gdańsk regency), inhabited by around 1/5 of the population of the analyzed territories, had an occupational structure comparable to that of America and France, in the second half of the 1880s (just a few years earlier). Only for that area, we can draw conclusions, relying on the occupational structure data, that it had a relatively high level of development (Olivetti 2013:29). However, the structure of service and industry sectors, even in those areas, does not resemble that of a modern economy. The service sector relied too heavily on employment by the army, the industrial sector was dominated by small enterprises and one-person workshops

(Żarnowska 1974:43). Moreover, the relatively undeveloped level of mechanized industrial manufacturing played a significant role.

Table 3

Occupational structure at the end of 19th century in selected European countries and in the USA

	Great Britain (1891)	Netherlands (1899)	USA (1890)	France (1886)	Sweden (1900)	Spain (1887)	Poland (total)	Prussian partition (1895)	Congress Poland (1897)	Galicia (1900)
P	***15.7***	***34.1***	***42.7***	***47.0***	***52.3***	***69.4***	***69.8***	***62***	***63***	***82***
S	***43.6***	***32.6***	***27.2***	***25.7***	***28.0***	***16.0***	***11.6***	***18***	***13.5***	***7***
T	***40.7***	***33.3***	***30.1***	***27.3***	***19.7***	***14.6***	***18.6***	***20***	***23.5***	***11***

Source: own study based on census data from Germany 1895, Russia 1897 and Austria from 1900. UK, France, USA, Spain: Claudia Olivetti, op. cit., tab. 1, p. 29; Sweden: O. Krantz, L. Schönn, Swedish Historical National Accounts 1800—2000, Lund Studies in Economic History 41, Almqvist&Wiksell International, Lund 2007, p. 60; Holland: J.P. Smits, E. Horlings, J.L. van Zanden, Dutch GNP and Its Components, 1800-1913, University of Groningen, Groningen Growth and Development Centre, 2000, p. 114

Conclusions

The problem of economic development of the Polish territories at the end of 19th century was one of the main issues Polish economic historians debated in the second half of the 20th century. Previous studies conducted did not provide a comparative analysis of the occupational structures of all the Polish territories. Our study attempts to fill in these gaps and correct earlier research by estimating as closely as possible the occupational structure in the Polish territories in the late 19th century.

A thorough analysis of census data collected from the three partitions: Russian (1897), Austrian (1900) and German (1895) and adjustments made to this data, has allowed us to create a new juxtaposition of the occupational structure in the Polish territories at the end of 19th century. These adjustments allowed us - in our opinion - to approximate the data as closely as possible to the real situation at the end of the 19th century. We are fully aware that many factors may have been distorted; our calculations on the numbers employed in the three main sectors of economy have not been taken into consideration, and therefore, the presented estimations could certainly lead to further corrections and adjustments.

The occupational structure of the Polish territories clearly shows that the areas of eastern Poland remained the least developed part of the Polish territories, however, the difference between them and other regions was not as significant as the original census data indicated. As we move north and west, the occupational structure looks more "modern" – the share of the second sector (industry and craft) rises, at the expense of the first one (agriculture). The presented results confirm previously held assumptions, that the territories under German rule, along with two Congress Poland governorates of Piotrkow and Warsaw were the most developed areas in the Polish territories.

Out of the seventeen investigated regions, only three maintain the claim that an industrial revolution had already started (in the sense that factory workers accounted for a larger proportion of professionally active individuals). In this sense, the presented estimations only partially confirm observations that point towards the seventies and eighties of the 19^{th} century, as the moment of industrial revolution in the Polish territories. It happened several years later, and to a very limited extent, even in the regions that could be recognized as modern. This is also suggested by the comparisons with the occupational structure of other European countries and the USA. Against this background, the Polish territories remained economically backward, even in comparison with peripheral Spain.

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ANNEX. Occupational structure of Polish lands 1895/1897/1900 by sector

German part: Regierungsbezirks Marienwerde (Kwidzyn), Danzig (Gdańsk), Bromberg (Bydgoszcz) and Posen (Poznań).

Russian part (Russian Poland or Congress Kingdom of Poland): governorates: Kalisz, Kielce, Lublin, Łomża, Piotrków, Płock, Radom, Siedlce, Suwałki, Warszawa.

Austrian park: Province Galizia; HBK Krakau (Kraków), HBK Lemberg (Lwów) and HBK Brody.

Sources and method described in paper.

