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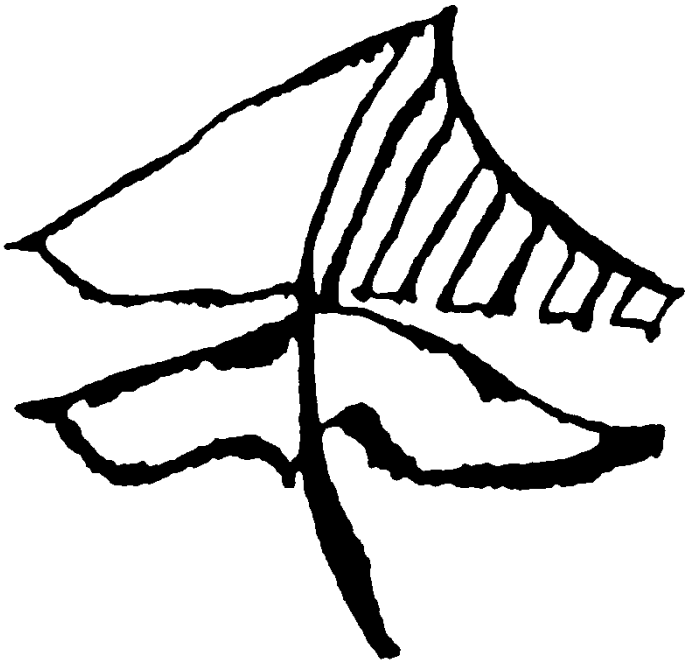

# INTERCATHEDRA

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# INTERCATHEDRA

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No 33/2 contains articles ordered first and foremost by the Editorial Board in 2017 year - approved for printing following reviewers' positive opinions and necessary amendments. A overwhelming majority of published articles was presented and discussed in some scientific conferences.

Scientific Quarterly INTERCATHEDRA are published under the auspices of IATM - International Association For Technology Management. The members of this scientific network volunteered to write their reviews, prepare materials for publication. I would like to take this opportunity to thank them for their contribution and dedication.

*Wojciech Lis*

*Agata Balińska*[1]

# CULINARY TOURISM IS A FORM OF RURAL TOURISM AIMED AT SENIORS

**Abstract**: The main objective of this paper is to analyze the opportunities of culinary tourism (food tourism) development within the framework of rural tourism (rural culinary tourism). The paper focuses on culinary tourism, the role of food products in tourism and examines the relationships between rural tourism and other forms of tourism, including culinary tourism. The paper argues that culinary tourism may potentially appeal to senior tourists. The study involved a survey conducted among active senior tourists which shows their interest in culinary tourism.

**Key words**: culinary tourism, rural tourism, seniors

## INTRODUCTION

In recent years there has been a growing interest in culinary tourism. Tourists are keen to discover local and traditional dishes and get to know how to prepare them, etc. In response to this trend tourism market offers food experience which is not just meant to meet basic biological needs but is supposed to be a leading tourist attraction. Culinary tourism is not attributed to a particular area and it can develop both in rural areas and in the city. It can be perceived as a subset of rural tourism, which will be further discussed in this study. Rural tourism is characterized by a great dynamics of development. Owners of agritourism farms and other rural facilities improve the quality of offered services and diversify and customize their offer for expectations and needs of different customer groups. Senior travellers are an important segment of the recipients of tourist services. Due to demographic changes (population aging), their proportion in society is increasing. This is why this study will explore the needs of this group of consumers.

In the individual aspect, old age is a biological phenomenon that is part of the human life cycle. From a gerontological point of view 'aging' is a dynamic process while 'old age' is a static state [Porzych et al. 2004]. Usually old age is sub-grouped into three stages: young-old (60/65 to 74), middle-old (75–84), and oldest-old (over 85). [Raport ... 2012]. The proportion of population over 65 in Polish society was 15.8% in 2015 (compared to 10.2% in 1990 and 12.4% in 2000), and it is estimated to reach 32.7% in 2050 [Rocznik ... 2016]. The available research results show that tourist activity of seniors and their needs vary and, due to the continuing growth of senior segment, the tourism providers should ensure that their products meet the senior travellers' needs [Górna 2015; Pilis et al. 2010, Alén et al. 2012; Śniadek 2007; Parzych, Gotowski 2016; Szpara 2015, Esichaikul 2012].

The objective of this study is to examine the perspectives for rural culinary tourism development. It is investigated through literature review and a survey conducted on the sample of 83 active senior tourists[2]. The selection of respondents was non-random. The interviewed group included students attending courses at the University for Seniors run by Józef Piłsudski University of Physical Education in Warsaw (AWF) in the Royal Baths (Łazienki) and Saski Garden (Ogród Saski) in Warsaw.

## RURAL TOURISM AND CULINARY TOURISM

Rural tourism is defined as a form of tourism which 'facilitates a close link between tourists and the local community, uses the assets of a village and its surrounding as well as the existing infrastructure with respect to the natural environment' [Sikora 2012]. The analysis of published

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[2] The survey was conducted by S. Górniewska for her dissertation: *Culinary Tourism as a Holiday Offer for Seniors*, defended in 2016 at Warsaw University of Life Sciences (SGGW), Faculty of Economics.

definitions of rural tourism has led to the identification of its key components [Balińska, Sikorska-Wolak 2009]:

- It takes place in truly rural areas, .i.e. where the spatial development and local population's activities are dominated by agriculture.
- It provides peace and quiet and unrestricted contact with nature.
- It uses local resources (social, natural and cultural) rationally.
- It is a small scale venture (relatively small number of venues providing food and accommodation) so that the primary agricultural function is not dominated by the tourist function.
- It builds on existing housing resources (uses local buildings through adaptation of e.g. old mills, stables, granaries, etc.) and labour resources (uses surplus labour resources).

The concept of rural tourism can be approached from two perspectives, one focusing on supply and the second- on demand (Table 1)

Table 1. Definitions of rural tourism focusing on supply and demand perspectives

| Perspective | Definitions |
|---|---|
| Supply | Form of the indigenous community's activity aiming at rational utilization of natural, cultural, housing and human resources in order to create an original and comprehensive offer of leisure activities for tourists and visitors. |
| Demand | Form of spending leisure time in rural areas with agricultural functions, individually or in small groups, with respect to natural and socio-cultural assets of the area. |

*Source: A. Balińska: Znaczenie turystyki w rozwoju gmin wiejskich na przykładzie obszarów peryferyjnych wschodniego pogranicza Polski. Wydawnictwo SGGW, Warszawa 2016, p.102.*

The development of rural tourism involves mainly the improvement of service quality, expanding horizontal cooperation between the accommodation providers (e.g. by creating network products) and enhancing diversification and attractiveness of the offer. As a result, rural tourism takes forms representative for other types of tourism as depicted in Figure 1.

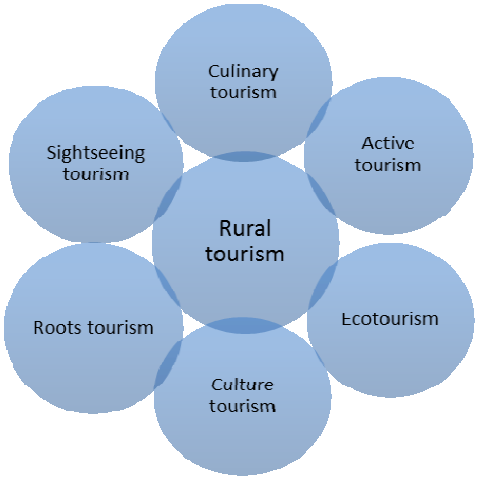


Figure 1. Rural tourism linked to other forms of tourism

*Source: own elaboration*

Depending on the creativity of the accommodation providers and the needs of the tourists, rural tourism may take the form of: active tourism (e.g. offering horse riding, bicycles, kayaks, etc.), ecotourism (e.g. in venues located near nature reserves or on ecological farms), cultural tourism (e.g. visiting open-air museums, participating in handicraft workshops), roots tourism (hosting Poles who live abroad and bringing them closer to the history and culture of their country of origin), sightseeing (visiting places of interest in a given region) and culinary tourism (exploring culinary heritage and food of the region).

Due to the adopted research topic this study will focus on culinary tourism (food tourism). Culinary tourism is part of more general consumer trend involving the quest for authenticity, fashion for cooking (best exemplified by the growing number of cookery TV shows) and eating out. Food, and especially food consumption, is an intrinsic element of travel. Tourists are more and more eager to look for tastes and flavours typical of the region they are visiting. There are also those for whom gastronomy is a major tourist attraction. The actions of public persons and organizations such as Slow Food also contribute to the creation of this type of needs [Jęczmyk, Sammel, 2012, p. 224]. The conservation of traditional dishes and flavours is also part of the European Union policy, as exemplified by the protection of traditional products in the form of Protected Designation, Protected Geographical Indication, Guaranteed Traditional Specialty. An interesting example of protection and promotion of traditional culinary assets is the European Network of Regional Culinary Heritage, with a very successful contribution of Poland and the List of Traditional Products kept by the Ministry of Agriculture and Rural Development (by 15 March 2017 it listed 1668 products).

According to A. Matusiak, 'through foods and through the world of smells and tastes the tourist can fully and thoroughly experience culture' [Matusiak 2009, p. 5]. Food and everything related to it from agricultural production through processing, packaging and storage is an attraction in itself. Culinary tourism therefore involves trips providing the experience and knowledge of:

- Traditional regional and national dishes
- Culinary novelties
- Products of famous chefs and confectioners
- Production processes of foods protected under EU legislation (PDO, PGI, GTS)
- Vegetable and fruit growing and animal husbandry typical for the region
- Local, regional and national liquors

In the latter case we can talk about enoturism (wine tourism) involving trips to wine regions, vineyard tours, wine tasting, etc. In many countries wine routes are very successful and attract not only wine connoisseurs but also people seeking original, atypical leisure activities.

