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MIDDLE-AGED WOMEN IN POLAND AS A SEGMENT OF TOURIST SERVICES RECIPIENTS

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ABSTRACT

The aim of the article is to present middle-aged women as a segment of recipients on the tourism services market. The article characterizes women's tourist activity. The available statistical data was reviewed. A survey (hand-out survey) was also conducted on a non-random sample of 155 women. The following research problems were used in empirical studies: What are the reasons for women giving up tourist trips? What form of organization and length of trips do the respondents prefer? Is there a relationship between the respondents' ability to drive a car and their tourist activity? In whose company do women usually go? What goals decide about undertaking tourist activity and which factors have the greatest impact on the organization of a tourist trip? What is the dream tourist trip of the respondents? The research allowed to determine the ways of spending time preferred by women during tourist trips. Women willingly participated in domestic and foreign tourist trips. They usually left with their family or partner, and the main reason for the trip was the desire to entertain, get to know interesting places and rest. Factors that were most important for the respondents were the weather, leisure places and company. The price was definitely less important.

Key words: women, customer segment, tourist trips

JEL codes: E7, H31, P46, Z32

INTRODUCTION

Tourism market is very diverse. It is subjected to socio-consumer trends that exist on the consumer market. That is why we observe a significant diversity of vacation offers. In addition to the typical ones, appealing to a wide audience, there are more and more offers targeting various customer segments. The literature review shows that customer segmentation in tourism market can be based on various criteria and there are different approaches to this process [Jefmański 2006, Nowacki and Zmyślony 2012, Manczak 2014]. In the author's opinion it can be argued that middle-aged women (40+) form an attractive and underestimated segment of tourism participants. Assuming after E. Kąciak [2011] that creating a market segment involves answering the following questions: who? (consumer description e.g. socio-demographic characteristics), how many? (segment size) and why? (dimensions of cognitive and motivational structures typical for consumers in this segment), it can be argued that the adopted research group constitutes a consumer segment. It would also be justified to ask if creating this customer segment could be useful.

There are many conditions determining the utility of customer segments and the most common include [Mazurek-Łopacińska 2005]: accessibility (the ability to advertise and sell products), measurability, size, the possibility of providing effective service, stability, traceability, homogeneity, sensitivity (customers are likely to resonate with marketing instruments).

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As no segment is completely homogeneous, it can be assumed that also the customer segment adopted by the author meets the conditions of utility. In addition to the obvious variable, which is age, this group shares other qualities. Middle-aged women increasingly often enjoy a stable professional, financial and family situation. They often have experience in combining part-time or full-time work with childcare (in Poland in 2017, 10.6% of women worked part-time, of which 16.5% due to childcare). For men these figures were respectively: 4.4% and 4.5% [GUS 2018]. Women of this age often feel the need to do something for themselves; they seek self-fulfillment and personal development. These needs are analyzed in numerous popular psychological publications and press articles, as well as created by advertising messages. Women are also the most frequent recipients of marketing campaigns, which is reflected in the advertisements placed in mass media.

The tourist activity of women has also been analyzed in scientific literature [Berbeka 1999, Kieżel 2010, Niemczyk 2010, Łubkowska et al. 2014]. However, there are too few studies taking into account other variables, such as age, in addition to gender. The scarcity of such research is also visible in public statistics databases.

The typical tourism offer targeted to women (including women aged 40+) is a spa & wellness holiday, rejuvenating, slimming or cleansing treatments etc. Proposing mainly this type of offer is a manifestation of stereotypical perception of women and their needs. This has prompted the author to undertake the research that was presented in this article. The aim of this study was to explore 40+ women's participation in tourism, with particular focus on destination choices, favorite leisure activities and preferred trip organization.

The study reviewed the available secondary data illustrating the tourist activity of women. Additionally, a survey research was carried out on a random sample of 155 women aged 40+. The following research issues have been formulated in empirical studies:

- What are the reasons for the resignation of women from tourist trips?
- What type of organization and length of trips do the respondents prefer?
- Does the ability of the respondents to drive a car affect their tourist activity?
- In whose company do women travel most often?
- What are the goals that decide about taking up tourism activities and which factors have the greatest impact on the organization of a tourist trip?
- What is the dream of a tourist's trip?

The collected empirical material was subjected to quantitative and qualitative analysis. The test results are presented in tables and graphs. The U Mann-Whitney test was used to analyze the relationships between selected variables.

The female tourism market

The proportion of women in the population of Poland is 51.6%. The majority of women (61.3%) live in cities. Women aged 40+ are 53.1% of the female population, of which almost half (49.2%) are in the age group of 40–59 (they constitute 26.1% of the female population in general) [GUS 2017]. The data published by Poland (GUS) also show that women were slightly more active as tourists than men. Nearly one in five women (19.8%) participated in short-term domestic trips, 25.5% in long-term trips and 9.2% in foreign trips lasting a minimum two days. In the case of men, these figures were respectively: 18.5%, 23.2% and 8.0% [GUS 2014]. In the aforementioned GUS study a detailed analysis of long-term trips (minimum four days) was carried out also with regard to gender. It shows that a statistical Polish woman usually takes a trip once a year (85.5%), organizes the trip by herself (80.0%), uses a car as a means of transport (70.5%), stays with her family or friends (34.8%) or rents a guestroom in private guesthouse (22.8%), chooses a destination situated 201–700 km from the place of residence and travels accompanied by people from outside the household (76%) [GUS 2014]. Women most often participate in one long-term trip per year and in 76.8% of cases the destination is located no more than 500 km from the place of residence. Most often these are privately organized leisure trips taken in company of people from outside the household. Most frequently women travel by car; they stay with their family or rent a guestroom in private guesthouses. The short-term trips are less researched. However, GUS statistics show that 44.8% of women participate only in one short trip a year, but 43.3% in 2–5 trips. Also in this case, they most often (64.4%) stay with the family. The indicated means of transport and place of accommodation are preferred by Poles in general, regardless of gender [GUS 2019].

In response to the changing tourist needs of women, there are more and more actors (travel agencies, foundations, holiday platforms) that direct their offer to this group of customers. This is interesting from the point of view of cognitive and practical phenomenon and as such requires research.

Empirical research results

The empirical study was carried out using the survey technique. The questionnaires were distributed in Warsaw agglomeration. The study was conducted in the first half of 2017 years in the center of Warsaw. 155 women participated in the studies. The choice of women living in the agglomeration was intentional and resulted from the high tourism activity of the inhabitants of this area, a specific fashion for short- and long-term trips and their high mobility.

The sample was dominated by women in the 40–50 age group (47.5%), and 51–60 years (31.0%). The remaining ones were in the age groups: 61–70 years (10.3%) and 71+ (11.0%). More than half had higher education (58.0%), 28.4% – secondary education, 9.7% – basic vocational education and 3.9% – primary education. The place of residence of respondents varied, i.e. 47.1% lived in a city of over 100,000 inhabitants, 25.2% – in rural areas, 11.0% – in a town up to 15 thousand inhabitants and 16.8% in a city of 15–100 thousand residents. Only 12.9% of respondents declared that they were single. The remaining ones declared that their households consisted of: two persons (26.5%), three persons (24.5%), four persons (22.6%) and 5+ (13.4%). The vast majority did not have minor children (68.4), 13.5% had one child, 10.3% – two children, 7.1% – three and more. A large share of respondents was professionally active. Over a half (54.8%) worked full-time and 18.1% ran their own business. Retired women and those receiving disability benefits were 18.1%. The rest stayed at home (6.5%), or took on irregular jobs (2.5%). Respondents' personal financial situation was rated as very good (11.0%), good (38.7%), average (42.6%), poor (7.7%), very poor (11.0%).

Taking into consideration the adopted research area, it was important to determine respondents' mobility understood as the ability and willingness to travel. The most numerous group (43.9%) declared that they are happy to drive a car on distant, also unknown routes, 12.9% of respondents drive only on well-known, short routes (to work, shops, children's school), and as many as 43.2% do not drive at all.

The tourist activity of respondents was quite diverse. Most often they took one trip a year (31.6%) or two trips a year (29%). More frequent trips were declared less often (by 18.7% of respondents). The number of respondents travelling once every few years was 12.9% and 7.7% declared that they travel rarely. There was no statistically significant relationship between women driving a car and their tourist activity, which seems surprising (Manna-Whitneya U test: $Z = 0.28747$ $p = 0.773750$).

The reasons for resigning from travels varied. Respondents mentioned lack of financial resources (32%), lack of travel companionship (21.3%), lack of time (18.7%), no need to travel (13.3%) and lack of suitable offer (10.7%). There was no statistically significant relationship between the reasons for resignation from tourist trips and demographic variables of the respondents.

The surveyed women most often traveled with their family or a partner and less often alone (Table 1). Almost half of respondents sometimes made trips with friends. The benefits of trips without partners are drawn Durko and Stone [2017]. Their research shows that female trips only in a women's society, without families or partners have a positive attitude not only on relations between women, but also strengthen bonds within the family.

Table 2 provides information on the length of stay and people accompanying the trips of the respondents.

They usually took week-long or longer trips. The longest trips were used by the oldest women and those living in big cities (confirmed by Mann-Whitney U test). Short-term trips were chosen relatively rarely. Mostly, respondents planned trips together with their travel companions (48.4%) and alone (22.6%). The travel agent's services were used only by 19.3% of the surveyed women.

The study aimed to determine which individual goals are important in the process of making tourist destination choices (Fig. 1).

Table 1. Travel companions of respondents (%)

Frequency	Travel companions			
	only with a partner/ husband	with friends	with family	alone
Most often	50.3	40.6	74.8	7.1
Sometimes	29.7	47.1	24.6	21.9
Never	20.0	12.3	0.6	71.0
Total	100.0	100.0	100.0	100.0

Source: own research.

Table 2. Length of the respondents' journey (%)

Frequency	Length of trip (number of days)			
	1	2–3	4–7	>7
Most often	12.9	34.7	56.1	49.0
Sometimes	38.1	58.1	38.1	35.5
Never	49.0	7.2	5.8	15.5
Total	100.0	100.0	100.0	100.0

Source: own research.

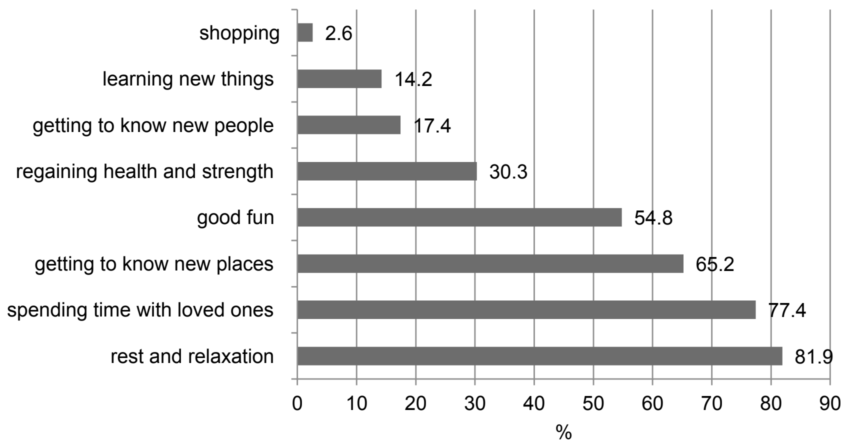

Fig. 1. Destinations of respondents tourist trips

Source: own research.

Respondents named the most important reasons for trips: rest and spending time with their loved ones (77.4%), and for the least important shopping (2.6%). Age and other demographic variables did not decide on leading goals (Mann-Whitney U test from $Z = 0.29$ at $p = 0.774$ to $Z = -0.59$ at $p = 0.550$). Other researchers also point to the very wide impact of tourism on human well-being, including Smith and Diekmannd [2017], Khan [2011].

The study also aimed to investigate what factors counted most in the process of a trip organization (Table 3).

Table 3. The importance of selected factors in the process of organizing a trip

	most important	medium importance	not important	total
Price	34.7	64.5	0.8	100.0
Destination	63.1	36.1	0.8	100.0
Time of trip	33.1	65.1	1.8	100.0
Weather	42.4	55.8	1.8	100.0
Attractions	27.4	70.6	2.0	100.0
Travel companions	48.3	50.0	1.7	100.0
Accommodation	29.9	70.1	0.0	100.0
Length of trip	13.8	78.2	8.0	100.0

Source: own research.

In the decision-making process respondents focused most on destination and travel companions. The length of the trip was of lesser importance. The vast majority (79%) preferred to travel by car and it was true also for those respondents who did not drive themselves.

Respondents were also asked to evaluate the attractiveness of various types of trips (differing in theme). The list includes elements that are most often included in trips for women and several less popular proposals (Table 4).

The holidays that scored the highest were beach holidays and "city breaks". This last proposition enjoys the last time, more and more popular among tourists regardless of the gender. City break offers are offered by many travel agencies. Also, city managers, airlines and hoteliers promote this type of spending time. The least attractive were weight loss holidays, SPA & wellness holidays and art and craft workshops. There was no statistically significant difference between the age and the place of residence of the respondents and the perceived attractiveness of the various forms of rest (verification was performed by a Whitney-Mann U test, the value of the testing between age and attractiveness Rest: $Z = 0.51$ at $p = 0.61$, and between the place of residence and attractiveness: $Z = 0.61$, $p = 0.54$).

Table 4. Attractiveness of various tourist trips in the opinion of respondents (on a scale of 1–5, where a higher score indicates a more attractive holiday and 5 is the highest score, % of respondents)

Type of trip	Evaluation/score					Average score
	1	2	3	4	5	
Weight loss holiday	42.6	25.8	22.6	4.5	4.5	2.0
Group trip with attractions such as art and craft workshops	31.0	21.3	27.1	17.4	3.2	2.4
Fitness holidays (with sports activities e.g. Nordic walking etc.	27.7	18.7	27.7	11.6	14.2	2.7
Trekking in the mountains	25.8	16.1	20.6	16.1	21.3	2.9
SPA & wellness holiday	24.5	14.2	16.8	26.5	18.1	2.3
Seaside & beach holiday	18.1	9.0	19.4	26.5	27.1	3.4
Guestfarm holiday	18.1	20.0	32.3	22.6	7.1	2.8
City-break	12.9	16.1	21.9	30.3	18.7	3.2

Source: own research.

The surveyed women most often searched for holiday destinations on the Internet (social networking sites, thematic sites), asked friends and looked for inspirations in magazines (also online editions). The insightful search of women for information preceding the purchase process is also indicated by Zalega [2017]. Friends are an important source of information all the time. Contact with him is less often direct, and more often through social media.

SUMMARY

The official statistics, in which women were separated as a group, showed that they are active participants in the tourism market. They take domestic and foreign trips for different purposes and in diverse company. There are also more and more travel offers dedicated only to women and they go beyond relaxation in spa & wellness facilities. The customer segment consisting of women aged 40+ seems particularly interesting. The empirical research presented in the paper showed that female respondents were quite active tourists. The main reasons for limiting tourist trips was the financial situation and the lack of a person who could accompany during the trip. The ability to drive a car did not determine their tourism activity.

Most often they traveled with family or only with a partner, but very rarely alone. Their most important travel goals, apart from rest and relaxation, included cognitive goals and entertainment. The most important factors taken into account when organizing a trip included a tourist destination, travel companions and weather. Interestingly, the least desirable by the respondents were trips on slimming vacations, to the spa and handmade workshops. The most attractive types of holiday indicated by respondents were seaside and beach holidays, city breaks and trips to the mountains.

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KOBIETY W ŚREDNIM WIEKU W POLSCE JAKO SEGMENT ODBIORCÓW USŁUG TURYSTYCZNYCH

STRESZCZENIE

Celem artykułu jest prezentacja kobiet w średnim wieku jako segmentu odbiorców na rynku usług turystycznych. W artykule dokonano charakterystyki aktywności turystycznej kobiet. Zaprezentowano wyniki badań ankietowych (przeprowadzono je na próbie 155 kobiet) pokazujących aktywność turystyczną i organizację wyjazdów przez kobiety. Określono preferowane przez nie sposoby spędzania czasu podczas wyjazdów turystycznych. Kobiety chętnie uczestniczą w krajowych i zagranicznych wyjazdach turystycznych. Zwykle wyjeżdżają z rodziną lub partnerem, a głównym powodem wyjazdów jest chęć rozrywki, poznania ciekawych miejsc i odpoczynku. Co ciekawe jako najmniej atrakcyjne respondentki wymieniały wczasy odchudzające, wyjazdy do hotelu spa oraz z ofertą warsztatów rękodzieła artystycznego. Czynniki, które dla respondentek miały największe znaczenie to pogoda, miejsce wypoczynku oraz towarzystwo. Zdecydowanie mniejsze znaczenie miała cena. Co ciekawe niewielki wpływ na sposób organizacji wyjazdów ma umiejętność jeżdżenia samochodem przez respondentki.

Słowa kluczowe: kobiety, segment odbiorców, wyjazdy turystyczne

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THE DEVELOPMENT OF THE TOURISM ECONOMY IN POLAND COMPARED TO EUROPE IN 2010–2018

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ABSTRACT

In article shown the problem with the assessment of the importance of tourism was recognized, and the first initiatives to develop the so-called tourism satellite in the 1990s. The aim of research is to answer the question: what is the share of the tourism economy in generating GDP in Poland and in Europe? The second goal was to answer the question: how has the Polish tourism economy responded to the global economic crisis and has this reaction been similar to European markets? The following hypotheses were adopted: first, the share of the tourism economy in Poland is smaller than the average for Europe, and, second, the Polish tourism economy reacted better to the global economic crisis than other European economies. The article uses data from the satellite tourism account for Poland and World Tourism and Travel Council (WTTC) data showing the multiplier effect of tourism in Europe. The data analysis shows that share of tourism economy in Polish GDP is 6% and the share of tourism industry in Europe in GDP is 8% in the end of second decade of twenty-first century.

Key words: tourism economy, Poland, economic development, importance of tourism, economic crisis

JEL codes: L83, Z32

INTRODUCTION

The number of international tourist trips in the world has been increasing for many years. The consequence of this phenomenon is a growing demand for reliable information on the economic importance of tourism for the national economies of individual countries. This applies both to countries with highly developed tourism economies and countries in which the importance of tourism for the development of the country is underestimated.

The basic and widely used tool for measuring the performance of all sectors of the economy is the system of national accounts in individual countries. These data enable observation of processes taking place in an entire economy at the production stage, the generation and distribution of income, as well as showing the state of the economy at the end of the analysed period. Unfortunately, national accounts do not show the real contribution of tourism to the processes of creating added value, tax revenues of the State, gross domestic product (GDP), or job creation [Dziedzic 2003].

Challenges arise when trying to measure the economic value added for tourism, because tourism is not a single sector of the economy that is clearly separated on the supply side. A tourist package usually consists of several products, in various areas such as ‘hotels and restaurants’, ‘transport’, ‘culture and recreation’. Measurement of the economic impact of tourism-related activities based solely on the supply side approach is applied in the standard national accounts system and leads to a significant understatement of the real eco-

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nomic effects of tourism, and thus to a weakening of its position compared to other sectors of the economy [Tourism Satellite Account… 2001].

It is easier to define tourism on the demand side, i.e. to determine the value of tourist goods and services purchased in a given year [Dziedzic 2017, Podhorodecka and Cobb 2019].

Problems assessing the importance of tourism in the 1990s, resulted in the development and use of a metric called the 'tourism satellite account' (TSA). TSA is defined as a method of measuring the direct economic contributions of tourism consumption to a national economy. Its unique approach derives from employing the principles and structure of the internationally-adopted System of National Accounts to measuring the direct economic impact of tourism [Frechtling 2009]. This account does not constitute a subsystem in standard national accounts, but due to its very close and clear connections with national data, it is a 'satellite' to the national accounts system [Tourism Satellite Account 1999, Tourism Satellite Account... 2001].

The impact of tourism on the development of a national economy is analysed in two ways. On one hand, there is the term 'tourism industry', which is defined as 'tourism in the narrow sense' [Travel & Tourism Economic Impact 2012]. Expenditure incurred by tourists is considered as well as travel for goods and services directly related to tourism, e.g. spending on hotels and restaurants, and travel agencies. On the other hand, the concept of a 'tourism economy' includes expenditure not only directly related to tourism, but also indirect expenditure, i.e. expenses that would not have been incurred were it not for tourism (e.g. expenses incurred by tourists and travellers on transport, food, fuel, insurance). The indirect effects of the impact of tourism on the economy result primarily from the activation of branches not directly related to tourism (e.g. agriculture, construction, and rail transport) and this part of GDP and employment, which would not exist if it were not for tourism.

The Polish tourism satellite account presents a comprehensive picture of the Polish tourism economy in statistical terms and is most useful for monitoring its impacts and setting directions for development. Its advantage is the presentation of basic macro-economic aggregates, which allows the assessment of tourism in comparison to other areas of the economy [Dziedzic 2003, Balińska 2007].

The purpose of this article is to answer the question: what is the share of Poland's tourism economy in relation to that of Europe? The second aim to answer the question: how has the Polish tourism economy responded to the global economic crisis, and has this reaction been similar to European markets? The following hypotheses were adopted: the share of the tourism economy in Poland is smaller than the average for Europe, and the Polish tourist economy reacted better to the global economic crisis than other European countries.

The paper is organised in the following way: the next section presents a brief literature review. This is followed by the development of methodology in order to test the hypotheses. The following section will apply this methodology to the tourism sector in Poland and the European Union. The next section presents the results, and the last section addresses discussion of the results, and conclusions.

Measuring the impact of tourism and its role in jurisdictional economic development is becoming more important as large numbers of individuals in many parts of the world become more affluent and more curious about exploring other parts of the world [OECD 2016]. Measuring the impact of tourism is a growing strand of the literature [Cárdenas-García and Pulido-Fernández 2017]. Documenting trends in European tourism has been the subject of great attention from the UN World Tourism Organization [UNWTO 2018.]. As more individuals participate in the tourism service economy, greater analytical and policy prescriptions appear in academia, government and business literatures [Balińska 2007].

Tourism in Poland had been analyzed by the data from the tourism satellite account, which was financed by the central government [Baran et al. 1998, Dziedzic 2003, 2017]. Tourism in global economic crises was discussed by T. Dziedzic et al. [2010], V. Chan [2011] and E. Smeral [2011].

METHODOLOGY

One of the key elements of TSA is the calculation of the tourist consumption coefficient, which allows us to determine what part of the production of various sectors of the economy is produced solely in order to satisfy the tourism demand. The need for such a procedure can be explained, for example, using the example of transport, which is a very important tourist service. Tourists make up a significant proportion of buyers of transport services, but the majority of journeys by rail are those taken for travel to work, not travel for tourism purposes. A similar situation occurs in cultural and recreational services: not everyone who visits a museum or swimming pool is a tourist. It is obvious, therefore, that including all of these production areas into tourism would lead to significant over-reporting, but not taking them into consideration would lead to understating the true economic effects of tourism.

POLISH EXPERIENCE IN PREPARING THE TOURISM SATELLITE ACCOUNT

Due to the complex nature of the tourism economy, the assessment of the economic effects of tourism requires the use of various sources of statistical information and the use of appropriate tools. The methodological basis for compiling this type of summary includes the Recommended Methodological Framework (RMF), the Polish adaptation of which has been used to prepare the Tourism Satellite Account (TSA) for Poland for 2000–2002 and 2005 [Tourism Satellite Account... 2001]. This methodology is very extensive when it comes to the scope of analyses, and consequently requires the use of detailed data developed as part of national accounts and data from surveys of tourism demand.

Appreciating the growing importance of tourism for the national economy of Poland and the role of the analytical tool that the tourism satellite account has become, Poland began to work on the preparation of TSA for Poland in 1998, because there was a need to improve tourism statistics before entering Poland to European Union. As a result, an experimental satellite tourism account for Poland for years 1995 and 1996 was generated – issued by the Central Statistical Office, and co-financed by the Office of Physical Culture and Tourism [Baran et al. 1998]. Then, the adaptation of the TSA methodology for Polish conditions was prepared for the years 2000–2002 and 2005.

The TSA results are obtained with considerable delay because the necessary data from the final supply side is only available after approximately three years from the reference year. In order to obtain more recent results, a simplified TSA methodology has been developed, which is partly based on the projection of results obtained under the full TSA, and partly on the study of tourism consumption in the reference year. This methodology was used to estimate the economic results of tourism in 2003–2006 and 2008–2010.

THE SIGNIFICANCE OF THE TOURISM ECONOMY IN POLAND

According to the results of the accounts that have been carried out up to now, the economic role of tourism in the economy is much higher than the results from the data presented in national accounts. National accounts, which are drawn up in the form of five institutional sectors and by type of activity, do not show the real contribution of tourism to the processes of adding added value, state tax receipts, gross domestic product (GDP) etc. In the Polish Classification of Activities [Rozporządzenie... 2007], the only section strictly 'tourist' is Section I Accommodation and catering. Other sections of PKD 2007, such as: section N Administering and supporting activities (N 79 is the activity of tour operators and agents), section H Transport and storage, section R Activities related to culture, entertainment and recreation, section G Trade; repair of motor vehicles – these are sections that to a lesser or greater extent include tourism activities. To estimate this share, it is necessary to prepare an TSA. Two key indicators that we receive as a result of the preparation of TSA show the share of tourism in generating the country's GDP and the share of people working in specific types of tourist activities in the total number of employed people in the national economy.

From the data presented in Figure 1 it can be seen that the amount of the so-called 'Tourist' GDP in the period 2000–2010, fluctuated and its decline was recorded in the final period. It should be remembered that the years 2008–2009 were a period of intensifying financial and economic crisis in the world, and tourism is a sector sensitive to all economic fluctuations. In addition, the total GDP growth rate was higher than the growth rate of tourist GDP, which affected its contribution to GDP. Figure 2 shows results from the

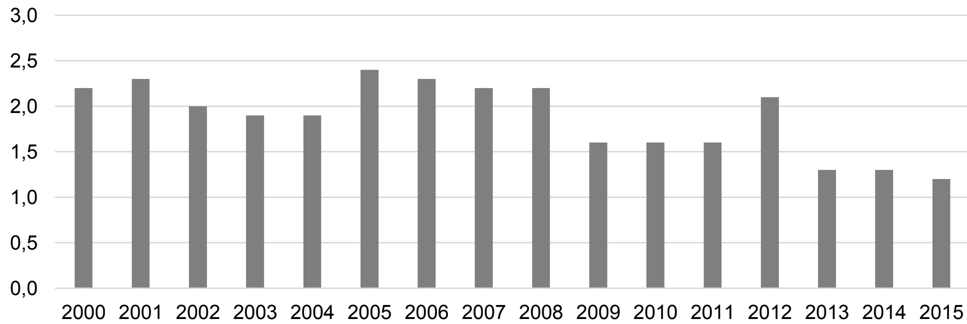

Fig. 1. The share of 'tourist GDP' in total GDP in the years 2000–2015 on the basis of TSA (%)

Source: elaboration based on data of Ministerstwo Gospodarki, Pracy i Polityki Społecznej [2003a, b] and Ministerstwo Sportu i Turystyki [2007].

second significant indicator: the share of the number of people employed in the total number of employed persons in Poland. This index, after slight fluctuation at the beginning of the 21st century, has become stable and remains at 5% of the total workforce. It should be noted that despite the continuing share at the unchanged level, the number of people working in specific types of tourist activity is constantly increasing (from 5.9 in 2000 to 6.0 in 2010, with an exceptional year 2001 when the number of employees in CRDT was 7.8% of people).

In Poland, the share of the tourism economy in GDP in 2007–2011 fluctuated slightly, but remained high at a contribution of around 5–6% of GDP. In 2007 it amounted to 6%, while in 2011 – around 4.9% – with simultaneous increase in inflows from the tourist economy. In the analyzed period, the largest inflows from the tourism economy were recorded in 2008 (they amounted to PLN 75 billion) and in 2010 (PLN 74.2 billion). In 2011, expenditure in the tourism economy totaled PLN 72.7 billion and was PLN 2.7 billion higher than in 2007.

It should be emphasized that the above declines and fluctuations in years 2008–2010 were the result of the global economic crisis. Tourism is a sector very sensitive to economic changes – that is why stimulating and implementing investment activities that ensure its continuity is so important for its development. At the same time, tourism in the Polish economy is starting to be perceived as a significant and dynamically developing sector. According to WTTC forecasts, the prospect of developing the tourism sector is facing Poland in such a way that the share of the tourism economy increases to 5.8% of GDP – an increase from PLN 72.7 billion to over PLN 120 billion (in 2022) [World Travel & Tourism Council 2012]. This illustrates the significant potential of this sector in stimulating the growth of Poland's GDP in the following years.

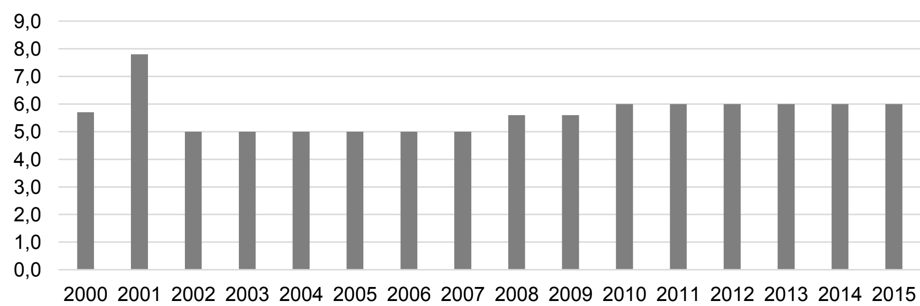

Fig. 2. The share of persons working in specific types of tourist activities to all persons working on the basis of TSA in the years 2000–2015

Source: elaboration based on data of Ministerstwo Gospodarki, Pracy i Polityki Społecznej [2003a, b] and Ministerstwo Sportu i Turystyki [2007].

According to the estimates of the Institute of Tourism, in 2011 the expenses of foreigners in Poland amounted to PLN 31.5 billion and were 8% higher than in 2007. Expenses of Polish citizens for domestic travel were in the period of 2007–2011 at the level of approx. 20–21 PLN billion and only slightly fluctuated. The expenses of Poles on foreign travels in the analyzed period amounted from PLN 6.7 billion in 2011 to PLN 10.2 billion in 2010. The largest increase was recorded in 2010 and 2008 – PLN 9.2 billion. Practically the same level in 2007–2011 was spent on business trips: over PLN 10 billion, of which in 2011 there was a significant increase to the level of PLN 11.3 billion. Similarly, the state's expenditure on tourism remained unchanged – around PLN 3 billion (in 2011, it amounted to exactly PLN 3.3 billion). Tourism plays a significant role in Poland's trade exchange. In 2011, tourism exports amounted to PLN 31.5 billion, which accounted for 4.7% of total exports. The tourist export increased by PLN 2.4 billion compared to 2007 (increase by 8%). In total, in 2007–2011, the share of tourism in exports remained at the level of 5–6%.

In 2011, there was a decline in tourist imports (Table 1) to the level of PLN 11.7 billion from PLN 18.3 billion in 2010. In general, in 2007–2011, two significant decreases in tourist imports were observed: in 2009 and in the aforementioned 2011. Reduction of expenses of Polish residents during international travel in the above-mentioned years reflect trends related to the global economic crisis. At the time, the expenses of Polish citizens on foreign travels did not decrease in such a visible way (decreases in 2009 and 2011 by PLN 1.3 billion and PLN 3.5 billion, respectively). This shows that the decrease in expenses when traveling abroad was not the result of a similar decline in the number of trips abroad – Poles went abroad, but limited their expenses during these trips. Overall, the balance of trade exchange with tourism increased significantly in 2007–2011 from PLN 9.5 billion to PLN 19.8 billion, with a decrease in 2008 (PLN 5.7 billion). This is the result of the increase in tourist exports by 8% with a simultaneous decrease in imports by 40%.

THE IMPACT OF THE GLOBAL ECONOMIC CRISIS ON THE TOURISM SECTOR IN POLAND

The financial crisis dominated the economic situation in the world in 2009, and its effects have altered the condition of the global economy. There were problems with inflation and taxes caused by the introduction of 'Economic support packages' and problems related to the increase in public debt and real interest rates that weaken the rate of economic growth [Dziedzic et al. 2010].

The crisis has significantly influenced the transformations on the economic map of the world, leading to the growing importance of developing countries (emerging markets). For example, in 2009 compared to 2008 the rate of economic development in Southeast Asia and South Asia was –6.5% (European Union: –4.0%, United States: –2.3%). The crisis has also contributed to the rise in unemployment in highly developed countries (United States increase of unemployment rate from 4.6% in 2007 to 9.6% in 2010; United Kingdom 5.6% in 2008, 7.7% in 2010) [The World Bank Group].

In the global travel and tourism market, the crisis has been very strongly recorded: in 2009, the global tourist demand decreased by 10.2%. The slowdown affected both international traffic as well as domestic

Table 1. The contribution of the tourism economy to GDP in 2012–2018

Specification	2012	2013	2014	2015	2016	2017	2018
Gross domestic product (PLN billion)	1629.4	1656.9	1720.4	1800.2	1861.1	1989.3	2115.7
Incomes from tourism economy by the Institute of Tourism (PLN billion)	98.1	100.8	89.9	102.4	110.3	116.7	124.0
Share of tourism economy in GDP (%)	**6.0**	**6.1**	**5.2**	**5.7**	**5.9**	**5.9**	**5.9**

Source: elaboration based on data: Central Statistical Office of Poland, Institute of Tourism, Ministry of Sport and Tourism.

traffic and business expenses as well as investments in the tourism sector. This is illustrated by the fact that the weakening affected the entire tourism economy more than just the tourist industry – the crisis affected the behavior of tourists who reduced tourist-related expenses. The data presented by UNWTO shows that the decline in revenue from arrivals was greater than the decline in traffic: the number of international trips decreased in 2009 by 4.3%, and global revenues from international tourism by about 8–8.5%. This was due to the fact that people thought that holidays should be traveled at least once a year, but you can reduce tourist expenses during such a trip [Dziedzic et al. 2010]. The year 2009 was also very unfavorable for the aviation industry, with the exception of low-cost airlines, which in 2009 served more passengers than in 2008. Tourism turned out to be a very sensitive area in the face of the crisis, as a result of which, some of the countries introduced special support instruments for this sector. The Polish economy was also affected by the crisis: despite the maintenance of GDP growth, unemployment increased and the situation of public finances deteriorated considerably. In addition, in 2009 the exchange rate relations of PLN to the EUR and the USD were relatively unstable.

The crisis affected the tourism economy, tourist demand decreased by 4.3%, the share of the tourist economy in GDP fell from 5.9% to 5.3% (a decrease from PLN 75 billion to PLN 70 billion). The share of tourism in exports decreased slightly: from 5.6% in 2008 to 5.2% in 2009, however the absolute values of tourist exports (expenses of foreigners in Poland) practically remained unchanged: PLN 28.1 billion in 2008 and PLN 27.8 billion in 2009 [Dziedzic et al. 2010].

The indicators in most segments of tourist activity deteriorated: in 2009, the number of domestic trips (by 12%) and foreign Poles decreased (by 21.7%). The decrease in the frequency of foreign trips was influenced, among others, by decrease in business trips related to business savings. The crisis significantly increased the spending of Poles during foreign trips than during domestic ones. In addition, the decline in tourist arrivals to Poland in 2009 was more pronounced than in Europe, which was influenced by reducing the number of arrivals after Poland's accession to the Schengen Agreement. The number of people using the accommodation base and the number of passengers at Polish airports also decreased.

Positive trends recorded in 2009 include a slight decrease in foreigners' expenses in Poland, an increase in charter traffic and an increase in the hotel base. In addition, the support of the tourism industry through financial resources under the European Union multiannual financial perspective 2007–2013 was one of the factors undermining the negative effects of the crisis at the level of the tourism economy. The mitigation of the consequences of the recession was also carried out by measures to define the impact of the economic crisis on the tourism industry as part of the Inter ministerial Team for Coordination of Government Tasks set out in 'Directions for tourism development until 2015' support for entrepreneurs (legal changes, easier access to credit, liberalization conditions for running a business) and promotional activities of Poland implemented by the Polish Tourist Organization.

THE DEVELOPMENT OF TOURISM ECONOMY IN EUROPE

In 2010–2018, the tourism economy in Europe was a mature economy that developed dynamically after the Second World War, especially in countries such as France, Spain, Great Britain and Portugal (Figure 3). It was estimated that the tourist industry in Europe generated 3.8% of GDP, and if we take into account the tourism economy and adding together with the multiplier effect it was 8.8%, and together with the induced effect it is 10%. Comparing this with the results of the tourist satellite account for Poland, where the tourism economy accounts for 6% of GDP in 2018, clearly the significance of the tourism economy for the Polish economy is lower than the average for Europe.

The share of the tourism industry in creating jobs on the European market is constantly growing. It should be emphasized that tourism is an extremely labor-intensive sector. In 2008–2009, it was 3.6%, then in 2010 as a repercussions of the global economic crisis, there was a drop to 3.5%, and then a stable growth to 3.85% in 2018. The share of jobs created by tourism industry in Europe was rising after the global economic crisis from the level 3.5% in 2010 to 3.85% in 2018 (Fig. 4).

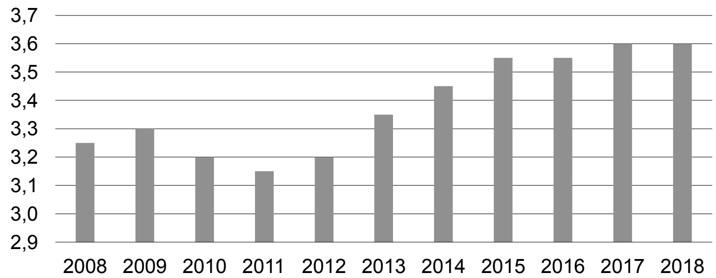

Fig. 3. The contribution of the tourism industry to GDP in Europe (%)
Source: elaboration based on Travel & Tourism Economic Impact [2018].