Administrative Unit	Sector of Economy	Total LF by sector	Shares of sectoral LF in TLF	Male LF by sector	Shares of sectoral LF in total MLF	Female LF by sector	Shares of sectoral LF in total FLF	*Sectoral Population*	*Male sectoral population*	*Female sectoral population*
Kwidzyń	**P - Primary**	244306	65,11	143911	60,05	100395	74,05	524475	260932	263543
	S - Secondary	55373	14,76	49025	20,46	6348	4,68	154400	82191	72209
	T - Tertiary	75546	20,13	46720	19,49	28826	21,26	135735	65934	69801
	Suma	**375225**	**100,00**	**239656**	**100,00**	**135569**	**100,00**	**814610**	**409057**	**405553**
Gdańsk	**P - Primary**	131582	50,35	80807	47,60	50775	55,45	278434	260932	137250
	S - Secondary	61210	23,42	50512	29,76	10698	11,68	158224	81724	76500
	T - Tertiary	68531	26,22	38432	22,64	30099	32,87	131411	58127	73284
	Suma	**261323**	**100,00**	**169751**	**100,00**	**91572**	**100,00**	**568069**	**400783**	**287034**
Bydgoszcz	**P - Primary**	176146	62,34	101757	56,43	74389	72,77	362924	260932	183016
	S - Secondary	51612	18,27	46075	25,55	5537	5,42	140386	75675	64711
	T - Tertiary	54794	19,39	32497	18,02	22297	21,81	106801	49056	57745
	Suma	**282552**	**100,00**	**180329**	**100,00**	**102223**	**100,00**	**610111**	**385663**	**305472**

Administrative Unit	Sector of Economy	Total LF by sector	Shares of sectoral LF in TLF	Male LF by sector	Shares of sectoral LF in total MLF	Female LF by sector	Shares of sectoral LF in total FLF	*Sectoral Population*	*Male sectoral population*	*Female sectoral population*
Poznań	**P - Primary**	326318	65,69	175980	59,61	150338	74,60	672000	260932	350688
	S - Secondary	79440	15,99	67903	23,00	11537	5,72	219713	114719	104994
	T - Tertiary	91006	18,32	51358	17,40	39648	19,67	177451	78403	99048
	Suma	**496764**	**100,00**	**295241**	**100,00**	**201523**	**100,00**	**1069164**	**454054**	**554730**

Administrative Unit	Sector of Economy	Total LF by sector	Shares of sectoral LF in TLF	Male LF by sector	Shares of sectoral LF in total MLF	Female LF by sector	Shares of sectoral LF in total FLF	*Sectoral Population*	*Male sectoral population*	*Female sectoral population*
Kalisz	**P - Primary**	265615	72,34	155407	67,37	110209	80,75	548165	272643	275522
	S - Secondary	37600	10,24	33376	14,47	4224	3,10	104609	55626	48983
	T - Tertiary	63951	17,42	41909	18,17	22042	16,15	157785	73799	83986
	Suma	**367165**	**100,00**	**230691**	**100,00**	**136475**	**100,00**	**810559**	**402068**	**408491**
Kielce	**P - Primary**	267309	78,65	154304	73,58	113005	86,83	553222	270709	282513
	S - Secondary	21808	6,42	20196	9,63	1612	1,24	63942	33660	30282
	T - Tertiary	50741	14,93	35209	16,79	15532	11,93	127796	61390	66406
	Suma	**339858**	**100,00**	**209709**	**100,00**	**130149**	**100,00**	**744960**	**365759**	**379201**
Lublin	**P - Primary**	377194	71,35	222008	64,62	155186	83,86	777453	389487	387966
	S - Secondary	42052	7,95	38031	11,07	4021	2,17	123352	63385	59967
	T - Tertiary	109387	20,69	83544	24,32	25843	13,97	234915	125635	109280
	Suma	**528633**	**100,00**	**343583**	**100,00**	**185050**	**100,00**	**1135720**	**578507**	**557213**

Administrative Unit	Sector of Economy	Total LF by sector	Shares of sectoral LF in TLF	Male LF by sector	Shares of sectoral LF in total MLF	Female LF by sector	Shares of sectoral LF in total FLF	*Sectoral Population*	*Male sectoral population*	*Female sectoral population*
Łomża	**P - Primary**	182723	68,10	107300	59,88	75422	84,64	376802	188246	188556
	S - Secondary	19895	7,41	17717	9,89	2178	2,44	58378	29529	28849
	T - Tertiary	65695	24,48	54182	30,24	11513	12,92	127791	75046	52745
	Suma	**268313**	**100,00**	**179200**	**100,00**	**89113**	**100,00**	**562971**	**292821**	**270150**
Piotrków	**P - Primary**	268400	45,72	156378	39,76	112022	57,82	554403	274347	280056
	S - Secondary	179696	30,61	141788	36,05	37908	19,57	457812	236313	221499
	T - Tertiary	138950	23,67	95149	24,19	43801	22,61	343351	164538	178813
	Suma	**587045**	**100,00**	**393314**	**100,00**	**193731**	**100,00**	**1355566**	**675198**	**680368**
Płock	**P - Primary**	160025	66,31	93279	60,01	66746	77,72	330513	163648	166865
	S - Secondary	19258	7,98	17474	11,24	1784	2,08	56196	29123	27073
	T - Tertiary	62039	25,71	44689	28,75	17350	20,20	140653	71563	69090
	Suma	**241322**	**100,00**	**155442**	**100,00**	**85880**	**100,00**	**527362**	**264334**	**263028**