According to K. Plebańczyk culinary tourism can be considered from different perspectives, [Plebańczyk 2013, p. 27]:

- Tourism in general, as it is included in the classification of UNWTO (World Tourism Organization);
- Sustainable development of agriculture and rural areas, because it contributes to the maintenance of extensive, traditional forms of production,
- Economy, because it stimulates the development of local entrepreneurship and creates new jobs.

In the author's opinion, the development of culinary tourism is extremely important from a societal point of view. On the one hand, it contributes to the conservation of regional culture and identity. On the other hand, it prevents migration from rural to urban areas and builds a sense of belonging to the 'little homeland'. Culinary tourism can be a form of both rural tourism and urban tourism. Both in urban and rural areas it is possible to create networks (clusters) that can (and increasingly often actually do) provide quality food experience combined with other memorable attractions. Rural areas, being a natural place of food production, are predisposed to develop

culinary tourism. Food tourism appeals to people of all ages with varied needs for physical activity, including seniors, especially since their culinary experiences are usually very rich. K. Szpara and M. Gwóźdź perceive culinary tourism as part of cognitive tourism and even special interests tourism [Szpara, Gwóźdź 2011, p. 222]. There is recognition that food and beverages are experiencing a growing popularity among tourists [Krupa 2010, pp 451-455; Borowska 2013, pp. 73-81]. Moreover, this form of tourism facilitates the creation of networking products.

**RESEARCH RESULTS**

The survey was conducted on a sample of 83 active senior tourists. The interviewed group was dominated by women who accounted for 74.7% of the sample. The vast majority (80%) of the respondents lived in cities of over 50,000 and only 6% were village residents. The sample consisted mostly of seniors (65-74 years), which accounted for 78% of the sample. The oldest seniors (85+) accounted for only 4% of the sample.

The majority of the respondents (90%) declared that they travelled at least twice a year. The details are presented in Figure 2.

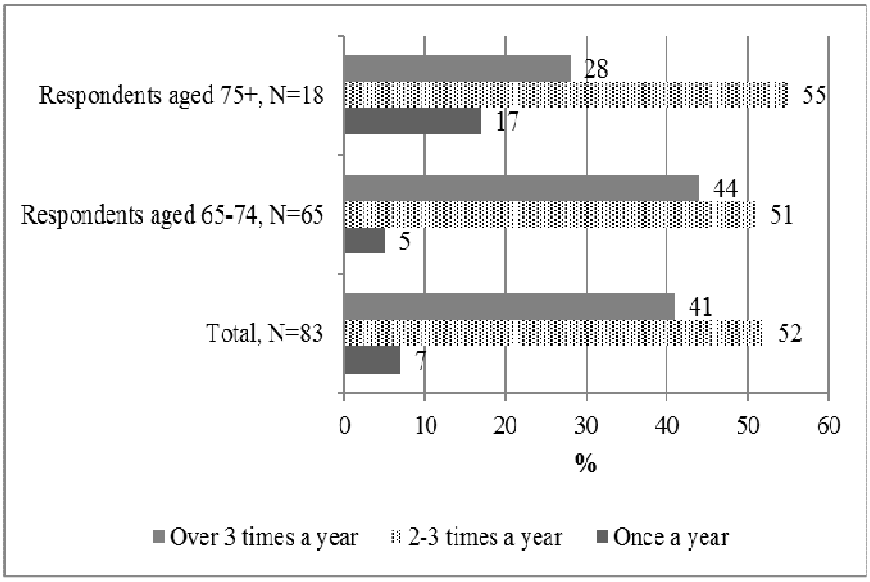


Figure 2. Frequency of travels by age.

*Source: own research*

Independently of age, most respondents went on 2-3 day breaks. Women travelled more often than men. Nearly half of the women travelled more often than three times a year. Only one in four men declared similar frequency. Most often they were relatively short 2-3 day breaks (40% of the respondents) and 4-5 day trips (37%). Only 7% reported one week travels while 16% took minimum two week holidays. The longest trips were taken to SPAs, mainly by women.

The respondents travelled mostly in low season i.e. in autumn (45%) and spring (31%). They were most often accompanied by spouses (48%), friends (33%), children and grandchildren (19%). Interestingly, the majority of respondents (63%) participated in organized trips, mainly in Poland. The purposes of the trips were diversified, as shown in Figure 3.

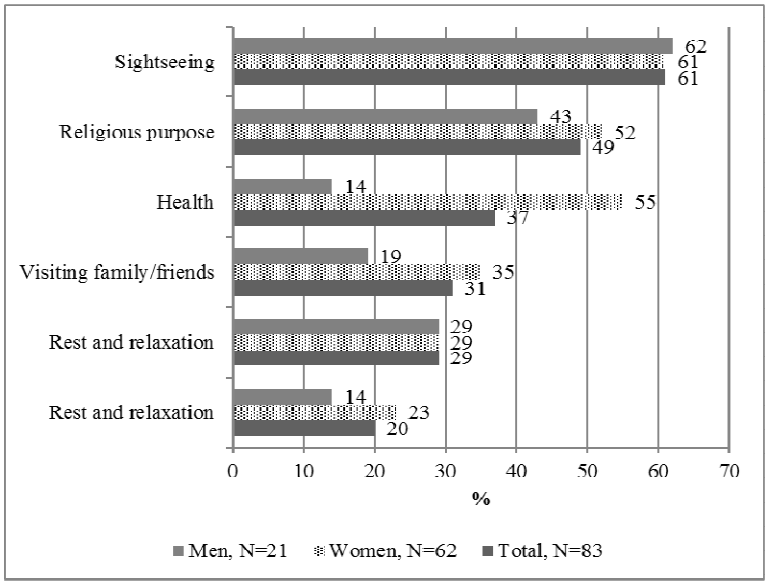


Figure 3. Purposes of trips by sex

*Source: own research*

Regardless of sex, the main purpose of the trip was sightseeing, followed by religious purpose and health purpose declared by a larger proportion of women than men. Culinary purpose was in the last position which should not be surprising as culinary tourism is not very popular yet. The idea of culinary tourism got rather positive assessment. Nearly three in four interviewed seniors (mostly women) found it attractive (Figure 4).

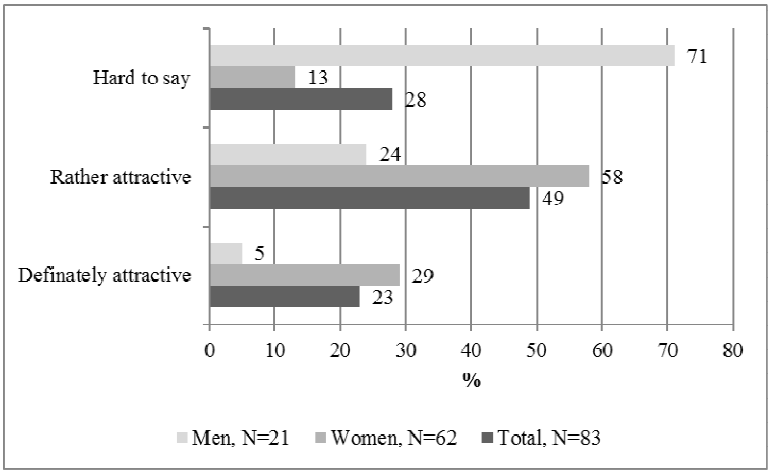


Figure 4. Attractiveness of culinary tourism assessed by respondents by sex

*Source: own research.*

Almost one in three respondents was unable to assess the attractiveness of culinary tourism and they were more likely to be men than women. It should be emphasized that none of the respondents rated it as unattractive. The majority of respondents (88%) were of the opinion that Poland has a potential for the development of this form of tourism (98% of women, 57% of men). The fact that more women than men found culinary tourism attractive can be explained, among others, by their greater experience in this field. Seniors are, after all, a group where the classic division of roles at home was common and the preparation of meals was the role of women.

The attractions of culinary trips were also assessed by the respondents, as illustrated in Figure 5.


Figure 5. The attractions of culinary trips assessed by the respondents by sex

*Source: own research.*

The interviewed women found it attractive to learn how to prepare local dishes and to visit places where they are made. Men preferred tastings and food festivals.

## CONCLUSIONS

Despite the fact that culinary tourism is still a novelty in the Polish tourism market, the conducted analysis leads to the thesis that with appropriate promotion and customizing the offer for the needs of different segments of customers food tourism should attract more and more travellers. Culinary tourism is characterized by low seasonality and senior tourists are more flexible with regard to travel time, which was confirmed by the survey results. It is therefore an attractive target group for tourism service providers.

Rural tourism can take the form of culinary tourism or even rural culinary tourism, which will take advantage of the culinary heritage and human potential of rural areas. It can also contribute to the restoration of long forgotten species and varieties of vegetables or cereals. Food experience can become the key rural tourist attraction. What's more, it can be an alternative to other local assets especially those which largely depend on weather conditions as culinary tourism is practically insensitive to the weather.

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*Hanna Doroz-Tomasik*[3], *Grzegorz Jankowski*[4]

# WATER TOURISM AS A CHANCE OF RURAL TOURISM DEVELOPMENT BASED ON THE EXAMPLE OF MAŁA PANEW VALLEY

**Abstract:** The canoe trail on Mała Panew is a less popular route of this type in Poland. It is a picturesque water route on a meandering river, characterized by a large variety of landscapes. Enterprises dealing with comprehensive canoeing services, as well as marinas being the starting and ending points of particular canoeing sections were created along the valley of the river. The facilities providing services of widely understood rural tourism are a complementary offer to active recreation on Mała Panew.