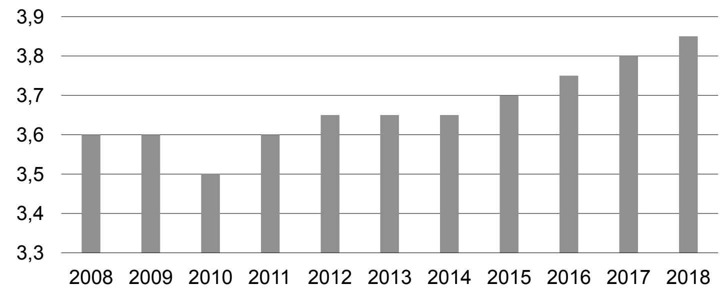

Fig. 4. The share of the tourism industry in creating jobs in Europe (%)
Source: elaboration based on Travel & Tourism Economic Impact [2018].

CONCLUSIONS

This article describes the sources of data in research in the area of 'Tourism', the results of Polish tourism in 2009 and the share of the European tourist sector in the European economy. The Polish tourist economy had a smaller share in GDP than the European. This is confirmed by data for 2018, when the tourist economy in Europe was 8% of GDP, and in Poland – 6%. The article uses data from the satellite tourism account for Poland and World Tourism and Travel Council (WTTC) data showing the multiplier effect of tourism in Europe. Data analysis addressing the two hypotheses shows that the share of tourism industry in Polish GDP was 1.25% in 2018 and the share of tourism industry in Europe in GDP was 3.6%. During the global economic crisis, the tourism sector in Poland reacted better than the average in Europe. There were no such large declines in tourist arrivals and tourist expenses in Poland as on European markets, which could have been caused by Poland's preparations for the UEFA Euro 2012 European Football Championship and the large-scale promotion related to this event.

It should be remembered that there have been changes in borderline surveys since 2008. Poland's accession to the Schengen zone in December 2007 caused the cancelation of the internal EU borders, and thus the Border Guard ceased to provide important data from the point of view of international tourism. The future research should not only take into account statistical data on the share of tourism sector in GDP of Poland and Europe but should provide information about what is the best value of the share of tourism in advanced economies and how to provide the best quality jobs in tourism.

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ROZWÓJ GOSPODARKI TURYSTYCZNEJ W POLSCE NA TLE EUROPY W LATACH 2010–2018

STRESZCZENIE

W artykule wskazano problem związany z oceną znaczenia turystyki w gospodarce. Opisano pierwsze inicjatywy na rzecz rozwoju rachunku satelitarnego turystyki. w latach 90. XX wieku. Celem badań to uzyskanie odpowiedzi na pytania: jaki jest udział gospodarki turystycznej w generowaniu PKB w Polsce i Europie oraz w jaki sposób polska gospodarka turystyczna zareagowała na światowy kryzys gospodarczy i czy ta reakcja była zbliżona do rynków europejskich? Przyjęto następujące hipotezy: po pierwsze, udział gospodarki turystycznej w Polsce jest mniejszy niż średnia dla Europy, a po drugie, polska gospodarka turystyczna lepiej zareagowała na światowy kryzys gospodarczy niż inne gospodarki europejskie. W artykule wykorzystano dane z rachunku satelitarnego turystyki dla Polski oraz dane Światowej Rady Turystyki i Podróży (WTTC) pokazujące efekt mnożnikowy turystyki w Europie. Analiza danych pokazuje, że udział gospodarki turystycznej w PKB dla Polski pod koniec drugiej dekady XXI wieku wynosił 6%, a udział gospodarki turystycznej w Europie w PKB wyniósł 8%.

Słowa kluczowe: gospodarka turystyczna, Polska, znaczenie turystyki, kryzys ekonomiczny

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INNOVATIVENESS OF ENTERPRISES IN POLISH TECHNOLOGY PARKS AND INCUBATORS

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ABSTRACT

Most of Polish small and medium-sized enterprises (SMEs) treat the implementation of a new product or service as too expensive, time-consuming and risky. The share of innovative industrial and service enterprises in the years 2015–2017 in the total number of these enterprises amounted to 18.5% and 10.4%, respectively. Most of these companies do not have their own R&D department. Therefore, for many of them the cooperation with innovation centres, such as technology parks or incubators would be a great opportunity to build a long-term competitive advantage. This study aims to assess the innovativeness of companies – tenants of the mentioned institutions.

Key words: technology parks, technology incubators, enterprise innovativeness, innovation centres, start-up, spin-off

JEL codes: D02; D22; E02; L26; M21; O12; O32; O43; R11

INTRODUCTION

Reasons for undertaking research theme

The progressing globalisation process and the widespread availability of modern information technologies significantly facilitate the entry of new economic entities onto the market. The growing number of enterprises also increases a demand for the quality of products and services provided by them. Therefore, knowledge and innovation are becoming the key resources of the modern economy; that is why, those entities which are building their long-term competitive advantage based on innovation as the key development factor, not on price, have the greatest chance of maintaining their market position. However, not all market entities have sufficient resources in order to develop innovation.

Polish entrepreneurs, especially those in the SME sector, treat this type of activity as too expensive, time-consuming and risky, although they are aware of the benefits of implementing new solutions. As a result, they lose the chance to build a long-term competitive advantage [Kurznack and Timmer 2019].

In the meantime, those enterprises which do not have their own R&D facilities may cooperate with innovation centres acting as business support institutions created to support enterprises in their development at its every stage. This article is to explain the functions of these centres and to analyse the effects of their operation by assessing the innovativeness of enterprises located in technology parks and incubators.

Research aim

The main research aim of this article was to assess the innovativeness of enterprises located in the Polish technology parks and incubators.

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Specific research aims

As part of the main research aim, the following specific research aims were identified:

1. Assessing the innovativeness of enterprises of the Polish SME sector
2. Defining the role of technology parks and incubators in stimulating innovative activities of enterprises
3. Assessing the proneness of enterprises located in technology parks and incubators to undertake innovative activities.

Research hypothesis

The article was to verify the following research hypothesis:

H – Innovativeness of enterprises located in Polish technology parks and incubators usually remains at a higher level than the national average, but it is not satisfactory.

RESEARCH METHODOLOGY

The presented analysis is a fragment of a broader nationwide research on technology parks and incubators, which is has been cyclically carried out by the Polish Business and Innovation Centres Association in Poland (PBICA) since 2009.

For the purposes of this analysis, empirical data was used to describe only the selected aspect of enterprises' operations, i.e. innovativeness. Other issues regarding adaptation of these entities to the changing global trends related to Industry 4.0 or their involvement in network (horizontal) cooperation with the economic environment will be the subject of more extensive considerations in a book to be published.

The research material was collected using two methods of data collection: 1) Desk research – based on existing sources, i.e. subject literature review, available documents, statistical studies, databases, laws, regulations, reports, summaries, and other materials available in paper and electronic versions; 2) quantitative method for collecting empirical data – CAWI (Computer Assisted Web Interview) – a computer-aided interview using a website. The method is based on a traditional questionnaire survey where the paper questionnaire is replaced by a sheet displayed on the computer screen after selecting the appropriate website address. Answers are automatically saved in an electronic version, and the interview itself is conducted anonymously by a program which displays questions and controls the responses of respondents.

Empirical data was collected in 18 technology parks and 2 independent technology incubators. This constituted 56% and 40% of their total number in Poland, respectively. The research was participated by centres from 15 Polish regions. Data collection process took place in two stages. First of all, a database maintained by the PBICA was updated based on official registers and with the help of parks' administrators. In this way, basic information about 1270 tenant enterprises was collected[1], such as: entities' name, contact details, and REGON (National Business Registry Number) or NIP (Tax Identification Number) numbers. The second stage carried out in the period from April to June 2019 involved conducting an online survey with the representatives of enterprises who agreed to participate in the research.

A total of 177 enterprises participated in the questionnaire survey, i.e. 82% from technology parks and 18% from technology incubators. The surveyed entities were mainly micro-enterprises (having on average 3 employees) – 71% and small enterprises – 21%. Most often they were young enterprises (start-up stage) registered after 2015 – 46%. Enterprises operating on the market for up to 10 years constituted 32% of the surveyed group, and the elder ones – 22%. In total, medium-sized and large enterprises accounted for 8%.

Innovativeness of SME sector in Poland

Small and medium-sized enterprises (SMEs) play an important role for the Polish economy. They constitute over 99% of all economic entities, are a workplace for 69% of all employees, and their share in the national GDP exceeds 50%. It is worth noting that as many as

[1] A technology park's tenant was regarded an enterprise having a lease agreement for the area in the technology park. Enterprises using virtual office services, which do not have an office in the technology park infrastructure (office or production space) and only use the park's address were excluded.

96% of enterprises in this group are micro-enterprises [Skowrońska and Tarnawa 2018] most of which are conducted by self-employed persons. Due to the constantly growing number of entities and, as a result of it, the continuing increase in consumer requirements, the skilful building of competitive advantage of these entities through innovation is increasingly important.

In the meantime, the Polish SMEs are most often not interested in implementing innovative activities, and treat it as too expensive, time-consuming and risky. They struggle to stay on the market more often than they implement a long-term innovation strategy [Starczewska-Krzysztoszek 2014 and Haiduk 2018]. In 2017, expenditure on innovation activities of Polish industrial enterprises amounted to PLN 28 billion, while 94.4% of it concentrated in enterprises employing over 49 persons, representing less than 30% of all enterprises in Poland. In the services sector, on the other hand, this expenditure reached PLN 13 billion and 88% of it was concentrated in enterprises employing over 49 persons, constituting less than 17% of the population being surveyed [GUS 2019].

The share of innovative industrial and service enterprises in the years 2015–2017 in the total number of these enterprises amounted to 18.5% and 10.4%, respectively (to compare to the years 2014–2016, it decreased by 0.2% in industry and by 3.2% in services) [GUS 2018]. In the analysed period, process and product innovations were most often used in industry – 15% and 12%, respectively. In services, the 8% share of process innovations slightly exceeded the percentage of applied organisational and marketing innovations, each of which amounting to 7%. The group of innovative entities was dominated by large enterprises employing over 250 persons. In the SME sector, medium-sized enterprises employing 50–249 persons dominated among innovative enterprises, i.e. 32% in industry and 24% in services, respectively. Small innovative enterprises employing 10–49 persons constituted 11% of the surveyed group in the case of industry and 7% in the case of services [GUS 2018].

According to the report of the Ministry of Entrepreneurship and Technology and Siemens Polska, the most commonly used technologies by the enterprises being surveyed were: automation of production lines, data analytics and production optimisation, as well as application of software reducing costs of prototyping. Among the least popular technologies associated with Industry 4.0 implemented by the surveyed SMEs were: artificial intelligence, big data and cloud computing [Ministerstwo Przedsiębiorczości i Technologii and Siemens 2018].

In 2017, the share of revenues from sales of new or significantly improved products in total revenues from sales in the SME sector did not exceed 5% [GUS 2018].

Role of technology parks and incubators as stimulants of enterprise innovativeness

In the Polish literature, technology parks and incubators are included in the group of innovation centres being one of the three forms of institutional business support[2] along with entrepreneurship centres and non-banking financing institutions [Bąkowski and Mażewska 2015, Wójcik-Karpacz and Rudawska 2016, Borowy 2017]. Their basic role is to conduct activities aimed at improving the competitiveness of the economy by supporting the process of implementation of scientific research results, developing the innovative activities of enterprises, and supporting the creation of start-up enterprises [Borowy 2017].

The main difference between innovation centres and entrepreneurship centres is that the former institutions focus mainly on supporting innovativeness through involvement in technology transfer processes and commercialisation as well as provision of pro-innovative services, including consulting in the field of intellectual property protection, finance, establishment and organisation of new and innovative economic entities [Matusiak 2010, NIK 2016]. The main aim of entrepreneurship centres is, in turn, professional activation, promotion of entrepreneurial attitudes and support of economic initiatives among local communities.

[2] In addition to innovation centres, entrepreneurship centres are listed as entities providing broadly defined business promotion and incubation, whose activity is focused on informing, training, consulting and creating new work places. The third group consists of non-bank financing institutions dealing with distribution of non-returnable and returnable instruments which include loan funds, loan guarantees, seed capital funds, and business angel networks.

Innovation centres such as technology parks and incubators are the most developed form of support among business environment institutions. Technology incubators (TI) operate in an environment or in close connection with scientific and research institutions, offering support during subsequent development phases of enterprises, such as the so-called start-up phase (incubation stage) and the development phase, i.e. entry onto the market (acceleration stage) [Borowy 2017, Yusubova et al. 2019]. Technology incubators often have specialised R&D facilities (e.g. laboratories or modern equipment) and business premises. The basic role of TI is to support the creation of innovative (high-tech) enterprises and provision of help in surviving on a competitive market with a high risk of failure [Matusiak 2011, Mas-Verdu et al. 2015, Borowy 2017].

Technology parks are the most comprehensive form of institutional support for innovative entrepreneurship. Their role is to strengthen inter-sectoral connections by initiating active cooperation with scientific and research institutions, local and regional public administration as well as financial instruments [Rudawska, 2016]. According to the definition of the International Association of Science Parks [IASP 2002], a park is defined as an organisation managed by professionals whose goal is to increase social well-being in a given area by promoting a culture of innovation and competitiveness among knowledge-based enterprises and institutions. The park stimulates and manages the flow of knowledge and technology among universities, research and development institutions, enterprises, and markets. It facilitates the creation and development of enterprises operating on the basis of innovation through incubating spin-off enterprises and providing high-quality infrastructure and services affecting their added value [Borowy 2012, 2017].

Depending on the country in which the parks operate, their specifics, offers or shareholders, they function under different names, e.g. technopolis; technopark; research park; science park; technology park; science and research park; science and technology park; and industry and technology park [Matusiak 2010]. And although different types of parks have their own specificity, their common task is to stimulate innovative entrepreneurship; therefore, they are called by some authors as seedbeds of innovation [Felsenstein 1994].

Polish parks provide newly established enterprises using modern technologies with consulting services in the creation and development of an enterprise, technology transfer and commercialisation of scientific research results, as well as offer them real estate and infrastructure [Kandefer et al. 2007]. Most often they are multi-tasking. They combine functions of entrepreneurship incubators, technology incubators, technology transfer centres, and some of them manage capital funds as well [Mażewska and Tórz 2019].

Technology parks make it easier for their tenants (enterprises) to interact with each other, which, along with solid support of the business-related environment, may cause a unique synergy effect. This effect, strengthened by the specific atmosphere of entrepreneurship and the specific competition, is an incentive for young people who want to open and develop their own enterprise [Hołub-Iwan et al. 2012, Borowy 2017].

The analysis carried out in 2019 by the Polish Business and Innovation Centres Association in Poland has confirmed the activity of 32 technology parks and 5 independent technology incubators [Mażewska and Tórz 2019] located throughout the country. They are most often found in large academic centres such as Kraków, Poznań, Wrocław or Katowice or in less developed areas with high unemployment rate and low technological potential (including agricultural areas, e.g. Podlaskie, Warmińsko-Mazurskie, and Zachodniopomorskie regions), serving the implementation of pro-development innovation policy.

Empirical research results

According to the Polish Classification of Activity (PKD), the surveyed group consisted mainly of enterprises whose activity is defined as professional scientific and technical (Section M) – 36%. These entities were dealing with scientific research and development works, advertising, market research, as well as legal and accounting services. The ICT industry representation was comparable (Section J) – 34%. These enterprises were mainly dealing with software and IT consulting. Industrial processing enterprises (Section C) – 10% or commercial ones (Section G) – 7% were much less frequent than the previous ones. Other types of activity were marginal – 1–3%.

According to the OECD classification, most of the surveyed entities – 52% could not be qualified to those whose activities use high or medium-high production technologies. Among 177 enterprises, only three enterprises represented high technologies and five – medium-high ones. On the other hand, the respondents were dominated by enterprises providing services based on advanced technological knowledge – 44%. In addition, taking into account the aforementioned Polish Classification of Activity (PKD), high and medium technology industries present in technology parks and incubators were represented only by enterprises operating in the field of industrial processing (Section C). However, high-tech services were mostly provided by enterprises included in Section M, representing professional scientific and technical activity – 74%. The remaining 26% was constituted by the ICT enterprises.

In this article, the assessment of enterprise innovativeness was made using only those parameters used in the subject literature, whose measurement was possible. Therefore, the research included: number of implemented innovations; number of patents, utility and industrial designs, and licenses; having own research and development (R&D) department or cooperating with scientific and research units [Wojnicka 2004, Narocki 2015, Rudawska 2017, OECD, Eurostat 2018].

When analysing the number of implemented innovations, a division into product, process, marketing and organisational innovations was adopted in accordance with the Oslo Manual [2008, 2018] (Table).

In the surveyed group, product and process innovations were most often implemented, i.e. in 23% and 16% of enterprises, respectively. The percentage share of enterprises implementing marketing or organisational innovations was significantly lower and amounted to 7% and 6%, respectively. The solutions used by the vast majority of enterprises were new and mostly on a national scale – up to about 70% or even 90% in the case of organisational innovations. Marketing solutions most often had a chance to compete on the international European Union markets – 33%. Globally, in turn, there were product innovations – 45%.

The share of innovative products and services in the total sales of the surveyed enterprises was also analysed. According to the respondents' opinions, 20% of enterprises did not have them at all or they constitute 100% of the offer in the case of 19% of enterprises. Considering that 23% of enterprises did not answer this question, it may be assumed that 57% of the surveyed entities had in their assortment at least one innovative product or service.

The surveyed enterprises usually did not apply intellectual property protection – 50%. A domestic patent was held by 10% of them and a foreign one by 5%. The share of enterprises possessing a domestic or foreign utility/industrial design did not exceed 7%. It should be remembered, however, that most of the surveyed enterprises using advanced technological knowledge were service-oriented. This could also result in a small share of enterprises which granted or acquired licenses. They accounted for 10% and 3%,

Table. Percentage share of enterprises which implemented product, process, marketing or organisational innovations taking into account the scale of impact (enterprise, Poland, European Union, world)

Type of innovation	enterprises (%)	Including			
		enterprise's scale (%)	Polish market (%)	European Union market (%)	global market (%)
Product innovation	23	60	60	23	45
Process innovation	16	69	69	14	21
Marketing innovation	7	58	67	33	17
Organisational innovation	6	91	64	9	9

Source: own elaboration based on the PBICA's primary data.

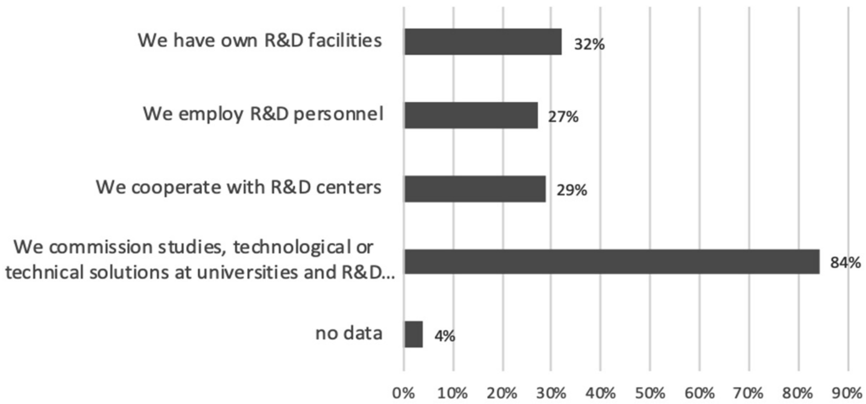

Fig. Availability of R&D facilities for enterprises

Source: own elaboration based on the PBICA's primary data.

respectively. However, it is worth highlighting the activities of two of the surveyed enterprises operating in the IT industry, which have granted up to 1200 and 2000 licenses so far.

Also, the analysed entities usually did not use quality certificates – 79%. Only 19% of them had ISO (ISO 9001, ISO 27001, ISO 17025, ISO 22000, ISO14001).

Almost one in three entities had their own research and development (R&D) facilities, and slightly less as 27% of them employed specialised personnel for R&D tasks (Fig.). The low propensity to employ R&D personnel may result from the easy availability of resources of neighbouring knowledge centres. Most enterprises confirmed that they commission universities or R&D centres to develop the necessary technical/technological solutions – 84%, which, compared to 29% of respondents declaring cooperation with scientific and research units, may indicate the apparent nature of some agreements concluded between institutions (Fig.).

CONCLUSIONS

The task of technology parks and incubators is to facilitate the start of young enterprises and create conditions for technology transfer through contacts with scientific units, verification of business concepts, implementation of various types of consulting and training services for enterprises. Through their activities, they strengthen the mutual interaction of their tenants, which, along with solid support of the business-related environment, may cause a unique synergy effect. This effect, strengthened by the specific atmosphere of entrepreneurship and the specific competition, is an incentive for young people who want to open and develop their own enterprise.

It is not surprising then that the percentage of innovative enterprises operating within technology parks and incubators is three times higher than the average in Poland. Nevertheless, innovative imitation still dominates here (H). The majority of enterprises have their offer new at the national level – 70% to 90% in the case of organisational innovations. Most of the surveyed entities – 52% did not use high or medium-high production technologies. Also, they usually did not acquire or grant licences. They sporadically applied available forms of intellectual property protection, such as patents, utility or industrial designs.

These arguments confirm the hypothesis (H) set out in the article. However, despite the fact that the tenant enterprises have not achieve high values of indicators proving their innovativeness yet, their strong commitment to real cooperation with knowledge centres should be emphasised. As much as 84% of them commission universities or R&D centres to develop technical/technological solutions. Continuation of this cooperation is an opportunity for further innovative development of the enterprises being surveyed.

To sum up, it should be emphasized that today, an immanent element of the SME development are innovations, whose scope of influence goes beyond the national economy. Therefore, it is extremely important from the point of view of building competitive advantage of these companies to base their offer not on imitative solutions, but actually new ones, better suited to changing market preferences. To this end, in particular Polish small companies should be more involved in their own R&D activities, but also cooperate with renowned innovation centres, as well as create new value based on already available solutions. These actions give the chance to create the right long-term strategy in a globalizing market.

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INNOWACYJNOŚĆ PRZEDSIĘBIORSTW W POLSKICH PARKACH I INKUBATORACH TECHNOLOGICZNYCH

STRESZCZENIE

Większość polskich małych i średnich przedsiębiorstw (MSP) traktuje wdrażanie nowego produktu lub usługi jako zbyt drogie, czasochłonne i ryzykowne. Udział innowacyjnych przedsiębiorstw przemysłowych oraz usługowych w latach 2015–2017 w ogólnej liczbie przedsiębiorstw wynosił odpowiednio 18,5% i 10,4%. Większość tych firm nie ma własnego zaplecza badawczo-rozwojowego (B+R). Dlatego, dla wielu z nich, doskonałą okazją zbudowania długofalowej przewagi konkurencyjnej byłaby współpraca z ośrodkami innowacji, takimi jak parki oraz inkubatory technologiczne. Niniejsze opracowanie ma na celu ocenę innowacyjności firm-lokatorów wspomnianych instytucji.

Słowa kluczowe: park technologiczny, inkubator technologiczny, innowacyjne przedsiębiorstwo, ośrodek innowacji, start-up, spin-off

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MOTIVATION BEHIND THE FOREIGN EXPANSION OF ŁÓDŹ VOIVODESHIP COMPANIES

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ABSTRACT

The aim of the article is to present the motivation behind foreign expansion of small and medium-sized enterprises (SMEs) based in Łódź Voivodeship. In order to carry out the project the researchers analysed the literature on the subject and conducted primary research on the sample of the selected companies with the use of survey and interview questionnaires that the managers of the companies surveyed responded to in 2017 and 2018.The decisions to enter foreign markets also resulted from the fact that companies wanted to increase their turnover and profits and in some cases, as the research proved, they were also motivated by factors concerning the companies productivity. Companies perceive foreign market expansion as an opportunity to expand their product offer, enter new markets, implement innovative solutions or achieve the previously set strategic goals, which is referred to as the so called strategic motivation.

Key words: internationalization, motivation factors for foreign market expansion

JEL codes: M31

INTRODUCTION

In today's times we are witnessing intensive development of internationalization processes concerning all companies regardless of their size, sector and operating territory. The presented paper refers to the internationalization processes of Polish enterprises, which develop rapidly these days and concern all kinds of enterprises regardless of their size, the industry they represent and the territorial scope of their operations. The aim of the article is to present the motivation behind foreign expansion of small and medium sized enterprises (SMEs) based in Łódź Voivodeship. In order to carry out the project the researchers analysed the literature on the subject and conducted primary research on the sample of the selected companies with the use of survey and interview questionnaires that the managers of the companies surveyed responded to in the years 2017–2018.

FOREIGN EXPANSION MOTIVATION FACTORS

The main motivation factors for companies to expand into foreign markets are:
- market factors,
- cost factors,
- provision factors,
- political factors. [Dunning 1993, Yip 1996, Rymarczyk 2004].

Market motivation factorsresult from the market situation in the producer's country. The company decides to enter foreign markets if the following conditions (one of them, some of them jointly or all at the same time) are fulfilled :
- the product on the domestic market is in the saturation stage and the company wants to prolong it,
- the company has spare production capacity,
- the competition on the domestic market is increasing,

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- foreign markets experience dynamic economic growth,
- protective measures against domestic companies operating on foreign markets are being intensified,
- current suppliers and (or) customers expanded their operations into foreign markets,
- the company's competitors start operating on foreign markets,
- the company is trying to gain a competitive advantage on international markets.

Cost motivation factorsare closely related to the necessity to boost the company's performance and to the increase of its profitability. Entering a new market (regardless of its form) enables the company to achieve these goals because it causes a production increase, which in turn leads to economies of scale and learning curve effects and as a consequence to the increase of the company's turnover and profits. Companies often start operating on foreign markets because prices of raw materials, energy, semi-finished products or labour costs are lower there than on the domestic market and because, especially in the case of direct investments, they can eliminate transport costs. In order to avoid a price increase of raw materials and production materials and to ensure supply continuity, companies often absorb their current suppliers and clients also reducing this way also the costs of raw material acquisition (in the literature on the subject this process is referred to as internalization). Sometimes, because of the cost factors the company wants to reduce the risk of operating on just one or several foreign markets (e.g. the risk related to the economic situation) and then it decides to enter many foreign markets so that the losses resulting from the bad economic situation on some of them could be compensated by profits made on others.

Provision motivation factors for foreign expansion refer to the situation when there is a shortage of raw materials and production materials or when the company wants to ensure the continuity of their supplies, which can involve direct investments or the above-mentioned process of internationalization in sectors providing supplies for foreign investors.

Political motivation factors result from the state economic policy towards domestic companies and their operations on foreign markets. Generally, the state policy in every country supports the international expansion of domestic companies. It may refer to all forms of foreign expansion but most commonly refers to export and direct investments. The support policy usually uses export insurance schemes but other instruments such as duty drawbacks, tax refunds, reduction or abolition of customs tariffs, partial or full state financing of the international market information acquisition, financing the promotion of domestic companies and products on foreign markets, granting export credit guarantees, etc., are also used.

Other authors divide motivation factors for international expansion into the following three categories:

- economic,
- strategic,
- competitive.

Strategic and competitive factors, however, correspond to the above-mentioned market factors and economic factors correspond to market and cost factors [Wiktor et al. 2008, Fonfara 2014].

Motivation factors can also be divided into offensive and defensive ones. The offensive motivation factors refer to the opportunity to increase the company's profits, enter new markets and win new customers. The defensive factors, on the other hand, involve protecting the domestic market, ensuring supply continuity and acquiring new technologies [Gorynia 2007]. Also in this case offensive factors correspond to market and cost factors, whereas defensive factors – to provision and political factors.

The literature of the subject also divides the reasons for internationalization into proactive and reactive ones. The first category results from the companies' own initiatives and their awareness that operating on foreign markets will benefit them. The company management expects that profits made on foreign markets will be higher due to the economies of scale and the learning curve effects, the acquired knowledge of foreign markets or the competitive and technological advantage. The other category of reasons results from the pressure exerted on companies by their competitors, the situation on the buyer's market, the degree of saturation in the product life cycle or the company's spare production capacity. The pressure on companies can also result from internationalization activities of the company's existing clients or from the fact that the company has been contacted by some foreign enterprises [Keegan et al. 2002]. As we can see, the factors putting pressure on companies to internationalize and the factors resulting from the company's own initiative correspond to the market, cost and provision factors that have been briefly mentioned earlier.

The internationalization processes led to the internalization of industrial production and the integration of companies' activities on a global scale. The aim of the internalization processes is to optimize costs, maximize profits and to maintain or strengthen the company's competitive position on many foreign markets or globally. The competition on many foreign markets and on the international market as a whole is constantly growing and the transfer of new technologies is accelerating. We can also observe that there is a tendency to unify the patterns of organization and production processes worldwide [Witek-Hajduk 2010, Wiktor and Chlipała 2012].

FOREIGN EXPANSION OF ŁÓDŹ VOIVODESHIP COMPANIES – RESEARCH FINDINGS

Research assumptions and sample structure

This article is the result of the research project Foreign expansion strategies of Łódź Voivodeship companies conducted in the Department of Marketing at the University of Lodz in the years 2017–2018. To select the research sample we used random sampling. The research units were Łódź Voivodeship companies operating on foreign markets selected from Statistics Poland (the Central Statistical Office) list of over 2,800 companies based in Łódź Voivodeship, which constituted the sampling frame of our research.[1]

In the first stage of the project we initially selected 100 companies from that list and after further verification we used purposive sampling to finally select 50 units. The main sampling selection criterion was the company's declaration that it has been operating on foreign markets. The managers of the selected companies were interviewed with the use of a standardised interview questionnaire. In the second stage of research we used interview questionnaires sent to personal email addresses in over 900 enterprises. They were selected from list of 2,800 companies that we purchased from Statistics Poland on having verified the information about their foreign expansion.

The presented findings result from the analysis of the information collected during the interviews and electronic questionnaires. The questionnaire was constructed in such a way that researchers could encode the acquired information and use statistical analysis to research it. During the process of collecting information we finally received 117 interview questionnaires and used them for further analysis.

Structure of surveyed companies

The predominant legal form among the companies surveyed were limited liability companies which accounted for over 50% of all the surveyed units They were followed by public limited companies accounting for almost 20% of the surveyed sample and general partnerships – about 12%. The majority of the companies surveyed, namely 53% of the sample, were medium-sized companies employing 50–249 people. Large companies employing over 250 people accounted for over 27% of the companies surveyed. Small companies (10–49 people) accounted for over 17% of the sample, while micro enterprises employing fewer than 10 people – for only about 2%. The companies having the legal status of limited liability companies were mostly medium-sized or small companies – accounting for 29% and 14% of the sample, respectively.

Over 38.4% of the surveyed companies reported an annual turnover of EUR 11–50 million, while about 32.5% generated an annual turnover in the range of EUR 3–10 million. The prevailing majority of companies in these two intervals were medium-sized companies employing 50–249 people accounting for over 47% of the total number of the surveyed companies. Small companies employing 10–49 people in most cases (60%) generated an annual turnover of up to EUR 2 million. Only 9% of the companies surveyed admitted that their turnover exceeded EUR 50 million and these were primarily large companies employing

[1] It should be noted that the Statistics Poland list doesn't provide the information whether the company operates on foreign markets. That is why it was verified in order to select the companies that could potentially participate in this survey.

over 250 people (about 8% of all the companies surveyed). It can be noticed that the company size generally corresponded to its turnover – which means that micro enterprises and small companies usually generated a relatively small turnover (of maximum EUR 10 million), whereas small and medium-sized companies in most cases generated a turnover of EUR 11–50 million.

The prevailing majority of the surveyed companies (112) have been functioning on the market for over 10 years and accounted for almost 96% of the sample. None of the surveyed companies have been functioning on the market for less than two years, there was just one company in the interval 2–5 years of functioning (0.85%) and four companies in the interval 6–10 years of functioning (3.42%).

The majority of companies participating in the survey represented the food industry (15.38%), the service sector (11.97% – trading companies, security services companies, research centres, design studios, promotional agencies), electromechanical, electrical and electronic engineering sector companies (10.34%), chemical industry (10.26%), machinery industry (9.40%), textile industry (7.69%) and the furniture industry (6.84%).

Motivation factors for the foreign expansion of Łódź Voivodeship companies

One of the purposes of conducting this research was to obtain information about the motivation behind the foreign expansion of companies based in Łódź Voivodeship. The research identified cost, market, provision and political motivation factors and determined the characteristic elements of these motivation factors. As it follows from the research findings, for most of the surveyed companies the above-mentioned motivation factors were "of little importance" in the process of decision making concerning foreign expansion, 65 companies surveyed, that is 55% of the total number shared this opinion. Among the remaining 52 companies (45% of the total number) 12 companies (10% of all the companies surveyed) claimed they were "absolutely essential" (important), 11 companies (over 9%) said that they were "less important", 15 companies (over 12%) were of the opinion that they were "neither more nor less important" (neither important nor unimportant?), 12 companies (over 10%) claimed they were that they were "less important" and 5 companies surveyed (about 4%) claimed they were "unimportant". For the majority of the companies surveyed these motivation factors were of moderate (neutral) significance for making the decision to expand into foreign markets. Such answers are difficult to interpret in an unambiguous way because the respondents were in fact presented almost all the likely reasons to expand into foreign markets.

Therefore, the only way to determine the elements describing particular kinds of motivation, which are of greater or lesser importance for the companies surveyed is an individual analysis of every single motivation factor. Although the number of responses was relatively small the most important and important elements of the motivation behind the foreign expansion of companies based in Łódź could be identified. The most commonly mentioned elements in the group describing cost motivation factors (Fig. 1) were labour costs (21 responses – about 18%) and production costs (21 responses – about 18%).

In the group of elements describing market motivation factors (Fig. 2) the elements commonly recognised as "important" were difficulties in selling the company's products on the domestic market (21 responses – about 18%), high level of competition on the domestic market (21 responses – about 18%) and unsatisfied demand for the product(s) on the selected foreign market (24 responses – about 21%).

The most important element that influenced the decision of the Łódź Voivodeship companies to expand into foreign markets among provision motivation factors (Fig. 3), was the fact that they didn't have to bear the transport costs and they had access to cheaper raw materials and production materials (11 responses – about 9%). These elements were apparently important for the companies surveyed because the form of foreign expansion that the majority of them chose was export.

The most common elements of political motivation factors (Fig. 4) behind the foreign expansion of the Łódź Voivodeship companies were the European Union incentives and support (13 responses – 11%) and deteriorating political situation on the domestic market (13 responses – 11%).

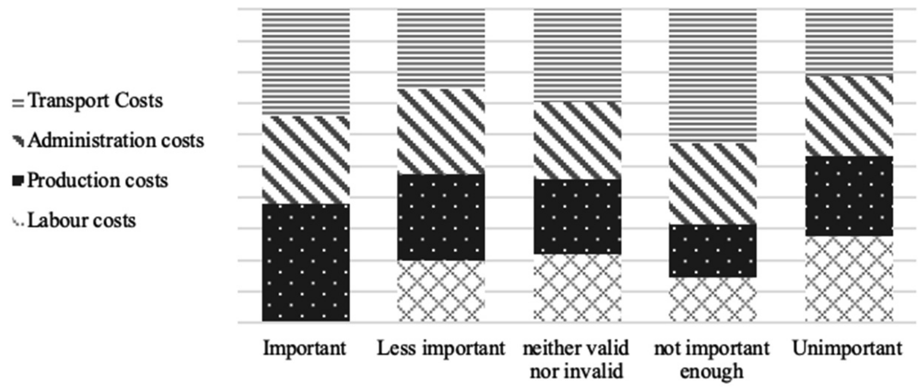

Fig. 1. Cost motivation factors behind the foreign expansion of Łódź Voivodeship companies, N = 117 (number of responses)

Source: the author's own study based on empirical research (N – research sample).

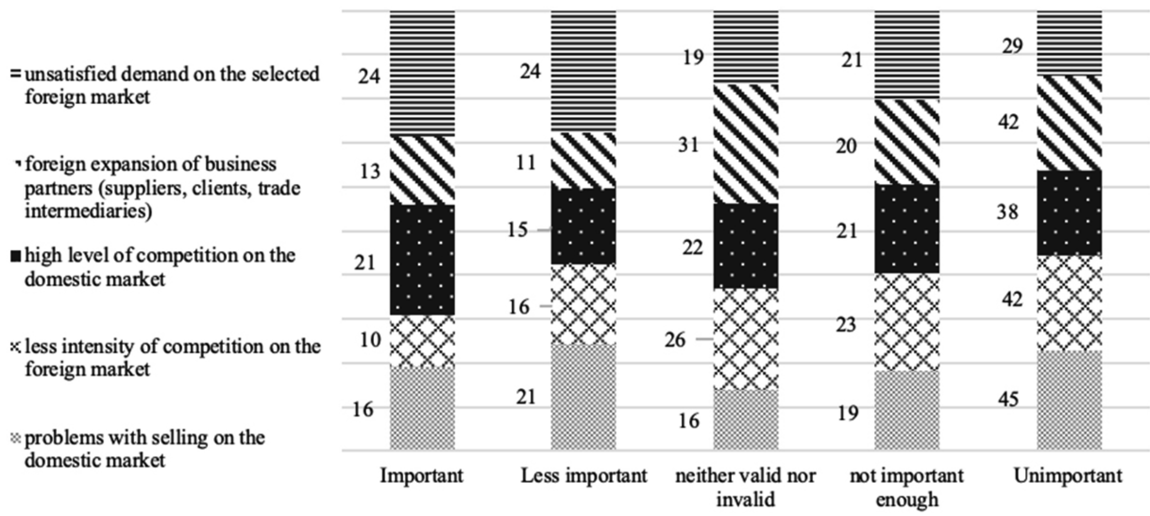

Fig. 2. Market motivation factors behind the foreign expansion of Łódź Voivodeship companies, N = 117 (number of responses)

Source: the author's own study on the basis of empirical research (N – research sample).