Administrative Unit	Sector of Economy	Total LF by sector	Shares of sectoral LF in TLF	Male LF by sector	Shares of sectoral LF in total MLF	Female LF by sector	Shares of sectoral LF in total FLF	*Sectoral Population*	*Male sectoral population*	*Female sectoral population*
Radom	**P - Primary**	265713	74,06	155601	67,80	110111	85,19	548263	272985	275278
	S - Secondary	32726	9,12	30994	13,50	1732	1,34	97892	51656	46236
	T - Tertiary	60324	16,81	42907	18,70	17417	13,47	149421	72832	76589
	Suma	**358762**	**100,00**	**229502**	**100,00**	**129260**	**100,00**	**795576**	**397473**	**398103**
Siedlce	**P - Primary**	253819	74,39	149225	67,62	104594	86,78	523284	261799	261485
	S - Secondary	27285	8,00	25634	11,62	1651	1,37	82517	42724	39793
	T - Tertiary	60104	17,61	45828	20,77	14276	11,85	148019	75562	72457
	Suma	**341208**	**100,00**	**220687**	**100,00**	**120521**	**100,00**	**753820**	**380085**	**373735**
Suwałki	**P - Primary**	203081	76,29	115993	70,04	87088	86,58	421216	203496	217720
	S - Secondary	15443	5,80	13059	7,89	2384	2,37	42032	21765	20267
	T - Tertiary	47679	17,91	36567	22,08	11112	11,05	98222	53317	44905
	Suma	**266202**	**100,00**	**165618**	**100,00**	**100584**	**100,00**	**561470**	**278578**	**282892**

Administrative Unit	Sector of Economy	Total LF by sector	Shares of sectoral LF in TLF	Male LF by sector	Shares of sectoral LF in total MLF	Female LF by sector	Shares of sectoral LF in total FLF	*Sectoral Population*	*Male sectoral population*	*Female sectoral population*
Warszawa	**P - Primary**	337366	40,77	199948	35,26	137418	52,78	694331	350786	343545
	S - Secondary	162462	19,64	131998	23,28	30464	11,70	425175	219996	205179
	T - Tertiary	327569	39,59	235112	41,46	92457	35,51	711543	364738	346805
	Suma	**827396**	**100,00**	**567057**	**100,00**	**260339**	**100,00**	**1831049**	**935520**	**895529**

Administrative Unit	Sector of Economy	Total LF by sector	Shares of sectoral LF in TLF	Male LF by sector	Shares of sectoral LF in total MLF	Female LF by sector	Shares of sectoral LF in total FLF	*Sectoral Population*	*Male sectoral population*	*Female sectoral population*
Lwów	**P - Primary**	1231407	79,94	731372	76,11	500035	86,28	2486603	1236515	1250088
	S - Secondary	107788	7,00	92495	9,63	15293	2,64	296294	159945	136349
	T - Tertiary	201223	13,06	137015	14,26	64208	11,08	442139	221035	221104
	Suma	**1540418**	**100,00**	**960882**	**100,00**	**579536**	**100,00**	**3225036**	**1617495**	**1607541**
Kraków	**P - Primary**	896580	81,75	538346	77,82	358234	88,47	1851487	955903	895584
	S - Secondary	85618	7,81	70970	10,26	14648	3,62	227314	120129	107185
	T - Tertiary	114512	10,44	82491	11,92	32021	7,91	275009	133727	141282
	Suma	**1096710**	**100,00**	**691807**	**100,00**	**404903**	**100,00**	**2353810**	**1209759**	**1144051**
Brody	**P - Primary**	615582	86,23	361299	82,22	254283	92,64	1265295	629588	635707
	S - Secondary	35098	4,92	31000	7,05	4098	1,49	109461	56660	52801
	T - Tertiary	63225	8,86	47117	10,72	16108	5,87	167097	80468	86629
	Suma	**713905**	**100,00**	**439416**	**100,00**	**274489**	**100,00**	**1541853**	**766716**	**775137**

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