The aim of this article is to assess the natural potential of Mała Panew valley and to demonstrate the role of canoe tourism in the development of rural tourism in this area. Internet sources and bibliography are the research material. Moreover, field studies and interviews with selected travel agents were conducted.

The results show great natural value of Mała Panew valley. The existing tourist and paratouristic infrastructure, allows for tourist arrivals and professional canoeing.

Natural and non-natural values are an attractive tourist offer. Taking into account the proximity of large urban centers, while improving and intensifying marketing activities, there is a real chance to revive interest in rural tourism in Mała Panew valley and to activate local tourist businesses.

**Key words**: water tourism, Mała Panew, rural tourism, canoeing

## INTRODUCTION

Inland water tourism has long been very popular. However, only a few years ago, as a result of the liberalization of regulations (such as licenses), it has become really widespread. One of the most frequently practiced varieties is canoeing, which enables exploration of practically all the basins (lakes, water bodies, rivers, canals and other waterways). Unlike other forms of water tourism, canoeing does not require extensive infrastructure, although it undoubtedly constitutes an important element, which, together with its natural and cultural values, makes this form of tourism attractive.

Currently canoe tourism trails have been designated on most of the basins. It is estimated that in Poland there are about 15 thousand kilometers of rivers and water reservoirs, which make it possible to practice caneoing tourism (Klementowski 1995). Moreover, in 2013, about 213 waterways with a total length of 15 393 km were registered (Owsiak 2013). Mała Panew is one of them. Although it has been present in informative and advertising materials of particular municipalities and tourist institutions (e.g. PTTK) for many years it is still a little known, albeit a picturesque trail. Interesting attractions include numerous meanders and, above all, significant diversification of natural and cultural values on particular sections of the river. The functioning infrastructure (though not sufficient) in the form of marinas, camping sites, higher standard accommodation as well as catering and paratouristic facilities year by year makes the canoe trail of Mała Panew an ever increasing attraction of the areas through which the river flows. Marketing activities are also important. Companies offering canoeing, individual sections and existing

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infrastructure appears more often in industry publications promoting not only canoeing on Mała Panew but also rural tourism facilities.

In the scientific literature the issue of water tourism is taken in various aspects. It finds its place in the broader concept of tourism (Merski 2002, Lijewski et al. 2008) and it is also elaborated in foreign literature (Jennings 2007, Pollock et al. 2007). There are also scientific articles about water tourism in narrow contexts (Wyrzykowski 1994, Wiluś 2007, Nitkiewicz-Jankowska and Jankowski 2012).

On this elaboration, both inhouse and field studies have shown that both tourism (natural and non-natural) values and existing infrastructure have a certain potential. Assessment of this potential – as the main objective of this article – is a summary of mentioned studies.

**THE RANGE OF RESEARCH**

According to J. Kondracki (2001) the area of Mała Panew valley is entirely located at the Opolska Plain (318.57). The Opolska Plain extends in the right river basin of Odra River from Stobrawa north to Tarnogórski Garb being already on the Silesian Upland in the south (Ruman, 2011). It borders from the north-west with the Oleśnicka Plain, in the eastern belt with the Silesian-Kraków uplands and from the south-west with Wrocławska Proglacial Valley. The surface is covered with loam, sand, gravel, clay and loess formations overgrown with Bory Stobrawskie, where the "Smolnik" and "Bażany" reserves were created. The area of the Opolska Plain is approx. 2600 km$^2$ and it is divided by a Mała Panew River flowing through the middle, creating Obniżenie Małej Pawki in its eastern part (Kondracki, 2001).

Mała Panew (Fig.1) is the right-bank tributary of Odra River, and its length (about 132 km) and the catchment area (about 2130 km2) make it the largest Odra tributary in its upper course (Czaja, 2011). The slopes of Próg Woznicki are the source area of Mała Panew, and then the river flows into the broad and sandy plain which narrows in the Kalety region. In terms of nature, it is one of the most interesting sections of Mała Panew, where a meandering river (photo 1.) creates several-meter indentations. The valley extends only in the vicinity of the town of Kolonowskie and reaches a maximum of 2 km wide. From Ozimek to the Turawa Reservoir, the trough of Mała Panew has been settled as it passes through an area of the so-called reservoir backwater (Czaja, 2011).

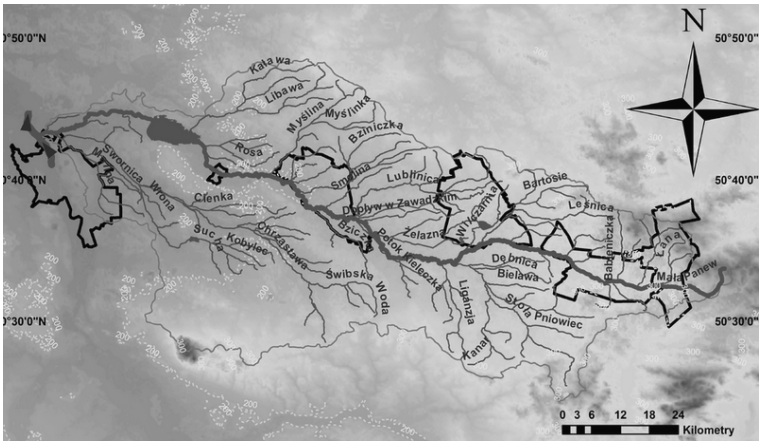


Fig. 1. Mała Panew River (black lines – city boundaries along the river: Woźniki, Kalety, Lubliniec, Zawadzkie, Kolonowskie, Ozimek, Opole)

*Source:https://pl.wikipedia.org/wiki/Ma%C5%82a_Panew#/media/File:Ma%C5%82a_Panew_(rzeka).png access: 24.04.2017*

Photo 1. Meander of Mała Panew in the area of Zawadzkie town

*Source: http://www.esslli2012.pl/index.php?id=46 access: 24.04.2017*

Numerous reserves and protected areas were created in Mała Panew, and the most interesting include: „Jeleniak Mikuliny" reserve located in Koszęcin commune 37 ha, crane breeding site, protecting the old trees, approx. 2,5 ha „Dęby Buroszowskie" reserve located in Tworóg commune and "Hubert" reserve located in Wielowieś commune, where on the area of a little bit over 13 ha mixed forest is being protected (Kondracki, 2001).

The settlement was established by the river. Larger settlement centers include Ozimek, Kolonowskie, Zawadzkie and Dobrodzień

**RESEARCH MATERIAL**

Research materials used in the article were collected in two stages. The first stage included inhouse studies. Authors have made a list of entities providing rural tourism services (especially canoe tourism), located in the valley of Mała Panew. The list is shown in Table 1 with a comment from field studies.

Table 1. Selected rural and canoe tourism facilities in the valley of Mała Panew

| **Facility** | **Range of services** | **Comment** |
|---|---|---|
| Resort „Zielona" (Kalety) | Accommodation, catering, recreation | Resort in the process of modernization |
| Hotel „Prawdzic" (Krupski Młyn) | Accommodation, catering, recreation, SPA and fitness | Hotel in the process of categorization and expansion of the offer; new facility |
| Mill „Bombelka" (Żędowice) | Canoes, parties, paintball, accomodation | |
| Canoe marina „Tropicana" (Zawadzkie) | Canoes, small catering | Seasonal activity |
| Canoe marina „Siber" (Kolonowskie) | | Moved/liquidated |
| Canoe marina „Amazonka" (Kolonowskie) | Canoes, paintball, small catering | Seasonal activity |
| Dzika Chata (Staniszcze Małe) | Restaurant | |
| Turawa canoeing (Turawa) | canoes | Seasonal activity |

*Source:Own study*

The second stage included field studies. Mapping and inventory took place at the riverside area of Mała Panew as well as in Kalety, Krupski Młyn, Żędowice, Zawadzkie, Kolonowskie, Staniszcz Mały and Turawa. Additionally, in three enterprises interviews with the representatives of the facilities were conducted - OW „Zielona", Hotel „Prawdzic and Mill „Bombelka".

**RESULTS**

During the field studies (I half of April) despite favorable weather, only three of these facilities provided any tourist services. First of them was Resort „Zielona" in Kalety, the second one was a newly constructed hotel „Prawdzic" in Krupski Młyn and the last one was Mill „Bombelka" in Żędowice. During the interviews 9 questions were answered, which are shown in Table 2. Empty boxes in the table indicate no response. In the case of „Prawdzic" hotel this empty box is due to the short existence of the hotel on the market, therefore the representative of the hotel does not have the knowledge to provide a reliable answer.

Table 2. Information on selected tourist facilities in the valley of Mała Panew

| **Question:** | **OW „Zielona"** | **"Prawdzic" hotel** | **Mill „Bombelka"** |
|---|---|---|---|
| 1 – range of services | Accommodation, recreation (field, city canoe rental), catering, educational offer | Accommodation, restaurant and bar, recreation, SPA and fitness | Canoeing, paintball, outdoor events, accommodation, camping |
| 2 – period of increased tourist interest | Holidays and weekends | | Weekends (May-September) and holidays |
| 3 – scale of the regional significance of the object | regional | Reception for foreign tourists – business tourism | regional |
| 4 – length of stay | | 1 day | 1 day |
| 5 – features attracting the tourists | Water reservoir, forest | Silence, forest surroundings and other natural values | Natural values (mainly forest, river), silence; canoes |
| 6 – cooperation (and its range) with other entities | The city of Kalety – canoe rental; private entrepreneurs – sleigh rides, dancing parties | | Private entrepreneurs – event service (catering), paintball, marina access to other canoeing organizers and individual tourists |
| 7 – factors satisfying the tourists most | Natural values, location in the forest | Kitchen in the hotel restaurant (game, fish) | River wildlife, isolation from civilization, lack of bigger infrastructure |
| 8 – factors causing the tourists dissatisfaction | | | Low water level in the river |
| 9 – areas needing improvement to increase the attractiveness of Mała Panew | Improving the standard of services offered, increasing interinstitutional cooperation, active participation of various actors in the organization of events | | Ineffective marketing – lack of translation of the tourist centre operation into the effects of entrepreneurs |

*Source: Own study*

There are leisure and holiday complexes at Turawskie Lake and in its immediate vicinity (photo 2). Their back facilities are very different in terms of service standards. There are camping

sites, resorts, boardinghouses, guest houses and hotels, bars and restaurants. During studies these facilities were closed, in some of them renovations works were performed, preparing them for the tourist season.