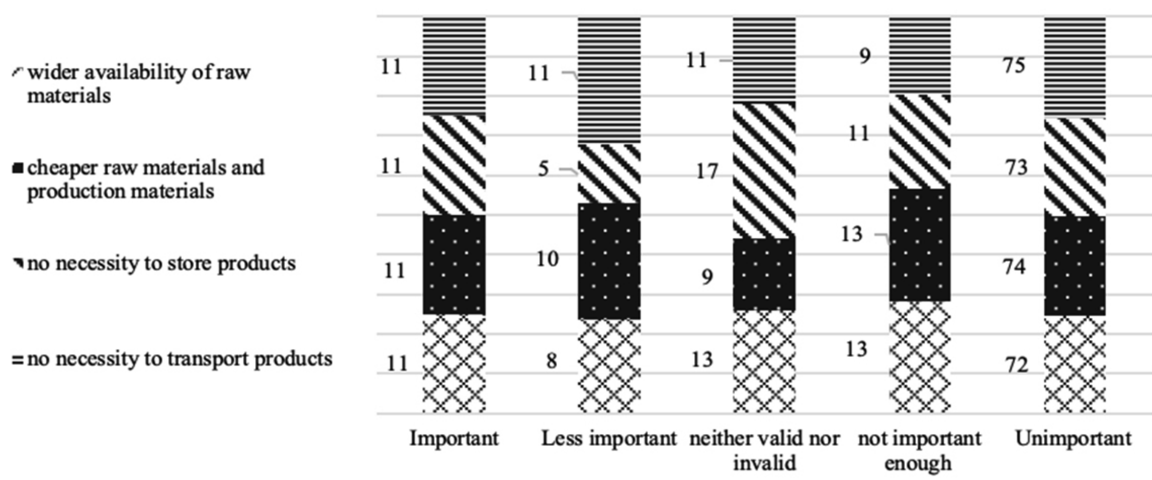

Fig. 3. Provision motivation factors behind the foreign expansion of Łódź Voivodeship companies, N = 117 (number of responses)

Source: the author's own study based on empirical research (N – research sample).

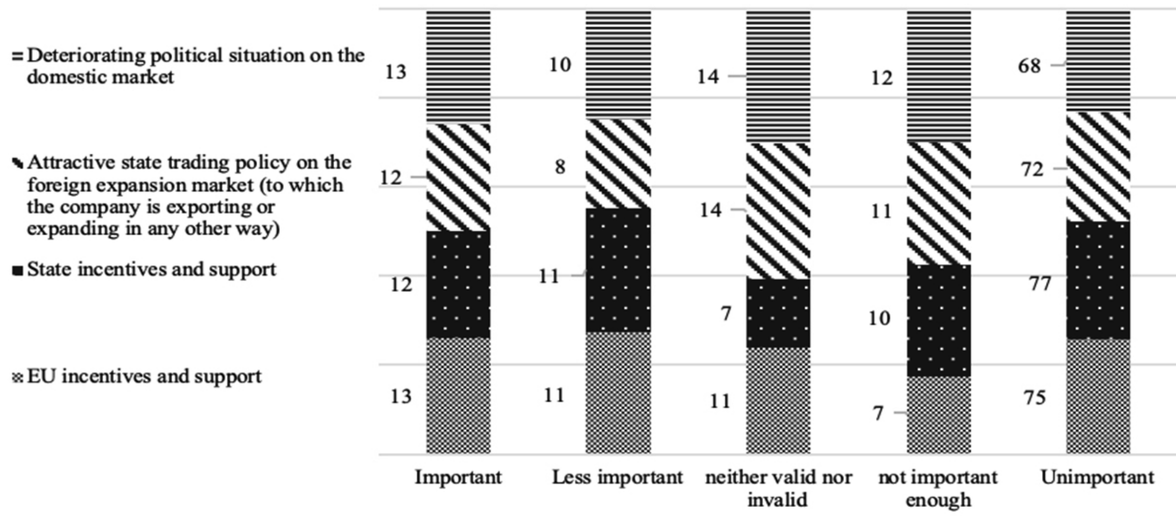

Fig. 4. Political motivation factors behind the foreign expansion of the Łódź Voivodeship companies, $N = 117$ (number of responses)

Source: the author's own study on the basis of empirical research (N – research sample).

It should be emphasised that many respondents presented an "averaged" attitude towards the motivation factors behind their foreign expansion recognising many elements of the motivation factors as being of "average importance". The elements describing particular motivation factors for foreign expansion that were recognised as "neither important, nor most important" with respect to cost motivation factors included, among others, transport costs (20 responses – about 17%) and administration costs (17 responses – about 15%). The most commonly mentioned elements with respect to market motivation factors were the lower level of competition on the foreign market (26 responses – about 22%), the higher level of competition on the domestic market (22 responses – about 19%) and the foreign expansion of the company's business partners such as suppliers, clients and trade intermediaries (31 responses – about 27%). The element of "medium" importance among provision motivation factors was the lack of necessity to store products (20 responses – about 17%). As for political motivation factors, the elements of "medium" importance were factors such as attractive trade policy of the country to which the company exports its products or expands into in any form (14 responses – about 12%) and the deterioration of the political situation on the domestic market (14 responses – about 12%).

As for the cost motivation factors for foreign expansion the companies surveyed indicated that the elements recognised as being "of little importance and least important" were labour costs (65 responses – about 56%). This result, however, can be caused by the fact that the form of foreign expansion that the prevailing majority of the surveyed companies choose is direct export (93%) or indirect export (38%). Due to the fact that in this situation the company produces mainly for the domestic market and it bears the labour costs of such production these costs don't have a significant importance in export and are not the predominant factor influencing its volume.

There was also a significant percentage of the problems recognised as "irrelevant" among market motivation factors, such as difficulties in selling on the domestic market (45 responses – about 39%), lower level of competition on the foreign market (42 responses – about 36%) or the foreign expansion of the company's business partners, such as suppliers, clients, trade intermediaries (42 responses – about 36%).

As for the elements describing provision motivation factors, the Łódź Voivodeship companies don't attach great importance to the lack of necessity to transport products (75 responses – about 64%) or the availability of cheaper raw materials and production materials on the foreign markets (75 responses – about 64%).

As far as political motivation factors are concerned the companies surveyed indicated that the factors that do not have any greater importance to them for their foreign market expansion are the European Union incentives and support (75 responses – 64%) and the incentives and support of the state (77 responses – 66%). It can be assumed that such results were caused by the fact that the companies did not know about the European Union or state incentives and support, they have to wait for too long to receive them or they do not have specialists who could apply for such incentives.

Apart from the survey questions concerning the company's foreign expansion, the responses to which were presented in the above diagrams, the companies surveyed had to answer an additional open question. The purpose of this question was to find out whether there might have been any other reasons that encouraged the companies to expand into foreign markets. The analysis of the companies' responses to this question allows us to draw a conclusion that they made the decision to expand into foreign markets because they wanted to increase the company's turnover generated from the sales of the company's own products that either haven't been modified at all or have been only partially modified for new customers. Over 55% of the companies surveyed (65 responses) indicated that it was their aim and it was also the most common reason for foreign expansion of the Łódź Voivodeship companies. The opportunity to increase the company's turnover is rather not related to the difficulties in selling products on the domestic market but to the unsatisfied demand on the foreign market and/or the company's need to develop. The analysis of the collected material shows that the second most important reason for foreign expansion was the company's development (28 responses – 24% of the surveyed companies). The subsequent reason for foreign expansion was expanding the market for the company's products (18 responses – about 14%). 15 companies out of 117 companies surveyed also mentioned increasing profits (about 13% of responses), claiming that they can get higher profit margins. The surveyed companies also indicated that thanks to their foreign expansion they intended to diversify their product offer (12 responses – over 10% of responses). The less frequently mentioned responses pointed out to product development (7 responses – about 6%), brand extension (6 responses – over 5%) or possibilities of financing (5 responses – about 4.3%). The reasons for foreign expansion related to company development that the companies surveyed mentioned were the issues concerning the quality of products, that is product improvement and implementing the innovations that are necessary to expand into foreign markets. According to the surveyed companies the elements that they considered important were the brand recognition and its prestige among new customers. The companies also indicated that foreign expansion enables them to access new sources of financing and to balance foreign currency flows (5 responses – about 4.3%). Some respondents also claimed that the presence on foreign markets allows them to have access to technological innovations and gives them an opportunity to implement them in the production process and to develop new products but the proportion of these answers was very small (4 responses – about 3.5%). Only 1.75% of the respondents claimed that the main aim for their foreign expansion was to enter new market segments, which can result from their lack of knowledge of marketing and segmentation or from the fact that they supply products only for the so called mass market consumers. This may mean that the companies based in Łódź Voivodeship supply their products to trade intermediaries on foreign markets and that is why they don't have the knowledge about their ultimate consumers. Contacting intermediaries doesn't require such knowledge and eliminates the risk of a misguided choice but it also reduces the company's sales revenues and makes exporters dependent on trade intermediaries.

SUMMARY

The decisions of Łódź Voivodeship companies considering their expansion into foreign markets were mostly motivated by costs and market factors. The decisions to enter foreign markets also resulted from the fact that companies wanted to increase their turnover and profits and in some cases, as the research proved, they were also motivated by factors concerning the companies' productivity. Market factors are related to the fact that companies keep looking for new markets in order to use their production capacities in a more efficient way. Market expansion can also be driven by the company's growth and its desire to acquire knowledge about customers, the market or new technologies. Companies perceive foreign market expansion as an opportunity to expand their product offer, enter new markets, implement innovative solutions or achieve the previously set strategic goals, which is referred to as the so called strategic motivation. It should be emphasised that there are also motivation factors related to marketing activities, which mainly concern developing high-quality innovative products and building the image of Polish brands on foreign markets.

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MOTYWY EKSPANSJI NA RYNKI ZAGRANICZNE PRZEDSIĘBIORSTW WOJEWÓDZTWA ŁÓDZKIEGO

STRESZCZENIE

Celem artykułu jest przedstawienie motywacji stojącej za ekspansją zagraniczną małych i średnich przedsiębiorstw (MŚP) z siedzibą w województwie łódzkim. W celu realizacji projektu badacze przeanalizowali literaturę przedmiotu i przeprowadzili badania pierwotne na próbie wybranych firm z wykorzystaniem kwestionariuszy ankiet i wywiadów, na które kierownicy ankietowanych firm odpowiedzieli w latach 2017–2018. Decyzje o wejściu na rynki zagraniczne wynikały również z faktu, że firmy chciały zwiększyć obroty i zyski, a w niektórych przypadkach, jak wykazały badania, były również motywowane czynnikami dotyczącymi produktywności. Firmy postrzegają ekspansję na rynku zagranicznym jako okazję do poszerzenia swojej oferty produktowej, wejścia na nowe rynki, wdrożenia innowacyjnych rozwiązań lub osiągnięcia wcześniej wyznaczonych celów strategicznych, co określa się mianem tzw. strategicmotivation.

Słowa kluczowe: internacjonalizacja, czynniki motywacyjne dla ekspansji na rynku zagranicznym

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PROFESSIONAL ACTIVITY OF PARENTS RECEIVING FAMILY 500+ CHILD SUPPORT IN RURAL AND URBAN AREAS

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ABSTRACT

The purpose of this study is to analyse the professional activity of parents who receive the Family 500+ educational benefit. Eligibility for this benefit in the first three years of the programme was dependent on family income and the number of children. Research shows that the highest level of professional activity was among parents who had one child and they did not receive a child benefit. Parents who received a 500+ benefit and had two or more children were more active in the labour market than parents with one child. An increase was also found in the number of economically inactive people not seeking work for reasons related to running a home and caring for family members, especially among people living in the countryside.

Key words: child benefit, labour market, professional passivity, professional activity, rural areas, family 500+ programme

JEL codes: J20, J13, J22

INTRODUCTION

The Family 500+ Programme is a relatively new programme in Polish family policy and has been the subject of much debate. During the election campaign in 2015, the Law and Justice Party announced the 500+ Programme, which was introduced after winning the election. The Family 500+ Programme came into forceon 1st April 2016 and was designed to provide "partial coverage of expenses related to bringing up a child, including taking care of the child and satisfying its life needs" [Ustawa… 2016]. The mother, father, factual guardian or legal guardian of a child is entitled to this benefit. Until July 2019, the programme applied only to certain families and children: in the case of families with one child, the income criterion applied[1], whereas, in the case of families with more than one child, the benefit was paid for the second and subsequent child. In case of a single parent raising one or more children, it was stipulated that the maintenance allowance should be based on an enforceable title originating or approved by the court. The Act provided for the possibility of receiving child support in whole or in part in material form or in the form of payment for services in situations where carers waste the paid-out money [Ustawa z dnia 11 lutego 2016].

By April 2019, the programme had been in operation for three years. Although, many aspects of the programme's functioning have been debated, research has yet to confirm the hypotheses. This is due to the fact that the programme has been functioning for a very short

[1] Parents received PLN 500 each month for the second and subsequent children. If the income per person in the family was less than PLN 800 (PLN 1,200 family with disabled child), then the parents received the benefit for first child. The gross minimum wage in 2016 was PLN 1,850.

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period, and there isa lack of research on this subject (especially qualitative research). Undoubtedly, this is the most important social programme in the history of Poland, and it has changed the nature of state policy in terms of family welfare assessment. According to Public Opinion Research Centre data, until the year 2013, the state's policy for families was rated as being sufficient or insufficient,and a year into the programme, 52% of respondents rated it as good [CBOS 2017].

This study seeks to answer the question as to whether, in families taking advantage of the 500+ Programme, the level of professional activity is lower than in families who do not receive the benefit, and whether this programme could increase professional inactivity among rural populations. The research is based on results from the Labour Force Survey presented by the Central Statistical Office of Poland. Although the program started in 2016, data on the professional activity of parents receiving 500+ are available from 2018 (Until 2018, there were no questions about 500+ child benefit in the LFS survey).

CURRENT RESEARCH ON THE IMPACT OF THE 500+ BENEFIT ON THE LABOUR MARKET IN POLAND

From the outset, there has been a question mark over whether the programme would affect the labour market. According to Ruzik-Sierdzińska [2017], this benefit has had such an impact that in 2016 between 20,000 and 23,000 female employees left the labour market. She points out that, in the short term, exiting the labour market may have a neutral or even beneficial effect ona household, whereas a long break from work may make it difficult for parents or carers to return to employment at a later date and may increase the risk of poverty in old age (less work experience means a lower pension in the future). It has been noted that the benefit has a much stronger influence on decisions made by less-educated women [Magda et al. 2018]. Myck's research [2016] indicates that the programme influences the percentage of couples in which both partners work, and the effect is particularly noticeable in small towns and villages. The question about the effects of the Family 500+ Programme on the labour market is still valid.

Other results of the programme are also emphasized, such as a reduction of poverty among families with children. The analysis carried out by Brzeziński and Najsztub [2017] based on equivalency scales suggests that even before the introduction of this child benefit, the extreme poverty rate in Poland among households with children was at alevel comparable or lower than the level of poverty among single-person households or couples without children.

CASES WHERE THE MAIN BENEFICIARIES OF THE "FAMILY 500+" PROGRAMME LIVE IN RURAL AREAS

According to the data, the Family 500+ child benefit has been granted to 54.1% of all children (3.74 million people) up to the age of 18 in Poland. Most children covered by the 500+ Programme live in rural areas (61%). Insome rural communes, over 90% of children are covered by the programme, e.g., the Potworów commune (92% of children) and the Grabowo commune in the Podlasie Voivodeship (90% of children). Only 47% of children living in urban communes and 55% of those in urban-rural communes have received this benefit (as of 30th June 2018). Since the beginning of the programme, PLN 54.8 billion have been spent for this purpose, of which 61% was spent in rural and urban-rural communes (Table 1).

Table 1. Family 500+ child support expenditure from the beginning of the programme until 30th June 2018

Communes	Expenditure	
	PLN billion	(%)
City	21.6	39
Rural	19.6	36
Urban-rural	13.6	25
Total	54.8	100

Source: [Ministerstwo Rodziny, Pracy i Polityki Społecznej 2018].

In 2017, the average benefit granted to families participating in the programme amounted to PLN 9,795 for those in rural areas and PLN 8,591 for those in urban communes. The overall average for families participating in the programme amounts to PLN 9,193. A large part of the budget for this programme goes to rural families due to the fact that in recent years more children have been born in the countryside, and income there is lower. The percentage of people at risk of poverty is higher in rural areas than in cities. Since 2016, there has been a clear decline in the number of people living below the subsistence level, both in rural areas and in cities, with the exception of large cities where this indicator has increased (Table 2). Undoubtedly, changes in this indicator have been affected by the good labour market, wages and increased agricultural incomes. In the case of households with children, we should also take into consideration the provision of childsupport and parental allowance. The parental allowance (commonly referred to as "Kosiniakowe")[2] has been in force since January 2016 and applies to women who have given birth to a child butare not eligible for maternity benefit, e.g., students and farmers' wives.

The number of children in a household affects the risk of poverty. Data produced by the Central Statistical Office are published for the whole country and include the number of children in families (but not the division between cities and villages). The data show that households with children have a greater risk of extreme poverty. Households without children have the lowest poverty rate, and no major changes were noted here. In contrast, there is clearly a lower poverty rate in households with at least two or three children aged 17 or under, as well as in households with a disabled child (Table 3).

Table 2. Extent of extreme poverty in Poland between 2013 and 2017 (% of people in households)

Specifications	2013	2014	2015	2016	2017
Poland	7.4	7.4	6.5	4.9	4.3
Urban areas:	4.6	4.6	3.5	2.9	2.4
number of inhabitants: – more than 500 thousand	1.0	1.0	1.1	1.1	1.5
– 200–500 thousand	4.6	3.2	3.2	1.9	1.1
– 100–200 thousand	3.5	3.7	3.1	2.8	1.8
– 20–100 thousand	4.9	5.1	4.6	3.9	2.8
– less than 20 thousand	8.2	8.5	5.4	4.0	4.1
Rural areas	11.6	11.8	11.3	8.0	7.3

Source: own study based on GUS [2015, 2017, 2019].

Table 3. Extent of extreme poverty in households with children between 2015 and 2017

Specification		2015	2016	2017
Poland in general		6.5	4.9	4.3
Household	with at least 1 child aged 0–17	8.8	5.9	4.9
	with 1 child aged 0–17	5.3	4.3	3.8
	with 2 children aged 0–17	8.1	5.3	4.5
	with at least 3 children aged 0–17	16.7	9.9	7.6
	with at least 1 child under the age of 16 with a disability certificate	10.7	8.3	4.9
	without children aged 0–17	3.7	3.7	3.6

Source: own study based on GUS [2015, 2017, 2019].

[2] The term "Kosiniakowe" benefit comes from the name of its originator, i.e., the former Minister of Labour and Social Policy – Władysław Kosiniak-Kamysz.

Sawicka and Stolarczyk [2018] draw attention to the fact that no one supports the positive effects of the programme in terms of families with children. There is no doubt that, in households with children, provision of child benefit and parental allowance have an impact on improving the income situation of families.

PARENTS WHO ARE PROFESSIONALLY "PASSIVE" DUE TO FAMILY RESPONSIBILITIES RELATED TO RUNNING A HOME

The structure of the Family 500+ Programme could encourage parents to be professionally inactive or to conceal income in the case of households where the income criterion is important (exceeding the specified income limit by one PLN can result in a loss of 500 PLNs' worth of benefit). Annual increases in the minimum wage have caused some of the lowest earners to lose benefits. Such slight increases in income are unlikely to significantly improve families' financial situation but may well render them ineligible for benefits.

In Poland, there are 4,869 thousand economically inactive people of working age. The main reason for passivity in this group is family responsibilities related to running a home. For this reason, 1,150 thousand people are outside the labour market, half of whom live in rural areas (Table 4). The number of people who are economically inactive due to family responsibilities is growing, especially in the countryside. In 2018, there were 166,000 more professionally inactive people than in the third quarter of 2013, of whom 104,000 lived in rural areas. Since the 500+ Programme began operating (i.e., 1st April 2016), there has been a clear increase of 44,000 professionally passive people in the countryside (during the second quarter of 2016). However, it should be emphasized that professional passivity of the rural population is conditioned by many factors occurring simultaneously. Firstly, the rural labour market is mainly associated with agriculture. Owning a farm has an important and significant impact on being in the working group [Kmieć 2015, Drejerska 2018], and the situation of the landless population in the rural labour market is difficult. There is a higher demand for work outside agriculture in the cities, and an important role here is played by the profitability of work. Not only is the level of remuneration important but also costs associated with undertaking a job outside the place of residence. Weaker development of technical and social infrastructure in rural areas means that costs can be very high, which affects employment choices, especially those of parents who are caring for children. In discussions, there is often an argument about insufficient childcare places, but this is only one of the problems that existin cities and also the countryside. There are nurseries in 14% of rural communes. It should be remembered that in addition to the availability of nurseries, the cost and quality of childcare services are also important, and this varies greatly. However, the solution to the problem of looking after children up to three years of age will not change much. The ability to plan the functioning of members of the whole family (i.e., the existence of a predictable schedule) is of great importance. For example, school timetables (starting and finishing at different times of the day) influence family decisions about whether to be active in the labour market, especially for women. In addition, organizing childcare during the summer break, school holidays and extended weekends is very expensive, and parents engagedin non-standard forms of work may not be granted leave (especially paidtime off).

In addition, returning to the labour market may be problematic due to trouble some commuting to the workplace. A key problem is the lack of organized public transport or the limitations of this.

We are increasingly likely to see problems associated with care of the elderly living in rural areas. Difficulty accessing medical services is a problem not only for parents but also for other residents of villages as there are fewer health care facilities than in cities. The consequence of an aging population is an increase in the number of people needing support. The number of adults who have living parents and grandparents is increasing. Three- and four-generation families are appearing and even (briefly) five-generation families. The probability of families with great-grandparents, grandparents and parents has increased [Szweda-Lewandowska 2014]. Demographic changes and access to care services will affect the professional activity of household members, especially women as they are most often the carers.

The occurrence of so many problems simultaneously and an inability to quickly resolve them makes it necessary for families to resort to a certain level of

Table 4. Population living in towns and villages between 2013 and 2018 not seeking work due to family responsibilities related to running a home, including looking after children or other persons requiring care

Year	Population not seeking work due to family responsibilities aged 15–44 years			
	urban areas		rural areas	
	(in thousands)	previous quarter = 100 (in thousands)	(in thousands)	previous quarter = 100 (in thousands)
2013 I quarter	514	–	502	–
2013 II quarter	505	–9	488	–14
2013 III quarter	506	1	478	–10
2013 IV quarter	484	–22	465	–13
2014 I quarter	478	–6	470	5
2014 II quarter	501	23	481	11
2014 III quarter	485	–16	483	2
2014 IV quarter	469	–16	461	–22
2015 I quarter	488	27	463	2
2015 II quarter	479	–9	487	24
2015 III quarter	528	49	503	16
2015 IV quarter	501	–27	497	–6
2016 I quarter	518	17	503	6
2016 II quarter	519	1	547	44
2016 III quarter	576	57	559	12
2016 IV quarter	553	–23	568	9
2017 I quarter	565	12	514	–54
2017 II quarter	553	–12	514	0
2017 III quarter	602	49	614	100
2017 IV quarter	566	–36	571	–43
2018 I quarter	556	–10	546	–25
2018 II quarter	537	–19	555	9
2018 III quarter	568	31	582	27

Source: own study based on the Labour Force Survey in Poland for the years 2014–2018.

professional passivity, especially since few people have the option to work underpart-time contracts. According to OECD data for Poland, in 2000, 12.8% of working people worked part-time, whereas, in 2017, this was only 6.9%. Instead of working part-time under a contract of employment in Poland, employees are employed under less regulated and protected time contracts (e.g., civil contracts) or are encouraged to set up their own business and continue working for a former employer. In 2017, according to estimates by the Central Statistical Office, 1.2 million people entered into a mandate contract or a contract for specific work and did not have an employment relationship with any employer, and 1.2 million people were self-employed and did not employ staff. The number of people working for a former employer is unknown [GUS 2018]. In addition, a small percentage of people have the chance to perform their work at home or have flexible working hours. According to research by Zajkowska, the probability of performing some professional duties at home is lower for women than for men. The option to work flexible hours is adopted by men more frequently than women [Zajkowska 2014].

ECONOMIC ACTIVITY AMONG RURAL AND URBAN POPULATIONS RECEIVING 500+ BENEFIT

Since the first quarter of 2018, the Labour Force Survey of the Central Statistical Office has taken into consideration whether families receive 500+ child support. The available data show the level of the phenomenon, and data from the following periods will allow changes over time to be observed. What may come as a surprise is the fact that there are parents with two or three children who do not receive this benefit. It can be assumed that, in this group, there are people who have not submitted an application or people who do not have an established maintenance allowance for their second and subsequent child.

Data from Table 5 show that parents not receiving benefit are characterized by a higher level of professional activity (89.7% compared to 79.7%). In addition, it can be seen that dependence of the economic activity rate on the number of children occurs only in households receiving the 500+ benefit – the more children, the lower the total professional activity. There are particularly large differences between villages and cities: in households with three children, the professional activity rate during this period was almost twice as high as in rural households (83.3% in cities versus 43.5% in rural areas).

The situation was different in households receiving the 500+ benefits. The data show that the professional activity of parents was at a similar level in cities and in the countryside. The lowest activity was among parents (residents of villages and cities) with one child. In the countryside, the professional activity rate of parents-with one child was 20.9 percentage points lower than in households not receiving 500+ benefit, and in cities the difference was 24.5 percentage points. It should be noted that parents with one child are less active than parents with at least three children. The employment

Table 5. Economic activity of parents belonging to households receiving and not receiving the 500+ with the number of children below the age of 18 (II quarter of 2018) (%)

Parents	Activity rate in households		Employment rate in households	
	receiving 500+ benefit	not receiving 500+ benefit	receiving 500+ benefit	not receiving 500+ benefit
Total:	79.7	89.7	77.2	88.2
With one child below the age of 18	67.3	90.4	61.2	89.0
With two children below the age of 18	84.4	81.8	82.7	79.4
With three or more children below the age of 18	74.9	55.2	72.8	55.2
Urban areas	81.3	90.9	78.3	89.6
With one child below the age of 18	66.8	91.3	60.0	89.9
With two children below the age of 18	86.1	83.9	83.9	82.8
With three or more children below the age of 18	75.9	83.3	73.0	83.3
Rural areas	77.8	87.3	75.9	85.6
With one child below the age of 18	67.9	88.8	62.4	87.2
With two children below the age of 18	82.3	78.6	81.0	76.2
With three or more children below the age of 18	73.6	43.5	72.4	43.5

Source: date from Labour force survey in Poland II quarter 2018, Statistics Poland, Warsaw 2018.

rate of parents with three children was over 70%, and the employment rate for those with one child was 60% in cities and 62% in the countryside. This probably results from several facts. Firstly, along with the number of children, disposable income per capita in households is reduced, which leads to greater professional activity. Moreover, parents receive 500+ childsupport for their second and subsequent child regardless of their level of income. Secondly, the age of children is important: older children are more independent and can help care for younger siblings, for example, by picking them up from kindergarten or school. Thirdly, in most communes in Poland, there are no public nurseries and in cases where nurseries do exist, the number of places for children is insufficient and a household with one child has little chance of getting such a place when recruitment points are awarded to children with siblings. Public nursery places are initially given to candidates who have siblings, especially those from large families as they gain a points advantage. In this situation, parents with only one child must choose between suspending their professional activity and paying for nursery places in the private sector, the cost of which may be several times higher.

THE LEVEL OF UNEMPLOYMENT AMONG PARENTS WITH 500+ BENEFIT IN RURAL AND URBAN AREAS

Clear differences in the unemployment rate can be seen by comparing one-child parents who receive the 500+ benefit with those who do not receive it. The data show that the highest unemployment rate was among parents receiving 500+ benefit with one child up to 18 years of age (on average, three times higher than the total unemployment rate). Even greater disproportions are evident if we analyse data broken down by city and rural area, although disproportions between the unemployment rate of one-child parents who receive benefit and those who do not are smaller among the rural population (7.8% and 1.8% in rural areas, compared to 10.3% and 1.5% in cities) (Table 6).

The unemployment rate among parents with two or three children was found to be much lower. Differences in the unemployment rate of parents with one child are large, and it can be assumed that the income-related criterion for granting benefit has an impact on decisions regarding professional activity.

Table 6. Unemployment rate of parents belonging to households receiving and not receiving the 500+ benefit with the number of children below the age of 18 (II quarter of 2018) (%)

Parents	Unemployment rate in household	
	receiving 500+ benefit	not receiving 500+ benefit
Total:	3.2	1.6
With one child below the age of 18	9.1	1.6
With two children below the age of 18	2.1	×
With three or more children below the age of 18	2.5	–
Urban areas	3.7	1.5
With one child below the age of 18	10.3	1.5
With two children below the age of 18	2.5	×
With three or more children below the age of 18	3.7	–
Rural areas	2.5	1.9
With one child below the age of 18	7.8	1.8
With two children below the age of 18	1.5	×
With three or more children below the age of 18	1.4	–

Symbol (x): not applicable; Symbol (–): magnitude zero

Source: date from Labour force survey in Poland II quarter 2018, Statistics Poland, Warsaw 2018.

CHANGES IN THE "FAMILY 500+" PROGRAMME AND THEIR IMPACT ON PROFESSIONAL ACTIVITY

From 1st July 2019, the rules for paying out the 500+ benefit are due to change. The income criterion for granting benefit to the first child will be disestablished. The programme will cover all children, so (according to the announcement) there will be 6.8 million children provided for by the programme. At present, it is difficult to estimate with a high degree of accuracy the impact of the benefit on the phenomenon of professional passivity. It is even more difficult to predict how the supply of labour will be affected within the context of the proposed move to include all children in the programme. On one hand, it can be expected that abolition of the income criterion will increase the professional activity of parents with one child, but it may be a slight increase, especially in rural areas for reasons mentioned earlier in this paper. Another scenario cannot be ruled out, i.e., that there may also be a decline in professional activity among parents with at least two children. A fixed income may influence household decisions to withdraw from the labour market for a period of time to take care of family members or to find jobs with better working conditions. In the case of rural populations, the changes may not be that large, and they will depend on the functioning of the local non-agricultural job market. A well-functioning labour market counteracts the outflow of young people from the countryside and, at the same time, also affects agriculture, preventing the emergence of agrarian overpopulation. If working outside agriculture is attractive, it can cause structural changes in agriculture in the long run [Rosner and Stany 2017].

CONCLUSION

Most children covered by the Family 500+ benefit live in rural communes. During the years analysed in this study, the extent of extreme poverty among families with children decreased, especially among families with three children. Child support has certainly improved the income situation of parents with children. Although, the number of people at risk of poverty has decreased, it is still high among the rural population. It is difficult to estimate exactly how many people have become professionally inactive as a result of the introduction of the 500+ benefit. Nonetheless, there has been an increase in the number of parents who are professionally passive due to family responsibilities, especially in rural areas.

The lowest level of professional activity was observed among parents with one child up to 18 years of age who received a benefit from the 500+ Programme. The total employment rate was the lowest for this group of parents. Parents with at least three children were more active in the labour market than parents of an only child who also received a benefit.

The highest employment rate for rural and city residents was among parents with one child who did not receive the 500+ benefit because, in most cases, the income criterion had been exceeded. In the group of people receiving the 500+ benefit, employment rates in the rural population amounted to 75.9% and were slightly lower than the indicator for the city population. However, the unemployment rate among the rural population benefiting from the 500+ Programme was lower and amounted to 2.5%, compared to 3.7%. The highest unemployment rate was among parents with one child who received the 500+ benefit.

Extension of the programme to include all children, regardless of parental income, will be costly, and it is difficult to predict its impact on the professional activity of parents. It can be expected that abolition of the income criterion will positively affect the activity of parents with one child, but these may only amount to small changes, especially in areas with poor development of social and technical infrastructure, and among people performing low-paid jobs.

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AKTYWNOŚĆ ZAWODOWA RODZICÓW OTRZYMUJĄCYCH ŚWIADCZENIE WYCHOWAWCZE 500+Z PODZIAŁEM NA WIEŚ I MIASTO

STRESZCZENIE

Celem badań była analiza aktywności zawodowej rodziców, którzy otrzymywali świadczenie wychowawcze z programu „Rodzina 500 plus". W pierwszych trzech latach programu otrzymanie świadczenia uzależnione było od liczby dzieci i poziomu dochodów na osobę. Z badań wynika, najwyższy współczynnik aktywności zawodowej był wśród rodziców z jednym dzieckiem, którzy nie otrzymywali świadczenia 500+. Rodzice, którzy otrzymywali świadczenie 500+ i mieli, co najmniej dwoje dzieci byli bardziej aktywni zawodowo niż rodzice z jednym dzieckiem. Zaobserwowano, że w roku, w którym wprowadzono świadczenie 500+, wzrosła liczba biernych zawodowo, szczególne wśród mieszkańców wsi, którzy nie szukają pracy z powodów obowiązków rodzinnych, w tym opieki nad członkami rodziny.

Słowa kluczowe: zasiłek na dziecko, rynek pracy, bierność zawodowa, aktywność zawodowa, obszary wiejskie, program Rodzina 500+

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AGRICULTURAL LAND IN THE CONTEXT OF THE THEORY OF PUBLIC GOODS – CRITICAL ANALYSIS

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ABSTRACT

The main purpose of this article is to present a critical point of view towards the application of the public goods concept to land and agriculture. The basic legal regulations forming the agricultural system in Poland and the assessment of the legitimacy of state interventions on the land market in the light of the theory of the Austrian school of economics are discussed. According to the criteria used in the theory of public goods, agricultural land is a typical private good. On the other hand, the issue of goods integrally connected with land such as agricultural landscape and quality of the natural environment is debatable. The following arguments are against the state intervention: the lack of the possibility to objectively identify social needs, the political and redistributive nature of state intervention, the existence of market mechanisms for financing public goods.

Key words: agricultural land, agricultural system, theory of public goods, Austrian school of economics

JEL codes: B53, H41, Q15

INTRODUCTION

As in other European countries, within the scope of the policy shaping the agricultural system in Poland, there is a model of agriculture based on family farms. For this purpose, the privileges are being created in access to agricultural land for this kind of farms. Thus, the access to land is not determined by the economic efficiency but by the legal status of the buyer. From an economic point of view, this means that the market allocation of land has been replaced by political decisions.

The problem of functioning of the agriculture in the conditions of market economy is often addressed in economic research. The mainstream of research in this field is dominated by the belief that in order to improve the economic efficiency of this sector, state intervention is necessary [Stiglitz 1987, Wilkin 2003]. One of the main reasons for this, is the specific nature of the land that is the basic factor used in agricultural production. It is believed that in the currently developed sustainable agriculture model, the land provides not only food and energy resources but also many other general social functions. These services have the character of public goods and the market mechanism usually does not ensure their optimal supply [Poczta 2010, Wilkin 2010, Zegar 2010, Czyżewski and Kułyk 2011]. On this basis, the land is treated as a specific public good and family farms are the best trustees of this good. Such a statement also appeared in the justification to the governmental draft law on suspending the sale of real estate of the State Treasury Agricultural Property Reserve and on the amendment of some acts [Rządowy projekt ustawy z dnia 4 marca 2016 r.] – „agricultural land should be treated as an unprofitable public good and as such should be subject to special legal regulations".

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The economic discussion also includes critical opinions on the concept of public goods [Hoppe 1989, Holcombe 1997, Fijor 2011, Kwiatkowski 2013]. These economists, in turn, indicate the limited cognitive qualities of this theory, resulting from its selective and unsystematic approach to the study of reality. This sceptical position is characteristic primarily for representatives of the Austrian School of Economics. An analysis of the effects of state intervention in the economy constitutes an important and well developed part of the school's achievements [von Mises 2000, Rothbard 2009, Huerta de Soto 2011].

The main goal of this article is to present a critical point of view towards the concept of public goods as well as its application to land and agriculture. The partial objective of the research was to present the basic systemic solutions affecting the functioning of the agricultural land market. The primary legal regulations shaping the agricultural system in Poland and their impact on the functioning of the agricultural land market were discussed. The final stage of the research was the assessment of the legitimacy of state intervention in the land market in the light of the theory of the Austrian school of economics.

The study is of a theoretical nature. To accomplish the main objective, the literature of the subject was reviewed, the analysis was based on deductive reasoning and verbal logic. The assumptions and instruments of the policy shaping agricultural system were presented. For this purpose, source materials in the form of legal acts were used.

THE AGRICULTURAL SYSTEM IN POLAND AND THE RULES FOR TRANSFERS OF AGRICULTURAL LAND

In Poland, a family farm, as the basic form of farming in agriculture, was established in art. 23 of the Constitution of the Republic of Poland of April 2, 1997. In addition to the Constitution, the most important regulations shaping the agricultural system in Poland are: the Act of April 11, 2003 on shaping the agricultural system, the Act of October 19, 1991 on the management of agricultural property of the State Treasury and the Act of April 14, 2016 on suspension of sale of property from the Agricultural Property Stock of the State Treasury and the amendment to certain acts. According to these regulations, a family farm is a farm: (1) which is run by an individual farmer, (2) whose total area of agricultural land is not more than 300 ha. An individual farmer is considered to be an owner, perpetual usufructuary, independent possessor or lessee of agricultural properties whose total area of arable land does not exceed 300 ha, who has agricultural qualifications and has for at least five years lived in the commune, where one of the agricultural properties belonging to the farm is located, and who ran the farm personally during that period.

As part of the policy of shaping the desired agricultural system, the state conducts interventions including: (1) improving the area structure of agricultural holdings, (2) preventing excessive concentration of agricultural property, (3) ensuring that agricultural activities are carried out on farms by persons with appropriate qualifications. These activities are carried out in the form of a ban on the purchase of agricultural properties by persons who are not individual farmers. This limitation applies to all agricultural properties with an area of 1.0 ha, excluding properties designated for spatial development plans for purposes other than agricultural. Acquisition of agricultural land by a person who is not an individual farmer requires special consent. The obligation to run a farm personally for five years is also imposed on the buyer. Currently, control over the land market is carried out on behalf of the State by the National Support Centre for Agriculture (until 2016 called Agricultural Property Agency). For this purpose, NSCA was equipped with such rights as the right of pre-emption and repurchase. The right of pre-emption consists in the fact that in the situations specified in the law, NSCA has the right to enter into the transaction and purchase the agricultural property at a price and on the terms specified earlier by the seller and the buyer. The right of repurchase has similar consequences as the right of pre-emption. It allows NSCA to acquire an agricultural property in the case of contracts transferring ownership other than a sale agreement, such as, for example, a donation, making contribution-in-kind of an agricultural property to a commercial company, divisional agreements, and property exchange. By executing the right of pre-emption and repurchase, NSCA may prevent the purchase of agricultural properties by natural persons who are not private farmers, and by legal persons.