Photo 2. One of leisure complexes at Turawskie Lake

*Source: G. Jankowski*

**CONCLUSIONS**

Summing up the above considerations, it can be stated that the tourist traffic in the valley of Mała Panew is characterized by seasonality. It is a normal phenomenon for canoe tourism, although the canoeing season is increasingly extended, for example by spring rafts to clear the troughs and direct river waters. Therefore, conducted studies proved that the seasonality of canoe tourism on Mała Panew is enclosed in a period from May to the end of August, occasionally there are still canoe trips in April and September. This is caused not only by weather conditions, but to a large extent this is influenced by the fact that a significant portion of the tour operators serving the canoe trail of Mała Panew offers their services only during the holiday season (e.g Kajnar tourist office based in Gliwice rents equipment in canoe hostel in Krupski Młyn – photo 3).

Infrastructure is an extremely important element that influences the tourism potential in this area. Most of the facilities are unfortunately rather primitive, "home-made" slips, bridges and places making it easy to cross the weir (canoe carrying and passes – photo.4). However, apart from such facilities there is also an infrastructure already offering an adequate level of services. An example of this is OW „Zielona", which (according to the interview) year to year increases the range of services (suitably prepared sandy beach, canoe platform with hinterland or event organization) but mostly their quality (renovation of standard rooms, catering facilities and surroundings around the objects). The situation is similar in the case of Mill „Bąbelek". In addition to a well-prepared marina with full facilities (barbecues, bonfires, shelters, benches, etc.), the place offers a camping site and accommodation in a brick building. An additional attraction is a very popular paintball arena. According to field studies conducted, the number of participants using the attractions of the area is slowly but systematically increasing


Photo 3. The facilities of „Kajnar" seasonal canoe marina

*Source: G. Jankowski*

Photo 4. Canoe pass on the weir in Kolonowkie

*Source: G. Jankowski*

We cannot forget about the current promotional activities strongly highlighted during the interviews. They are performed, together with marketing, mostly by individual entities in a given area. However, the lack of coordination and coherent marketing projects for the entire canoe trail of Mała Panew is seen as rather insufficient, although nowadays, as clearly emphasized by the interviewee, it is much better than a more than 10 years ago when there was no promotion or marketing at all. Thus, such activities are carried out by individual municipalities, canoeing companies, owners of catering and lodging facilities and industry organizations (e.g. PTTK). Despite this (or perhaps due to it), information about Mała Panew canoe trail, the natural and

cultural attractions associated with it, and the facilities of accompanying infrastructure can be found in numerous materials concerning the trail itself and the areas through which it passes.

It can therefore be stated that already in the present form the tourist product of water tourism is an important aspect of the tourist potential of Mała Panew valley. Its impact on the rural tourism infrastructure development can be seen, not only in the form of elements directly associated with the canoe trail, but also accommodation and catering facilities from newly constructed „Prawdzic" hotel, aspiring to be a three-star hotel, through holiday resorts (e.g OW "Zielona") to agritourism farms offering accommodation.

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# RELATIONSHIP BETWEEN AGRITOURISM LODGINGS AND NATURE CONSERVATION IN EASTERN REGION OF POLAND

**Abstract:** Tourist values are one of the most significant factors determining spatial distribution of tourist traffic. One of the type of such values are natural ones, which are especially important for rural vacations. Perception of those values' quality may be strongly subjective, however fact of the law protection of particular area or place may be treated as a specific determinant in this matter. Therefore the paper is an attempt to find a relationship between size of protected areas, as well as their percentage share in general area of counties, and number of tourist accommodation establishments (including agritourism lodgings) within those administrative units in years 2012 and 2015. The research area was Eastern Region of Poland (by NUTS 1 classification), which covers Podlaskie, Lubelskie, Podkarpackie and Świętokrzyskie provinces. The advantage of such delimitation is in analysis of areas that, thanks to their agricultural nature, seem to be predestined for rural tourism and where at the same time are many forms of nature protection. Moreover, inner landscape diversification of the research area (from lake sites and plains in the north to mountains in the south) gives an opportunity of inside comparison of obtained results and provides some representativeness of carried out analysis. In the paper statistical measures were used and the main source of data were databases of Central Statistical Office of Poland.

**Key words:** rural tourism, agritourism, natural values, nature protection, agritourism lodgings, correlation.

## INTRODUCTION

Present civilization transformations and their pace make natural environment increasingly valuable - both from the point of view of decision-makers, as well as society. This is accompanied by increased concern for preserving the environment in good condition. Such trend is noticeable not only in the popularity of many ecological initiatives and projects and widely understood education, but also in tourism [R. D. Tauber, L. Wojtasik 2011]. The natural factor is present in many types of tourism, though not in the same way - in some journeys it only constitutes the background or element of the spatial arrangement of different attractions, while in the others is becoming the primary destination of departure. Undoubtedly, the second situation is the case of rural tourism, which already by its name refers to the return to the roots of man - nature and life based on close, direct relationships with nature. It should be emphasized that while in general rural tourism is often understood as the same as agritourism, they are not equivalent concepts. In the broadest sense rural tourism can in principle be regarded as the whole of the phenomenon of tourism, if only its implementation is in rural areas [A. P. Wiatrak 1996]. To narrow this general idea a little, it can be claimed that it is tourism organized in rural areas with the use of attractions and tourist conditions that rural environment can provide, unlike the offer of consumption possible within urban areas [J. Sikora 1999]. Agritourism in turn, however meets the requirements defined for rural tourism and is considered as its most popular form, has a significantly more specialized profile and should be understood as a form of leisure, held in rural areas of an agricultural character, based on accommodation and leisure activities related to the farm and its natural, production and service environment [M. Drzewiecki 1995]. Agritourism is therefore a much narrower concept than rural tourism, but for both of them the role of the broadly understood nature (rural environment, natural

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surroundings of the farm) is a determining factor, as evidenced not only by the constructs of the definitions given, but also by studies conducted on tourists spending holidays in the countryside in different regions of Poland. The surveyed associated this type of tourism primarily with contact with nature, appreciated mostly the opportunity to interact with natural habitats, the quality of the natural environment and natural values, silence, calmness and fresh air and finally mostly preferred to stay in naturally attractive (flora, fauna, landscape) surroundings [A. Balińska 2009; J. Zawadka 2010; J. Feczko 2011]. Therefore all of this proves the strong relationship between rural tourism, including agritourism, and nature, most often represented in the common perception by natural values.

## NATURAL VALUES AND FORMS OF THEIR PROTECTION

Tourist values are the specific characteristics and elements of the natural environment and the manifestations of human activity that are object of interest of tourists [T. Lijewski, B. Mikułowski, J. Wyrzykowski, 2002]. They are a narrower concept than tourist resources, because the latter should be understood as objective attributes of the natural and social environment (so-called potential values) that, once assessed rightly by tourists (as a result of the perception process), can become true values [A. Kowalczyk, 2000]. Therefore a specific, physically existing resource is not perceived by every tourist as a value, the object of his interest - and values are those elements that in most cases determine the choice of places to spend weekends, holidays or vacations [J. Kaczmarek, A. Stasiak, B. Włodarczyk, 2010]. Tourist values can be divided according to different criteria, but the most common is their origin, differentiating them into natural and anthropogenic ones [Z. Kruczek, 2003]. Natural values, understood as ones having the genetic link with the natural environment [T. Lijewski, B. Mikułowski, J. Wyrzykowski, 2002], do not create a homogeneous group, encompassing a number of diversified objects: point and surface, animated and inanimate, formed with or without human influence, and finally with some form of legal protection or deprived of it. It is worth noting that, according to Lijewski, Mikułowski and Wyrzykowski [2002], large-space protected areas are usually terrains with the highest natural values and outstanding landscape features, worth keeping for the future, what significantly affects the tourist perception of their attractiveness.

The Nature Conservation Act of 16 April 2004 distinguishes 10 different forms of protection [Ustawa..., 2004], but only a part of them may be considered as a large-space. Such requirement is not fulfilled by the monuments of nature, which mainly have spot character, and covering small areas documentation sites, established primarily for scientific and didactic purposes, as well as decisive for biodiversity ecological areas, which are residues of ecosystems. Also species protection, as related to certain types of plants, animals and fungi, cannot be considered in the large-space terms, because its occurrence is a derivative of the existence or non-existence of particular species in a given area and it primarily concentrates on living objects and their habitats. Therefore the forms that can be considered as meeting the requirement of a large space are:

- national park, understood as an area of exceptional natural, scientific, social, cultural and educational value, of an area not less than 1000 hectares, where all nature and landscape values are protected [Ustawa..., 2004];
- landscape park, understood as an area protected because of its natural, historical and cultural values, as well as and landscape values, in order to preserve and popularize these values in conditions of sustainable development [Ustawa..., 2004];
- nature reserves, understood as areas preserved in natural or unaltered state, ecosystems, refuges and habitats, as well as plant habitats, animal habitats and fungal habitats and structures and components of inanimate nature, distinguished by extraordinary natural, scientific, cultural or landscape values [Ustawa..., 2004];

- protected landscape areas, which are terrains protected because of distinctive landscape with diverse ecosystems, valuable because of ability to meet the needs related with tourism and recreation or the function of ecological corridors [Ustawa..., 2004];
- landscape-nature complexes, understood as fragments of natural and cultural landscapes deserving protection due to their scenic or aesthetic values [Ustawa..., 2004];
- Natura 2000 sites, which protect birds, habitats and sites of EU importance and may cover fragments or whole area of the described above other forms of nature conservation.

According to J Sikora [1999] rural tourism is appreciated by tourists thanks to, among others, the possibility of visiting national and landscape parks, as well as nature reserves. Similar opinion is presented by I. Sikorska-Wolak [2009], who emphasizes that not only diversified, natural countryside, large areas of forests and reservoirs are conducive to the development of rural tourism in Poland, but also large-space protected areas, like national and landscape parks, and nature reserves. W. Rudolf [2010] argues explicitly that agritourism should be the preferred type of tourism in landscape parks and its priority is justified by low aggression towards the natural environment. Also J. Majewski [2013] notes that the terms defining protected areas, such as national or landscape parks or reserves, fit perfectly into the image of rural tourism and, as widely recognized and understood thanks to the education process and the media, they create good associations and make the offer of this type of tourism more diversified and attractive. All these authors therefore note the role of nature's large-space protected areas in rural tourism or agritourism, although they focus primarily on their three most popular types: national parks, landscape parks and nature reserves. Only J. Majewski [2013] notes the image benefits for rural tourism from Natura 2000 sites, although he stresses the low awareness of this appellation in Polish society. However, it is worth noting that for such type of tourism also the other two forms of large-space protection (protected landscape areas and landscape-nature complexes) may be important. Although certainly less popular and recognizable, they have important functions in preserving an appropriate natural environment for tourism, which is evident especially in the context of their introduction, where the aspect of scenic and aesthetic values of the landscape is highlighted, as well as use for tourism and leisure.

The purpose of the article is therefore an attempt to determine the relationship between the size of particular protected areas, as well as their share in the overall area of administrative units, and the number of tourist accommodation establishments, mainly agritourism lodgings. Finding such dependency will allow to check how strong impact have different types of large-space protected areas on the development of local agritourism.

## METHODOLOGY

For the purposes of this paper literature search on rural tourism, agritourism and protected areas in Poland, as well as a survey based on existing data was conducted. This study was carried out for region of Eastern Poland according to the NUTS classification (NUTS 1), which includes Lubelskie, Podkarpackie, Świętokrzyskie and Podlaskie provinces. Such choice was made due to common social perception of the provinces mentioned above as areas associated with tradition and countryside on the one hand, and, on the other hand, the presence of numerous and varied forms of nature conservation. Moreover, inner landscape diversification of the research area (from lake sites and plains in the north to mountains in the south) provides some representativeness of carried out analysis. The unit of analysis was a county and 67 of them were considered in the research (due to the incompleteness of the necessary data the Tarnobrzeski county had to be excluded). In the paper the statistical data from the Local Data Bank of the Central Statistical Office were used.

To analyze the phenomenon Pearson's correlation coefficient was used. As the maximum significance level, for which the results of the calculations were considered as statistically significant, $p$ equal to 0,05 was assumed. The module of calculated coefficient demonstrates the

power of interdependence. Based on the literature, the following intervals were adopted [B. Pułaska-Turyna, 2011]: 0,0-0,2: very poor interdependence, 0,2-0,4: poor interdependence, 0,4-0,6: moderate interdependence, 0,6-0,8: strong interdependence, 0,8-1,0: very strong interdependence. There is no doubt that in this case the variables related to tourism are dependent and those associated with protected areas independent, so it allows to draw some directional conclusions. The first stage of the analysis was identification of Pearson's correlation between the agritourism accommodation base[7] in microregions (counties), expressed by 4 variables: agritourism lodgings in general, year-round agritourism lodgings, number of bed places in agritouristim lodgings in total and year-round, and independent variables, including the following categories of protected areas: national parks, nature reserves, landscaped parks overall, protected landscape areas, nature-landscape complexes and protected areas overall. Moreover data about nature conservation was considered at two levels: absolute (surface in hectares) and relative (protected areas mentioned above as a share in total county areas). The Nature 2000 areas were intentionally not considered in the study - partly because of their character (species and habitat protection), but primarily due to their overlap with other forms of protection, what would result in double counting of the protected area and in consequence would bring false total results. The calculations were made for 2 years: 2012 and 2015. These were 2 extreme years for which data could be obtained, but it is important to be aware that in such short period of time major change in the tourism sector and the size of the protected areas could not be observed. In the second stage the relationship between the independent variable, for which the strongest correlation was found for 2015, and other types of accommodation (establishments overall and bed places overall) was analyzed. That verified the legitimacy of the formulated earlier and based on the literature assumption that the size of protected areas in given area influences agritourism accommodation more significantly than other types of tourist accommodation, like hotels or guesthouses.

**RESULTS AND DISCUSSION**

The obtained results of the correlation between the number of agritourism lodgings, as well as number of their bed places, and the large-space forms of nature conservation are presented in table 1. The results clearly show that the factor which significantly influences the number of agritourism lodgings (and number of bed places offered in them) is the absolute size of the protected areas. In all forms of nature conservation the calculated correlation coefficients were higher in this category than in case of their percentage share in general area of counties. This may be due to the fact that tourists (and therefore the accommodation providers, in response to the demand side's expectations) are more attentive primarily just to the existence of protected areas and their size, somehow equated (though not necessarily right) with quality (due to principle: the more, the better). This assumption may be confirmed by the highest correlation coefficients obtained for overall protected areas, rather than for particular forms of nature conservation - therefore it can be concluded that for agritourism more important is quantity (area) than the perceived through individual types of conservation

[7] Data provided by CSO for particular regions concerns only collective accommodation facilities, those with at least 10 bed places. This rule also applies to agritourism lodgings, which are understood by this statistical institution as *tourist accommodation units, which are rooms and residential houses and adapted farm buildings (after adaptation) in rural farm (agricultural, breeding, garden or fishing), owned by farmers, rented to tourists as accommodation for a fee* (http://stat.gov.pl/metainformacje/slownik-pojec/pojecia-stosowane-w-statistics-public/899,pojecie.html, access 18.04 2017). Although this approach is methodologically appropriate and coherent with the definition of agritourism, it omits very large part of the smaller accommodation facilities and doesn't take into account other forms of rural tourism. Therefore it does not give a complete picture of this phenomenon. Nevertheless, because of the lack of possibility to obtain comparable data for particular categories of accommodation facilities in other way, the statistics presented by CSO were used for the purposes of this analysis.

quality of valuable natural environment. This is somehow compatible with the assumptions of holidays in the countryside, based on the proximity of nature and the well-preserved natural environment, regardless of its legal status - tourists are primarily interested in beautiful landscapes and pure nature and reflections on their value in official documents goes to the background. What is important, all results for the absolute size of protected areas, with the exception of landscape-nature complexes (which is likely to be due to their low occurrence, both in number and area, in the research sample) can be considered statistically significant for the assumed level of *p*, moreover in all cases positive correlation was obtained.

Table 1. Correlation between the size of protected areas, as well as their types, and agritourism lodgings, as well as number of their bed places in 2015 (including significance level *p*)

| | | **Agritourism lodgings** | | **Bed places** | |
|---|---|---|---|---|---|
| | | **Total** | **Year-round** | **Total** | **Year-round** |
| **Protected areas overall** | A | **0,69** (+) *(p<0,001)* | **0,67** (-) *(p<0,001)* | **0,68** (+) *(p<0,001)* | **0,68** (-) *(p<0,001)* |
| | S | **0,45** (+) *(p<0,001)* | **0,40** (-) *(p=0,001)* | **0,47** (+) *(p<0,001)* | **0,42** (+) *(p<0,001)* |
| **National parks** | A | **0,26** (-) *(p=0,034)* | **0,25** (-) *(p=0,041)* | **0,27** (-) *(p=0,027)* | **0,27** (-) *(p=0,027)* |
| | S | **0,22** (=) *(p=0,074)* | **0,19** (-) *(p=0,124)* | **0,24** (-) *(p=0,05)* | **0,22** (-) *(p=0,074)* |
| **Nature reserves** | A | **0,48** (+) *(p<0,001)* | **0,58** (+) *(p<0,001)* | **0,45** (+) *(p<0,001)* | **0,57** (+) *(p<0,001)* |
| | S | **0,42** (+) *(p<0,001)* | **0,49** (+) *(p<0,001)* | **0,41** (+) *(p<0,001)* | **0,49** (+) *(p<0,001)* |
| **Landscapes parks overall** | A | **0,51** (+) *(p<0,001)* | **0,44** (-) *(p<0,001)* | **0,52** (+) *(p<0,001)* | **0,46** (-) *(p<0,001)* |
| | S | **0,40** (+) *(p=0,001)* | **0,30** (-) *(p=0,014)* | **0,43** (-) *(p<0,001)* | **0,34** (-) *(p=0,005)* |
| **Protected landscape areas** | A | **0,57** (+) *(p<0,001)* | **0,59** (+) *(p<0,001)* | **0,55** (+) *(p<0,001)* | **0,58** (+) *(p<0,001)* |
| | S | **0,29** (=) *(p=0,017)* | **0,28** (=) *(p=0,022)* | **0,28** (+) *(p=0,022)* | **0,28** (+) *(p=0,022)* |
| **Nature-landscape complexes** | A | **0,04** (+) *(p=0,748)* | **0,02** (+) *(p=0,872)* | **0,05** (+) *(p=0,688)* | **0,04** (+) *(p=0,748)* |
| | S | **0,01** (+) *(p=0,936)* | **0,00** (+) *(p>0,999)* | **0,02** (+) *(p=0,872)* | **0,01** (+) *(p=0,936)* |

A: size of the area; S: share in total area; +/-: increase/decrease of correlation values in 2015 in relation to 2012.