Summarizing the above, it can be concluded that currently the agricultural land market in Poland is under strong influence of the state policy. The most important consequences of these regulations should certainly include a drastic reduction in demand for land by limiting the circle of potential buyers only to individual farmers. Another important phenomenon, which in turn affects the supply of land, is the suspension of the privatization of state land.

THE LAND IN THE CONTEXT OF THE PUBLIC GOODS THEORY

Nowadays, a fundamental argument in favour of interventionism in agriculture is the economic theory of public goods. This concept is at the same time one of the basic elements of the market failure theory. According to this, there is no possibility of achieving economic efficiency in the conditions of market order. The essence of this theory comes down to the statement that socially desirable goods that meet such features as non-rivalry and non-excludability from consumption will be insufficiently supplied by the market. Therefore, the supply of these goods should be left the state. These goods are the opposite of private goods.

The economic concept of public good was formulated by Samuelson [1954], who considered the lack of competition in consumption to be the basic criterion distinguishing public goods. In the following years, this theory was developed and modified as a result of which many definitions and classifications were obtained depending on the level of publication [Daniłowska 2014]. First of all, it is indicated that besides the pure public goods, there is a wide group of "intermediate" goods that only partially meet the criteria of non-rivalry in consumption and non-excludability. The scope of these goods is variable and depends on the number of consumers, the territorial scope of the market, the level of economic development and available technologies. It was also claimed that the features of public goods are also found in private goods which generate positive external effect for society. These goods are called desirable social goods or merit goods [Musgrave 1957, Wilkin 2010].

The theory of public goods has also found a widespread application in sciences in the aspect of rural and agricultural development. It is emphasized that apart from traditional functions in the form of production of food raw materials, agriculture is a provider of many public goods. The most commonly mentioned are: agricultural landscape, biodiversity, water quality and availability, soil functionality, climate stability, air quality, resistance to floods and fires, rural areas vitality, food safety, animal welfare and health [Cooper et al. 2009]. In turn, due to the fact that the main factor of production in agriculture is land, it is treated as a fundamental public good and, therefore should be subjected to special regulations.

According to critics of the theory of public goods, it contains a series of errors and inaccuracies. The economists of the Austrian school of economics certainly belong to the greatest opponents of this theory. The school bases its research method on a few fundamental pillars such as subjectivism and methodological individualism, emphasizing the importance of knowledge limitation and uncertainty in the management process as well as rejecting quantitative methods. Subjectivism and methodological individualism express the belief that only individual human beings act in a way that they engage in conscious actions to achieve selected goals. Human preferences are subjective in nature and, in consequence, the value of market goods is the result of personal valuation and individual choices. The theory of the Austrian school assumes that a human being always acts in conditions of limited knowledge and uncertainty, and the most effective mechanism for knowledge acquisition is the free market. The prices of consumer goods reveal the most urgent unmet needs, while prices of economic resources inform about the availability of production factors. Then entrepreneurs searching for profit are motivated to meet the needs of consumers in the best way simultaneously minimizing resource consumption. This process is most efficient when protection of individual property and individual freedoms are ensured, hence any extortion of cooperation through the system of orders and prohibitions limits the productivity of society and undermines the moral foundations of society. The economists of this school are also characterized by a sceptical approach to quantitative methods and mathematical modeling.

They believe that economic knowledge can only be collected by verbal explanations of cause and effect relationships. On the basis of a priori true statements (like the fact that a human acts), their logical implications are formulated.

An important part of the Austrian school of economics output is a critical analysis of the effects of state intervention. Ludwig von Mises [2000] defined interventionism as a set of procedures hindering the functioning of the market economy. In his opinion, it interferes with production and limits the ability to satisfy the needs as it forces producers and owners of means of production to use them in a different way than they would use under market pressure. It is a disruption of economic rationality, which is undoubtedly the result of the poverty in society. According to Austrian economists, the theory of public goods is also not a justification for state intervention. At the same time, it should be noted that the fact of specific nature of some goods itself does not raise controversy. Austrian economists argue that both consumer goods and capital goods are heterogeneous and that their economic functioning is difficult to be captured in the form of universal schemes. The exaggerated emphasis of this fact raises objections and draws improper conclusions such as the need to replace the market production with public production. Table 1 presents the list of the most important critical remarks regarding the theory of public goods.

First of all, it should be noted that since human needs are subjective in nature, the optimal production structure cannot be determined in advance. Thus, there are no objective grounds to claim that a given method of resource allocation better fulfills social goals than another. Referring this to agriculture, there are two competitive ways of land resources usage that are often mentioned in modern economic research. The first is to use land as a factor in production of food and food commodities. The second is the supply of services by agriculture and rural areas based on natural ecosystems, of which the land is a part, e.g. agrotourism, rural landscape, etc. As it can be seen, settling the issue which of the above goods produce more and which less depends on individual consumer preferences. And the preferences, in turn, depend on many factors including the income situation of buyers. Low-income consumers who spend a substantial part of the budget on food may be more interested in a greater supply of food than in developing other services within the agricultural sector. In turn, affluent consumers with sufficiently satisfied food needs will be more inclined to appreciate the values of the natural environment and more often will look for related services. It can be observed that it is impossible to clearly and indisputably indicate what the optimal structure of production should be from the social point of view. Because of the fact that each consumer assesses the usefulness of particular goods in marginal conditions and according to the individual preferences, learning the level of satisfaction from its consumption is not available to other people. Thus, this undermines the main con-

Table 1. The critical approach to the theory of public goods

The main statements of the public goods theory	Critical remarks
Public goods are socially desirable	− human needs are subjective, changeable, hidden, − lack of opportunities to learn and aggregate social needs
Public goods are specific (non-rivalry and non-excludability) and generate positive external effects	− the lack of rivalry in consumption is apparent, − exclusion from consumption is a function of entrepreneurship, − the actual inability to exclude from consumption results from the lack of property rights, − the external effects are common and have a subjective character
Market production is insufficient, state intervention is necessary	− too simplified and static image of the market, ignoring the complexity and dynamics of market processes, omitting the entrepreneurial function, − the actual efficiency of the public sector is not taken into account, − the state is a tool of group interests

Source: own work based on Hoppe [1989], Holcombe [1997], Kwiatkowski [2013].

clusion from the theory of public goods that market production will not be socially optimal and that state intervention is necessary to improve this situation. This is due to the fact that it is impossible to compare whether production increased as a result of state intervention is more beneficial than with drawn production that would be delivered on the free market. Therefore, any arbitrary claims regarding the resource allocation desired by society are in fact an extrapolation of individual or group preferences to the whole society and not a real reflection of social needs. For this reason, supporters of the free market argue that the only effective way to aggregate social preferences is the market process, which is not only about the exchange of existing goods but also serves as a transfer of information and determines future directions of development.

Taking this idea further, we encounter additional doubts which arise from the theory of public goods, for example: a) what should be the area and economic structure of farms? b) what should be developed – agriculture or non-agricultural business in rural areas? c) what rural landscape is more valuable: traditional or modern? These are the key problems determining the directions of development of agriculture and rural areas, for which economics, as a science, cannot give the answer, because all claims will always have a normative character resulting from subjective human assessments. As L. von Mises [2007] said, "economics is a theoretical science and refrains from value judgments. It is not its role to indicate people what goals to pursue".

Similarly, there is no satisfactory answer to the question: where does the belief that family farms best serve the public come from? And if there is no scientific basis to claim that, then the model of agriculture based on family farms should rather be regarded as a political concept pursuing the interests of specific social groups and not a scientifically developed social program. In case of the policy shaping the agricultural system, the social group that benefits from this policy are undoubtedly individual farmers because they are privileged with access to land. The next social group benefiting from this are the officials and politicians who are equipped with the means necessary to conduct this policy and the scope of their authority is increased.

The next pillar of the theory of public goods is the specificity of goods, which due to such characteristics as non-rivalry and non-excludability cannot be effectively supplied by the market system. First of all, it should be noted that land perceived as a part of the earth's surface, is undoubtedly a scarce good and, therefore in the context of the theory of public goods is a typical competitive good. In order to resolve the conflict of who should benefit from this scarce good, the spatial borders of the property are determined and property rights are assigned. Hence, the agricultural land like the land in general should definitely be considered as a private good. However, a much more problematic issue is related to the existence of various goods integrally associated with agricultural land such as agricultural landscape, quality of the environment, rural areas vitality, food safety, etc. Proponents of the theory of public goods express their doubts that the open nature of these goods together with the inability to enforce payment for their usage may cause individual owners of resources to be deprived of economic incentives to provide this type of goods (the free-rider problem). It is indicated that these goods have the character of externalities, where the externalization of benefits does not allow effective delivery by the market mechanism. It should be noted that this statement is difficult to justify for several fundamental reasons.

The first one results from the above mentioned subjective theory of values, so whether these goods are goods at all. Similar conclusions will be reached, if we consider them as a sign of externalities. For some consumers, these will be positive external effects, for others negative and for some neutral. Another issue worth highlighting is that externalities are a common phenomenon also noticeable in case of typical private goods, e.g. the aesthetics of private houses and gardens affect the appearance of the whole area. What is more, a profound and systematic approach to this issue allows to notice that the actions of some people influence the situation of other people, which is in fact the essence of social life. Social cooperation in direct terms usually has an equivalent character (exchange system). However, in indirect terms, a whole series of events that generate economic and social progress can be observed, where some incur costs while others benefit. Such phenomena certainly include any investment activity or any progress in production methods (technical, organizational, biological). This progress due to the effect of imitation is spreading and contributing to the growth of general well-being. Goods produced using more and more efficient production methods in the long run become cheaper and more easily available to the average consumer. Thus, a massive external effect might be observed whereby the most entrepreneurial individuals save, invest and bear the risk of a production venture and the benefits in the form of an increase in the average standard of living are related to the whole society. At the same time, it is important to highlight that the fastest economic growth occurred in systems where the main role was played by the market mechanisms. And that means that the inability to internalize social benefits was not a barrier to initiate and disseminate pro-social behaviour. In turn, in the systems with central management where the dominant role in the economy was played by the state, there has always been an economic decline and deterioration of the living conditions by society. Therefore, if any conclusion for an economic policy can be drawn from this, then it is completely opposite to what the theory of public goods postulates, i.e. that social welfare grows faster if the state resigns from an active role in the economy. This also applies to the issue of food safety. Since the market system has always led to the abundance of goods, it would be difficult to explain that this principle does not apply to food. Similarly, it refers to welfare and health of animals. In fact, the living conditions of farm animals are closely related to the living conditions of people. Thus, if the market system is effective in improving housing and human health, then animal welfare and health are also improved in a natural way.

An interesting explanation of how the market system deals with the "free-rider problem" is the concept of entrepreneurship developed by the Austrian school of economics. Entrepreneurship is understood as the ability to discover mismatches in the real world and to create new solutions to eliminate these inconveniences. So, if there are unmet and adequately strong social needs and at the same time the appropriate resources are available and the only problem is the inability to enforce the payment for the service, then the solution of the problem will be only a matter of time and human creativity. In these conditions, technical or organizational progress is almost unavoidable. As stated by J. Huerta de Soto [2011] „from the point of view of the dynamic theory of the entrepreneurial function, every situation in which some «public» good appears, is an opportunity to discover and eliminate this situation with the help of entrepreneurial creativity. Hence, from the dynamic perspective of unimpeded realization of entrepreneurial processes, the collection of «public» goods tends to become an empty set". In practice, these activities may be of a very different nature. Some may rely on direct payments and search for more effective ways to eliminate non-payers. Other ways relate to maintaining the open nature of goods and financing operations from the sale of associated goods. An example of this second type of activities may be the rural landscape and agrotourism services.

Particular attention must be given to the issue of environmental protection. Proponents of the theory of public goods argue that the state of natural resources, their biodiversity and reproducibility are a good that can be overexploited and degraded under the conditions of the market system. Negative externalities of economic activity pose a threat to these resources, therefore state policy should also be extended to activities in the field of environmental protection. From the perspective of the theory of the market economy, the situation is different. In the market system, as a result of voluntary exchanges, both product prices as well as prices of production factors are formed. Thus, each resource owner will be interested not only in the current income from business activity, but also in maintaining and multiplying the capital value of resources. The capital value of resources is the sum of discounted future income, so in the long run the resource holder will strive to maintain resources in good condition because it will guarantee high current income in the future. Thus, the phenomenon of an overexploitation can occur only in the absence of real ownership power. Users of no-one's resources will be interested only in current incomes. In this situation, a degradation of resources takes place, e.g. excessive exploitation of common pastures, exhaustion of soils in state farms, massive deforestation of state forests that are leased, pollution of rivers, lakes and seas.

The issue of solving social problems caused by negative externalities based on property rights deserves more profound analysis. Strict compliance with property rights means not only the exclusive use of the resource by the owner but also the prohibition of any nuisances, i.e. burdens from the owners of other resources. In this way, it guarantees the inviolability of the physical boundaries of the real estate and at the same time protects goods integrally connected with the land, such as soil, groundwater and air. As it is highlighted by the free market economists, the currently observed a massive problem of air pollution is the result of long-term negation of property rights by the state legal system. In the period of industrialization, the development of industry was prioritized in the economic policy of governments. Industrialization of the economy has become a "social" goal, which means that all demands for stopping the emission of industrial pollution requested by local residents were rejected by the courts as incompatible with the "common good" policy. As a result, this has led to the spread of harmful production technologies and the ban on nuisances has in practice become a dead law [Rothbard 1982, Block 2016]. Negative effects of state interference are also observed in agriculture. As W. Kwaśnicki [2010] indicates, long-term subsidizing of agriculture in highly developed countries has led to a deterioration of the natural environment and food quality. Subsidies for production were an economic encouragement to use intensive, environmentally harmful production methods. On the other hand, deriving a large part of the income from outside the market has made the agricultural producers independent of the consumers' decisions. Buyers' voluntary spending is a basic element of the market system as it is the only effective way to demonstrate consumer preferences. When state subsidies replace consumer spending to some extent, the producers motivation to satisfy consumers' needs was effectively weakened. This situation has been further deteriorated by the state policy in regard to food safety. As part of this policy, strict requirements in the production and consumption of food have been introduced. As a result, the possibilities of food production by fragmented farms have been drastically reduced and the function of food processing has been taken over by the food industry. Strong barriers to enter the food processing market have brought agriculture into the role of a raw materials producer and have activated a mechanism for transfer of value added from agriculture to industry and trade [Maśniak 2017].

CONCLUSIONS

According to the criteria used in the theory of public goods, agricultural land is a typical private good – in social conditions property rights are assigned to it and it is used with the exclusion of other people. However, more questionable is the issue of all goods that are integrally connected with land such as agricultural landscape, quality of the natural environment, vitality of rural areas, food safety, etc. These goods are indeed open in their characteristics and generate numerous external effects. However, this does not lead to the conclusion that the state should be responsible for providing theses goods to the society. This is due to the following reasons:

- Objective identification of social needs is not possible. The claims about the optimal structure of production will be always subjective. This also applies to agriculture and the way of land utilization.
- The postulates about the necessity of state interference in the sphere of agriculture are of a political rather than a scientific nature. The state is a tool for realizing group interests. Beneficiaries of the policy forming the agricultural system are family farms owners and the political and clerical class.
- The market system has developed mechanisms for financing goods with diversified characteristics, including those with the features of public goods. Direct payment for goods and services is not the only way to finance production. The pricing system and entrepreneurship coordinate social needs with available resources.

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ZIEMIA ROLNICZA W KONTEKŚCIE TEORII DÓBR PUBLICZNYCH – ANALIZA KRYTYCZNA

STRESZCZENIE

Głównym celem artykułu jest przedstawianie krytycznego stanowiska wobec zastosowania koncepcji dóbr publicznych do ziemi i rolnictwa. Omówione zostały podstawowe regulacje prawne kształtujące ustrój rolny w Polsce oraz ocena zasadności interwencji podejmowanych przez państwo na rynku ziemi w świetle teorii austriackiej szkoły ekonomii. Według kryteriów stosowanych w teorii dóbr publicznych ziemia rolnicza jest typowym dobrem prywatnym. Dyskusyjna jest natomiast kwestia takich dóbr integralnie z ziemią związanych jak krajobraz rolniczy i jakość środowiska naturalnego. Przeciwko interwencji państwa przemawiają takie względy jak: brak możliwości obiektywnej identyfikacji potrzeb społecznych, polityczny i redystrybucyjny charakter interwencjonizmu państwowego, istnienie rynkowych mechanizmów finansowania dóbr publicznych.

Słowa kluczowe: ziemia rolnicza, ustrój rolny, teoria dóbr publicznych, austriacka szkoła ekonomii

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STRATEGIES FOR THE DEVELOPMENT OF AVERAGE POLISH DAIRY FARMS IN THE CONDITIONS OF A SINGLE EUROPEAN MARKET

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ABSTRACT

The paper aims to achieve two objectives: 1) To determine the competitive potential of Polish dairy farms and assess the economic results they achieved compared to other European Union entities, 2) To determine and assess the economic effects of possible development directions (strategies) for average Polish dairy farms. The analyses show that the production and economic potential of dairy farms from the European Union countries, characterized by the largest increase in milk production in years 2005–2015, was very diverse. On average, in 2016, the total value of the fixed assets of a Danish agricultural holding was 16 times higher than the value of the fixed assets of a farm in Poland and the average net value added generated by a Polish farm in 2016 was over thirteen times lower compared to Danish farms. However, if we take into account the costs of engaging external factors of production (land, labour and capital), it turns out that Danish farms are losing their advantages. The simulations of three possible variants of development for an average Polish dairy farm showed that good economic results were generated by the variant in which the land was leased and farm holders got employment outside the farm. The variant, which assumed an increase in the number of dairy cows (from 15 to 30) and the resulting growth in milk production could potentially give a slightly higher total net income for the farm family in the first two years, but it was certainly more risky.

Key words: dairy farms, economic competitiveness, development strategy
JEL codes: Q18

INTRODUCTION

Ancient philosophers who paved the way for our contemporary thinking already stressed the need to evaluate and define further directions of development for individuals, business entities or sectors of the economy. At the beginning of our era, Roman philosopher and poet Seneca the Younger wrote: “If one does not know to which port one is sailing, no windis favourable” [Seneka 2017]. This quote has not lost its significance; on the contrary, it has grown in strength [Romanowska 2003]. Naturally, there are also opponents who present arguments undermining the sense of this type of effort [Grant 2011]. In my opinion, it is particularly important (even necessary) to have visions and draw up development strategies for individual sectors of the economy (e.g. dairy sector), especially if considerable public funds are allocated to improve their functioning. The funds spent by taxpayers should support the right directions of development of entities operating in a given sector of the economy (in this case – the dairy industry). Allocating public funds for activities that serve contradictory purposes is economically unjustified.

The dairy sector in the Polish agri-food industry is of great importance. In 2018, the value of exports of dairy products amounted to EUR 2240.6 million, which was in the milk equivalent 4.62 million tonnes

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(33.6% of production). As compared to 2005, the value of exports in 2018 increased by EUR 1341.0 million. Imports increased from EUR 146.9 to EUR 992.5 million [Smoleński et al. 2007, Szajner 2018]. These data indirectly illustrate the intensification of international competition, which is part of the growing globalization of the economy (including the agri-food sector) [Parzonko 2013]. In the dairy sector, an important element are agricultural farms that keep milk cows and produce milk. The question arises: What is the competitive potential of Polish dairy farms in relation to entities from other countries (especially the European Union) and in what direction they can develop? The works of W. Ziętara and M. Adamski [2018] and E. Kołoszycz and M. Świtłyk [2019] show that the main determinant of the economic efficiency of dairy farms is the scale of production. Farms that maintained more than 30 cows in 2016–2017 generated income allowing for the payment of their own work and development.Unfortunately, farms with a smaller scale of milk production dominate in Poland. Unpublished data from ARIMR show that the number of farms applying for subsidies to cows in 2018 was 151,847, out of which the number of farms applying for subsidies to flocks from 3 to 19 cows was 109,660 (72.2%).

MATERIAL AND METHODS

The main objectives of the article are: 1) To determine the competitive potential of Polish dairy farms and assess the economic results they achieved compared to other European Union entities, 2) To determine and assess the economic effects of possible development directions (strategies) for average Polish dairy farms.In order to achieve thedefined objectives a desk research study has been conducted involving areview of the literature and the European Unionlegal acts as well as an analysis of a representative sample of farms registered in the European Farm Accountancy Data Network (FADN). The study focused on farms selected from six European Union countries which achieved the highest increase in milk production in 2005–2015 and operate in similar climatic conditions. The studied farms specialised in milk production (the so-called "dairy cows" production type) and the presented measures and indicators show values for an average dairy farm from aselected European Union country in the years 2005, 2010 and 2016.

The model-basedanalysis and assessment of potential economic effects of adopting different development directions (strategies) was carried out on a purposefully selected dairy farm with the production potential (UAA, number of cows, total value of fixed assets) similar to an average Polish farm from 2016 registered in the Polish FADN. The dairy farm selected for this studyoperates in the vicinity of Ostrołęka and is run by an agricultural family who is considering the formal handover of the farm to a young heir in 2020.

The production and economic potential of Polish dairy farms compared to other European Union countries

The starting point in designing the development strategy of an enterprise or a group of enterprises from a given sector (including dairy farms) is to determine their production and economic potential.

In the case of an agricultural holding (including a dairy farm), a very important resource affecting the competitive capacity and potential direction of development is the size of utilised agricultural area (UAA) is [Czekaj and Józwiak 2009]. The UAA size perholding depends on various factors. The most important of them include: 1) historical conditions, 2) level of development of the economy, 3) degree of attachment of family members to land resources, i.e. "the patrimony".

As demonstrated in Table 1, the average size of UAA (owned and rented) managed in 2016 by dairy farms covered by the FADN in the selected European Union countries ranged from 20.96 ha in Poland to 156.05 ha in Denmark. The tendency to increase the average size of UAA of dairy farms over time should be noted. This trend was most dynamic in Denmark. From 2005 to 2016, the average UAA managed by a Danish farm breeding dairy cattle increased by 65.43 ha. In Poland, it was only 3.1 ha. Other very important resourcescontributing to the production potential are various types of technical means, such as: buildings, machines, equipment and means of transport, which we refer to as fixed assets. Their potential can be measured by total asset value. As can be seen from the data presented in Table 1, the total

Table 1. Selected measures and indicators of the economic potential of average dairy farms from selected European Union countries in 2005–2016

Specification	Year	Selected European Union countries					
		DE*	PL	NL	FR	IE	DK
Average number of cows per holding (LSU livestock units)	2005	43.17	11.63	66.35	43.35	51.77	96.64
	2010	53.20	14.29	81.80	51.91	63.75	149.96
	2016	62.80	15.99	92.24	59.78	75.49	165.21
Total Utilised Agricultural Area UAA (ha)	2005	59.41	17.86	43.50	75.61	49.02	90.62
	2010	70.44	20.18	49.23	86.87	59.18	145.13
	2016	72.01	20.96	51.06	92.11	60.15	156.05
Total Asset Value (EUR'000)	2005	570.43	67.69	2 080.01	214.80	950.57	1 631.55
	2010	678.16	164.37	2 519.98	283.94	1 185.06	3 808.88
	2016	794.24	199.10	2 344.75	313.06	1 285.80	3 278.32
Value of buildings (EUR'000)	2005	85.37	29.684	144.73	75.92	75.15	672.02
	2010	100.38	38.317	269.15	109.39	139.94	638.19
	2016	125.50	45.323	283.98	104.82	99.16	568.41
Value of vehicles and machinery (EUR'000)	2005	71.82	17.601	76.12	57.70	32.78	158.67
	2010	98.04	29.068	131.75	73.37	58.06	335.82
	2016	113.83	37.380	115.10	82.91	59.85	275.02
Labour (paid and unpaid) (hr)	2005	4 036	3 838	3 806	2 818	3 673	4 173
	2010	4 365	4 094	4 016	2 960	3 870	5 018
	2016	4 390	4 002	4 151	2 979	3 737	5 690
The degree of financing assets with equity (%)	2005	84.04	90.96	74.49	60.62	95.85	34.72
	2010	82.44	93.87	69.52	56.91	94.34	31.95
	2016	75.94	95.41	64.66	51.25	95.40	21.78

*DE – Germany, PL – Poland, NL – Netherlands, FR – France, IE – Ireland, GB – Great Britain, DK – Denmark

Source: own study based on [European Commission…].

value of fixed assets on the average farm specialising in dairy cattle production in the studied European Union countries was very diverse. In 2016 the total asset value of an average dairy farm in Denmark was 16 times higher than the asset value of a dairy farm in Poland. It should be noted that this difference has been decreasing over time, because in 2005 the total value of fixed assets of a Danish farm was over 30 times higher than in Poland.

The analysis of fixed assets can go further and focus on the basic pieces of property needed for breeding dairy cattle. The fixed assets which are indispensable in our climatic conditionsare livestock buildings. One can evaluate these resources from different perspectives. However, the data available from the FADN only provide their value. The value of livestock buildings in Denmark was over 12 times higher than in Poland (Table 1). The gap was similar with regard to means of transport, machinery, agricultural tools and devices. Summing up, the presented information on the production and economic potential of the analysed farms specialising in milk production in the studied European Union countries demonstrate the following: 1) there were substantial differences between European Union dairy farms and Polish farms in this respect were the weakest; 2) in the analysed period of 11 years (2005–2016), the differences between the European Union countries were only slightly reduced.

Economic efficiency of Polish dairy farms compared to selected EU countries

Running a business in a free-market economy involves pursuing the most effective use of the existing resources, which partly translates into a constant struggle to improve work efficiency. Adam Smith in his magnum opus "An Inquiry into the Nature and Causes of the Wealth of Nations" observed that "the wealth of every nation is regulated by two different circumstances; first by the skill, dexterity, and judgment with which its labour is generally applied; and, secondly, by the proportion between the number of those who are employed in useful labour, and that of those who are not so employed" [Smith 1954]. This regularity is still valid.

The measure presenting the economic effects of the used resources, without taking into account whether they are owned by the farm family or only in their use, is the Farm Net Value Added. As the data presented in Table 2 demonstrate, the highest average net value added was achieved by Danish farms. In 2016, it amounted to EUR 186,062 and was 65% higher than in 2005. At the other extreme there were Polish farms specialising in milk production. The average net value added in 2016, generated by a Polish farm was over

Table 2. Selected measures and indicators of economic effectiveness of an average dairy farm from selected European Union countries in 2005–2016

Specification	Year	Selected European Union countries					
		DE*	PL	NL	FR	IE	DK
Farm net value added (EUR)	2005	53 735	8 851	84 110	43 132	51 750	112 745
	2010	72 747	14 073	109 629	58 612	61 203	192 451
	2016	74 931	13 744	71 569	43 192	70 879	186 062
Farm net income (EUR)	2005	32 513	7 967	51 033	30 600	41 103	29 237
	2010	44 302	13 354	58 309	41 740	47 798	–14 453
	2016	40 640	12 891	26 730	23 175	60 192	9 802
Profitability of farm family labour (EUR/hr) (PL_0)**	2005	9.95	2.15	14.15	11.63	12.69	10.12
	2010	13.69	3.36	15.88	15.39	14.17	–5.45
	2016	11.88	3.29	7.38	8.87	18.40	3.71
Profitability of farm family labour (Euro/hr) (PL_1)***	2005	1.65	1.57	–6.98	8.67	–8.33	–14.20
	2010	4.49	1.80	–10.18	12.07	–6.30	–52.38
	2016	4.21	1.00	–11.29	6.05	–7.09	–28.84

* De – Germany, PL – Poland, NL – Netherlands, FR – France, IE – Ireland, GB – Great Britain, DK – Denmark
** Profitability of farm family labour (PL_0) = Farm net income (EUR) / Farm familylabour input (man-hour)
*** Profitability of farm family labour (PL_1) = (Farm net income – Costs of equity capital and own land) (EUR) / Farm family labour input (man-hour)

Source: own study based on [European Commission…].

thirteen times lower than on Danish farms. However, if we take into account the cost of total external factors of production (land, labour and capital), it turns out that Danish farms lose their advantages. In 2016, the average farm net income in Denmark was only EUR 9,802 and was the lowest among the compared countries. The highest farm net income in 2016 was, on average, generated by farms from Ireland (EUR 60,192) and Germany (EUR 40,640). The average farm focused on milk production in Poland, according to data from the FADN, achieved farm net income of EUR 12,891.

Another indicator, crucial for the assessment of the economic effectiveness of farms from the selected EU countries, is the economic productivity of labour and the profitability of the farm family labour input. The profitability of farm family labour has a greater informational value (especially in international comparisons) when it comes to proper assessment of the competitive potential and, at a later stage, designing a dairy farm development strategy. The profitability of farm family labour can be determined in two slightly different manners. The first involves the relationship between the farm net income and the farm family labour input. The second approach takes the farm net income less the costs of holder's own factors of production (capital and land) and refers the result to the farm family labour input. The indicated costs of holder's own factors of production have the character of calculated costs (they are not actually incurred), however, they play an important role in the analysis of the potential directions of changes (Table 3). The conducted calculations showed that in the studied countries the average profitability of labour on farms specialising in milk production was quite diverse. Relatively low average farm net income in Poland and Denmark resulted in a very low labour profitability ratio (PL_0). Taking into account the calculated costs of holder's own land and the equity capital input in the farm net income, it turned out that in some countries it had a negative value (Netherlands, Ireland and Denmark). This resulted in a negative indicator of labour profitability (PL_1).

Potential strategies for the development of average dairy farms in Poland – case study

In Poland and other European Union countries farmers running a business, such as e.g. dairy cattle breeding and milk production, are still facing the problem of the most effective use of resources (own labour and equity) and the accumulation of the generated financial surplus. As it was stated in the previous part of the arti-

Table 3. Average prices of external factors (land, labour and capital) on dairy farms from selected European Union countries in 2005–2016

Total external factors	Year	Selected European Union countries					
		DE*	PL	NL	FR	IE	DK
Rent paid for UAA (EUR/hour)	2005	221.90	30.07	561.72	124.20	328.36	592.78
	2010	204.74	53.00	703.37	130.60	306.14	600.33
	2016	286.25	87.87	675.51	147.36	388.18	590.19
Wages paid (EUR/man-hour)	2005	9.03	1.64	11.50	9.76	9.09	17.68
	2010	10.04	2.59	13.35	11.02	10.47	22.26
	2016	13.87	2.75	15.12	12.23	12.19	22.95
Interest paid (%)	2005	4.18	2.46	3.67	3.59	5.72	4.26
	2010	3.90	3.17	3.87	3.46	4.62	4.58
	2016	2.76	3.63	2.76	2.44	4.59	2.70

Source: own study based on [European Commission…].

cle (Tables 1 and 2), the production and economic potential of Polish farms focused on milk production was on average much smaller compared to other European Union countries. Its use was relatively good, however, the generated financial surplus only allows for very low accumulation (investments). In addition, it should be noted that farms specialising in milk production in Poland vary considerably. Therefore the development strategy should be designed separately for average dairy farms and separately for farms showing above the average production potential. Due to the complexity of the problem the model-based considerations will demand its simplification.

Because of the deep regulation of the agricultural market in the European Union, executed through a series of agricultural policy instruments, the farm development strategies cannot be designed without taking into account both the existing solutions and planned changes. In 2015, the "quota milk production in the European Union"[1] was finally liquidated and the customs restrictions on the inflow of dairy products from outside the European Union were reduced. Due to these decisions the competition in the European Union milk market increased. Milk purchase prices paid in European dairies followed prices in New Zealand and the USA [Szajner 2017, Parzonko 2019].

The current European Union agricultural policy is a fact and its effects are noticeable. However, for farmers who are planning changes in agricultural production in their holdings (dairy farms, dairies) it is crucial to know what will be the priorities of Common Agricultural Policy of the European Union after the end of the current programming period, i.e. in years 2021–2027. The final guidelines are not known yet. The Regulation of the European Parliament and of the Council establishing rules on support for strategic plans to be drawn up by Member States under the Common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD), published on June 6, 2018, shows that the planned changes will be relatively small compared to the current programming period [Rozporządzenie… 2018/0216/COD]. A very important proposed change in the Common Agricultural Policy of the European Union after 2021 is even stronger emphasis on positive impact of farms on the environment and climate [Wąs et al. 2018].

The first and naturally considered option (strategy) for the development of a farm focusingon breeding dairy cattleis to increase the scale of milk production and thus generate additional economic benefits. These decisions are quite difficult and entail a real risk, so they are mainly taken by young people. One of the basic conditions determining the considerations of this variant of farm development is the readiness (willingness) of the farm family to work with animals (dairy cattle) and take up the challenges assigned to this type of work. The second factor determining pursuing this path of change (development) is the farm production potential and its dedication to aparticular type of production. Farms deeply specialized in milk production and well equipped with machinery and suitable buildings (e.g. a modern cowshed well equipped with devices improving milking and feeding) may find it very difficult to shift the direction of production. The situation is different in less specialised holdings which are less equipped with means of production dedicated to dairy business.

In order to pursue the objectives defined for this study, the consideration of potential directions of development (strategy) will focused on a dairy farm with production potential and economic results characteristic for an average farm from the population of farms focused on milk production registered in the Polish FADN (input parameters from 2016). Three variants (strategies) of development will be considered: a) Increase the number of dairy cows, which will result in increased milk production; b) Lease land and get employment outside the holding; c) Replace breeding dairy cows with beef cattle. Variant A requires changes to the production potential i.e. a number of new invest-

[1] It should be noted that the milk production quotas began to phase out gradually from 2007. It was a rather sophisticated mechanism, involving increasing national milk quotas for individual European Union countries. The result was that in many European Union countries dairy quotas ceased to actually limit the production of milk.

ments. The first important problem will be providing an increased number of animals with an appropriate feed base and proper management of organic fertilizers. There is a real need for additional UAA. This is a very difficult problem because land is a special production factor, which is a limited resource and cannot be moved to another location. Another problem and investment challenge related to this farm development strategy is the need for new (more functional) livestock buildings. In addition, more efficient agricultural machinery and equipment are needed to manage more livestock and UAA. The farm family faces the need to tie up more capital in the expanded economic activity. This brings up the question about potential sources of the necessary capital and efficiency of its use. Another natural problem to tackle is to determine the degree of increasing milk production and the scope of necessary investments. The presented variant, assumes the most realistic increase in the number of dairy cows from 15 to 30 through the purchase of in-calf heifers (11 units), enlargement of UAA resources by 15 ha through lease, modernization of existing livestock buildings and purchase of a tractor with a set of haylage machines (Table 4).

The total investment expenditure (rather conservatively estimated) including rent paid on UAA would amount to PLN 362,900. At this point, one of the most challenging questions about financing the planned investments arises. Usually the holder's own savings are insufficient and in order to fully finance the investment ideas it is necessary to use external sources of funding (usually loans). In the presented case, the holder's own funds amount to PLN 45,000 and to maintain financial liquidity, a loan of PLN 303,000 will be required at the beginning of the year, of which PLN 228,000 will be a long-term loan and 75,000 will be a short-term loan with a maturity date at the end of the year. The use of external financing sources increases the risk of losing financial liquidity, especially in the situation of a volatile market (unstable milk purchase prices). In this situation, the question arises – is it worth taking this type of risk?

In order to address this question, we will make an economic calculation presenting the potential financial results of this variant, compared to economic benefits from alternative solutions. Having assumed the average prices from 2018 (e.g. the net price of milk of PLN 1.2 per litre) and the average level of productivity of plants and animals (e.g. annual milk yield at the level of 6,500 litres) with the intensity of production adjusted to this level, we calculated the annual net income in the year of modernization at PLN 65,520. This relatively low amount results from the increased feed costs (increased number of livestock requires purchase

Table 4. Investment expenditures and costs of rent in separate strategies for the development of a farm with average production potential (PLN)

<table>
<tr><th rowspan="2">Specification</th><th colspan="3">Strategies for development of a farm with „average” production potential</th></tr>
<tr><th>variant – „A”</th><th>variant – „B”</th><th>variant – „C”</th></tr>
<tr><td>Annual rent for UAA</td><td>17 435</td><td rowspan="7">no investment needed</td><td>–</td></tr>
<tr><td>Purchase of heifers of the milk breed</td><td>60 500</td><td>–</td></tr>
<tr><td>Purchase of beef cattle</td><td>–</td><td>99 000</td></tr>
<tr><td>Purchase of a tractor</td><td>120 000</td><td>–</td></tr>
<tr><td>Purchase of machines for preparing silage</td><td>60 000</td><td>–</td></tr>
<tr><td>Extension and modernization of the existing cowshed (including installation of a second-hand milking machine)</td><td>105 000</td><td>10 000</td></tr>
<tr><td>Total</td><td>362 935</td><td>109 000</td></tr>
</table>

Source: own study.

of feeds, because the holding's own resources will be insufficient) and also the annual milk production is lower. In the following year, agricultural net income should reach PLN 139,000. Additionally, it should be noted that the increased number of dairy cows on the farm will require full farm family labour resources; hence the total net income of the farm family will be their income from agricultural activity.

In variant "B", (involving resignation from agricultural activity and getting a job outside the holding), it was assumed that the farmer and his wife would get employment outside the farm and their net income from this form of employment would amount to PLN 72,000 (net pay PLN 3,000 per month). In addition, the lease of 17 ha of UAA will generate net income in the form of rent in the amount of PLN 21,100 (the rate of direct payments to the area of 17 hectares plus additional payment in the amount of PLN 300 per hectare of UAA). Additionally, the sale of movable tangible assets (such as tractors, machines, agricultural devices) will unlock capital, which will earn interest on a deposit generating annual net income of PLN 1,700. The annual total net income of the family in this development option would be PLN 94,800.