*Source: own research.*

Among the forms of nature conservation, the highest values of correlation were obtained for landscape parks and protected landscape areas, therefore it turned out that only one of the three most frequently presented by the authors forms is more distinctly linked with the size of the accommodation. The most important were indeed those forms which, in their assumptions, promote

primarily landscape values and their popularization and tourist use. The low correlation coefficient was obtained for theoretically the most distinctive form, the national park. This may be due to restrictions for tourism in such areas, as well as the development of infrastructure in their close vicinity. This situation in turn is only partially similar with nature reserves, which are internally differentiated group, also in aspect of protection level, and are more spatially dispersed, which facilitates their use in constructing the offer by accommodation providers. Interestingly, in the case of almost all forms of nature conservation higher correlations were obtained in the total number of accommodation, than in the year-round objects. The exceptions were only nature reserves and protected landscape areas, where the difference was hardly perceptible. This may be due to the already mentioned fact of internal diversification of reserves, which do not need to be based exclusively on animated nature values, usually more attractive in summer, and therefore - with their uniqueness - may be objects of year-round interest for tourists. The correlations values' changes between 2012 and 2015 were symbolic enough (the maximum difference was 0,05) that they were only limited to information about their direction - in most cases increases were observed, with except for national parks and year-round accommodation. This may suggest that agritourism strengthens its image of a close-by-nature holiday, but seasonal, based primarily on the values available for tourism without significant restrictions.

The correlation between the total size of protected areas and types of tourist accommodation establishments, as well as numbers of their bed places, is presented in table 2:

Table 2. Correlation between the total size of protected areas and types of tourist accommodation establishments, as well as numbers of their bed places in 2015

| Type of tourist accommodation establishment | Correlation between overall size of protected areas and: | |
|---|---|---|
| | number of establishments | number of bed places |
| **All objects** | 0,61* | 0,58* |
| **Hotels** | -0,06 | 0,55* |
| **Motels** | -0,06 | 0,22 |
| **Guesthouses** | 0,43* | 0,42* |
| **Other hotel facilities** | 0,05 | 0,36* |
| **Excursion hotels** | 0,07 | 0,20 |
| **Shelters** | 0,31* | 0,28* |
| **Youth hostels** | 0,00 | 0,17 |
| **School youth hostels** | 0,40* | 0,42* |
| **Holiday centers** | 0,28* | 0,23 |
| **Holiday youth centers** | -0,09 | 0,11 |
| **Training-recreational centers** | 0,28* | 0,29* |
| **Creative arts centers** | -0,09 | -0,03 |
| **Complexes of tourist cottages** | 0,30* | 0,25* |
| **Camping sites** | 0,29* | 0,43* |
| **Tent campsites** | 0,49* | 0,71* |
| **Hostels** | -0,12 | -0,12 |
| **Health establishments** | 0,19 | 0,20 |
| **Private rooms** | 0,31* | 0,33* |
| **Agritourism lodgings** | 0,69* | 0,68* |
| **Other types** | 0,31* | 0,16 |

Statistically significant values are signed by *.

*Source: own research.*

The calculated correlation coefficients confirm earlier assumptions that precisely agritourism lodgings are most closely related to the protected, valuable natural areas. The highest result of the analyzed relationship was obtained for the number of objects, and in the case of the number of beds it was the second best result - in both cases strong interdependence was observed. Other types of facilities that have been found to be most strongly correlated with protected areas are tent campsites and guesthouses, which can also be described as closely associated with nature. Nevertheless, in their cases only moderate interdependence was observed. In aspect of number of beds best locations were taken again by tent campsites (the highest correlation, strong interdependence) and hotels (with a moderate correlation and interdependence). The latter situation is interesting to note because in the case of the number of hotel facilities a negative correlation was obtained (though not statistically significant). Perhaps this can be explained by the fact that hotel facilities, built in the vicinity of valuable natural areas, are usually objects with a very large number of beds. Finally, it is worth noting that the overall number of facilities and accommodation places presents significant degree of correlation (moderate/strong interdependence) with protected areas, what only confirms their role in tourism and the development of the necessary infrastructure.

## SUMMARY

The conducted study confirmed that there is a statistically significant strong positive correlation between the number of agritourism lodgings and the size of protected areas in the analyzed region. Moreover, it is by far the largest for accommodation of this kind. Due to the strong landscape diversity of research sample (lowland, lake and mountainous areas), it can be concluded that indeed the natural aspect plays an important role in the spatial development of agritourism accommodation, regardless of its origin. However, the greater importance have absolute sizes of protected areas and these forms of nature conservation that are intentionally created for tourism and holiday purposes, such as landscape parks and protected landscape areas. On the other hand, considered as the most valuable ones, also in general awareness, national parks and nature reserves are designated primarily for close protection and thus this limits the development of infrastructure in their neighborhood. Therefore it can be claimed that generally perceived quantity is more important than the quality of the protected areas. Further conclusions, however, require in-depth analyzes, including also smaller agritourism lodgings, as well as other factors that may affect spatial distribution of accommodation in this type of tourism.

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# THE STRUCTURE AND ECONOMIC AND FINANCIAL RESULTS OF THE FURNITURE INDUSTRY IN SELECTED EU COUNTRIES

**Abstract**: The main goal of the study was to make a multidimensional analysis of the entity structure, employment structure and economic and financial results of the furniture manufacturing sector in the EU. The analysis was based on the EUROSTAT data referring to the seven largest (EU-7) furniture manufacturers in the EU (EU-28), i.e. Germany, Italy, France, Poland, the United Kingdom, Spain and the Netherlands. The analysis included a wide range of economic and financial determinants of the furniture manufacturing sector, such as the number and structure of the size of enterprises, the number of employees and employment structure, total income, gross value added, labour productivity, outlay productivity, production profitability. The study revealed that in all the countries under analysis there was the largest number of microenterprises in the furniture industry. The income and value added generated by this group of enterprises was strongly diversified. Apart from that, the study showed that the highest economic efficiency of the furniture manufacturing sector, which was measured with productivity ratios, was noted in Germany, the Netherlands and the United Kingdom, whereas the lowest economic efficiency was noted in Poland. On the other hand, the best financial results, measured with profitability ratios, were noted in the furniture manufacturing sector in Poland, the Netherlands and the United Kingdom. As far as the Polish furniture industry is concerned, these differences were chiefly caused by low labour costs, which constituted a relatively small part of the value added. In consequence, they were decisive to the highest production profitability in the EU.

**Key words**: structure, economic and financial results, furniture industry, EU

## INTRODUCTION

In 2014 about one million European workers (EU-28) were employed in 121,000 furniture companies and the production of furniture sector amounted to more than 90 billion euros, where the value added amounted to nearly 29 billion euros [Annual…, 2016]. Poland is listed among the world's ten largest furniture manufacturers. Polish furniture industry together with the industries in Germany, Italy and France make about 17% of the global production and almost 60% of the EU production [The EU Furniture, 2014]. The significant position of the EU furniture industry translates into its high global position. The EU makes a quarter of the global furniture production [Bičanić et al., 2010; Grzegorzewska et al., 2012; The EU Furniture, 2014]. Apart from that, according to basic measures of the international competitive position, the EU furniture industry successfully competes on world markets [Grzegorzewska, 2013; Xiao et al., 2009].

The main goal of this article is to present the structure and assess the economic and financial efficiency of the furniture sector in selected EU countries, which are listed as the largest furniture manufacturers. The overall goal of the study included analysis of the basic characteristics of the furniture industry in selected EU countries, i.e. the entity and employment structure, the capacity to generate income and value added, the levels of efficiency, productivity, profitability and labour costs.

## MATERIAL AND METHODS

The analysis of the structure and economic and financial results of the furniture manufacturing sector in the EU was based on the latest updated data for 2014 published by EUROSTAT in the

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form of structural business statistics referring to individual sectors of the industry as total (Annual..., 2016) and according to the size of enterprises (Industry by..., 2016). The sources of data were used to analyse the structure of the size of enterprises, the structure of employment, the structure of income, production and value added in the furniture manufacturing sector in the EU countries. Available statistics were used for assessment of the economic and financial results in the context of labour productivity, outlay productivity, production profitability as well as the level and structure of labour costs. The analysis was based on the comparison method and graphic data presentation. The structural analysis and the analysis of economic and financial results were limited to seven (EU-7) major furniture manufacturers in the EU, i.e. Germany, Spain, France, Italy, the Netherlands, Poland and United Kingdom. In these countries nearly 66% of the total number of the EU furniture manufacturing enterprises are located. These enterprises employ 64% of the total number of people working in the sector and they generate nearly 80% of the total value of the furniture manufacturing sector in the EU (EU-28).

## RESULTS AND DISCUSSION

### THE NUMBER AND STRUCTURE OF ENTERPRISES IN THE EU FURNITURE INDUSTRY

According to the data from 2014, the production potential of furniture sector is determined by 121,000 enterprises (Table 1), 65.7% of which are located in Germany, Spain, France, Italy, the Netherlands, Poland and United Kingdom. Italy and Poland stand out in this group as in 2014 there were respectively 18,100 and 14,800 furniture manufacturing enterprises in these countries, i.e. 15.0% and 12.2% of the total number of enterprises in the EU furniture sector. On the other hand, the enterprises operating in the United Kingdom and the Netherlands constituted a relatively smaller percentage in the total number of furniture manufacturing enterprises in the EU. In these countries there were respectively 5,900 and 7,900 enterprises, i.e. about 4.9% and 6.6% of the total number of furniture manufacturing enterprises in the EU.

In each sector the production potential is determined not only by the number of enterprises but also by the structure of their size. As results from the data in Table 1, in the entire EU (EU-28) there was the largest number of microenterprises. They amounted to as much as 87.6% of the total number of furniture manufacturing enterprises in the EU, whereas the percentage of medium and large enterprises amounted to only 2.0% and 0.3%, respectively. In general, the group of major furniture manufacturers (EU-7) is not very much different in this respect. However, there are relatively significant differences between the countries in this group. The furniture manufacturing sector in Germany is characterised by a relatively smaller percentage of microenterprises (79.8%) and a significantly higher share of small (15.8%), medium (3.7%) and large (0.7%) enterprises. On the other hand, in Spain furniture is mostly manufactured by microenterprises, which amounted to nearly 92% of the total number of furniture enterprises in this country. There is even higher intensity of microscale business in the furniture industry in France and the Netherlands. The share of microenterprises in these countries amounted to nearly 96% and in general it indicates that there is a small number of small, medium and large enterprises. The data in Table 1 show that the high rank of microenterprises is also characteristic of Poland. However, it is also noticeable that in comparison with the EU-28 the high percentage of the smallest entities in the Polish furniture industry (91.2%) was combined with a relatively smaller percentage of small enterprises (5.9%) and with a relatively high percentage of large enterprises (0.7%).

In comparison with the aforementioned countries the furniture manufacturing sector in Germany and the UK is characterised by the most favourable enterprise size structure. The share of microenterprises in these countries amounted to 79.8% and 76.6%, respectively. In consequence of these conditions there is a noticeably greater share of small, medium and large enterprises in these

countries. As a result, there are better economic and financial results due to a greater scale of production.

Table 1. The number and structure of enterprises in the furniture industry in the EU countries in 2014.

| Specification | Number of enterprises | | Structure of enterprises[1] (%) | | | |
|---|---|---|---|---|---|---|
| | thous. | % EU-28 | Micro | Small | Medium | Large |
| EU-28 | 121,0 | 100 | 87,6 | 10,0 | 2,0 | 0,3 |
| Germany | 11,1 | 9,1 | 79,8 | 15,8 | 3,7 | 0,7 |
| Spain | 12,4 | 10,2 | 91,6 | 7,5 | 0,8 | 0,1 |
| France | 9,2 | 7,6 | 95,9 | 3,3 | 0,7 | 0,1 |
| Italy | 18,1 | 15,0 | 83,4 | 14,7 | 1,8 | 0,2 |
| Netherlands | 7,9 | 6,6 | 95,7 | 3,7 | 0,5 | 0,1 |
| **Poland** | **14,8** | **12,2** | **91,2** | **5,9** | **2,2** | **0,7** |
| United Kingdom | 5,9 | 4,9 | 76,6 | 18,5 | 4,3 | 0,6 |
| EU-7 | 79,4 | 65,7 | 87,8 | 10,0 | 1,9 | 0,3 |

[1]Micro (1-9 employees), small (10-49 employees), medium (50-250 employees), large (> 250 employees).
*Source: Annual detailed enterprise statistics for industry (NACE Rev. 2, B-E) EUROSTAT (http://ec.europa.eu/eurostat/data/database)*

## THE NUMBER OF WORKERS AND EMPLOYMENT STRUCTURE IN FURNITURE INDUSTRY IN THE EU

Apart from the number and structure of enterprises, the number of workers and employment structure are important determinants of production capacity. As results from the data in Table 2, in 2014 the furniture industry in the EU employed one million workers. The major furniture manufacturers in the EU (EU-7) employed 639,500 workers, i.e. as much as 64% of the total number of employees in the EU. Furniture production absorbs the largest number of workers in Poland, Germany and Italy, where 161,200, 142,700 and 136,200 people worked in the furniture industry, i.e. 16.1%, 14.3% and 13.6% of total number of employees in the furniture manufacturing sector in the EU. It also means that the total number of employees in Poland, Germany and Italy makes as much as 44% of the total employment in the furniture sector in the EU.

As results from the analysis of the data presented in Table 2, the employment structure in the entire EU (EU-28) and in the seven largest furniture manufacturing countries altogether (EU-7) is very similar and it generally shows that there is equal distribution of the number of employees in individual enterprise size classes (about 25% in each). However, there are significant differences between the countries under analysis. In the furniture sector in Spain and the Netherlands there is the largest percentage of people employed in microenterprises (43.6% and 46.1%). The percentage of workers employed in medium (17.5% and 20%) and large (6.3% and 6.9%) enterprises is much lower than average. The situation in Germany, Poland and the UK is completely different. In these countries the percentage of workers employed in microenterprises ranged between 14% and 19% and in consequence, there was a significantly greater percentage of workers employed in larger enterprises. In the furniture sector in Germany there is a noticeable relatively high share of workers employed in medium (30.8%) and large enterprises (28.6%). In Poland there is a particularly high percentage of workers employed in large enterprises (41.7%), whereas in the UK there is a relatively high share of workers employed in medium enterprises (34.1%). These differences have influence on another important determinant of the production capacity of furniture manufacturing

enterprises, i.e. the number of employees per enterprise, which results both from the structure of enterprises and from the employment structure according to their size. It is mostly obvious that the furniture manufacturing sector looks particularly favourable in Germany, the UK and Poland, where the average number of employees per enterprise amounted to 13, 12 and 11, respectively. It was about 33-57% more than the average value in the EU. In comparison with these countries, furniture manufacturing enterprises in the Netherlands, Spain and France are characterised by significantly lower production capacity. In an average furniture manufacturing enterprise in these countries 3-5 workers were employed, i.e. 35-65% less than the EU average.

Table 2. The number and structure of workers employed in the furniture industry in the EU countries in 2014.

| Specification | Number of employees | | Number of employees per enterprise | | Structure of employees [1] (%) | | | |
|---|---|---|---|---|---|---|---|---|
| | thous. | % EU-28 | person | % EU-28 | Micro | Small | Medium | Large |
| EU-28 | 1000,0 | 100 | 8,2 | 100 | 23,8 | 25,1 | 26,1 | 25,0 |
| Germany | 142,7 | 14,3 | 12,9 | 157,3 | 17,0 | 23,6 | 30,8 | 28,6 |
| Spain | 55,7 | 5,6 | 4,5 | 54,9 | 43,6 | 32,6 | 17,5 | 6,3 |
| France | 50,0 | 5,0 | 5,4 | 65,9 | 27,9 | 24,4 | 27,1 | 20,6 |
| Italy | 136,2 | 13,6 | 7,5 | 91,5 | 30,6 | 36,7 | 21,8 | 10,9 |
| Netherlands | 22,8 | 2,3 | 2,9 | 35,4 | 46,1 | 27,0 | 20,0 | 6,9 |
| **Poland** | **161,2** | **16,1** | **10,9** | **132,9** | **19,2** | **11,6** | **21,9** | **47,4** |
| United Kingdom | 70,9 | 7,1 | 11,9 | 145,1 | 14,2 | 28,8 | 34,1 | 23,0 |
| EU-7 | 639,5 | 64,0 | 8,0 | 97,6 | 24,3 | 24,9 | 25,2 | 25,6 |

[1]Micro (1-9 employees), small (10-49 employees), medium (50-250 employees), large (> 250 employees).
*Source: Annual detailed enterprise statistics for industry (NACE Rev. 2, B-E) EUROSTAT (http://ec.europa.eu/eurostat/data/database)*

## INCOME, PRODUCTION AND VALUE ADDED IN THE FURNITURE INDUSTRY IN THE EU

Table 3 includes basic information concerning real effects of the activity of furniture manufacturing enterprises reflected with the value total income, production and gross value added. As results from the data, the furniture manufacturing sector in the EU (EU-28) generates significant income, amounting to 100 billion euros, whereas the value of production and gross value added amount to more than 90 billion and 29 billion euros, respectively. Apart from that, the data in Table 3 show that the major furniture manufacturers (EU-7) have a very high share in the value of income (73.8%), production (79.5%) and value added (77.7%) in the furniture industry in the entire EU (EU-28). If we take individual countries into consideration, it is easy to notice that this situation is chiefly determined by the high production capacity of the furniture sector in Germany and Italy. The share of income, production and value added in these countries amounted to about 20% of analogical values in the entire EU (EU-28). Simultaneously, it means that more than 40% of furniture production in the EU results from the production potential located in Germany and Italy. In comparison with these countries the furniture sector in Poland looks relatively poor. In spite of a relatively large number of enterprises and a relatively favourable employment structure according to the size of enterprises, the share of the Polish furniture industry in the total income, production and value added in the EU does not exceed 9%. This situation clearly shows that in general the

production capacity is poorly used and it results in much lower productivity of the Polish furniture industry. It is noteworthy that in spite of the higher production potential the position of the Polish furniture industry is even worse than in the UK. In Poland there are 14,800 furniture manufacturing enterprises, whereas in the UK there are 5,900 such enterprises, which is 60% less. However, both in Poland and in the UK the values of income, production and gross value added are comparable, which points to a comparable position in the entire EU.