The third considered development strategy – variant "C" – is to focus on breeding beef cattle. This variant would involve the sale of owned dairy cattle and purchase of 18 in-calf heifers of meat breed. This option would not require far-reaching investments and related capital needs. The purchase of heifers of meat breeds would be financed from the sale of the owned dairy cows and the necessary modernization of buildings would be financed from the holder's savings. Rearing of beef suckler herd is not very labour-intensive, therefore in this variant (strategy) the holder can be employed on a part-time contract (30 hours a week) and his wife can get a full time employment outside the farm. The calculations show that in the transition year the agricultural activity will generate a loss of PLN 20,100, but taking into account earnings from outside employment, the total net income of the farm family would amount to PLN 42,900. In the second year, agricultural net income would be PLN 20,340 and earnings from outside employment – PLN 63,000.

The calculations show that in the conditions when net earnings from employment outside agricultural holding are on the rise and easier to obtain, the development of agricultural activity, especially breeding dairy cows and beef cattle, is economically unattractive. The situation may could if there was apossibility to subsidize the necessary investments from public funds (e.g. Rural Development Program). Careful construction of support can stimulate quick changes. Assuming that public funds for farmers are made available, the priority should be programs supporting the construction or modernization of livestock buildings. Under RDP 2014–2020 (the measure "Modernization of agricultural holdings"), there are funds dedicated to construction of livestock buildings. However, the proposed administrative (bureaucratic) procedures are quite complicated and imprecise, which discourages potential beneficiaries. The administrative risk outweighs the potential benefits from more complex investments financed from public funds.

SUMMARY AND CONCLUSIONS

1. The analysis of the production and economic potential of dairy farms from European Union countries, who are leaders in this sector, shows the following: 1) there are big disparities and Polish farms in this respect were the weakest; 2) in the analysed period of 11 years (2005–2016), the differences between countries were reduced to a limited extent.
2. The efficiency of using the production potential by dairy farms in the six European Union countries was very diverse. Due to the relatively low profitability of farm family own labour (compared to net earnings available on the labour market), all analysed countries will have to further improve their economic efficiency. Polish average farms focused on milk production are characterized by low profitability of holders' own labour (and the increasing net earnings available on the labour market will force further improvement of economic efficiency).
3. The simulation of the three variants of Polish average dairy farm development showed that good results were obtained by the variant involving the lease of the holder's own land and getting employment outside the farm. The variant, which assumed an increase in the number of dairy cows (from

15 to 30 pieces) and the resulting increase in milk production could potentially give a slightly higher total net income for the farm family in the first two years, but it entails considerably bigger risk.

4. The simplification of bureaucratic (administrative) procedures required to obtain funds for co-financing the construction or modernization of livestock buildings could encourage the farm holders to increase milk production.

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Rozporządzenie Parlamentu Europejskiego i Rady (2018/0216/COD) ustanawiające przepisy dotyczące wsparcia na podstawie planów strategicznych sporządzanych przez państwa członkowskie w ramach wspólnej polityki rolnej (planów strategicznych WPR) i finansowanych z Europejskiego Funduszu Rolniczego Gwarancji (EFRG) i z Europejskiego Funduszu Rolnego na rzecz Rozwoju Obszarów Wiejskich (EFRROW) oraz uchylające rozporządzenie Parlamentu Europejskiego i Rady (UE) nr 1305/2013 i rozporządzenie Parlamentu Europejskiego i Rady (UE) nr 1307/2013 [Regulation of the European Parliament and of the Council laying down provisions on support under strategic plans drawn up by Member States under the common agricultural policy (CAP strategic plans) and financed from the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulation (EU) No 1305/2013 of the European Parliament and of the Council and Regulation (EU) No 1307/2013 of the European Parliament and of the Council].

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STRATEGIE ROZWOJU PRZECIĘTNYCH POLSKICH GOSPODARSTW MLECZNYCH W WARUNKACH JEDNOLITEGO EUROPEJSKIEGO RYNKU

STRESZCZENIE

Cele główne artykuł to: 1) Określenie potencjału konkurencyjnego polskich gospodarstw mlecznych i ocena uzyskiwanych wyników ekonomicznych na tle podmiotów z Unii Europejskiej; 2) Ocena ekonomiczna skutków określonych kierunków (strategii) rozwoju dla przeciętnych polskich gospodarstw mlecznych. Z przeprowadzonych analiz wynika, że potencjał produkcyjny i ekonomiczny gospodarstw mlecznych z krajów Unii Europejskiej, charakteryzujących się największym przyrostem produkcji mleka w latach 2005–2015, był bardzo zróżnicowany. Przeciętnie, w 2016 roku gospodarstwo duńskie posiadało 16-krotnie większy majątek trwały niż gospodarstwo w Polsce, a przeciętna wartość dodana netto w 2016 roku, generowana przez polskie gospodarstwo była ponad 13-krotnie mniejsza niż w gospodarstwach duńskich. Uwzględniając koszty zaangażowania zewnętrznych czynników produkcji (ziemi, pracy i kapitału), okazuje się, że gospodarstwa duńskie tracą swoje przewagi. Z przeprowadzonych symulacji trzech wariantów rozwoju polskiego przeciętnego gospodarstwa mlecznego dobre rezultaty ekonomiczne dawał wariant, w którym założono oddanie w dzierżawę posiadanej ziemi i podjęcie pracy poza gospodarstwem. Wariant, w którym założono zwiększenie pogłowia krów mlecznych (z 15 do 30 sztuk), co skutkowało zwiększeniem produkcji mleka, potencjalnie mogłoby dawać nieco wyższy dochód ogólny rodziny rolniczej w okresie dwóch pierwszych lat, jednak był on zdecydowanie bardziej ryzykowny.

Słowa kluczowe: gospodarstwa mleczne, konkurencyjność ekonomiczna, strategia rozwoju

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KNOWLEDGE OF BASIC PRODUCTION SAFETY STANDARDS AND RULES OF GOOD AGRICULTURAL PRACTICE IN OPINIONS OF AGRICULTURAL OWNERS

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ABSTRACT

The paper discusses the relation between issues related to environment protection and agricultural production carried out according to the adopted cultivation system. Surveys were conducted in 127 farms focused on plant production of which a fragment has been presented showing agricultural producers' opinions about issues related to the Code of Good Agricultural Practice. One of underlying assumptions was an attempt to identify farmers' attitudes to and their opinions about the practical application of principles adopted in the Code. The research shows that the application of the principles of good agricultural practice depended on the cultivation system adopted on the farm. Owners of farms managed in the integrated and organic production system fully declared knowledge of the Code itself and the content it contained, which translated into a higher level of their knowledge and implementation of recommendations in practice compared to people running traditional farms. One of major obstacles preventing the implementation of good agricultural practices by farms was the lack of information about the Code and promotion of its importance to the implementation of the concept of sustainable development.

Key words: the Code of Good Agricultural Practice, plant farms, sustainable development, sustainable agriculture

JEL code: Q56

INTRODUCTION

Due to growing environmental problems, efforts were taken in the 1960s to improve the state and protection of the environment. The environmental conditions determine the shape and character of social life, whereas the nature itself, alongside the economy and culture, provides a framework for the phenomena and processes taking place in human communities [Miletzki and Broten 2017]. By indicating threats to humanity, the public was urged to change the present pervasive domination of a human being over the nature aimed at short-term maximisation of profits and to take efforts to ensure the right development [Bartosik 1996, Adamska 2015, Śleszyński 2017].

The efforts to find balance between the environmental, economic and social spheres also applied to agriculture [Duer 2017]. Intensive farming and improvement in technology contributed to higher and better quality crops. As a result, agriculture gained more importance compared to the other economic sectors [Pretty et al. 2010]. On the other hand, however, such radical changes in agricultural practices and land cultivation led to degradation of the soil and water conditions, caused changes in biological diversity and rural landscape and led to the deterioration of

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air quality [Płonka 2017]. The negative environmental impact of agricultural activity, and by default its negative impact on the natural environment of a human being, was acknowledged by the Organisation for Economic Cooperation and Development as one of the major problems that should be combated as part of the efforts to improve the state and protection of the environment [OECD 2012]. Thus, among the systems of modern agriculture, a serious threat is posed by that which does not respect the principles of rational use of the natural environment [Wilson 2001, Dubas 2007, Korska-Adamowicz et al. 2012]. According to Dubas [2007], this system should not be used at all.

The above assumptions became one of the elements of the policy pursued within the structures of the European Union, which has for many years been promoting a model of agriculture that is focused on environmentally friendly activities and complies with the principles of sustainable development [Żylicz 2004, Skowroński 2006]. This approach was reflected in the Common Agricultural Policy (CAP), which requires the implementation of agricultural practices that do not undermine environmental sustainability, bring economic benefits and facilitate social development [Zegar 2012]. Unfortunately, farmers mainly adapt their production to the criteria of micro-economic effectiveness, undermining environmental sustainability and burdening the whole society with the costs of restoring it [Payraudeau and van der Werf 2005, Bołtromiuk 2006]. That is why the Union's agricultural policy introduced activities designed to promote production methods that help to protect the environment and rural areas as well as forms of excluding land from agricultural production.

Another key activity aimed at environmental protection was linking direct payments with the obligation imposed on farmers to comply with the so-called good agricultural practice and quality standards, which are in line with the concept of an agriculture model that is based on safe production both to the environment and consumers' health [Kraciuk 2004, Hart 2015].

The efforts to link financing agricultural activity with the requirement to follow certain principles of conduct in line with the concept of sustainable agriculture (and development) imposed on European Union member states an obligation to create a document containing the key principles of running a farm. In Poland, the Code of Good Agricultural Practice (CGAP) was created in 2004, specifying environmentally-friendly agricultural practices and providing information serving as a source of knowledge on the protection of individual elements of the environment. The task of the Code is to inform what is permitted and what is prohibited in agricultural activity and to prevent malpractice. It thus provides a set of practices designed to shape farmers' social attitude towards the laws in force by teaching how to reduce the negative environmental impact [Kania 2006].

However, adherence to the principles and recommendations of the Code of Good Agricultural Practice is not always obligatory to farmers. Whether it is necessary to follow them in practice is to a large extent determined by the cultivation system adopted by a farm, which is often inseparably connected with implementation of different packages (or their options) under the Rural Development Programme (RDP). Adoption of a certain cultivation system, i.e. sustainable agriculture, organic agriculture or integrated production, forces a farmer to use methods that go beyond a standard (good) agricultural practice. Making financial support conditional along with the necessity of compliance with certain standards (dos and don'ts) presented in the CGAP establishes certain conditions for the receipt of payments, while on the other hand – reduces the risk of a negative environmental impact of agriculture [Juntti 2012].

MATERIAL AND METHODS

The aim of the work was try to made to identify and assess the attitude of agricultural producers to the compliance with the principles, standards and orders laid down in the CGAP. The survey conducted in 2017 among farms situated in municipalities located in selected parts of Lesser Poland. These areas have been specifically selected to reflect the diversity of economic and natural conditions found in the region. A total of 127 owners of plant producing farms were surveyed. The criterion for selecting entities for the survey was carrying out agricultural activity in accordance with the adopted cultivation system, namely traditional system, also referred to as conventional system, organic system or integrated system. The research sample consisted of 87 farms carrying out activity in a conventional (traditional) manner, 12 farms carrying out activity in accordance with the principles of an integrated system and 28 farms operating in compliance with the requirements of organic agriculture. All the analysed farms participated in the payment systems of the CAP. Obtained research results were considered in the context of agricultural production systems, farm size and education of respondents. Thus, the practical implementation of the assumptions of the Code depends above all on a farmer's level of knowledge, including awareness of the environmental impact of his/her agricultural activity (especially with reference to the conventional system), and a farmer's good will, which is often a result of recognition of the benefits [Płonka 2017]. Although, the sample size was not representative of the entire population of farms in the region, allowed the observation of phenomena and draw conclusions.

The main research tool that was used to obtain information and empirical data was a survey questionnaire. The survey research was conducted by means of two research techniques. The first was auditorium method, which involved distribution of the survey questionnaire among respondents, a group of people gathered in a given space, to complete (53 people). The second technique of data acquisition was the method called Computer Assisted Web Interviews (CAWI). In this method, which is currently one of the most widely used research techniques, a survey questionnaire is distributed to respondents by electronic means and completed online (74 people) [Sobocińska 2005].

RESULTS AND DISCUSSION

The analysis has shown that almost a third of farm owners engaged in plant production in accordance with the conventional system who participated in the survey stressed that until the research they had not been familiar with the concept of the Code or its content. In contrast, knowledge of the Code was declared by all respondents managing their farms in the organic or integrated system. The survey results confirmed the assumption that the selected cultivation system was related to the knowledge of the Code and its principles, but the level of this knowledge varied quite significantly (Table 1). In most cases, the respondents assessed their knowledge about good agricultural practice as average, regardless of the size and system in which they managed their farms. A very good knowledge of the standards and recommendations contained in the Code was mainly declared by farmers carrying out integrated plant production, mostly with higher education (almost 45% of responses). Meanwhile, farmers running traditional farms mostly assessed the level of their knowledge in that area as basic (33.2% of responses) or average (20.1% of responses). Every third respondent from that group, having basic education or vocational training, admitted to not knowing anything about the Code or its recommendations. It can also be seen that due to the size of the farm, owners of farms over 10 ha of arable land declared a much higher level of knowledge of the Code's rules.

Further part of the research involved asking the farm owners who declared knowledge of the concept of the Code (i.e. 99 respondents) whether they applied its guidelines in practice. It should be borne in mind that only comprehensive implementation of the recommendations contained in the Code minimises the risk

Table 1. Knowledge of the concept and principles of the CGAP based on the farmers' opinions according to the type of the crop system and size of farms (%)

Items		Type of the crop system and size of farms									
		traditional				ecological			integrated		
		total	<10 ha	10–20 ha	>20 ha	total	<10 ha	10–20 ha	total	<10 ha	10–20 ha
Degree of knowledge of the GAP in farms	very good	2.0	0.0	0.0	100.0	24.0	28.6	71.4	44.6	20.0	80.0
	good	13.0	18.2	27.3	54.5	12.0	66.7	33.3	12.0	50.0	50.0
	average	20.1	41.2	35.3	23.5	46.0	69.2	30.8	32.4	50.0	50.0
	basic	33.2	69.0	31.0	0.0	18.0	100.0	0.0	11.0	100.0	0.0
	lack	32.7	46.4	53.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: own survey on the basis of conducted research.

of a negative impact of production on the quality and state of the environmental resources. A 100% share of positive answers to that question was recorded only among the owners of organic farms (mainly with secondary and higher education). A high share of responses indicating the application of the Code's principles in practice was also recorded among respondents carrying out integrated agricultural production. Over 80% of the responses in that group of respondents indicated a comprehensive application of the Code's principles in practice, whereas the rest (i.e. 17%) of the respondents practised such principles partially, i.e. they implemented selected recommendations. A large share of negative responses (over 50%) indicating failure to follow the recommendations of the Code in practice was observed among farmers managing their the smallest farms (up to 5 ha of UAA) in the conventional system. Only 15% of the respondents from that group admitted to comprehensive implementation of the practices and recommendations contained in the Code. As found in studies by Płonka and Wielewska [2018], regardless of the criterion of education or farm size, the reasons for relatively large share of negative responses as stated by the respondents include: the size of the document along with the formal and legal character of its language which discourage from studying the text and lack of information (including the promotion and popularisation of the benefits) on good agricultural practices.

The next stage in the implementation of the research aim of this study was to extend the research to include assessment of the level of respondents' knowledge on the key principles of a good agricultural practice in the area of plant production. It was decided that the level of knowledge of the Code's content as declared by the farmers surveyed should be verified by testing the respondents on the basics (detailed questions) regarding the principles of the management of plant production on a farm. Consequently, the owners of the farms analysed were asked to answer questions related to the rational use of fertilisers as well as principles of using plant protection products. It is worth noting here that fertilisation is one of the basic yield-forming and intensifying measures in agriculture, which determines the level and quality of crops. On the other hand, intensification of agricultural production is regarded as one of key factors causing degradation of elements of the environment and decline of biodiversity [OECD 2012]. According to Symonides [2008], the higher the intensity of agricultural use, the stronger and more lasting this negative impact. Therefore, among the modern cultivation systems, a serious threat is posed by a system that does not respect the principles of rational use of the environment.

The respondents were presented with a question about the permissible level of annual maximum dose of nitrogen in natural fertilisers per 1 ha UR, for which they were instructed to choose one response out of three options (1 correct one – 170 kg N/ha, and two incorrect ones). The results confirmed a very good knowledge of the subject among organic farmers, running small farms (up to 20 ha of UAA) – all the respondents from that group provided the correct answer (Table 2). A high share of correct responses was also recorded in the group of small integrated farms, where 80% of farm owners with secondary or higher education knew the dose of nitrogen recommended in the Code of Good Agricultural Practice. The biggest number of incorrect responses was provided by farmers carrying out agricultural production in the conventional system. They were especially the owners of the smallest farms, with an area not exceeding 10 ha of UAA, also characterized by a lower level of education. Almost 65% of them provided incorrect responses, i.e. the response indicating the dose exceeding the permissible level or the response indicating a lower level than the permissible dose (70 kg N/ha UR).

In order to assess the knowledge of general principles of the application of fertilisers, respondents were also asked to provide an answer to a question about maintaining a minimal, safe distance in the use of fertilisers in agricultural areas bordering lakes or water reservoirs covering more than 50 ha. According to the recommendations presented in the Code, this distance should be at least 20 m from the bank and this answer was correctly indicated by both farmers running organic farms and those carrying out production in accordance with the integrated system (up to 20 ha of UAA). Out of the three possible responses (i.e. 5 m, 20 m and 40 m), only the respondents maintaining conventional production incorrectly indicated the distance of 5 m (19%) or the distance twice as long as the recommended one (27%).

The assessment of the knowledge of the principles of appropriate use of fertilisers was supplemented by questions concerning recommended periods of the ap-

Table 2. Knowledge of the maximum annual dose of nitrogen per 1 ha of UAA based on the farmers' opinions according to the type of the crop system and size of farms (%)

Items		Type of the crop system and size of farms									
		traditional				ecological			integrated		
		total	<10 ha	10–20 ha	>20 ha	total	<10 ha	10–20 ha	total	<10 ha	10–20 ha
Max. annual dose of itrogen per 1 ha of AA	70 kg N/ha	47.5	89.3	7.1	3.6	0.0	0.0	0.0	16.7	50.0	50.0
	170 kg N/ha	37.3	4.5	54.5	41.0	100.0	64.3	35.7	83.3	40.0	60.0
	270 kg N/ha	15.2	33.3	44.4	22.3	0.0	0.0	0.0	0.0	0.0	0.0

Source: own survey on the basis of conducted research.

plication of fertilisers, including the optimal dates of application of manure as well as natural and organic fertilisers in a liquid form. The owners of organic farms and those managed in the integrated system, mainly with secondary or higher education, achieved 100% of correct answers in both the areas analysed (Table 3). A relatively high share of correct answers was also recorded among farmers maintaining farms in the conventional system. Over 2/3 of them correctly indicated the optimal date of the application of manure, which falls on early spring or late autumn assuming immediate ploughing. Moreover, over 80% correctly indicated the environmentally safe date of the application of natural and organic fertilisers in a liquid form. This was the only group of respondents who gave answers suggesting lack of knowledge of the recommended dates of fertilisation, however this result can be considered as satisfactory compared to the data indicating lack of knowledge of the Code (32% of farmers).

The analysis of the knowledge of good agricultural practice in the organisation of plant production was also supplemented by raising respondents' awareness of the principles of the application of plant protection products. These issues were given quite a lot of attention in the Code, which also indicated possibilities of combining and using various methods (i.e. biological, chemical and agro-technical) in order to ensure proper protection to plants, while maintaining the appropriate level of safety of humans and the environment. This stage of the research verified among others the knowl-

Table 3. Knowledge of the dates of application of fertilizers (%)

Items	Cultivation system		
	traditional	ecological	integrated
The optimal date of application of manure			
Late summer	3	0	0
Early spring/late autumn*	76	100	100
Early autumn**	21	0	0
The optimal date of using natural fertilizers in liquid form			
February 1 – October 30	5	0	0
March 1 – November 30	83	100	100
April 1 – December 30	12	0	0

* provided immediate ploughing, ** regardless of weather conditions

Source: own survey on the basis of conducted research.

edge of the concept and length of waiting periods, i.e. time that must pass between the application of a plant protection product and harvesting of plants. Over 66% of the respondents correctly interpreted the concept of waiting time, whereas the rest equated it with prevention (24%) or tolerance (10%). The best knowledge of the term and principles of application was recorded among farmers from smaller farms managing production in accordance with the integrated system. This result confirmed the assumption that the farms which adopted this cultivation system apply plant protection products in compliance with the principles adopted in integrated plant protection. The concept of waiting time was less known among conventional farms, with only 42% owners able to define it correctly. It is encouraging that among farms focused on organic farming, where no chemical plant protection products are used, almost 70% of those surveyed were familiar with the concept and principles of waiting time.

The empirical data obtained was also subjected to calculations using statistical methods of hypothesis verification, which served to determine the correlation between the answers given by the respondents and selected variables occurring in the studied population. First, the hypothesis about the existence of a given relationship was verified, and then its direction and strength were determined. The χ^2 independence test (chi-square) was used to verify the hypothesis about the relationship between the variables.This analysis was carried out at the significance level $\alpha = 0.01$, testing the research hypotheses H_0 and H_1, which meant: H_0 – no relationship between the examined features; H_1 – there is a relationship between the studied features. After verifying the hypothesis about the existence of a relationship between the studied variables, the character (direction) and strength were determined, for which the Pearson *C* contingency coefficient and the convergence coefficient *g*. Bearing in mind that the convergence coefficient *g* can take different values depending on which variable we treat as dependent and which as independent, it was always calculated twice, for both cases: g_{wk} (row to column convergence coefficient) and g_{kw} (convergence coefficient column to row) [Babbie 2003, Sobczyk 2004]. The statistical calculations carried out showed that the differences in the responses obtained from the respondents representing the compared groups were statistically significant in the context of: agricultural type and farm size as well as the level of education of the respondent (Table 4). For the remaining analysed criteria, no statistically significant differences were found.

CONCLUSIONS

Carrying out agricultural activity involves using elements of the environment, such as soil, water and air, which every farm needs for production. The higher the intensiveness of agricultural use, the greater and more lasting the consumption of environmental resources. Therefore introducing or maintaining balance between agriculture and the environment must be a permanent and long-term process based on holistic approach to

Table 4. The significance of differences in the declarations of the respondents, depending on variables present in the examined sample – the test χ^2 results and correlation coefficients

Items	$\chi^2_{\alpha=0.01}$	χ^2	C	g_{wk}	g_{kw}
Compliance with CGAP rules and farm size	22.301	60.478[1]	0.233	0.000	0.013
Compliance with CGAP rules and agricultural type of the farm	27.582	107.602*	0.304	0.041	0.032
Compliance with CGAP rules and level of education of the farm owner	21.107	26.206*	0.156	0.000	0.018
Compliance with CGAP rules and farm owner's gender	15.086	6.758	–	–	–
Compliance with CGAP rules and origin of the farm owner	15.086	3.067	–	–	–
Compliance with CGAP rules and location of the farm	15.086	1.020	–	–	–

*the result is significant at the level $\alpha = 0.01$

Source: own survey on the basis of conducted research.

farms and relevant legal regulations, an example of which is the Code of Good Agricultural Practice – one of basic documents shaping farmers' attitude towards the environment. Implementation of the recommendations, orders and prohibitions specified in the Code imposes on agricultural producers responsibility for the improvement of the condition and quality of the environment and contributes to the implementation of the assumptions of the concept of sustainable development (including sustainable agriculture).

Acting in line with good agricultural practices largely depends on a farmer's level of knowledge, including awareness of the environmental impact of his/her agricultural activity, and in particular on the cultivation system adopted. This is because the different cultivation systems vary in terms of the extent to which they implement the assumptions of sustainable development (and agriculture).

Implementation of good agricultural practice is especially important in the case of conventional farms. Even when they benefit from financial aid granted under the common agricultural policy aimed at promoting a sustainable system of farming, i.e. implementing agricultural practices that do not undermine environmental sustainability while reducing the negative environmental impact of agriculture, in practice they do not apply these rules. Thus it is very important to systematically inform farmers and raise their awareness of the adverse impact of agricultural activity on the environment and how it can be prevented. As survey results show, almost one third of respondents maintaining the traditional model of agriculture did not encounter the concept of the Code of Good Agricultural Practice, were not familiar with its content and did not follow its principles in practice.

Farm owners who carried out production based on integrated or organic cultivation systems were aware of the fact that only knowledge of and compliance with the principles of good agricultural practice would allow them to carry out environmentally-friendly activity in line with the idea of sustainable development and sustainable agriculture. Moreover, participation in financial assistance schemes promoting environmentally-friendly cultivation systems obliged farmers to increase knowledge and implement it in agricultural practice, which was reflected in survey results. These farmers showed higher, often specialised, level of knowledge on good agricultural practice. Based on their answers, which were correct (in 100%) in most of the issues analysed, one can assume that their knowledge is translated into practical activities reflecting the concept of sustainable development.

However, the principles of farming in systems focused on the environmental protection require that producers have extensive knowledge and systematically improve their environmental awareness. Thus, they should be popularised and implemented into the agricultural practice not only by farmers themselves, but also by administration, agricultural advisory service and agricultural education at all levels. This is because environmentally-friendly cultivation systems are the only option of modern sustainability-oriented agriculture.

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ZNAJOMOŚĆ PODSTAWOWYCH STANDARDÓW BEZPIECZEŃSTWA PRODUKCJI I ZASAD KODEKSU DOBREJ PRAKTYKI ROLNICZEJ W OPINIACH WŁAŚCICIELI GOSPODARSTW ROLNICZYCH

STRESZCZENIE

W opracowaniu podjęto problem wzajemnych relacji pomiędzy kwestiami ochrony środowiska a produkcją rolną prowadzoną według przyjętego systemu uprawy. Badania przeprowadzono w 127 gospodarstwach rolnych nastawionych na produkcję roślinną, z których fragment zaprezentowano, ukazując stosunek producentów rolnych do zagadnień związanych z Kodeksem Dobrej Praktyki Rolniczej. Jednym z przyjętych założeń była próba identyfikacji postaw rolników i ich opinii na temat znajomości oraz stosowania w praktyce zasad zawartych w Kodeksie. Z badań wynika, iż stosowanie zasad dobrej praktyki rolniczej zależało od przyjętego w gospodarstwie systemu uprawy. Właściciele gospodarstw prowadzonych w systemie produkcji integrowanej oraz ekologicznej w pełni deklarowali znajomość samego Kodeksu, oraz zawartych w nim treści, co przekładało się na wyższy poziom ich wiedzy oraz realizację zaleceń w praktyce w porównaniu z osobami prowadzącymi gospodarstwa tradycyjne. Jednymi z głównych przeszkód wdrażania dobrych praktyk rolniczych w gospodarstwach był brak informacji i promowania znaczenia Kodeksu dla realizacji koncepcji zrównoważonego rozwoju.

Słowa kluczowe: Kodeks Dobrej Praktyki Rolniczej, gospodarstwa roślinne, rozwój zrównoważony, zrównoważone rolnictwo

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FARMERS' HOUSEHOLDS ECONOMIC SITUATION IN POLAND IN 2010–2017

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ABSTRACT

The aim of the research is to assess the financial situation of farm households in Poland in 2010–2017.The analysis of household finances, i.e. the value and structure of income as well as the method of their distribution, was performed. Despite a significant improvement in the living conditions of this group of people, the financial situation of farmers' families was worse than of those who have other sources of income. Disposable income in households of farmers per person per month in 2017 amounted to PLN 1575.57 and was as much as PLN 420 higher than in the previous year. The ratio of the share of expenditure on food in total expenditure in 2017 was 31%. Aggregated data from studies of household budgets published annually by the Central Statistical Office constituted the basis of the information used as the sources and own surveys carried out in 2017 in 302 farmers households located in the Masovian Voivodeship.

Key words: farmers' household, household budget, available income, financial situation

JEL codes: D1, D31, G51

INTRODUCTION

A household is defined as a key unit in terms of consumption and investments. This is related to the basic purpose of operation of a household, which is to meet the common and individual needs of its members. The degree of satisfaction depends on the level and living conditions of households. In the subject literature, there are several definitions of the level and conditions of living. When talking about the living conditions of the population, terms such as: standard of living, quality of life, well-being of the society, etc., are used. Living conditions constitute a general state of satisfaction of all life needs and human activities [Liszewski 2004]. The standard of living determines the degree of satisfaction of material and spiritual needs. Quality of life is the degree of human satisfaction with living conditions, i.e. the conditions that people live in [Kiniorska 2010]. According to Roeski-Słomka, the financial condition of households is mainly demonstrated by the level of income and expenditure as well as the amount of savings [Roeske-Słomka 2004]. The material conditions of households mean the livelihood and subsistence of households, and their level depends on the income and expenses of households budget. The method of managing financial resources influences the financial situation of households. The material conditions of households are also determined by socio-demographic factors, including number of persons in the household, age, education, family live cycle, etc.

Farmers' households differ from other groups of households by many socio-economic features, which strait affect their financial situation. Farmers' households constitute a specific socio-economic group due

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to their close connection with farms, and thus the specificity of the consumption and production sphere [Chmielewska 2000]. Income obtained by farmers' households from farms constitutes the basis for the functioning of families and farms. As a result, this hinders the management of private finances of farmers' households [Kozera and Wysocki 2014]. Agricultural income is, to a large extent, dependent on sales revenues subject to seasonal fluctuations, which rely on the management conditions in a given year. The specificity of the implementation of agricultural activity on the farm is associated with difficulties in predicting future production volumes, costs, and inputs due to, among others changing soil and climatic conditions, plant and animal diseases, drought threats as well as excessive rainfall [Kusz 2009]. In addition to natural factors, the market environment has a significant impact on the income of farmers. Depending on the amount of selling prices of specific agricultural products, the income situation of farms may vary [Felczak 2014].

In the economic theory several laws applying to agriculture, for example: law of "diminishing returns", "parity price ratio"the ratio of the prices farmers get to the price they must pay, showing that prices received by farmers have not risen as much as have prices they have to pay in a long time. "Low-income elasticises for food" what means that when consumers get richer, do not want to expand their food consumption as much as they want to expand the consumption on other goods (industrial). That's why farm incomes fluctuate between boom and bust to a greater degree than non-farm incomes. Its justifying the government intervention in farmers sector. There are variety of programs supporting and maintaining farm income (Common Agricultural Policy of European Union, government support to farmers in USA, etc.) to keep the farmers in profession. It's not solving the important problem of rural poverty, there are needed transfer-program payments to health care services, education and retraining [Samuelson 1980].

MATERIALS AND RESEARCH METHOD

The objective of the research is to assess the financial situation of farmers' households in Poland in the period 2010–2017. The analysis was based on statistical data from the annual national household budget survey (BBGD) carried out by the Central Statistical Office (CSO) in Poland, which is the primary source of information on the living conditions of the population. The BBGD concerns both the material and immaterial spheres of life. The material sphere covers that part of households living conditions that can be apprehended in value, i.e. current household income and wealth (savings, real estate, durable goods and other material resources) [Podolec 2010].

The analysis also used own research carried out in 2017 among 302 representatives of farmers' households. The interview questionnaire was used as a tool for collecting empirical material. The research was located in selected rural and urban-rural communes of the Mazovia Province in Poland.

In order to assess the financial situation of a household, the levels of disposable income and expenditures of households were used. Another measure was the share of consumer expenditure and the share of fixed expenditure in the disposable income of a household. The structure of expenditures, including the ratio of the share on food expenditures with regard to total expenditures were analysed .

RESULTS AND DISCUSSION

The basic indicator of the assessment of households' financial situation is their disposable income. Its value indicates the economic rank of a given household and its wealth; it determines the purchasing power of the household and, consequently, the ability to meet the needs of its members. Disposable income includes current cash and non-cash income, reduced by voluntary and compulsory payments, such as: taxes on income, inheritance, donations and real estate. Disposable income is allocated for consumption purposes, for other expenditures and for savings [Muszyńska 2010]. Figure 1 presents the level of disposable income of households in 2010–2017 in nominal terms.

The basic indicator of material conditions is the level of current income per person in the household. In the years 2010–2017, in Polish households, there was an increase in the average disposable income per person in a household by 34%. In 2017, disposable income amounted to PLN 1598.13 per person. The

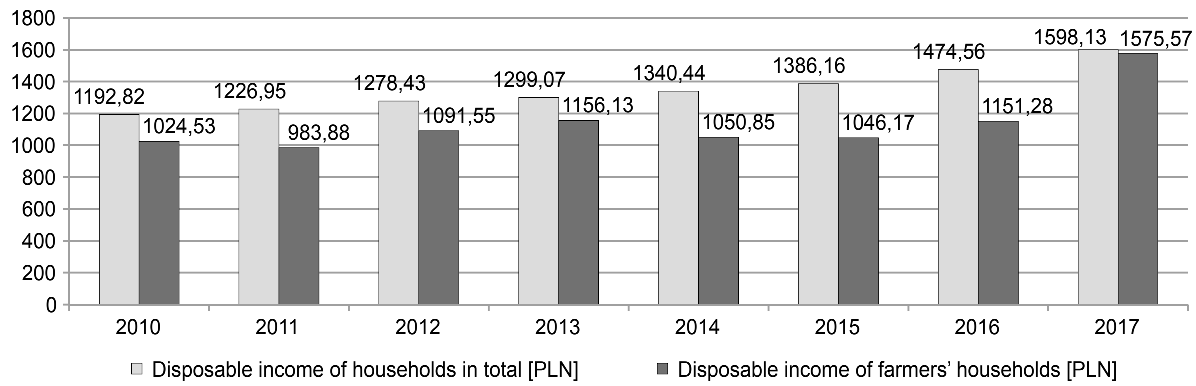

Fig. 1. Disposable income of households in 2010–2017 (PLN/person/month)

Source: own calculations based on data from household budget survey of Central Statistical Office [GUS 2011–2016, 2017b, 2018].

improvement of the financial situation of households resulted from the improvement of the socio-economic situation in Poland. The level of disposable income of households is characterized by an upward trend during the period under discussion. In the particularly difficult socio-economic situation, compared to other groups of households, there were members of farm households [Żmija 2015]. The nominal incomes of farmers' households during the study period were characterized by high dynamics of changes. A particularly high increase in incomes of all farmers' households was observed in 2017, which amounted to PLN 1575.57. In the studied period, the lowest level of disposable income was observed in 2011 (PLN 983.88).

The Institute of Agricultural and Food Economics – National Research Institute analysis shows that the income of farmers' households has increased significantly recently as a result of good economic situation on the food market and production growth, at relatively stable costs [PAP 2018].

The latest CSO research also shows an important issue regarding the inhibition of a clear drop in the income dispersion in households per household in terms of place of residence (urban – rural) in 2018, measured for several years, measured by the Gini coefficient [GUS 2019].

The main sources of households' maintenance in Poland are paid employment, farm work, self-employment and social benefits. Income is also obtained from other sources, such as renting land and buildings, social benefits, loans and credits, winnings, gifts and damages. The membership of a household in the socio-economic group is determined on the basis of the main source of income, which is why the structure is dominated by income obtained from this source [Muszyńska 2010]. The basis for maintaining farmers' households is work on the farm.

The level and sources of income obtained by farmers' households in 2010–2017 are shown in Table 1. There are evident changes occurring in the structure of income of farmers' households. In the studied period, a relative increase in the importance of income from paid employment and self-employment and a decline in income from an individual farm inagriculture were also observed in farmers' households.

Despite the changes in the area structure of agriculture, only a few farmers' households are able to ensure an adequate level of income for farmers and their families, sufficiently satisfying the consumption function (the basis for maintaining farmers and their families), the production function (accumulation in the household) and the motivational function (striving to achieve higher consumption and production) [Leśniak-Moczuk 2008]. Therefore, in order to improve personal finances, members of farmers' households, especially small farms, are increasingly taking up paid employment or self-employment [Kozera and Wysocki 2014].

The financial situation of households is also demonstrated by the manner of managing the finances of a given household. It is the entirety of decisions of household members, consisting in obtaining funds

Table 1. Sources of income and income level in farmers' households (PLN) in 2010–2017

Specification	2010	2011	2012	2013	2014	2015	2016	2017
Income from paid employment	104.76	111.73	129.28	123.27	141.38	145.27	152.85	162.06
Income from self-employment	10.26	10.13	9.78	13.52	11.59	14.30	12.6*	18.11*
Income from an individual farm in agriculture	732.01	677.15	755.24	812.89	692.79	681.28	715.82	1 075.03
Income from social insurance benefits	117.76	134.00	141.44	150.78	145.20	149.11	152.59	158.67
Retirement, national	82.24	91.86	92.76	96.49	94.24	103.15	110.02	114.36
Pension for incapacity for work, national	18.68	21.60	24.25	23.69	24.44	26.09	24.92	26.24
Family pensions, national	6.89	7.73	7.04	8.66	8.79	7.68	7.48*	7.76*
Income from other social benefits	34.58	31.18	33.67	33.65	31.94	29.77	93.34	135.98
Unemployment benefits, national	1.77	0.72	1.29	1.47	1.03	0.52	–	–
Other income	22.46	17.45	20.93	21.05	26.27	24.25	21.42	25.02
Gifts	18.23	14.58	18.11	17.97	22.37	18.83	16.92	19.84

*it occurred in the number greater than or equal to 20 but less than 50 cases from the sample.

Source: own calculations based on data from household budget survey of Central Statistical Office [GUS 2011–2016, 2017b, 2018].

from various sources and making decisions on their distribution for various purposes, in accordance with the adopted hierarchy of needs [Bywalec 2009]. The concept of household expenditures should be understood as expenditure on consumer goods and services as well as other expenditures. Expenditures on consumer goods and services intended to meet household needs include goods purchased for cash, credit, free goods and natural consumption. Other expenditures consist of, among others, gifts provided by the household, some taxes, other types of expenditures not directly intended for consumption [Dudek 2006]. With the drop in income in the farmer's household, the importance of natural consumption, i.e. the consumption of food produced in own agricultural farms, bypassing the market, is increasing [Biernat-Jarka et al. 2015].

Table 2 presents average monthly expenditures per person in farmers' households. In 2010–2017, the value of these expenditures increased from PLN 757.25 to PLN 867.99 in total. The increase in the value of monthly expenditures reached the highest rates in the group of expenditures on restaurants and hotels (353.9%), on health (141.2%), onclothing and footwear (134.6%). The largest decrease in expenditures in farmers' households in 2010–2017 was noted in the group of other expenditures as well as education, respectively 87.9% and 76.7%.

Figure 2 shows the structure of expenditures in farmers' households in 2017. The largest share in total expenditures are expenditures on food and non-alcoholic beverages, home use and energy carriers as well as transport. The ratio of food expenditures to total expenditures in 2017 was 31%. The smallest share in the total expenditures are expenditures on education, pocket money, restaurants and hotels.

Comparison of the level of expenditures with the level of disposable income of households also allows for the assessment of their financial situation. Figure 3 presents the share of consumer expenditures in disposable income in the years 2010–2017. In the studied period, a downward trend in the share of these expenditures in the disposable income of households can be observed from 73.9% in 2010 to 67.9% in 2013 (a decrease by 6 p.p.) and a decrease from 76.1% in 2014 to 55.1% in 2017 (down 21 p.p.). In farmers' households the lowest share of consumer expenditures in disposable income was observed in 2017, which amounted to 55.1%.

Table 2. Average monthly expenditure per person in households (PLN) in 2010–2017

Specification	2010	2011	2012	2013	2014	2015	2016	2017	2017/2010 (%)
General expenditure, including	757.25	736.02	784.59	784.62	799.35	779.14	814.59	867.99	114.6
Food and non-alcoholic beverages	238.85	243.22	249.87	246.99	247.73	243.84	256.81	269.11	112.7
Alcoholic beverages, tobacco and drugs	18.32	18.67	19.44	18.35	20.32	16.57	17.49	18.79	102.6
Clothing and footwear	39.54	38.46	40.32	43.83	46.99	43.47	48.54	53.21	134.6
Home use and energy carriers	140.38	132.52	138.92	146.36	138.99	133.77	135.78	147.06	104.7
Household equipment and running a household	40.70	39.09	38.57	42.80	38.65	39.16	42.97	48.29	118.6
Health	28.29	27.59	30.80	33.23	33.44	33.85	38.79	39.94	141.2
Transport	87.16	76.54	87.55	79.60	86.50	84.53	85.79	86.13	98.8
Communication	32.56	32.95	32.44	37.97	38.51	39.02	42.77	43.8	134.5
Recreation and culture	38.79	41.93	43.67	37.94	40.45	37.15	38.46	38.54	99.4
Education	5.57	6.45	5.31	7.76	5.83	4.88	6.35	4.27	76.7
Restaurants and hotels	6.42	5.21	9.65	13.01	17.23	14.59	15.96	22.72	353.9
Other goods and services	31.19	31.06	38.09	37.18	37.14	39.26	42.17	44.85	143.8
Pocket money	14.05	15.50	15.85	13.97	17.60	20.22	14.22	20.13	143.3
Other expenditures	35.44	26.82	34.13	25.62	29.98	28.83	28.50	31.14	87.9

Source: own calculations based on data from household budget survey of Central Statistical Office [GUS 2011–2016, 2017b, 2018].

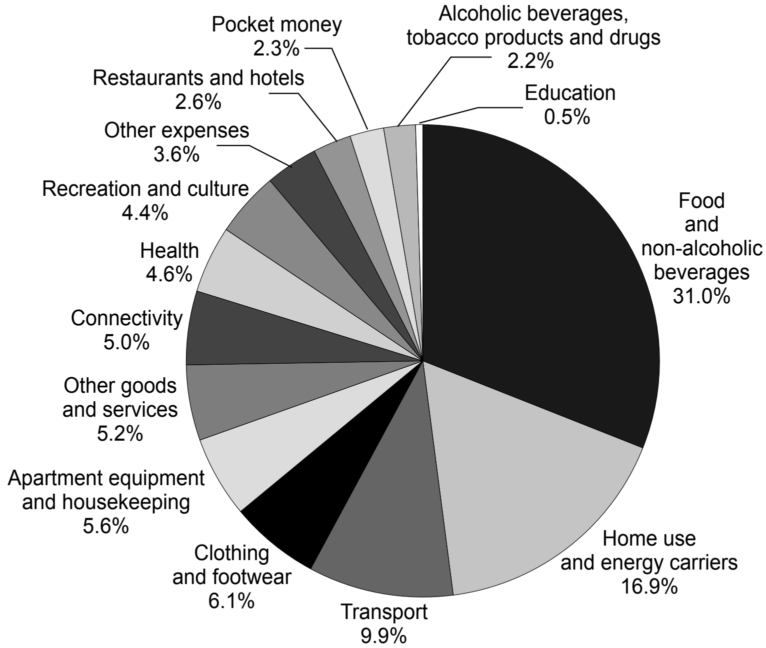

Fig. 2. Structure of expenditures in farms' households in 2017

Source: own calculations based on data from household budget survey of Central Statistical Office [GUS 2011–2016, 2017b, 2018].

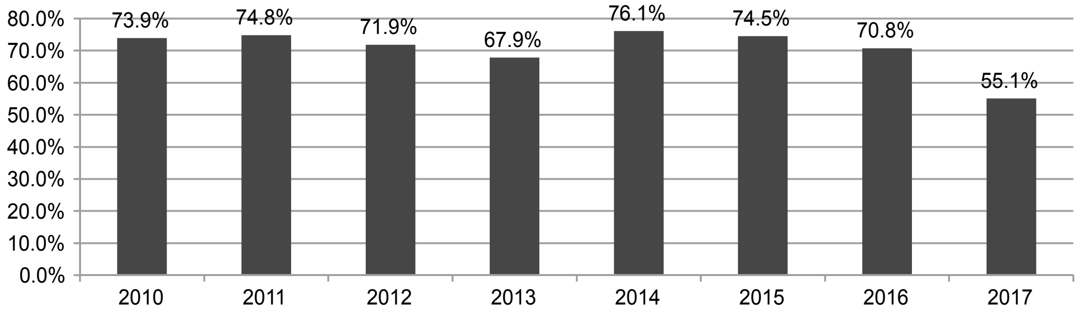

Fig. 3. Share of consumer spending in disposable incomes of farmers' households in 2010–2017

Source: own calculations based on data from household budget survey of Central Statistical Office [GUS 2011–2016, 2017b, 2018].

The financial situation of households is also demonstrated by the share of fixed expenditures in disposable income. Fixed expenditures of households are expenditures on food and non-alcoholic beverages as well as expenditures on home use and energy carriers. Other expenditures are so-called expenditures of free choice (free choice fund). However, it should be borne in mind that the boundary between basic expenditures and free choice is fluid and often debatable, in particular regarding expenditures on transport, house equipment and health [Janoś-Kresło 2011].

A higher share of fixed expenditures in household budgets makes it difficult to meet higher-level needs, thus affecting living standards [Kozera and Wysocki 2014]. It should be noted that as a result of the improvement in the financial situation of households in 2010–2017, a beneficial trend in the form of a declining share of fixed expenditures in households' budgets was observed, which was mainly related to lower expenditures on food and non-alcoholic beverages in the total household expenditures. Taking this into account, the most advantageous financial situation of farmers' households was observed in 2017, in which fixed expenditures was charged to approximately 26.4% of household budgets, respectively. The relatively weakest financial situation, where fixed expenditures accounted for 38.2% of disposable income, was observed in 2011.

In 2017, in order to get a better understanding and an in-depth analysis, our own surveys were conducted among 302 randomly selected representatives of farm households located in 10 rural and urban-rural communes of the Masovian Voivodship. The majority of respondents were women (59%).

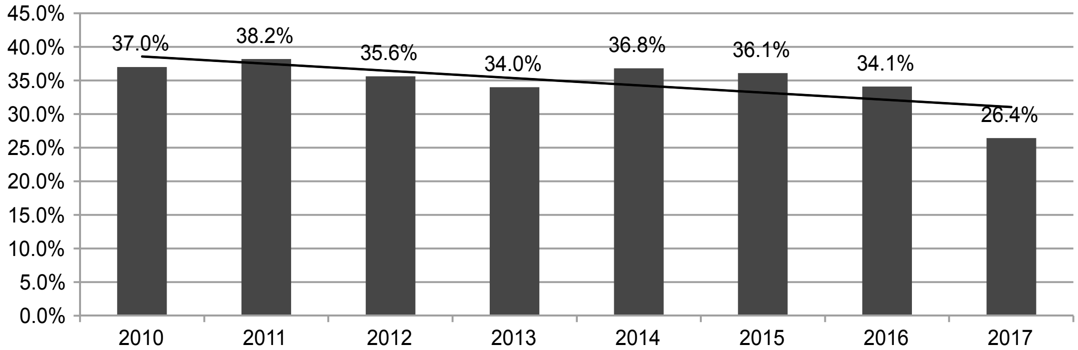

Fig. 4. Share of fixed expenditures in disposable incomes of farmers' households in 2010–2017

Source: own calculations based on data from household budget survey of Central Statistical Office [GUS 2011–2016, 2017b, 2018].

The researched farms are mainly two- and three--generation families, where four-person farms predominate. The structure of households by persons on the farm is as follows: 1-person – 2.7%, 2-person – 7.8%, 3-person – 14.5%, 4-person – 29.1%, 5-person – 25.7%, 6 and more people – 20.3%.

In about 32% of the examined households, children up to 14 years old lived. Farms without children up to 14 years accounted for 68% of respondents, with 1 child 18%, with 2 – 10%, with 3 and more children – 4%.

One of the most different social categories is the education of the respondents. The vast majority (52%) of the surveyed respondents are people with secondary education, of which 13.8% have secondary education, 38.3% have secondary and post-secondary education – 4.7%. About 4.4% of respondents have basic vocational education, slightly less – 2.2% have higher basic education, while the remaining 18.5% have higher education.

The primary factor determining the participation of each member of the society in the division of the social consumption fund is income per one person. Income is the basis for the intensity of feeling and the degree of satisfaction of needs, which is why it is the basic determinant of the development of the consumption structure. Taking into account the entire population surveyed, the income of the households surveyed is below: PLN 500 – 9.3%, PLN 501–1000 – 28.8%, PLN 1001–1500 – 22.5%, PLN 1501–2000 – PLN 15.6%, over PLN 2001 – 17.5%. About 6% of respondents did not answer the income question.

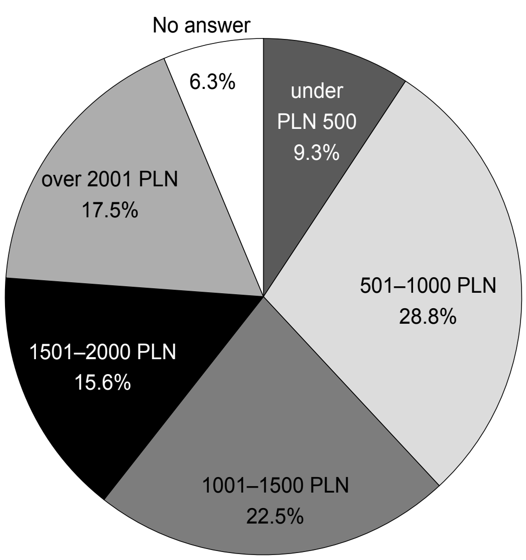

Fig. 5. Average income in a household per 1 person per month in the examined households

Source: own study based on own research.

The respondents were also asked about the size of the owned farm, the average area of the surveyed farms was 22.8 ha, which is much higher than the national average. The average size of agricultural land on a farm in the country in 2016 was 10.31 ha [GUS 2017a]. In every fourth farm, both crop and animal production was carried out, in 54% only crop production, and in 27% only animal production was carried out.

Own surveys only orientatively characterize the degree of affluence of the surveyed households due to the subjective nature of the response and the selected population from one of the provinces, hence the analysis was preceded by the results of representative CSO surveys.

CONCLUSIONS

The income structure of the population residing in rural areas is currently undergoing many changes. This is due to changes in the socio-economic environment affecting residents of villages. Both the sources of incomeand the structure of expenditures are changing. As the performed analysis showed, households in this socio-economic group are characterized by a lower level of disposable income, but their situation is improving every year. There was a decline in the share of income from work on the farm in favour of income from paid employment. Therefore, it can be concluded that farmers' households are attempting to improve their competitive ability by seeking additional sources of income. The most important item in expenditures from household budgets of surveyed families is food. The basic indicator of material conditions is the level of current income per person in the household. The average monthly income available to one person in households by their size (number) is favorable for single-person households and decreases as the number of people increases.

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SYTUACJA EKONOMICZNA GOSPODARSTW DOMOWYCH ROLNIKÓW W POLSCE W LATACH 2010–2017

STRESZCZENIE

Celem badań jest ocena sytuacji finansowej gospodarstw domowych rolników w Polsce w latach 2010–2017. Analizie poddano sytuację finansową gospodarstw domowych tej grupy ludności, tj. wielkość i strukturę dochodów oraz sposób ich rozdysponowania. Mimo znacznej poprawy warunków życia w badanym okresie sytuacja materialna rodzin rolników była znacznie trudniejsza niż utrzymujących się z innych źródeł dochodów. Dochód rozporządzalny w gospodarstwach domowych rolników na osobę miesięcznie w 2017 roku wyniósł 1575,57 PLN i był aż o 420 PLN wyższy niż w roku poprzednim. Wskaźnik udziału wydatków na żywność w wydatkach ogółem w 2017 roku wyniósł 31%. Bazę źródłową stanowiły dane zagregowane, pochodzące z badań budżetów gospodarstw domowych publikowanych corocznie przez Główny Urząd Statystyczny. Wykorzystano też własne badania ankietowe przeprowadzone w 2017 roku w 302 gospodarstwach domowych rolników zlokalizowanych w województwie mazowieckim.

Słowa kluczowe: gospodarstwo domowe rolników, budżet gospodarstwa domowego, dochód rozporządzalny, sytuacja finansowa

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ORIGINAL PAPER

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INNOVATIVE AND SOCIALLY RESPONSIBLE CONSUMER BEHAVIOUR IN PARADIGM OF CIRCULAR ECONOMY – A RESEARCH MODEL

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ABSTRACT

The following paper is innovative and based on the premise that consumers play a vital role in the development of the economy in Poland. Its structure, in addition to introduction and summary, consists of two parts: cognitive and practical. The research question is: Can consumer influence the implementation of the principles of circular economy in Poland towards their faster and more efficient application? The aim of the paper is to offer a theoretical model for research and stimulation of changes in consumer behaviour towards an innovative and socially responsible consumer action (CnSR). We used experimental, descriptive model and visual research methods. The paper is normative.

Key words: CnSR, tacit knowledge, quadruple helix, platform

JEL codes: J24, O31, O35, O36, Q01

INTRODUCTION

Consumer behavior has been a topic of interest of social sciences, including economics, especially since the mid-XXth century but still requires more thorough research. This applies to, among others, the ability and capacity of consumers for innovative and socially responsible behavior. The dynamic changes of technological, economic and demographic conditions and the natural habitat together with increasing and evolving human needs resulted in consumer behavior, which is an interdisciplinary category, new research hypotheses can be made. Especially since implementing the rules of triple-balanced economy (economically, socially and ecologically) in European Union countries, creates a new context for researching the role of consumers in that process. Furthermore, attempts are made to implement the circular economy to the practice of linear economy, as the developed model of stable and balanced economy [Zalewski and Skawińska 2019] question arises, as a research issue, can consumers influence the implementation of the principles of circular economy in Poland toward their faster and more efficient application?

It is worth noting that Poland still belongs to countries catching up with the leading innovative economies [European Innovation Scoreboard 2018, Global Innovation Index 2018]. In spite of support via various governmental and international programs, vertical and horizontal cooperation of economic entities, it still remains at a low level and the cooperation effects in the form of innovation and commercialization of research results are unsatisfactory. Therefore, can active inclusion of consumers in the cooperation, forming a quadruple helix, help to overcome/decrease the barrier to innovation growth in Poland, towards development of circular economy? How to change consumer attitudes to be more pro-innovation? So far, in the

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light of literature studies of the research subject, the role of consumer within these processes was treated marginally while the information era lifted the value of innovation activity, which can cause increase of new non-economic stimuli, increasing cooperation and its effectiveness. Searching for answers, the following hypothesis was formulated: the shaping of innovative and socially responsible consumer behavior for development of circular economy in Poland requires a system of educational and institutional support. Its verification is difficult since it applies to phenomenon shaped to a large extent by nonmaterial unmeasurable factors, but an attempt can be made to see how it works as a social experiment. According to J. Pieter "the basic rules for experimenting are the same everywhere" [1975]. They include an active intervention of researchers into the research subject, in this case with the assumption of making changes in the behavior of persons.

The key aim of this paper is to offer a theoretical model for research and stimulation of changes in consumer behavior towards an innovative and socially responsible consumer action (CnSR) for the development of circular economy in Poland. A supplementary aim is to awake reflection over the need to finance experimental research in this area. In carrying out the work, experimental, descriptive, models and visual research methods were used. The paper is normative.

CHANGE IN CONSUMER BEHAVIOUR IN THE CONCEPT OF CIRCULAR ECONOMY

Basic terms and their interpretation

A characteristic feature of economic papers is the occurrence in their text of multiple meaning requiring explanation. The first is "circular economy", characterized by closed cycle and applying to all levels of economic activity. It includes all stages of process and product life cycle as well as the process-environment-economy interaction (Fig. 1). It is a system of saving and recovery, in which inputs on entry and waste on exit, emissions and energy losses are limited via slowing and reducing energy and circulation [Geissdoerfer et al. 2017, Sariatli 2017]. Its idea is also included in the theory of economic moderation and the theory of balanced consumption [Kołodko 2014, 2017].

The development of circular economy in Poland is in line with the support policy of the European Union [Komunikat Komisji Europejskiej 2014, European Comission 2017]. However, the level of knowledge within the Polish society about implementation of the theoretical assumptions of circular economy and its effects is still quite low, in spite of the European Commission passing normative acts that are in force in the European Union [Zalewski and Skawińska 2019].

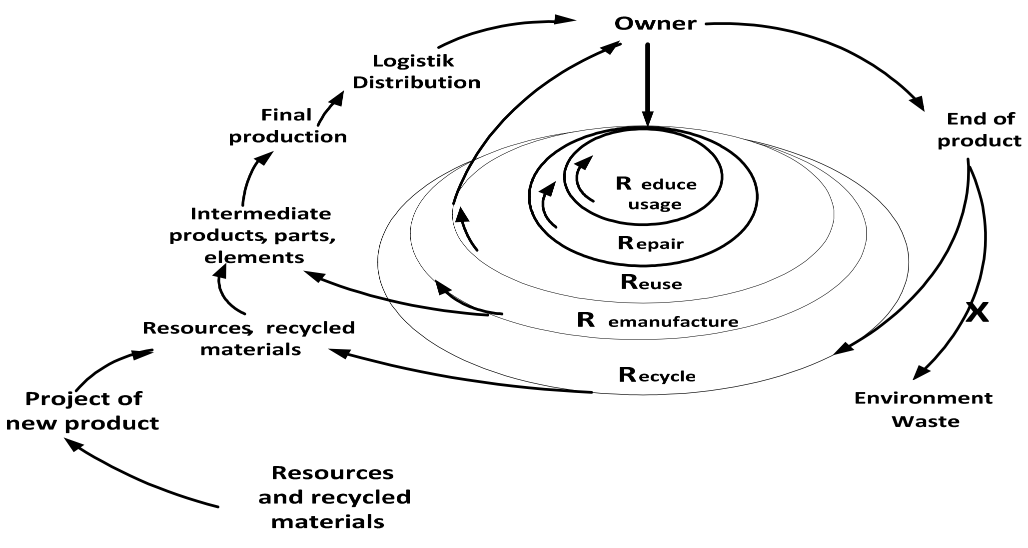

Fig. 1. Model of circular economy
Source: own drawing.

In 2013 in Poland, in response to postulates of the Education Committee "The Strategy for Innovation and Economic Effectiveness" was prepared and in 2016 "The Roadmap of Transformation Towards a Closed Loop Economy". Their application is to constitute "a green path" in production and consumption to increase effectiveness of usage of natural resources and raw materials [Gołębiewski 2019]. If we want to speed up the progress from linear economy to circular economy we should expect changes in consumer behavior. Innovation development in the context of building circular economy ties in with its intelligent development, which requires absorption of intellectual potential of the whole society, changing social attitudes towards more socially responsible and cultural changes [Korhonen et al. 2018]. So far, changes in consumer behavior were seldom included/referred to in the definition of circular economy. Among 114 definitions described in literature, only several of them had such reference [Kirchherr et al. 2017].

The next term requiring explanation is "consumer behavior". In the neoclassical sense, economists assumed that behavior of society units in the process of fulfilling needs, i.e. maximizing expected value, is rational (neoclassical paradigm). This view has been questioned by other trends (e.g. new classical economics, complexity economics) including, first of all behavioral economics. The theory of needs and the theory of consumer behavior is under constant development.

Recently, hints of redefining the neoclassical approach to rational behavior of entities in economy were presented by E. Skąpska [2019]. She correctly assumes that knowledge possessed by a human forms the basis for choosing the means for the individual fulfillment of his needs, in accordance with his own value system and preferences. During the process of choice, emotions disturbing "the process of perception and logical reasoning" and different activities in information seeking, which leads to irrational decisions. The next indicator of the degree of rationality in consumer behavior, apart from knowledge, is the ability to perceive reality and social context, mainly formal and informal institutional systems. In terms of social rationality, the quoted author postulates that the aim of economy is the fulfillment of economic and beyond economic needs of society, and the criterion for rational choice is quality of life [Skąpska 2019]. This should be compared to the proposed model of circular economy, development of which is to improve the quality of life of current and future generations. Therefore, consumer behavior can be deemed socially rational, if his individual actions are geared towards realization of this goal.

It should be remembered, however, that rationality of consumer behavior is limited. Each person's choices are based on different and varied conditions. Therefore, how can risk and uncertainty be minimized in implementing the rules of circular economy? It can be done by decreasing the coherence gap between the individual goal of consumer (obtaining own "egoistic" advantages) and social goal. They can be reached as a result of constant growth of knowledge capital and development of intellectual potential of consumers via educational system, since incomplete knowledge about economic processes limits the possibility of reaching socially responsible decisions. Therefore, consumer socially responsible behavior (CnSR – Consumer Social Responsibility) is the next term requiring interpretation from the understanding adopted in this paper.

So far, in literature, the idea of social responsibility has been analyzed in relation to businesses (CSR – Corporate Social Responsibility), as an important tool for creating their competitive advantage. The overall/summary definition set/outlined by the European Commission in 2007 was formalized in the ISO 26000 norm, adopted in 2010, and is applied to all organizations. Its implementation by companies in Poland is becoming a fact and it represents an evolution of business goals from financial ones towards maximizing value to all interested parties. Many reports and research indicate that these activities are still uncoordinated and often selective. Recently, some efforts appeared as to researching consumer social responsibility (CnSR) in the context of CSR [Devinney et al. 2006, Szwajca 2018] and apply only to the phase of resource usage. This paper, however, adopts a wider perspective of consumer social responsibility and it means their voluntary behavior (in contrast to behavior forced by law) in terms of all areas and stages of decision making outlined later in article. These include:

- limiting purchases to those that satisfy necessary needs, with preference to high quality and fair trade practices,
- decreasing social costs of environmental protection via reducing pollution, waste levels (illegal landfills) and violation of someone else's property,
- getting rid of noise and peace disturbances in surroundings,
- cooperation engaged in protection of natural resources and care for natural environment in local communities (e.g. looking after green areas),
- preference for ecology in market decisions of consumers and households, closed cycle of resources, and quality and respect for common resources,
- complying with ethical norms and safety regulations towards others in business dealings, including limiting activities in grey areas,
- investment in knowledge acquisition, competencies and abilities to increase the quality of interpersonal communication, conscious choice and product usage and the resulting consumer rights.

Some of the mentioned activities (characteristics) of consumer social responsibility are outlined by L. Jeseviciute-Ufartiere [2017]. It is a result of growth in consumer social capital, motivation and entrepreneurship in innovation development, integration of consumers around common values, which increases respect for norms and values and improves relations with others.

Areas and steps of innovative and socially responsible consumer decision

The behavior of society and its effects can be considered within various areas of management. In literature, marketing research dominates that deals with market customer behavior. In this paper, the scope is widened to include 3 areas: market, household and natural environment.

There is interaction of indirect effects taking place between the 3 area, due to direct consumer activities in those areas. Consumer behavior research, from the perspective of its effect on development of circular economy, should encompass all stages of decision making process that has to do with fulfillment of needs. Note that the category of needs is under evolution as confirmed by further development of J. Maslow's pyramid of needs by contemporary representatives of social sciences [Miller-Zawodniak 2012]. There is indeed a spiral of expectations by society for new products, which is utilized by industry and trade. This increases the demand for energy and resources and problems with polluting natural environment [Global Circularity Report 2018].

Thus, using not only new innovative factors in production and supply, has become urgent, but also, innovative solutions in the area of demand and regulations, which favor improving life quality via reducing the existing social and ecological costs that arise in linear economy, have become important. New customer needs are also created by industry 4.0 and G5 communication. Modification of consumers behavior in this context is necessary and possible as a result of their new needs, greater market and ecological (environmental) awareness, the necessity to form social ties, co-creation, greater social and geographical mobility, increased concern for health and desired social attributes of products. This paper assumes that "a need is a person's psycho-physical state that expresses as a feeling of lack or desire for a thing or a state (conditions, circumstances)" [Cybulska 2018], and fulfillment of needs is a form of restoring external and internal balance. If the way of fulfilling is not going to be contrary to realization of circular economy goal, we can consider that consumer behavior is socially responsible.

In literature, specifying the stages of consumer behavior on the market takes place always only until the post-sale period [Przybyłowski et al. 1998]. This stage is understood as consumption and reflection. A representative of such a view is A. Barska who states that "Consumer behavior includes thoughts and feelings experienced by persons and activities undertaken by them in consumption process. They are implied by many factors from environment which affect them." [Barska 2019]. Such view is incomplete for achieving the research aim proposed in this paper.

We assume a wider understanding of consumer needs in the 21st century, which must be accompanied by innovative and socially responsible consumer behavior in the development of circular economy. Therefore, presented below are 5 integrated steps of consumer behavior.

First, there is the time that awareness of a need takes place, called "problem identification", and preparation for undertaking socially responsible decision about the way this need is to be fulfilled as a result of identifying/exploring information sources and situational factors. The second step is the conscious decision to purchase the product superseded by comparing alternative ways of meeting the need. The next step, so called post-purchase, is the time of using/consuming the purchased product, any cognitive dissonance, satisfaction assessment as to obtained value and possible decision to return the product, exchange, file complaint etc.

It is a conscious joining in a socially responsible process of management. In the 4th step, there are activities concerning utilization of post-consumption waste (fragmentation, segregation and recycling). Furthermore, assuming that these behaviors should be innovative towards the needs of circular economy development, we added another step, 5th, which represents creation of new ideas, innovative solutions by consumers as to utilization of waste in the next lifecycle of processed products. In the light of foregoing considerations, we suggest adoption of pro-innovative consumer attitude as the next characteristic of the widened CnSR concept.

FORMATION OF INNOVATIVE AND SOCIALL RESPONSIBLE CONSUMER BEHAVIOUR IN THE DEVELOPMENT OF CIRCULAT ECONOMY

Shaping of consumer behavior, as previously mentioned, requires interdisciplinary approach to changes in the hierarchy of consumers value system and motivation in their behavior, means for the growth of competences and awareness and social capital, as well as cultural growth. Previous research by the authors considered the thesis of primary influence of social capital on human behavior, and the development of their cooperation and forming long-term relations with other subjects in a triple helix model [Skawińska 2012]. The importance of the research topic is increased by the fact that rules of circular economy are still little known in the Polish society, while their implementation enables continuity of development, thus it is necessary for future. Therefore, we propose a social experiment with inclusion of consumers active cooperation in the development of such economy in Poland, via the following four phases:

1. Transfer of knowledge from the science sector to deliberately selected groups/communities of consumers, encompassing theoretical aspects of circular economy and determinants of its development, for shaping innovative and socially responsible consumer behavior (education process).
2. Acquisition of insider/implicit/non public knowledge form consumers, in terms of factors influencing changes in their market behavior, in the process of processing and usage in households, and behavior in natural environment (research process).
3. Creating new technology – Internet platform, as a means of communication for transferring the insider/implicit/non public knowledge from consumers to other subjects in the quadruple helix model (application process).
4. Dissemination of the new technology/platform for development of cooperation and participation of consumers in building relations with other entities in the economic environment and science sector within the quadruple helix (implementation process).

During phase 1, there will be sharing of knowledge by science sector employees, specialists and equipping of recipients in skills allowing for development of intellectual capital resources. Delivery of the education function by science representatives enables acquisition of new knowledge by consumers, increasing their awareness and rationality of behavior, which may induce them to open to new innovative ideas. Transfer of this knowledge from the science sector regarding the theory of circular economy and its best practices in the world to consumers is to stimulate creativity, entrepreneurship and innovation towards development of circular economy. Increased awareness in this field is a key determinant in raising cooperation skills levels, predisposition to cooperation, propensity towards risk-taking, modification in value system hierarchy and for activity in forming relations with participants of the quadruple helix. At this point, it should be explained that introduction of consumer in the triple helix model forms a quadruple helix that has a pyramid structure, in which innovations are in the center (Fig. 2).

Familiarity with the circular economy theory, process of innovation diffusion and adoption, has a significant influence on its perception, acceptance of the need for development and on reducing the level of neophobia with regard to the world latest achievements as to this model of management. This stage will enable creation of leaders of change in consumer behavior.

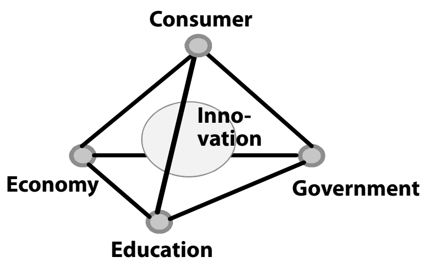

Fig. 2. Quadruple helix model
Source: own drawing.

The second phase will be achieved as a result of generating new ideas, during incubation of the insider knowledge of consumers. It has to do with acquiring new knowledge in terms of innovations for circular economy, assuming a holistic approach to researching intellectual capital (meta typology of intellectual capital) [Zalewski 2015]. Acquisition of insider knowledge about consumer behavior and their changes in socially responsible direction: a) on the market (purchasing behavior), b) in households (usage), c) in natural environment (work and rest) will allow for understanding their causes of behavior, actions, attitudes and intentions. The research will look for new criteria of choice making, supply of new ideas and opportunities for their implementation. Their aim is to discover and explain unrecognized opportunities in a given cultural and environmental consumer context, and factors in the area of cooperation with respect to circular economy.

The third phase is creation of an Internet platform which should solve communication requirements of users in terms of knowledge and information exchange, associated with the needs of circular economy development. It will ensure intelligent mobility in passing knowledge about circular economy from science and reporting of new ideas by consumers from a long-term perspective. Further, it will enable shaping of pro innovative behavior of persons that are aware, convinced and oriented on building relations and cooperation between science, consumers and economic environment towards innovation growth. This will allow for creation of networks of innovative consumers (clusters), and the interaction taking place in the cooperative activities of entities in the quadruple helix will lead to increased innovation for development of circular economy.

The last, fourth phase will be carried out via implementation of solutions leading towards stimulating innovation and cooperation between consumers, science, producers and other entities within the quadruple helix. This will enable refinement of ideas important to the concept of circular economy development. It should be remembered that shaping innovative and socially responsible behavior is a function of time. Knowledge awareness raising represents a stimulus/trigger for its recipients, to reflect on the necessary cooperation with other entities within the economic environment

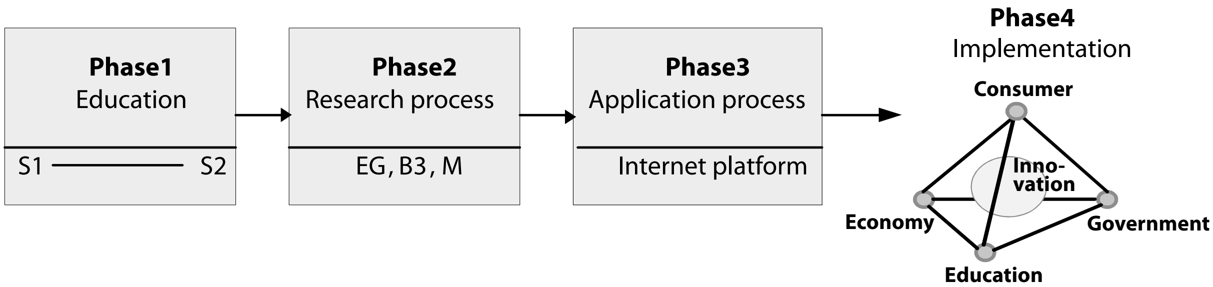

Fig. 3. Theoretical model of shaping changes in socially responsible consumer behavior (CnSR)
Source: own drawing.

and the need to build relations with them. This will be possible thanks to the Internet platform. Coherence of the presented research stages and development of innovative and social behavior of consumers, allows for a model representation (Fig. 3).

The outlined research proposition represents a departure from the traditional ways of subject behavior towards an active participation in building innovative circular economy in Poland. Key role in carrying out the aforementioned stages will be played by the application methods used in achieving their objectives. The selection of consumer communities/groups, as well as qualitative methods in 1 and 2 stage applied in the model shown in Figure 3, and the statistical methods used in compiling their results should be flexible, contingent on the potential of the scientific unit/entity undertaking the research.

It can be proposed to use the method of conventional lecturing in phase 1, and in phase 2 – questionnaires, focus groups and in-depth interviews, panel discussions groups, diagnostic simulation game method (DSGM) and from among statistical methods in complying results – the method of key components, classification and correspondence. In creating clusters of active consumers (phase 4) it may be helpful to use the method of opinion leaders and animation.

SUMMARY

The authors take on a very important scientific issue in the context of urgent need for development of circular economy. Firstly, they presented a holistic and reconstructed definition approach to circular economy and the concept of consumer social responsibility. Attention was paid to shaping new contemporary individual and social needs, as well as to, presented in the paper, the 3 areas and all phases of consumer decision making in the process of husbanding together with their interpretation. Next, the authors propose a social experiment with the active inclusion of consumers in cooperation with other entities in a quadruple helix model, via 4 stages including the following processes: education (knowledge transfer), research (insider knowledge acquisition), application (creation of Internet platform) and implementation, i.e. building relations with entities in economic and scientific environment. In this experiment, the authors assume an active intervention of science representatives in order to overcome the gap existing between the current and desired customer behavior, which is indispensable for development of circular economy in Poland. The added value of this paper/research to the existing knowledge relates to:

- a new proposition for defining social responsibility of consumers including a widened scope of decisions and innovative behavior (CnSR)
- creation of a theoretical model for shaping changes in consumer behavior, encompassing 4 stages in research of a social experiment character in relation to CnSR, using a quadruple helix model
- indicating a way of shaping change leaders in consumer behavior for development of circular economy
- undertaking of discussion as to development of consumer needs and growth factors in rationality of consumer behavior, and their change in the context of circular economy.

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STRESZCZENIE

Praca jest nowatorska, zakłada się w niej istotną rolę konsumentów w rozwoju gospodarki w Polsce. Strukturę pracy, oprócz wstępu i zakończenia tworzą dwie części: poznawcza i aplikacyjna. Problem badawczy stanowi pytanie: czy konsumenci mogą wpłynąć na szybsze i bardziej efektywne wpajanie zasad gospodarki cyrkularnej w naszym kraju. Celem podstawowym pracy jest zaprezentowanie teoretycznego modelu badań i stymulacji zmian zachowań konsumentów w kierunku innowacyjnych i społecznie odpowiedzialnych (*CnSR – Consumer Social Responsibility*) dla rozwoju gospodarki cyrkularnej w Polsce. Cel pracy wykonano z zastosowaniem metody eksperymentalnej, opisu, modelowej i wizualizacji. Artykuł ma charakter normatywny.

Słowa kluczowe: CnSR, wiedza niejawna, poczwórna helisa, platforma

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SINGLES ON THE CONSUMER MARKET IN POLAND

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ABSTRACT

The socio-economic changes taking place in Poland in the twenty-first century caused, among others, the changes of the family model, which resulted in a strong increase in the number of one-person households (the so-called singles). It is estimated that the share of modern singles at different ages will increase by 2030 in a global perspective by about 20%, especially in big cities. In Poland in 2017, the fraction of these households was 23.5%. Satisfying the various needs of singles should shape the market of goods and services addressed to this group of consumers. The author, using the data from the GUS (Central Statistical Office) household budget surveys in 2015 and the results of a co-authored own survey carried out in 2017, investigated consumer behaviours of singles from large cities in two age groups of young people and opinions about the degree of preparation of the Polish market, including the Internet, to meet their needs. Diagnostic and application usefulness is expressed by information important for the marketing activity of enterprises that will adjust their market offer to the expectations of a growing group of Polish one-person households.

Key words: single, consumer behaviour, market, marketing
JEL codes: D12, G5,J11

INTRODUCTION

Technological, demographic and economic changes result in the emergence of new trends in consumer behavior. A. Dąbrowska [2011] noticed that such behavioral trends as care for health, comfort, sensuality, individuality, the need to make contacts are related to the behavior of singles to a large extent. The consumption structure depends on the changes in the composition of households. According to Eurostat data (EU-28), in 2017 in Europe the share of one-person households amounted to 33.6% [Eurostat 2019]. Thus, demographic changes will be forcing new consumption behaviors and, consequently, differentiation in market offers.

In October 2015, the European Commission presented the New Market Strategy for Singles, which was to bring benefits for both consumers and entrepreneurs, including assistance in undertaking start-up activities, facilitating international economic cooperation or limiting obstacles in the lives of older people [European Commission 2019]. The announcement of this Strategy resulted from the observation of changes on the market of goods and services, which were more often "visited" by lonely people. Consumer market for singles has become of massive character, because representatives of these households, especially those over 25 years of age more often than marriages with children were buying the food, alcoholic beverages, clothing. Their spending on transport, tourism and entertainment services were much higher.

Young people spend more on goods that serve pleasure, the middle generation can afford extravagant shopping. However, it should be emphasized that

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such behaviors mainly concern people living in cities and with relatively high incomes [Lubowicki-Vikuk 2011].

The Polish subject literature is not very current, it covers the years of the beginning of consumerism development, which provoked the author to analyze the factors that determine, among others, the expenditures of one-person households in the middle of the second decade of the 21st century.

The aim of the work is to diagnose consumption behaviors of young people aged 25–45, living in the largest Polish cities as entities on the market of goods and services. An interesting research task was, among others, to identify factors influencing the distribution of expenditures on various goals, which may interest managers who create product and service offers for a growing group of Polish singles in the role of consumers. The study used statistical data from the Central Statistical Office on household budget surveys. As a tool for statistical analysis, the analysis of distributions of respondents' opinions was used.

Single as an entity on the market

In the literature on the subject, there is no explicit definition of a group of people referred to as singles. A. Dąbrowska et al. [2018] assumed that "single is a person living without a partner or outside the family, running a one-person household". The definition of the American sociologist P.J. Stein [1976] is considered classical, according to which "a single is a woman or a man who is not married or does not live in informal heterosexual or homosexual relationship". The most frequently mentioned attributes of these people are: high education, wealth, young age (although the lower age limit is not precisely specified), a specific (independent, individual) lifestyle.

Singles in the role of consumers were given relatively little research interest.

A. Dąbrowska et al. in 2018 attempted to answer the question whether the growing percentage of one-person households in the Polish population is an increasingly visible segment of the market. Quoted authors [Dąbrowska et al. 2018] conducted an own quantitative survey at the turn of July and August 2017 using the ePanel.pl platform (n = 501 persons aged 2–45, residents of the five largest cities in Poland). The questions contained in the questionnaire made it possible to characterize the behavior of singles on the market of food products and to assess the state of the offer of these products for one-person households (singles). Respondents also assessed the level of satisfaction with the services dedicated to singles in the fields of culture, gastronomy, tourism, recreation and sport, proposed through the Internet and by traditional means. Figure 1 presents a graphic illustration of the distribution of the subjective assessments of the financial situation, strong determinants of purchase decisions.

Authors [Dąbrowska et al. 2018], summarizing the results of a study conducted in 2017, stated that "only every fourth respondent-single from a large city found on the market offer dedicated to singles", only some respondents noticed an improvement in relation to e.g. packaging/package size for singles. A noticeable part of people representing this market segment (62%) buys food online. Although, more than half of respondents positively assessed their financial position, the opinions about tendency to pay a higher price for goods delivered via the Internet was quickly divided and undifferentiated by gender, age, place of residence, and housing conditions.

An important element in recognizing the needs of singles on the consumer market is the share in the structure of consumption of services, which, as revenue increases, become a point of growing interest for them. Figure 1 presents the distributions of the use of various types of services in dynamic terms, which made it possible to compare the interest in the services market in 2015–2017.

Focusing on the selection of the "currently, I use it more often" and "I rarely use it" variants, it can be noticed that in 2017, compared to the previous two years, over 1/5 singles more often used recreational and sports services, tourism organized without the help of travel agencies, catering and cultural. It may be a surprise that financial considerations have limited the use of many services by about 10–15%. The fewest restrictions concerned services related to running a home (a decrease of 5%). Quite symptomatic with regard to singles at an early age, living in the largest cities in Poland, was the non-use of services offered in the Internet, and such proceedings concerned, for example, 55% of respondents (insurance services), 50%

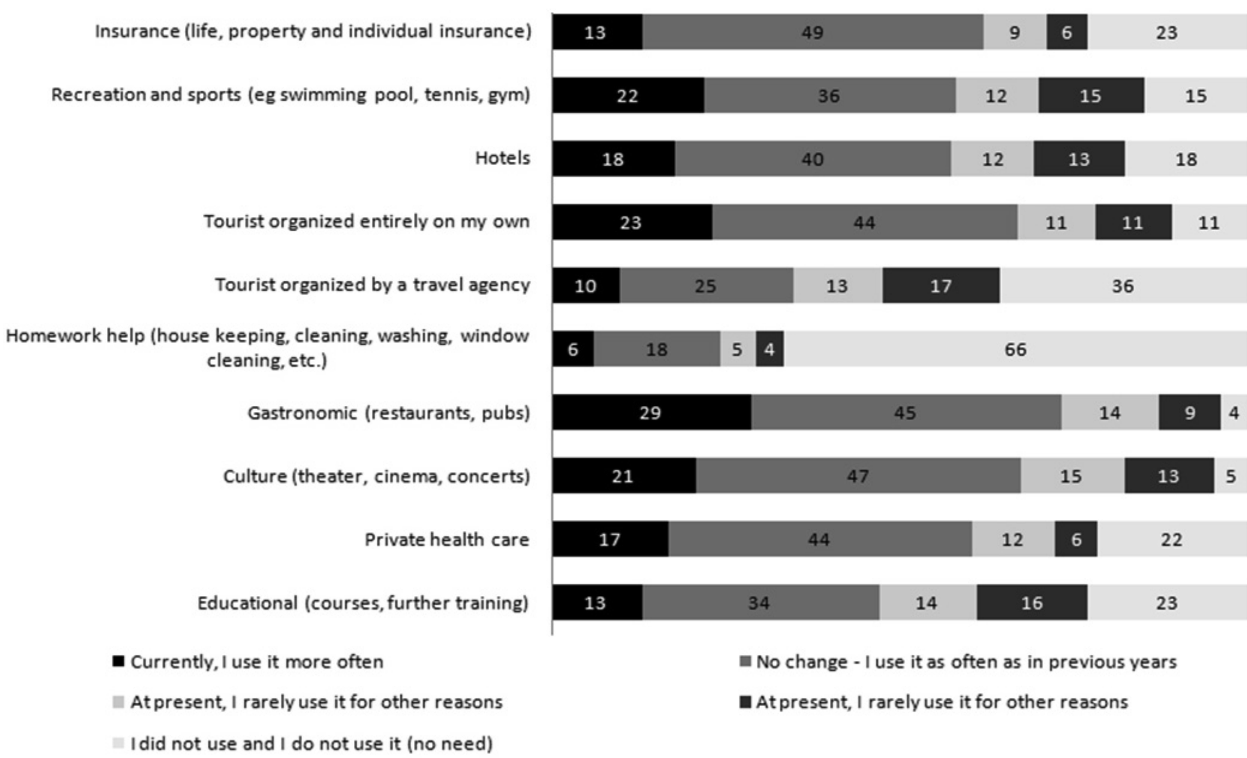

Fig. 1. Graphic illustration of distributions of assessments concerning use of services by singles in 2015–2017.

Source: Prepared on the basis of study 2017.

(private health care) or 60% (recreational and sports services). Mobile applications are becoming more and more popular, facilitating the use of cheap vacation places (e.g. Airbnb), gastronomic services (e.g. Delicious.pl) and transport services (e.g. city-bike – Veturilo). A new trend in the change of lifestyle is fostered by the new trend on the services market and the increasing popularity of conscious and collaborative (community) movement.

Opinions of respondents from one-person households are different (depending on) due to typological features of singles. The first step in assessing the strength of opinion dependence on the market of goods and services dedicated to singles was the use of Cramer's correlation coefficient [Luszniewicz and Słaby 2008][1]. Table 1 presents numerical assessments of this measure of correlation strength for nine of the 21 questions contained in the questionnaire of selected opinions, which may serve as a basis for confirming the assumption that consumer behaviors of singles on the commodity and services market are varied, although the respondents were homogeneous as to their age and place of living.

The statistical independence was marked in bold when treating the sample as a random sample. In this situation, the assessment of the dependence strength should be treated as only approximate.

Based on the results presented in Table 1, it should be noted that despite the relative homogeneity of the sample, the vast majority of opinions were only slightly dependent on respondents' age. For five cities in total, dependence of opinions on gender was stronger than on the age. Gender of respondents only living in Warsaw turned out to be a stronger factor differentiating opinions if compared to the ratings of people living in the other four cities. Such a situation was related

[1] When the correlation table was 2×2, this correlation strength measure was determined with the Yates's correction.

Table 1. Numerical assessments of Cramer's factor (dependence of opinion on gender and age)

Specification	Warszawa, Kraków, Poznań, Gdańsk, Wrocław *n* = 501		Warszawa *n* = 180		Kraków, Wrocław, Poznań, Gdańsk *n* = 321	
	sex	age	sex	age	sex	age
Have you met the promotions of goods or services directed to singles?	0.138	0.056	0.131	0.030	0.140	0.061
Do you think that information about the offer of goods and services for singles is sufficient?	0.078	0.036	0.046	**0.064**	0.095	0.029
In your opinion. has the market of goods and services for singles changed in recent years?	0.143	0.126	0.174	**0.123**	0.131	0.153
Do you think there are such food products that should be available / sold in smaller packages?	0.050	0.026	0.020	0.062	0.090	0.000
Do you buy food products labeled as healthy, organic, bio?	0.182	0.126	0.220	0.280	0.226	0.165
Do you think that the market currently offers food products adjusted by the basis weight / / size of the packaging for the needs of a one-person household?	0.037	0.025	0.032	**0.021**	0.043	0.042
Do you buy products using mobile devices?	0.111	0.021	0.186	0.019	0.075	**0.042**
How would you rate your level of satisfaction with the services ordered online and without the help of the Internet?						
Culture	0.150	0.122	0.239	0.268	0.113	0.084
Gastronomy	0.123	**0.068**	1.079	**0.122**	0.120	0.063
Tourism	**0.116**	**0.113**	0.169	**0.076**	**0.191**	0.142
Recreation and sport	0.072	**0.091**	0.196	**0.142**	0.158	0.066
How do you spend your free time during weeks / weekends (alone or with other people)?						
Culture	0.085	**0.039**	0.070	0.068	**0.098**	**0.096**
Gastronomy	0.108	**0.078**	0.140	0.100	0.164	**0.072**
Tourism	0.112	**0.040**	0.198	0.040	**0.072**	**0.050**
Recreation and sport	**0.037**	0.037	0.142	0.025	**0.091**	0.197

Source: own study using Statistica12.

in particular to the assessment of the satisfaction of singles from the use of culture, gastronomy, tourism, recreation and sport services.

The behaviour of singles on the market of goods and services according to research by the Central Statistical Office

The basis for the diagnosis of consumption patterns of singles were data from a secondary source, which are the results of the Central Statistical Office household budget surveys [GUS 2016]. In 2015, 7455 one-person households (singles) took part in the household budget survey [Household Budget Surveys 2015, 2016], which accounted for 20.0% of all households participating in the survey in 2016. Persons aged 25–35 accounted for 8.1% of 606 one-person households, and at the age of 36–45, 5.2% (391 households).

The subject of the analysis was a one-person household (single) and the diagnosis covered persons with higher education, in two age groups: 25–35 and 36–45, residing in five selected large Polish cities, whose population exceeded 500,000 people (Warsaw, Wrocław, Kraków, Poznań and Gdańsk).

A statistical analysis of the structure of expenses and the state of ownership (flat, luxury items, tourist equipment, insurance, cash management) was also made. The current state of research related to this group of households in Poland can be assessed as insufficient to predict trends in changes in the consumption of goods and services, which is important for planning the activities of enterprises providing services to this group of consumers.

Table 2 presents the structure of a selected sample of one-person households in Poland based on data from the CSO household budget surveys in 2015 in three demographic cross-sections (age, education, place of residence). The analysis of the situation in the five largest cities was based on background of 16 cities with a population of 200,000–499,999 people.

It is worth noting that within 584 one-person households, people with higher education aged 25–45 constituted only 1.8% of a random sample of all households surveyed in 2015, which is difficult to consider as a representative group in the household budget survey performed by the Central Statistical Office in 2015 in relation to all singles aged 25–45 in Poland. According to J. Czarnecka [2012], there are around five million singles in Poland aged 25, who live mostly in big cities, work in large corporations and have their own businesses. Singles are more and more purchasing power, which is noticed by the construction sector offering a growing propositions on the market of hotel-type flats with outside services (e.g. communal laundries, canteens, cafes, mini kindergartens as sharing economy in housing estates).

Respondents living in 16 large cities represented 12 provinces (without Lubuskie, Opolskie, Podkarpackie and Warmińsko-Mazurskie), whereby the distribution of their number in these provinces by age groups was not identical. There were definitely fewer singles aged 36–45, which can also be seen in the distribution by sex and age. Women aged 25–35 predominated, men aged 25–35 accounted for 37.7% of all singles in this age group. However, the distribution by gender was almost identical for both age groups. Table 3 presents the characteristics of the distribution of singles with higher education by age.

In 2015, the average age of a single aged 25–35 was just a little over 29 years. Because the distribution by age was almost symmetrical, the study included also singles younger than 29.2 years of age and older,

Table 2. Number of one-person households in selected Polish cities in household budget surveys

Number of singles with higher education			
Age	**25-35**	**36-45**	**Total**
Poland, total	404	180	584
16 cities (200,000 inhabitants and more) in total	294	96	390
Biggest cities*: Warszawa	120	34	154
Poznań	20	7	27
Gdańsk	21	7	28
Wrocław	27	8	35
Kraków	37	14	51

* the remaining 11 citiesare: Łódź, Szczecin, Bydgoszcz, Lublin, Katowice, Białystok, Gdynia, Częstochowa, Radom, Sosnowiec, and Toruń.

Source: own study based on CSO household survey [GUS 2016].

Table 3. Descriptive characteristics of distributions by age in cities, 25–35 and 36–45 years, 2015

Variants	Descriptive statistics (16 cities, 25-45 years)						
	valid *N*	average	median	min.	max.	variability coefficient (%)	asymmetry coefficient
2015							
25–35	294	29.2	29.0	25.0	35.0	10.4	0.3
36–45	96	39.9	40.0	36.0	45.0	7.2	0.2

Source: own study based on data from household budget survey CSO [GUS 2016] using Statistica12.

but not higher than 35 years. A similar situation occurred in the group of 36–45 years: the average age was almost 40 years with a slight predominance of older singles, but within 36-45 years. The diversity in both schedules was small, which means that the age of singles with higher education "focused" around average 29.2 and 39.9, respectively.

In the sample of one-person households that took part in the household CSO budget survey in 2015, one can notice the vast predomination of households from Warsaw, 120 farms of the so-called singles from this city constituted 26.4% of the surveyed population of respondents in this type of households among 584 in the total scale. The share of singles from 16 large cities accounted for almost 67% of the sample of one-person households in total that filled out budget books in 2015.

Analysis of selected conditions of consumption

The main factor differentiating the state and structure of consumption is the material situation. The Central Statistical Office in the study of household budgets uses the concept of disposable income. The average disposable income of the analyzed one-person households from 16 largest cities in Poland amounted to PLN 3590.1 in 2015 in the group of singles aged 25–35 and PLN 4804.4 in the older age group (36–45 years). Based on the designated measures of disposable income distribution structure and available income of one-person households in two age groups, it was found in relation to 16 large cities that "younger" singles had lower income in 2015 than respondents aged 36–45 in average terms [Dabrowska et al. 2018].

High asymmetry coefficients in both age groups indicate a very strong asymmetry, which means that arithmetic means are overstated. In both age groups, singles were dominated by households with relatively lower incomes, although in both groups there were several one-person households with relatively high income, both disposable and available ones what "raised" the arithmetic mean value. It should be emphasized that the income from self-employment on a monthly basis was, on average, very low in both age groups. The varied level of disposable income results in a different level of spending on consumer goods and services. The highest expenses are borne by both age groups of singles for housing maintenance. In the further position in the younger age group, these are food expenses, in the older one – costs of transport. The results of the household budget survey confirm that in addition to expenditure on housing and food needs, expenses related to leisure time, i.e. spending on restaurants and hotels, as well as on recreation and culture are important items.

Total expenditure distributions and spending on goods and services of one-person households in 16 large cities were characterized by relatively low asymmetry, therefore the interpretation of their average level is justified on the basis of the arithmetic average, which indicated that at this level the total expenditure of younger singles in 2015 was around PLN 600 monthly lower than the average spending of singles aged 36–45. Average spending on goods and services was also lower in one-person households aged 25–35 by around PLN 500.

With regard to expenditures for individual purposes, a comparative analysis should be made separately for two groups of households in which distributions for various purposes were characterized by low and high asymmetry. In the first case, the comparison of average expenses was made on the basis of the arithmetic mean, the second on the median. The first group of goals includes: food, expenses for restaurants and hotels. The remaining goals were included in the second group, in which most of the expenditure was at a relatively low level, but there were more households spending significantly more, which caused an excessive arithmetic average. Based on numerical levels of the median, it should be stated that in relation to alcohol and tobacco consumption expenditure, home use and health, half of the surveyed singles aged 25–35 spent more than those from such households, but aged 36–45.

In relation to other goals, the situation was reversed, half of the younger singles had spending smaller than singles aged 35–45. It should be noted that in both of these age groups no expenditure on education was recorded in 2015. Relatively the most in both groups was spent on home use (over PLN 500 and almost PLN 700). Relatively the least was spent on housing equipment, alcoholic beverages, health and clothing and footwear, while expenditures for these purposes were lower among singles aged 36–45 (excluding housing equipment). The characteristics of the way of managing the money was characterized by choosing one of five variants of the answer: 1 – we can afford a certain luxury; 2 – we have enough for us without special savings; 3 – it is enough for every day, but we have to save on more serious purchases; 4 – we have to be very economical on a daily basis; 5 – not enough even for basic needs.

The distributions of the grades indicated a slight asymmetry, so about 68% of the singles tested (within one standard deviation from the average scale in both age groups) believed that their money management allows them to meet their needs ("it is enough for every day, but we need to save for more serious purchases", "enough for many things, without special savings"). The scale averages did not differ in both age groups and were closer to the number 3. The level of satisfying the needs was assessed by selecting the appropriate number on the scale: 1 – good; 2 – rather good; 3 – average, neither good nor bad; 4 – rather bad; 5 – bad; 6 – not applicable, no such a need. The worst assessed was the satisfaction of the needs in the field of education and training, while the highest in the field of nutrition – these ratings were higher in the group of single-seniors.

Singles (one-person households) rated their financial situation well in 16 cities – 57% of singles aged 25–35 and 58% aged 36–45 together declared good and very good ratings. The five-degree scale is dominated by the answers that the material situation is on average level and that it has not changed, these were especially the singles at the age of 36–45. The improvement was mainly felt by people aged 25–35. The fact that the material situation will improve over the next 12 months convinced a larger percentage of younger singles, but also a larger percentage in

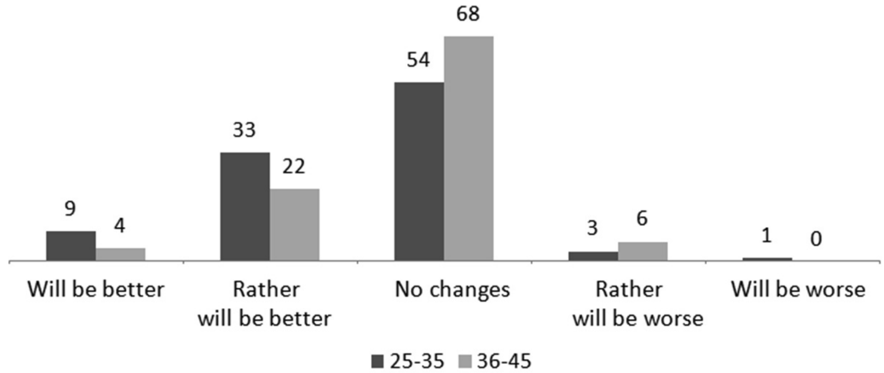

Fig. 2. Graphic illustration of the expected assessment of change in the material situation over the next 12 months
Source: own study based on CSO household survey [GUS 2016].

this age group was convinced that it will not change. Singles aged 36–45 were more pessimistic. One can say that one-person households of young and middle-aged people not only assessed their financial situation well, but also rather did not worry about the future. Negative assessments were expressed by a small percentage of people (Fig. 2). These results did not foretell the increase in the purchasing power of one-person households.

Summing up, on the basis of data from 16 major Polish cities, it was possible to state that in 2015, the conditions (incomes) and consumption behaviors (through expenditure level), as well as cash management self-assessment and the standard of living of singles aged 25–35 were slightly worse than singles about 10 years older. It should be emphasized that in both age groups there was an uneven amount of income, because there were people with very high incomes in those groups. It should also be noted that income in only a few cases was the result of self-employment. In assessing the satisfaction of needs, the worst assessments concerned meeting of the needs in the field of education, while the highest were related to food.

In the assessment of the standard of living, it should be stated, based on the results from the CSO research, that households did not have equipment, apartments, second homes or holiday plots, which could be considered as luxurious. There were relatively low amounts of money spent for three types of insurance (for life, health, housing), more money for these purposes was spent by singles aged 36–45. It should be emphasized that the surveyed households were not burdened with a loans. It is worth noting that according to the Credit Information Bureau (BIK) in 2015, 560 thousands of young borrowers with various family situations had 938.8 thousands of loans. These people in the following years had to pay PLN 6.2 billion [PolskieRadio24 2016].

Summing up, data on the situation of households of singles living in five large Polish agglomerations confirmed that incomes, expenses and self-assessments of the financial situation were at a relatively lower level in the group of people aged 25–35 than 36–45. Nevertheless, it was income that would satisfy basic needs, but for more serious purchases, the singles had to save. It was possible to notice that about 30% of respondents, especially younger ones, optimistically anticipated favorable changes in the next 12 months, i.e. in 2016.

CONCLUSIONS

Based on the results of the own study, opinions on the market of goods and services dedicated to one-person households living in the largest cities in Poland and their satisfaction with the current offer varied despite the homogeneity of the investigated group (age 25–45, major cities, higher education). The dependence of opinions on typological features (age, gender, current income level) was relatively small. Only every fourth single from a big city encountered an offer dedicated to this group of consumers in the analyzed years. Respondents indicated that the offer is growing, but still insufficient, e.g. in the field of food they indicated the lack of smaller packaging/lower weight of food products.

Data obtained from CSO's surveys of the household budgets also indicated good financial situation. Total expenditures as well as money spent on goods and services were lower in the 25–35 age group. Singles of the age from this group spent more on alcohol, housing and health, while older people from the age group of 36–45 years spent more on satisfying other needs.

Consumption behaviours of Polish singles aged 25–45, living in large cities, more and more often illustrate global consumer trends, e.g. faster shopping and preferences for organic products. A relatively large share of expenditure on tourism and recreation depicts the choice of wellness as an aspiration to a work-life balance, which they also consider to be a status symbol. Singles are increasingly inclined to consume as a part of collaborative consumption. This is due not only to the low income of younger singles (25–35), which forces themselves to save money in the face of the need for some more expensive products, but also to join the movement for sustainable development and social responsibility, which is expressed in various online forums.

At present, there is visible a slow reaction of companies to the needs of people living alone. This market segment, especially for young people, is growing in importance. Lack of empirical recognition of opinions about market preparation for senior singles living in urban and rural areas should constitute further research tasks for representatives from various scientific disciplines, in particular for marketers. Disturbing are the opinions of singles from metropolitan areas that the use of culture, private healthcare and insurance services, despite of the good mostly declared financial situation in 2016 if compared to 2015 is smaller. Reasons indicated by the respondents "burden" the producers and tenderers of various types of services, because the market has not yet adapted to dynamically changing needs in the conditions of changes in the family model and changes in the lifestyle of consumers.

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SINGLE NA RYNKU KONSUMPCJI W POLSCE

STRESZCZENIE

Zachodzące w XXI wieku zmiany społeczno-ekonomiczne w Polsce spowodowały m.in. zmianę modelu rodziny, co skutkuje silnym wzrostem liczby jednoosobowych gospodarstw domowych (tzw. singli). Szacuje się, że udział współczesnych singli w różnym wieku wzrośnie do 2030 roku w ujęciu globalnym ok. 20%, szczególnie w wielkich miastach. W Polsce w 2017 roku frakcja tych gospodarstwa domowych wynosiła 23,5%. Są to nie tylko osoby młode, ale również w średnim wieku oraz seniorzy. Zaspokojenie zróżnicowanych potrzeb singli powinno ukształtować rynek dóbr i usług adresowanych do tej grupy konsumentów. Autorka wykorzystując dane z badań budżetów domowych GUS w 2016 roku oraz wyniki współautorskiego badania własnego wykonanego w 2017 roku, zbadała zachowania konsumpcyjne singli wielkomiejskich w dwóch grupach wiekowych oraz opinie o stopniu przygotowania polskiego rynku, w tym internetowego do zaspokojenia ich potrzeb. Użyteczność diagnostyczna i aplikacyjna wyraża się informacjami ważnymi dla działalności marketingowej przedsiębiorstw, które będą dostosowywać swoją ofertę rynkową do oczekiwań rosnącej grupy polskich jednoosobowych gospodarstw domowych.

Słowa kluczowe: singiel, zachowania konsumpcyjne, rynek, marketing

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RETAIL NETWORKS AS A PLACE OF PURCHASE – THE EXAMPLE OF LARGE CITIES IN POLAND

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ABSTRACT

The article presents the results of the study investigating the purchasing behaviour of the residents of six large Polish cities (Warsaw, Wrocław, Katowice, Poznań, Białystok, and Gdańsk). Specifically, the study concentrates on the consumer shopping preferences with regard to grocery retail chains, pointing to the general differences and similarities, as well as gender- and age-specific tendencies. The study was conducted between 2016 and 2017 among 1970 respondents. This article also presents data from various reports of the research institutions from Poland and Europe: PMR, Nielsen, Ronald Berger, Euromonitor International, GfK Polonia. Despite problems with their comparability, they multidimensionally reflect the discussed issues that relate to the functioning of Polish retail trade, and they indirectly point to the purchasing behaviour of residents of Polish cities.

Key words: consumer buying behaviour, retail chains, shopping in retail chains
JEL codes: D02, L81, F18

INTRODUCTION

The aim of the article is to present a comparative analysis of shopping preferences with regard to retail food chains located in six large Polish cities. This article presents research results from own empirical study, as well as from various reports published by research institutions located in Poland and other European countries. These are for example: PMR, Nielsen, Ronald Berger, Euromonitor International, and GfK Polonia. Despite the problems with their comparability, they multidimensionally reflect different issues with regard to Polish retail trade and they indirectly indicate consumers' purchasing behaviors.

Own empirical study, which was conducted between 2016 and 2017 among 1970 residents of six large Polish cities (Warsaw, Wrocław, Gdańsk, Poznań, Białystok, and Katowice), adds to the literature in the field, by presenting both cross-city comparisons, as well as gender- and age-specific findings.

The dynamic development of Polish trade in the 21st century is mainly characterized by the dynamic development of different forms of sales and the changes in the number of retail chain stores in the FMCG retail trade characterized by [Karasiewicz and Nowak 2010, Reinartz et al. 2011, Karasiewcz and Trojanowski 2016]:
– diversity of store formats and their availability,
– a decrease in the number of retail stores due to the systematically decreasing number of traditional stores, including traditional grocery stores (Table 1),
– a systematic increase in the number of discount stores and convenience stores, as well as the level of sales value (Tables 2, 3),
– a changing value structure of the market share of individual store formats.

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These changes are also a derivative of changes in global retail, and in consumers' buying behavior, who prefer to buy goods quickly, conveniently, easily, for lower price, and with good quality [Kalyanam et al. 2006, Anitsal and Anitsal 2011, Raport Zakupy przyszłości 2017]. Such tendencies are confirmed by the results of the survey studies which report that Polish consumers in their everyday shopping value the quality of the product (77.7%), price (74.3%), ecological values of the product (27.4%), and place of origin of the product (20.7%) [Teraz Polska... 2018]. These expectations are met, in their opinion, by competing discount and convenience store chains [Kucharska et al. 2015]. In the case of Poland, the growth of the importance and increased financial performance of such stores has been also affected by the ban on Sunday trading. It activated these stores to use more appealing forms of sales promotion in the final days of the week and to increase communication frequency with their consumers. It should be also added here that according to the Global Powers of Retailing study that has been conducted since 2018, up to 90% of purchases in the world are made physically in traditional stores (brick and mortar retailers). On the other hand, different studies have shown that, on average, from 1 dollar spent in traditional stores, 56 cents is the effect of various types of virtual interactions that take place during the purchasing process [Global Powers of Retailing 2018]. The report "Global Convenience Retailing" by Planet Retail RNG also predicts that in the next five years convenience chains will be among the fastest growing in terms of value of revenues, giving way only to discount stores. At the same time, authors of the report indicate that this growth will be at the level of almost 5% (in discount stores of almost 6%), while at the same time the increase in online food sales is expected to exceed 17%.

Tables 2 and 3 illustrate the changes in the form of various revenue-shapes, and the value shares of those stores in Polish retail market. It can be observed that

Table 1. Number of retail stores in Poland in 2012–2018 (thousand)

Type / Year	2012	2013	2014	2015	2016	2017	2018
Stores total	318	312	304.3	298.3	283.3	271.3	262.4
Grocery stores	151	145	141.9	137.7	134.0	127.3	119.1
Traditional store	119	111	103	98	91	83	78
The value of sales in retail trade in billion PLN	219.4	220.6	224.6	227.8	231.3	241.3	251.5

Source: W Polsce działa... [2018].

Table 2. FMCG retail stores by operational formats – valuable market shares (%)

Type / Year	2012	2013	2014	2015	2016	2017	2018*	2019*	2020*
Hypermarkets	13	13	12	11	11	11	10	10	10
Supermarkets	20	21	22	22	23	24	25	25	25
Discount stores	19	21	23	24	26	27	28	29	30
Convenience stores	2	3	3	4	4	5	6	6	6
Traditional franchise stores	9	10	11	11	11	12	12	13	13
Traditional stores	31	27	23	21	18	15	13	11	9
Other	6	6	6	6	6	6	6	6	6

* forecast
Source: W Polsce działa... [2018].

Table 3. Retail trade turnover in Poland by format (billion PLN)

Type / Year	2012	2013	2014	2015	2016	2017	2018*	2019*	2020*
Hypermarkets	32	33	34	33	33	33	33	33	33
Supermarkets	27	28	29	31	32	34	36	37	38
Discount stores	41	47	51	55	58	64	68	71	75
Convenience stores	11	12	15	16	18	21	23	26	29
Traditional franchise stores	28	29	32	35	38	40	42	42	43
Traditional stores	53	49	44	41	39	38	36	35	34

Source: Roland Berger, Polski rynek handlu spożywczego 2010–2020, 2016.

the revenues of discount chains are systematically growing, while the turnover of traditional stores is falling down.

The growing importance of discount stores is particularly visible in recent years, when after a period of stagnation, the increase in the number of such stores and their share in the overall retail stores is common (Fig. 1). Such trends derive from very attractive price offers, high quality of offered food products, and a convenient location and conditions for shopping [Chan et al. 2011]. This is particularly visible and appreciated by consumers in large cities.

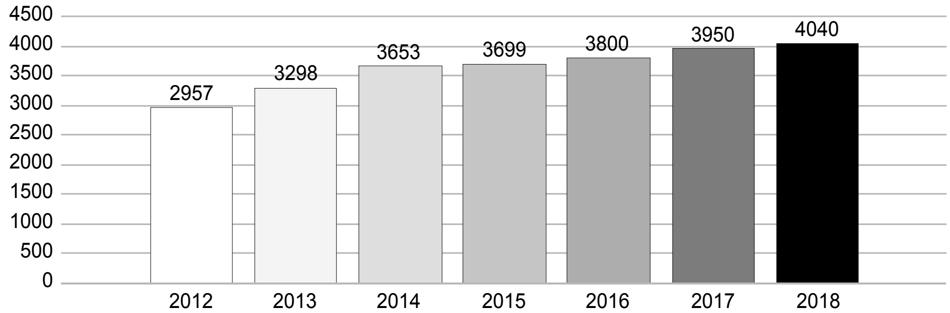

Fig. 1. The number of discount stores in Poland in 2012–2018

Source: Roland Berger, Polski rynek handlu spożywczego 2010–2020, 2016, Lista 500, Rzeczpospolita 2013–2018; DGP 11.01.2017 nr 11.

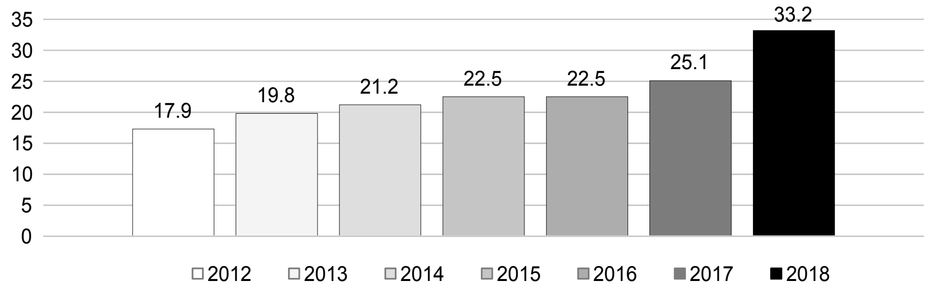

Fig. 2. The share of discounters in retail sales in 2012–2018

Source: Roland Berger, Polski rynek handlu spożywczego 2010–2020, 2016, Lista 500, Rzeczpospolita 2013–2018; DGP 11.01.2017 nr 11.

The analysis of the purchase preferences in retail chains in large cities in Poland

The article presents the results of a study that examined purchase preferences in the retail food chains reported by residents of large cities in Poland. The research was carried out by the Product Marketing Department of the Poznan University of Economics and Business between 2016 and 2017, among residents of six selected cities. The research method used was direct interview technique with a quota selection of the research unit that included: gender, age and place of residence – district (Wrocław, Gdańsk, Białystok in 2016 and Warsaw, Poznań, Katowice in 2017). Sample size for each of the cities ranged from 320 to 450 people. IBM SPSS Statistics ver. 22 was used to analyze the research data. In each of the tests, an identical measurement instrument was used – a categorized interview questionnaire. The article presents the results of the purchase preferences with regard to retail food store chains. Both general cross-city comparisons are presented, as well as the analysis of the gender- and age-specific variances.

Table 4. Purchase preferences in retail networks in various cities in total

Retail networks	Warszawa	Gdańsk	Wrocław	Białystok	Poznań	Katowice
	% of responses					
Biedronka	50	38	64	69	66	49
Tesco	30	45	36	6	50	36
Lidl	15	40	47	40	21	41
Carrefour	14	21	11	14	–	12
Top Market	13	–	–	–	–	–
Auchan	13	–	13	31	11	18
Żabka	11	23	10	5	17	9
Simply Market	7	–	–	–	–	–
Leclerc	5	–	10	–	–	–
Fresh Market	5	7	–	–	–	–
Kaufland	–	–	17	–	8	11
Sklepy osiedlowe	–	–	11	–	–	–
Real	–	4	8	–	–	22
Stokrotka	–	–	–	27	–	–
Lewiatan	–	–	–	19	–	9
Pss Społem	–	–	–	10	–	–
Piotr i Paweł	–	5	–	5	26	–
Netto	–	30	–	–	12	–
Intermarche	–	1	–	–	–	–
Aldi	–	–	–	–	–	11
Chata Polska	–	–	–	–	5	–

Source: own research.

Among the retail food chains that have been identified in all studied cities (which are: Biedronka, Tesco, Lidl, and Żabka), Biedronka was the most popular place of purchase. It is the most frequently indicated place of purchase by residents of Warsaw (50% of responses), Wrocław (64% of responses), Bialystok (69% responses), Poznan (66% of responses), and Katowice (49% responses). Only residents of Gdańsk declared that the most popular network is Tesco (45% responses), followed by Lidl (40% of the responses), and Biedronka (38% responses). The high position of Biedronka in most of the studied cities, results from the growing popularity of discount stores as a place to shop, and from the dynamic growth of this network, which in 2018 grew to the number of 2820 stores in Poland [Biedronka ma już... 2019].

The Lidl network is second most often indicated food retail chain in Wrocław, Katowice (47% and 41% responses); it is slightly less popular in Poznań and Warsaw (21% and 15% responses). In Warsaw and Poznań, the second most visited retail network is Tesco (30% and 50% responses). Interestingly – compared to other cities, this network is not very popular in Bialystok – only 6% of residents declare shopping there, and the Auchan network (31% responses) and the Stokrotka network (27% responses) are definitely more popular in this location, which is contrary to choices made in other studied cities.

In the case of the city of Poznań, the top three of the most popular retail chains include Piotr i Paweł (26% of responses), which commenced operations in 1990 in Poznań and is strongly associated with this city (despite nationwide coverage). On the other hand, in the case of Warsaw residents, the preferences for shopping in retail networks (apart from the most popular Biedronka chain) are at a similar level for Lidl, Carrefour, Top Market and Żabka chains (15%, 14%, 13%, 13%, 11% of responses respectively).

The third most popular grocery retail convenience store in analyzed cities is the retail chain named Żabka. The analysis of the responses of the residents of the studied cities, indicates that the Żabka network enjoys the greatest popularity among the residents of Gdańsk (23% of responses) and Poznań (17% of responses), and the smallest – among residents of Białystok (5% of responses).

The city specific differences can be observed with regard to retail chains such as Netto, Kaufland, Stokrotka, Piotr i Paweł, and Real. These retail chains were mentioned only in individual cities. Namely, Netto was mentioned only in Gdańsk (30% of indications), Kaufland in Wrocław (17% of responses), Stokrotka in Białystok (27% of responses), Piotr i Paweł in Poznań (26% of responses), and Real in Katowice (22% of responses). The popularity of these networks often comes from their local character (which affects the emotional attachment of residents and their shopping preferences, as in the case of the Piotr i Paweł in Poznań), and also from a number of stores in a given network in the city (as in the case of the Stokrotka chain in Bialystok).

Gender-specific differences in shopping preferences with regard to grocery retail chains in large cities

The gender-specific research results that concern shopping preferences of residents of large cities with regard to the grocery retail chains are presented in Table 5.

The gender-specific analyses of the preferences of residents of big cities indicate mixed results. For example, the Biedronka network, the most popular retail chain in most cities, is relatively more popular among women than men in Warsaw, Wrocław, Poznań and Katowice (respectively 54% to 46%, 73% to 54%, 70% to 62% and 52% to 46% of responses). In Gdansk, the Biedronka chain is slightly more popular among men (a difference of 8. p.p.), while in Białystok, gender practically does not differentiate shopping preferences in this network (the difference between women and men is 1 p.p.).

In turn, when analyzing gender-specific results for the Tesco chain, it can be noticed that men living in Wrocław, Poznań and Katowice indicate higher preferences for this network when compared to women (respectively 41% to 31%, 23% to 19% and 38% to 34% of responses). However, in Gdańsk and Białystok, this network is slightly more popular among men (41% to 43% and 7% to 4%, respectively). In the case of Warsaw residents, the popularity of the Tesco chain among women and men is at a similar level (29% to 30% of responses).

Table 5. Preferences of residents of large cities in Poland and the gender of the respondents

Retail networks	Warszawa		Gdańsk		Wrocław		Białystok		Poznań		Katowice	
	% of responses											
	gender											
	K	M	K	M	K	M	K	M	K	M	K	M
Biedronka	54	46	36	42	73	54	69	70	70	62	52	46
Tesco	29	30	47	43	31	41	7	4	19	23	34	38
Lidl	16	14	41	38	51	43	40	40	48	52	41	40
Carrefour	13	15	21	20	7	16	15	12	–	–	14	10
Top Market	8	22	–	–	–	–	–	–	–	–	–	–
Auchan	14	12	–	–	13	14	34	28	11	11	17	19
Żabka	12	9	24	21	6	12	3	7	14	21	10	8
Simply Market	6	8	–	–	–	–	–	–	–	–	–	–
Leclerc	7	3	–	–	13	8	–	–	–	–	–	–
Fresh Market	5	5	8	7	–	–	–	–	–	–	–	–
Kaufland	–	–	–	–	15	19	–	–	9	8	12	9
Sklepy osiedlowe	–	–	–	–	12	10	–	–	–	–	–	–
Real	–	–	5	4	10	7	–	–	–	–	18	26
Stokrotka	–	–	–	–	–	–	25	29	–	–	–	–
Lewiatan	–	–	–	–	–	–	20	17	–	–	11	6
PSS Społem	–	–	–	–	–	–	14	6	–	–	–	–
Piotr i Paweł	–	–	5	5	–	–	3	7	27	26	–	–
Netto	–	–	27	33	–	–	–	–	12	10	–	–
Intermarche	–	–	2	1	–	–	–	–	–	–	–	–
Aldi	–	–	–	–	–	–	–	–	–	–	8	15
Chata Polska	–	–	–	–	–	–	–	–	6	5	–	–

Source: own research

The analysis of gender-specific preferences with regard to the Lidl network shows that in the majority of studied cities (Warsaw, Gdańsk, Wrocław, Katowice) this network enjoys a relatively greater popularity among women than men – only in Poznań it is slightly more popular among men (52% to 48% of responses). Gender does not differentiate the popularity of the Lidl network in Białystok.

Similar results were achieved with regard to Żabka, another most often mentioned retail network. Żabka stores are more popular shopping destination for men in Wrocław, Białystok and Poznań (respectively 12% to 6%, 7% to 3% and 21% to 14% of responses). In turn, in Warsaw, Gdańsk and Katowice, Żabka network is slightly more popular among women (differences around 2–3 p.p.).

The gender-specific analyses also raise a question about the overall extent of differences between women and men. The smallest differences in preferences with regard to a chain choice between women and men is observed in Gdańsk (maximum 6 p.p. in the case of Biedronka) and Bialystok (also a maximum of 6 p.p. in the case of the Auchan network). In relation to other chains, the differences between women and men are insignificant. In turn, the largest differences in purchasing preferences between women and men are observed in Wrocław in the case of the Biedronka network, which is preferred by 73% of surveyed women and 54% of men (difference of 19 p.p.). The second biggest difference occurs in Warsaw, in relation to the Top Market network, which is popular among 22% of men and 8% of women (a difference of 14 p.p.).

Age-specific differences in shopping preferences with regard to grocery retail chains in large cities

Another interesting observations are made with regard to the extent to which residents' age differentiates preferences of consumers purchase. Respondents' preferences with respect to retail chains (Biedronka, Lidl, Tesco, Żabka) with regard to age are presented in Table 6.

The analysis of the data presented in Table 6 allows to formulate general conclusions regarding age differentiation of consumer preferences in relation to both specific chains and to the examined cities. When analyzing individual cities, it can be noticed that the preferences of consumers from separate age segments in relation to the Biedronka, Lidl, Tesco and Żabka networks are differentiated.

Respondents of 29 years old and younger indicated that the most popular network (out of four analyzed) is Biedronka, and those responses were observed regardless of the city studied (although the highest percentage of indications is observed in Białystok – 74%, Katowice – 67%, and Poznań – 64%). The least popular of the analyzed networks among respondents up to 29 years old is – depending on the city – Lidl (for Warsaw residents), Tesco (for residents of Białystok and Poznań) and Żabka (for residents of Gdańsk, Wrocław and Katowice).

On the other hand, when analyzing the segment of consumers aged 30–39 in terms of the most popular retail network, Biedronka was most popular among residents of Warsaw, Wrocław, Białystok, and Poznań; Biedronka and Tesco in the case of respondents from Gdańsk; and Tesco among residents of Katowice. Respondents of this age segment, least often indicated Żabka (regardless of the examined city), although the differences vary considerably (in Wrocław and Białystok only 3% of residents in the analyzed segment prefer this network, in Gdańsk as much as 23%, and in Warsaw – 19%).

Residents aged 40–49, in most of the surveyed cities, prefer shopping in the Biedronka network (45–67%). Only the inhabitants of Gdańsk showed different attitudes – they mainly prefer the Tesco and Lidl chains (48% of responses). The Żabka chain is the least popular within this segment of consumers (this is especially visible in the case of respondents from Wrocław, Katowice or Warsaw), and – interestingly – the Biedronka network achieved the same results among residents of Gdańsk. However, it should be noted that the percentage of indications in the analyzed category clearly differs – Biedronka from the four analyzed networks is the least popular in Gdańsk (27% of indications), and the Żabka network in Wrocław (2% of indications).

Analyzing the segment of consumers aged 50–59 with reference to four indicated and analyzed retail chains, it can be observed that - as in the case of other consumer's segments – Biedronka is the most popular in most of the studied cities (in Warsaw, Wrocław, Białystok, Poznań). For the residents of the of Gdańsk and Katowice, the most popular network is Tesco. In turn, the least popular network (from four analyzed), is Żabka, although similarly to the previous age segment, the values are clearly differentiated. In the case of Warsaw residents, none of the consumers of the analyzed age segment indicated this network, and in Gdańsk as many as 20% of respondents prefer this network (even though it is the least popular).

In the segment of senior consumers (60+) – as in the case of other segments – in most of the examined cities – the Biedronka network (Warsaw, Wrocław, Białystok, Katowice, Poznań) enjoys the greatest popularity. Only in Gdańsk, this consumer segment prefers much more the Tesco network. The least preferred network, regardless of the city studied, is Żabka.

Table 6. Preferences in terms of retail chains residents of large cities in Poland and the age of the respondents (% of responses)

Retail networks	Age				
	>29 years	30–39 years	40–49 years	50–59 years	60+
			Warszawa		
Biedronka	36	56	55	50	53
Tesco	9	18	50	47	37
Lidl	11	19	13	11	17
Żabka	15	19	5	0	9
			Gdańsk		
Biedronka	38	39	27	38	44
Tesco	27	39	48	61	49
Lidl	40	37	48	35	40
Żabka	26	23	33	20	17
			Wrocław		
Biedronka	62	63	67	56	71
Tesco	52	37	43	40	18
Lidl	47	54	62	56	30
Żabka	18	3	2	8	10
			Białystok		
Biedronka	74	68	65	77	65
Tesco	5	4	7	8	6
Lidl	38	47	43	35	38
Żabka	10	3	7	2	0
			Poznań		
Biedronka	65	61	52	58	75
Tesco	16	31	18	14	20
Lidl	61	46	55	39	44
Żabka	26	16	11	13	14
			Katowice		
Biedronka	67	43	45	41	44
Tesco	39	48	42	44	33
Lidl	46	32	25	41	31
Żabka	13	6	9	11	5

Source: own research.

SUMMARY

The research results conducted among residents of selected large cities in Poland, in the context of their preferences in relation to retail food chains, allow to formulate key conclusions [Wrzesińska-Kowal 2016]. Out of all analyzed chains, four are the most preferred networks among residents of all cities – these are: the Biedronka, Lidl, Tesco, and Żabka. Such results might be a consequence of the wide availability of these networks in the examined large cities, and their dynamic expansion (especially with regard to Biedronka, Lidl, and Żabka). As far as all the indicated retail chains are concerned, the most popular in majority of cities is Biedronka, followed by Tesco and Lidl. Interestingly, in the studied cities, consumer preferences are strongly interconnected with local brands that originate from these cities [Dimitrova et al. 2016]. This note applies to the city of Poznań and two chains – Piotr i Paweł, and Chata Polska, which both originated in Poznań, and to Białystok and Stokrotka chain which originated in Białystok. Gender-specific analyses show that generally gender does not differentiate consumer preferences with regard to retail chains, although some differences exist within specific networks. For example man prefer Top Market in Warsaw to much higher degree than women.

Much larger differences exist with regard to the age of the respondents. It is particularly visible with regard to the following chains – Biedronka, Lidl, Tesco and Żabka. The age-specific differences in shopping preferences in particular cities vary considerably.

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SIECI DETALICZNE JAKO MIEJSCE DOKONYWANIA ZAKUPÓW – NA PRZYKŁADZIE DUŻYCH MIAST W POLSCE

STRESZCZENIE

W artykule zaprezentowano wyniki badania weryfikującego zachowania nabywcze mieszkańców sześciu dużych polskich miast (Warszawy, Wrocławia, Katowic, Poznania, Białegostoku i Gdańska). W badaniu skoncentrowano się szczególności na preferencjach zakupowych konsumentów w odniesieniu do sieci sklepów spożywczych, wskazując na ogólne różnice i podobieństwa, a także tendencje związane z płcią i wiekiem. Badanie przeprowadzono w latach 2016–2017 wśród 1970 respondentów. W artykule zaprezentowano również dane z różnych raportów instytucji badawczych z Polski i Europy: PMR. Nielsen, Ronald Berger, Euromonitor International, GfK Polonia. Pomimo problemów z ich porównywalnością odzwierciedlają omawiane zagadnienia związane z funkcjonowaniem polskiego handlu detalicznego i pośrednio wskazują na zachowania zakupowe mieszkańców polskich miast.

Słowa kluczowe: zachowania nabywcze konsumentów, sieci handlowe, zakupy w sieciach handlowych

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SOCIAL CONVERGENCE IN THE EU-28 COUNTRIES IN THE LIGHT OF THE IMPLEMENTATION OF THE EUROPE 2020 STRATEGY. THE DEA APPROACH

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ABSTRACT

Increase in convergence of the European Union countries has been focal for the European Union leaders, from the very beginning. The aim of the study is to examine whether any social convergence occurred in the EU-28 from 2010 to 2016, in the context of the implementation of the recommendations and the social policy objectives formulated under the Europe 2020 strategy. This article is based on an overview of the literature on the subject and the statistics of Eurostat. The methods of assessing the effectiveness of objects is DEA and sigma convergence. It is a new approach to convergence measurement based on the assessment of the efficiency diversification of the European Union countries and it has clearly been the value added to the analyses conducted so far. The obtained results in the scope of the estimation of the effectiveness were then compared to the existing results produced with the use of the methods generally recognized and employed in the literature. Conclusions were presented in the final part of the study.

Key words: convergence, Europe 2020 strategy, DEA approach
JEL codes: O11, O15, I25, J21

INTRODUCTION

The issues of increasing the degree of convergence of the countries of the European Union have been in the centre of attention of the organization overlooking that topic practically from the beginning of its existence [Markowska-Przybyła 2011, Głodowska 2013]. It is reflected in all the projects and policies, especially in the policy concerning communities whose main aim is to eliminate developmental disparities. The strategy "Europe 2020", which has been implemented since 2010, enlists three priorities: (a) intelligent development based on knowledge and innovations; (b) sustainable development based on supporting the economy which uses resources effectively and is friendly to the natural environment; (c) development fostering social inclusion including high level of employment oriented towards ensuring social and territorial coherence. Detailed and measurable goals have been established within the aforementioned projects, which are meant to be realized by the countries of the European Union by 2020. Within the social area the goals are as follows: limiting the number of people most at risk of poverty to 20 million, increasing the index of employment for people between the ages of 20 and 64 to 75%, limiting the number of people leaving the education system prematurely to 10%, and finally increasing to 40% the number of people between the ages of 30–34 with higher education. The issues of maintaining the convergence and its measurement become particularly significant in the

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context of achieving the above mention goals. The aim of the work is researching whether convergence took place within the social area in the countries of the EU-28 between 2010 and 2016 in the context of realizing the recommendations formulated within the "Europe 2020" strategy. In the research the following hypothesis was put forward: convergence takes place in the social area in the countries of EU-28.

METHODOLOGY OF THE CONDUCTED RESEARCH

First of all, what was examined was whether convergence in social area in EU-28 countries occurs, on the basis of three selected indicators: material deprivation, an employment indicator and the percentage of people with higher education [Eurostat 2018]. A classic approach was employed in calculations [Batóg 2010]. Indicators describing spatial differentiation of the examined variables were calculated on the basis of positional coefficient of variation on a ratio scale: $V_Q = \frac{Q_3 - Q_1}{Me}$, where Q_3, Q_1, are the fist and the third quartiles, Me is a median or an (unweighted) arithmetic mean ($\overline{x}$) from the value of the examined variable; standard deviation (S) according to the equation $S = \sqrt{\frac{\sum_{i=1}^{28}\left(x_{it} - \overline{x}\right)^2}{28}}$; average deviation according to the equation $d = \frac{\sum_{i=1}^{28}\left|x_{it} - \overline{x}\right|}{28}$; coefficient of variation according to the following equation $V_s = \frac{s}{\overline{x}}$, $V_d = \frac{d}{\overline{x}}$. What was employed to measure sigma (σ) convergence[1] was standard deviation of the natural logarithms of the level of the analyzed variables x_{it} from arithmetic mean values ($\overline{x}$) in time t according to the following equation $\sigma = \sqrt{\frac{\sum_{i=1}^{28}\left(\ln x_{it} - \ln \overline{x}_t\right)^2}{28}}$. Sigma convergence shows how the regions got closer to one another in time and what proves its occurrence is the drop in the value of standard deviation from one period of time to another [Bal-Domańska 2009].

Secondly, the DEA (Data Envelopment Analysis) method was employed, which allowed for obtaining a value added to the conducted research in a form of the implementation of a new approach to the measurement of convergence based on the evaluation of the differentiation of the effectiveness of the EU-28 countries. It is a method of examining the effectiveness based on the function of production constituting an empirical envelope of data [Guzik 2009]. The DEA model based on variable economies of scale seems to be the most suitable one in regards to the specificity of the conducted research but, above all, in terms of the differentiation of the EU-28 countries in reference to their GDP from the absolutists point of view. The conducted research involves, in the standard approach, the application of the method of evaluating the effectiveness of particular subjects to determine the effectiveness of entire economies. What can be established on the basis of the data envelopment analysis is: an indicator of the effectiveness of objects, a level of economies of scale reached by the subjects, benchmarks for inefficient objects, the form and the structure of optimal technologies, inputs and outputs critical to the given objects. The empirical application of the DEA method became extremely popular in such areas as: the financial and insurance sectors, cultural institutions, healthcare facilities, sport and tourism, trade, transportation, production, legal sector, crime detection and prevention, company and product rankings as well as the analysis of the effectiveness of the performance of listed companies [Sathye 2001, Barros and Mascarenhas 2005, Kumar and Gulati 2008]. The DEA method was applied in this research to evaluate the differentiation of the EU-28 countries in the social area. The next steps in the DEA method are as follows [Guzik 2009]:

– a selection of evaluated objects (countries) O_1, …, O_J,
– set N of the input as well as set R of the output through which the effectiveness of the objects will be evaluated

[1] The method of the measurement of sigma convergence was employed in this paper, which does not exhaust all the possibilities of measurement of the analyzed phenomenon.

– the value of particular results as well as particular inputs in particular objects:
  yrj – the value of the result of an r-kind (r = 1, ..., R) in a j-object (j = 1, ..., J),
  xpi – the value of the expenditure of the p-kind (p = 1, ..., N) in a i-object.

A set of objects is usually assumed to be (almost) homogenous.

The following mathematical equations were employed to calculate results:

− an equation based on the input-oriented CCR model could be described as follows:

$$h_i = \sum_{r=1}^{R} u_r y_{ri\rightarrow} \rightarrow \max \sum_{p=1}^{P} v_p x_{pi} = 1,$$

$$\sum_{r=1}^{R} u_r y_{ri} - \sum_{p=1}^{P} v_p x_{pi} \leq 0,\ u_r \geq 0,\ v_p \geq 0$$

− an equation based on the output-oriented CCR model describes the following dependencies:

$$h_i = \sum_{r=1}^{R} u_r y_{ri} \rightarrow \min \sum_{p=1}^{P} v_p x_{pi} = 1,$$

$$\sum_{r=1}^{R} u_r y_{ri} - \sum_{p=1}^{P} v_p x_{pi} \geq 0,\ u_r \geq 0,\ v_p \geq 0$$

where:
h_i – the effectiveness of an object i (i = 1, …, n),
u_r – the value pertaining to particular effects (r = 1, …, R),
v_p – the value pertaining to particular effects (p = 1, …, P).

Since it is possible to make this model both input-oriented and output-oriented, which seems suitable from the point of view of the choice of methodology, the choice of the DEA model is the most fitting. The input-oriented model is based on the premise that a given country should strive to minimize the input in order to achieve a given effect. On the other hand, the output-oriented model is based on striving to maximize these effects with a given value of the input. From the economic point of view both aforementioned approaches together are a good example of the principle of reasonable (effective) management, the realization of which is based on striving to maximize the effectiveness, regardless of the applied way of achieving it.

However, the choice of the first of the presented variants seems to be more justified, since social goals are set at the same level or similar levels. It stems from the fact that the European Union strives to standardize the policy regarding equalizing the socio-economic development, whereas, the cost of input born by the member countries may significantly fluctuate. The period of analysis encompassed years from 2007 until 2016. The input-oriented DEA model was applied to 2007, 2010, and 2013, whereas the output-oriented DEA model was applied to 2010, 2013, and 2016. This paper was created on the basis of publications on the subject as well as statistical data taken from the Eurostat database.

THE PHENOMENON OF CONVERGENCE AND ITS TYPES

Convergence describes a process in which poorer countries (regions) become similar to richer countries (regions) making differences between them smaller, where poorer countries develop faster relative to richer countries [Łaźniewska et al. 2011]. In a broad understanding of the term, we can enumerate so-called structural convergence, which is connected with becoming similar within economies which are alike in regards to the level of development of economical structures, including such structures as: creating GDP, employment, institutional structures or infrastructure [Batóg 2010]. The most common division of convergence in publications on the topic mentions such types of convergence as:

− beta convergence – when an economic system with a lower level of development shows a faster pace of growth in comparison to a more developed economic system;
− sigma convergence – when the difference in the income levels per capita or other economic variables diminish [Barro and Sala-i-Martin 1992];
− absolute convergence, unconditional (type β) – when poor countries or regions develop faster than the richer ones regardless of the initial level of development and conditions;
− conditional convergence, often referred to its club name – when the process of convergence refers to the group of countries or regions relatively homogenous, characterized by a similar structure and a similar level of income [Adamczyk-Łojewska 2011].

Beta convergence and sigma convergence are mutually related. The existence of beta convergence is a necessary condition, but in itself insufficient, to the existence of sigma convergence [Łaźniewska et al. 2011]. The phenomenon of convergence and its measurement is the subject of numerous scientific publications, both theoretical and empirical ones. In this paper an attempt at examining the occurrence of convergence in the social area in the EU-28 countries has been made.

THE MEASUREMENT OF CONVERGENCE IN SOCIAL AREA IN EU-28 BETWEEN 2010 AND 2016

Poverty and social exclusion are inextricably connected with social areas of every economy. Poverty is of economic character and means the inability to satisfy all of one's needs. The index of material deprivation[2] was chosen to measure poverty. It is counted on the basis of the results of the European research in the area of income and people's living conditions (EU-SILC) [Niezbędnik statystyczny 2015]. It defines the percentage of people in households who indicate the inability to satisfy at least 3 of 9 of their needs such as: (a) paying for a week's holiday away from for the whole family at least once a year; (b) a meal including meat, chicken, fish or their vegetarian equivalent every second day; (c) heating to keep the home adequately warm; (d) unexpected financial expenses; (e) mortgage or rent payments, utility bills, hire or purchase instalments or other loan payments; (f) owning a color TV set; (g) owning a car; (h) owning a washing machine; (i) owning a telephone (including a mobile telephone). The interpretation of this indicator is as follows: the number of people at risk of material deprivation grows together with the increase of the indicator. The results of statistical data analysis for this indicator are presented in Table 1.

Table 1. Selected indicators of positional coefficient of variation for material deprivation in EU-28 between 2010 and 2016

Indicators	2010	2011	2012	2013	2014	2015	2016	Relative change 2016/2010
Maximum	45.7	43.6	44.1	43.0	33.1	34.2	31.9	0.70
Minimum	0.5	1.2	1.3	1.4	0.7	1.1	0.8	1.60
Max./ min.	91.4	36.3	33.9	30.7	47.3	31.1	39.9	0,44
Q_1	4.7	5.0	5.2	5.1	5.0	4.5	4.2	0.89
Me	6.4	7.2	8.9	8.9	7.9	7.0	5.7	0.89
Q_3	12.3	13.6	15.2	15.0	13.7	13.8	12.6	1.03
Coefficient of variability (V_q)	0.59	0.60	0.56	0.56	0.55	0.67	0.74	1.25
Median	10.6	11.0	11.8	11.5	10.5	9.6	8.8	0.82
Standard deviation (S)	10.2	10.1	10.1	9.8	8.0	7.7	7.5	0.74
Coefficient of variability (V_s)	0.96	0.92	0.86	0.85	0.76	0.80	0.85	0.86
Average deviation (d)	7.3	7.4	7.7	7.2	6.0	5.9	5.7	0.78
Coefficient of variability (V_d)	0.68	0.67	0.65	0.62	0.58	0.61	0.65	0.96
σ-convergence	1.04	0.97	0.96	0.90	0.91	0.85	0.90	0.87

Source: own analysis on the basis of data from Eurostat [2018].

[2] There is also an indicator of deepened material deprivation which entails the inability of satisfying at least 4 of the 9 mentioned needs.

What can be concluded on the basis of the outcomes of the research is that the maximum value as well as the median decreased for the analyzed variable only after 2012. At the same time it is difficult to unambiguously determine the direction of the changes for the minimum value, since it fluctuated over time. Standard deviation decreased, which can indicate the occurrence of sigma convergence. A graphic illustration of σ-convergence is presented on Figure 1.

The evaluation of the occurrence of sigma convergence can be made on the basis of the analysis of the direction of changes in standard deviation from Table 1. There is a decreasing trend which can be a reason for the occurrence of sigma convergence. The differentiation among countries in reference to the researched variable has decreased.

The second analyzed variable in this paper is the percentage of people between 30–34 years of age with higher education. The results are presented in Table 2.

What can be concluded on the basis of the outcomes of the research is that the maximum, the minimum and the median values for the measured variable

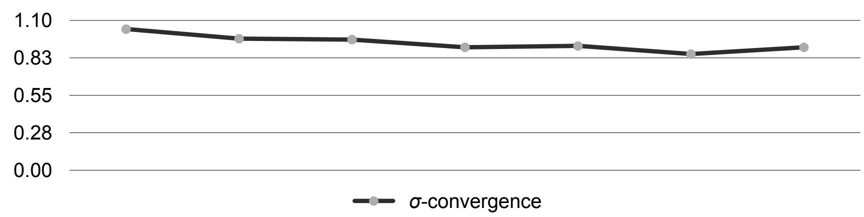

Fig. 1. σ-convergence on the basis of domestic indicators of material deprivation for EU-28 countries between 2010–2016
Source: own analysis on the basis of the data from Table 1.

Table 2. Selected indicators of positional coefficient of variationfor the percentage of people between 30–34 years of age with higher education in EU-28 from 2010 to 2016

Indicators	2010	2011	2012	2013	2014	2015	2016	Relative change 2016/2010
Maximum	50.1	49.7	51.1	52.6	53.3	57.6	58.7	1.17
Minimum	18.3	20.3	21.7	22.5	23.9	25.3	25.6	1.40
Max./min.	2.7	2.4	2.4	2.3	2.2	2.3	2.3	0.85
Q_1	24.4	26.0	26.7	28.8	31.4	32.1	33.2	1.36
Me	34.8	37.2	39.2	40.6	41.6	42.0	43.2	1.24
Q_3	43.4	43.7	44.4	44.3	45.0	46.6	46.5	1.07
Coefficient of variability (V_q)	0.27	0.24	0.23	0.19	0.16	0.17	0.15	0.56
Median	34.3	35.3	36.5	37.9	39.5	40.5	41.3	1.20
Standard deviation (S)	10.1	9.8	9.9	9.5	9.1	9.2	9.0	0.89
Coefficient of variability (V_s)	0.29	0.28	0.27	0.25	0.23	0.23	0.22	0.76
Average deviation (d)	9.0	8.8	8.9	8.4	7.7	7.7	7.6	0.84
coefficient of variability (V_d)	0.26	0.25	0.24	0.22	0.19	0.19	0.18	0.69
σ-convergence	0.31	0.29	0.29	0.26	0.24	0.24	0.23	0.74

Source: own analysis on the basis of data from Eurostat [2018].

increased systematically in the analyzed period of time. The variability of the indicators decreased, the standard deviation declined, which means that the differentiation among the EU-28 countries significantly diminished in reference to the researched variable.

What can be concluded on the basis of the variability indicators (Table 2) as well as the graphic illustration of σ-convergence (Fig. 2) for this variable is that convergence occurred in the analyzed period of time.

The third variable analyzed in this paper is the indicator of employment. The results of the statistical analysis are presented below in Table 3.

What can be concluded on the basis of the data presented in Table 3 is that the maximum values for the analyzed variable increased systematically in the analyzed period of time. The median values increased only after 2013, whereas the minimum values fluctuated in the analyzed period of time. They decreased

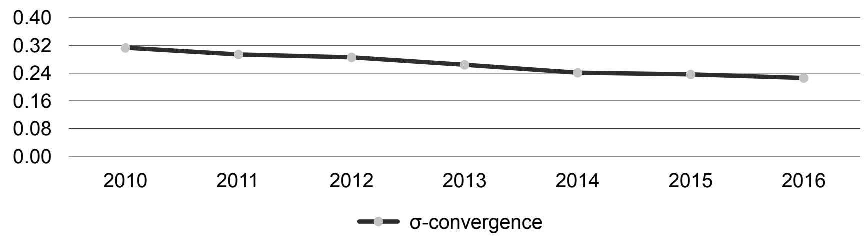

Fig. 2. σ-convergence on the basis of domestic indicators for the percentage of people between 30–34 years of age with higher education in EU-28 from 2010 to 2016

Source: own analysis on the basis of the data from Table 2.

Table 3. Selected indicators of positional coefficient of variationfor employment in EU-28 between 2010 and 2016

Indicators	2010	2011	2012	2013	2014	2015	2016	Relative change 2016/2010
Maximum	78.1	79.4	79.4	79.8	80.0	80.5	81.2	1.04
Minimum	59.9	59.6	55.0	52.9	53.3	54.9	56.2	0.94
Max./min.	1.3	1.3	1.4	1.5	1.5	1.5	1.4	1.08
Q_1	64.3	63.6	63.6	64.8	66.3	67.6	68.5	1.06
Me	67.2	67.9	68.2	67.2	67.7	69.1	70.5	1.05
Q_3	73.1	73.4	72.7	73.3	73.7	74.4	75.6	1.03
Coefficient of variability (V_q)	0.07	0.07	0.07	0.06	0.05	0.05	0.05	0.71
Median	68.1	68.0	68.0	68.0	68.9	69.9	71.0	1.04
Standard deviation (S)	5.4	5.8	6.2	6.5	6.2	5.9	5.8	1.07
coefficient of variability (V_s)	0.08	0.08	0.09	0.10	0.09	0.08	0.08	1.00
average deviation (d)	4.7	4.8	5.0	5.2	4.9	4.6	4.4	0.94
coefficient of variability (V_d)	0.07	0.07	0.07	0.08	0.07	0.07	0.06	0.86
σ-convergence	0.08	0.08	0.09	0.10	0.09	0.09	0.08	1.00

Source: own analysis on the basis of data from Eurostat [2018].

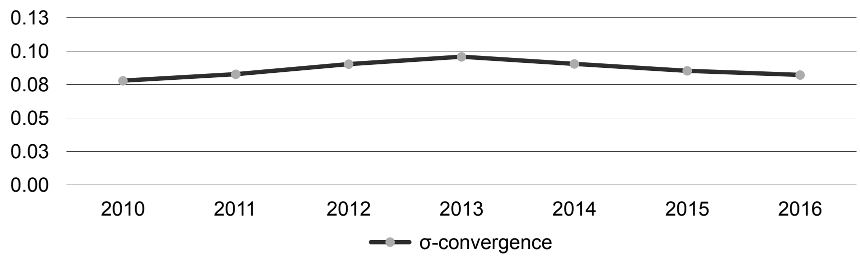

Fig. 3. σ-convergence on the basis of domestic indicators for employment in EU-28 between 2010 and 2016
Source: own analysis on the basis of the data from Table 3.

after 2013 and grew after 2016. The variability of the indicators and the standard deviation did not show a declining trend in the analyzed period of time. It indicates the lack of occurrence of sigma convergence which is confirmed further in Figure 3.

THE RESULTS OF THE ANALYSIS CONDUCTED WITH THE HELP OF THE DEA METHOD

The value of the standard deviation for the indicator of Lambda effectiveness of the EU-28 countries as presented in Table 4 for 2007, 2010 and 2013 (when it comes to input) and for 2010, 2013 and 2016 (when it comes to output). Any discrepancy among the years stems from the necessity of taking into consideration the time delay related to input influencing output. Data in Table 4 was taken from calculations of effectiveness based on the DEA model in three different variants: constant economies of scale (taking into account the input-oriented model or the output-oriented model since in both cases the outcomes were the same); variable economies of scale taking into account the input-oriented model; variable economies of scale for the output-oriented model. Arguments in favor of applying each of the three models can be given, hence, calculations regarding the value of standard deviations were made on the basis of all three models and they can be found in Table 4. However, the most adequate of the models seems to be the DEA model based on variable economies of scale since when it comes to the specificity of the of the conducted research, which was, above all, based on the application of the method of evaluating the effectiveness of objects (not determining the economic effectiveness of micro-objects, but entire national economies of the EU-28 countries).

Table 4. Comparison of the value of the standard deviation in the following years2010, 2013 and 2016* depending on the applied DEA model

Years	Standard deviation* DEA 2016 ces in out**	Standard deviation DEA 2016 ves in***	Standard deviation DEA 2016 ves out****
2010	0.31535	0.27604	0.04732
2013	0.29969	0.30013	0.06568
2016	0.31084	0.35665	0.05416

Source: own analysis on the basis of data from Eurostat [2018] as well as calculations made in programme MaxDEA i MS Excel.

Explanations: * The value of standard deviation calculated for output for: 2010, 2013, 2016; and for input for: 2007, 2010 and 2013; ** Standard deviation DEA 2016 ces in out – standard deviation of the value of Lambda indicator calculated on the basis of the input-oriented DEA model and output-oriented DEA model with constant economies of scale; *** Standard deviation DEA 2016 ves in - standard deviation of the value of Lambda indicator calculated on the basis of the input-oriented DEA model with variable economies of scale; **** Standard deviation DEA 2016 ves out – standard deviation of the value of Lambda indicator calculated on the basis of the output-oriented DEA model with variable economies of scale.

What can be concluded on the basis of the data concerning the level of the indicator of the standard deviation presented in Table 4 is that when taking into account constant economies of scale (ces) regardless of the type of orientation of the model, input-oriented (inp) or output-oriented model (out)[3], the degree of differentiation among EU-28 countries was maintained at a rather consistent level from 0.29969 for 2010 (input), and 2013 (output) to 0.31535 for 2010 (input), and 2013 (output).

We can notice significantly higher differentiation and divergence when taking into consideration variable economies of scale (ves) for input-oriented model in the respectful periods, since the values of standard deviation fluctuate between 0.27604 in the first analyzed period to 0.35665 in the third one.

By contrast, when taking into account variable economies of scale (ves) for output-oriented model in the respectful periods, what draws attention is the value of standard deviation which is relatively low and diversified to a relatively small degree (from 0.04732 in the first analyzed period to 0.06568 – in the second one). It means that we cannot draw the conclusion that convergence occurs in social area in the EU-28 countries.

CONCLUSIONS

On the basis of the conducted research the following conclusions can be made:

1. It is not possible to state that convergence in the EU-28 countries occurs in the social area characterized by the three aforementioned indicators in the years between 2010 to 2016 on the basis of the statistical analysis conducted in the first part of the paper since divergence exists in the job market. The decrease in differentiation can be seen only in the case of the indicator referring to the level of education. The analysis conducted on the basis of the DEA approach gives ambiguous results. It does not prove the hypothesis stated in this paper, that convergence in the social area occurs in the EU-28 countries.
2. The results are largely influenced by the applied method of examination.
3. There is a need for more precise selection of factors affecting convergence, for which the analysis of the main components can be used.
4. When applying the DEA approach it would be useful to consider which variant is the most plausible one to analyze convergence of the socioeconomic development of the European Union countries and whether the effectiveness measured with the use of that method is determining enough in regards to convergence.
5. The DEA approach is significantly limited. First of all, when taking into account only the statistical quantitative data. Secondly, it should be noted that the total number of inputs and outputs taken into account in the analysis should not be greater than 1/3 of the tested objects (in this article: EU-28 countries), and in practice it should be even much smaller to obtain reliable results. For this reason, only three variables were included in the study. And finally, due to surprising and volatile results obtained in the situation of significant correlation and the occurrence of linear correlations within inputs or outputs or between them. The above shortcomings might account for obtaining results which are plausible only to a limited degree when applying this approach.

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[3] In both cases practically identical results were obtained in the conducted analysis.

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KONWERGENCJA SPOŁECZNA W KRAJACH UE-28 W ŚWIETLE IMPLEMENTACJI STRATEGII EUROPA 2020. PODEJŚCIE DEA

STRESZCZENIE

Kwestie zwiększania stopnia konwergencji krajów Unii Europejskiej znajdują się w centrum uwagi kierujących tym ugrupowaniem, praktycznie od początku jego funkcjonowania. Celem pracy jest zbadanie czy występowała konwergencja w obszarze społecznym w krajach UE-28 w latach 2010–2016, w kontekście realizacji zaleceń i celów polityki społecznej sformułowanych w ramach strategii Europa 2020. W artykule podjęto próbę wykorzystania metody oceny efektywności obiektów (DEA) do zbadania konwergencji w analizowanym obszarze. Następnie dokonano porównania uzyskanych wyników z rezultatami analizy konwergencji metodami ogólnie przyjętymi w literaturze, tj. konwergencji sigma. Praca powstała na podstawie przeglądu literatury przedmiotu oraz danych statystycznych zaczerpniętych z bazy Eurostatu. Zaprezentowana w opracowaniu analiza pozwoliła na uzyskanie wyników w zakresie oceny efektywności oraz ich porównanie z rezultatami badań konwergencji przeprowadzonych metodami ogólnie przyjętymi w literaturze.

Słowa kluczowe: konwergencja, strategia Europa 2020, podejście DEA

CONTENTS
SPIS TREŚCI

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Obowiązuje następujący układ pracy:

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2. **Imię i nazwisko** autora (-ów).
3. **Afiliacja** wszystkich autorów**.**
4. **Streszczenie strukturalne** pracy (600–1000 znaków).
5. **Słowa kluczowe** – do 6 słów pomocnych przy indeksacji i wyszukiwaniu, układ (od ogólnych do szczegółowych).
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7. **Tytuł, abstract** (600–1000 znaków) jako tłumaczenie streszczenia i słowa kluczowe w języku angielskim (lub polskim, jeśli cała praca jest w języku angielskim).
8. **Adres do korespondencji** – pocztowy i internetowy.

Tytuły tabel oraz ich treść, a także podpisy rysunków i legendy muszą być podane w języku polskim i angielskim, a numery tabel i rysunków – cyframi arabskimi.

Jednostki i pisownia – obowiązuje międzynarodowy układ SI, a jednostki powinny być zapisane np: $g{\cdot}dm^{-3}$ (a nie g/dm^3).

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Chełkowski, Z. (1966). Introdukcja troci do rzeki Gowienicy. Gosp. Ryb., 1(2), 18–19.

Greń, J., Kowalski, Z. (1972). Statystyka matematyczna. PWN, Warszawa.

Pisulewski, P., Strzetelski, J., Antoniewicz, A. (2009). Podstawowe założenia IZ PIB-INRA norm żywienia przeżuwaczy. [W:] J. Strzetelski (red.), IZ PIB-INRA. Normy żywienia przeżuwaczy. Wartość pokarmowa francuskich i krajowych pasz dla przeżuwaczy. Wyd. IZ PIB, Kraków, 11–20.

Patkowska, E., Konopiński, M. (2008a). Pathogenicity of selected soil-borne microorganisms for scorzonera seedlings (*Scorzonera hispanica* L.). Folia Horticul., 20(1), 31–42.

Patkowska, E., Konopiński, M. (2008b). Pathogenicity of selected soil-borne fungi for seedlings of root chicory (*Cichorium intybus* L. var. *sativum* Bisch.). Veg. Crops Res. Bull., 69, 81–92.

Turski, W. (1972). Projektowanie oprogramowania systemów liczących. Mat. konf. Projektowanie maszyn i systemów cyfrowych. Warszawa 2–5 czerwca 1971. PWN, Warszawa, 132–139.

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