Table 3. Total turnover, production value and value added in the furniture industry in the EU countries in 2014.

| Specification | Total turnover | | Production value | | Gross value added | |
|---|---|---|---|---|---|---|
| | mld € | % EU-28 | mld € | % EU-28 | mld € | % EU-28 |
| EU-28 | 100,0 | 100 | 90,1 | 100 | 29,2 | 100 |
| Germany | 20,6 | 20,6 | 19,7 | 21,9 | 6,8 | 23,4 |
| Spain | 4,6 | 4,6 | 4,6 | 5,1 | 1,5 | 5,3 |
| France | 7,6 | 7,6 | 7,1 | 7,9 | 2,1 | 7,3 |
| Italy | 19,9 | 19,9 | 20,1 | 22,3 | 5,3 | 18,1 |
| Netherlands | 3,2 | 3,2 | 3,0 | 3,3 | 1,1 | 3,7 |
| **Poland** | **8,7** | **8,7** | **8,3** | **9,2** | **2,4** | **8,2** |
| United Kingdom | 9,2 | 9,2 | 8,9 | 9,9 | 3,4 | 11,8 |
| EU-7 | 73,8 | 73,8 | 71,6 | 79,5 | 22,7 | 77,7 |

*Source: Annual detailed enterprise statistics for industry (NACE Rev. 2, B-E) EUROSTAT (http://ec.europa.eu/eurostat/data/database)*

## THE ECONOMIC AND FINANCIAL RESULTS OF THE FURNITURE INDUSTRY IN THE EU

The assessment of the economic and financial activity of the furniture industry in the EU countries was based on selected efficiency and profitability indexes published by EUROSTAT and on the indexes that could be calculated on the basis of the data published.

Labour productivity is of primary significance in the assessment of efficiency. It provides information about the capacity to create new values and it is measured with value added per full-time employee. As results from the data in Table 4, there is considerable diversification of labour productivity in the furniture industry in the countries under analysis. Altogether in the EU-7 it is about 24% greater than in the entire EU (EU-28). In this perspective the Polish furniture industry is particularly unfavourably distinguished as labour productivity in Poland was the lowest and amounted to €14,800 per full-time employee, which was more than 50% less than the average value in the EU-28 and even more than 60% less than the value noted in the EU-7. On the other hand, furniture enterprises in Germany, the Netherlands and the United Kingdom were characterised by particularly high and comparable labour productivity (€47,000-48,000 per full-time employee). This means that labour productivity in the furniture industry of these countries was 55-57% greater than the EU-28 average and it was more than three times greater than labour productivity in the Polish furniture industry.

The value added index, measured with the share of this value in total income, is another important criterion in the assessment of efficiency and, indirectly, in the assessment of profitability. This relation carries important information. First of all, it indicates the capacity to generate new values in relation to the financial costs borne. Second of all, it is regarded as the basic determinant of the technical and technological advancement of enterprises. Third of all, it indicates the quality

and quantity of human capital [Skoczylas & Niemiec 2005, Wędzki 2006, Skoczylas 2007]. As results from the data in Table 4, as far as this measure is concerned, the furniture sector in the UK and the Netherlands was the most efficient, because the share of value added in income amounted to nearly 40% (38.6% and 36.6%) and it was 13% and 19%.greater than the EU-28 average. The lowest values of this index were noted in Poland (28.8%) and Italy (26.3%), where it was respectively 11% and 19% lower than the EU-28 average. Thus, these differences clearly show considerably different capacities to generate new values in the countries being compared.

The last measure of efficiency assessed in this study is the financial outlay productivity, measured with value added. It directly results from labour productivity and value added. There are significant differences in this respect between the countries being compared. However, the highest financial outlay productivity in furniture manufacturing was usually observed in the countries characterised by high labour productivity. It is noticeable that the furniture industry in Germany, the Netherlands and the United Kingdom was distinguished by the highest outlay productivity. In these countries high outlay productivity corresponded to high labour productivity and the high share of value added in income. It amounted to €0.50-0.60 of value added per €1 of outlay, whereas on average the value of this index amounted to 0.41 €/€ in the EU-28 and 0.44 €/€ in the EU-7. The situation looked slightly different in the countries with relatively low outlay productivity (except Poland) in the furniture industry. In these countries low outlay productivity was chiefly determined by low value added rather than low labour productivity. As results from the data in Table 4, in Poland, France and Italy there was only €0.36-0.38 of value added per €1 of outlay. It was 5-12% less than the EU-28 average and 15-20% less than in the EU-7. As was mentioned above, in these countries labour productivity in the furniture industry was strongly diversified. Simultaneously, the countries were characterised by low capacity to create new values, measured with the value added index. This fact was decisive to the low outlay productivity.

Table 4. The economic and financial results of the furniture industry in the EU countries in 2014

| Specifi-cation | Productivity ratios | | | | | | Profitability ratios | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Labour productivity | | Value added ratio | | Outlays productivity | | Share of gross operating surplus in value added | | Production profitability | | Wages profitability o | |
| | thous. € | % EU-28 | % | % EU-28 | €/€ | % EU-28 | % | % EU-28 | % | % EU-28 | % | % EU-28 |
| EU-28 | 30,9 | 100 | 32,3 | 100 | 0,41 | 100 | 27,7 | 100 | 8,5 | 100 | 31,9 | 100 |
| Germany | 47,9 | 155,0 | 34,7 | 107,4 | 0,50 | 120,4 | 24,5 | 88,4 | 8,1 | 95,3 | 30,1 | 94,2 |
| Spain | 27,6 | 89,3 | 33,7 | 104,3 | 0,49 | 120,9 | 18,6 | 67,1 | 6,2 | 72,9 | 19,0 | 59,4 |
| France | 42,7 | 138,2 | 30,1 | 93,2 | 0,39 | 95,4 | 8,3 | 30,0 | 2,3 | 27,1 | 8,1 | 25,3 |
| Italy | 38,8 | 125,6 | 26,3 | 81,4 | 0,36 | 87,8 | 30,4 | 109,7 | 8,1 | 95,3 | 35,6 | 111,5 |
| Netherlands | 47,8 | 154,7 | 36,6 | 113,3 | 0,52 | 126,0 | 31,4 | 113,4 | 10,8 | 127,1 | 33,3 | 104,2 |
| **Poland** | **14,8** | **47,9** | **28,8** | **89,2** | **0,38** | **91,1** | **41,8** | **150,9** | **11,4** | **134,1** | **64,3** | **201,3** |
| United Kingdom | 48,6 | 157,3 | 38,6 | 119,5 | 0,60 | 144,8 | 31,0 | 111,9 | 11,6 | 136,5 | 43,7 | 136,9 |
| EU-7 | 38,3 | 124,0 | 32,7 | 101,2 | 0,44 | 107,8 | 26,6 | 95,9 | 7,8 | 92,0 | 29,0 | 90,8 |

*Source: Annual detailed enterprise statistics for industry (NACE Rev. 2, B-E) EUROSTAT (http://ec.europa.eu/eurostat/data/database)*

Three measures of operating profitability were used to assess the financial efficiency of the furniture industry in the context of income profitability (value added and production) and in the context of employment profitability (remuneration).

The first measure used for assessment of profitability refers to the share of the operating surplus in value added. It shows the capacity to generate profit after paying taxes and costs of employment (costs of living labour). As results from the data in Table 4, profitability measured in this way achieved the highest value in the Polish furniture industry (41.8%). It was also relatively high in the Netherlands (31.4%) and in the UK (31.0%). In other countries it was significantly lower, especially in France (8.3%). The situation looked similar when production profitability was measured with the relation between the operating surplus and the production value. Profitability was the highest (10.8-11.6%) in the furniture industry in Poland, the Netherlands and the UK, while its average level in the EU-28 was 8.5%, in the EU-7 it amounted to 7.8%, and it reached only 2.3% in the French furniture industry. Similarly, the countries under analysis are considerably diversified by labour profitability, measured with the relation between the operating surplus and remuneration costs. In the Polish furniture industry this measure of profitability amounted to 64.3%. It means that there was as much as €0.643 of operating surplus per €1 of labour costs. The average value of profitability in the EU-28 was 31.9%, whereas in the EU-7 it was only 29%. Labour profitability was particularly low in France and Spain – 8.1% and 19%, i.e. about 75% and 40% less than the EU average.

As results from the analysis of productivity and profitability of the furniture industry in the major furniture manufacturing countries in the EU, high/low economic efficiency measured with productivity indexes does not always translate into high/low financial efficiency measured with profitability indexes. The Polish furniture industry is an example of this situation. As results from the data in Table 5, generally high financial efficiency combined with low economic efficiency chiefly result from low labour costs in Poland. These costs are decisive to the division of value added and thus, they result in relatively high profitability. In 2014 the average salary in the Polish furniture industry was €9,600 per employee, whereas in the EU-28 it was as much as 160% greater (€24,900) and in the EU-7 it was 244% greater (€33,100). Similar conclusions can be drawn from the data in Table 5. In the Polish furniture industry labour costs make only 16.8% of the production value. They are relatively low and comparable with these costs in the German furniture industry. It also includes social insurance costs in relation to total labour costs (17.8%). In spite of relatively low labour efficiency its level compensates for labour costs to the greatest extent (154.6%). The situation is completely different in France, where the furniture industry is characterised by high productivity and the lowest profitability. In this case the low financial efficiency of the furniture manufacturing sector should be attributed to labour costs. In the French furniture industry low values of profitability indexes go along with the highest labour costs (€43,700 per employee), their high share in the costs of production (27.6%) combined with a relatively high share of social insurance costs in labour costs (27.0%) and the lowest ratio between labour productivity and labour costs (97.7%), which indicates that there are too high salaries in relation to labour efficiency.

In comparison with the furniture industry in Poland and France, this sector in the UK, Germany and the Netherlands is characterised by specific balance between economic and financial efficiency. In general, in these countries the high efficiency of labour and outlay as well as the high value added index are relatively strongly correlated with high profitability and relatively high labour costs (€34,000; €39,000; €45,000, respectively). In this case the covering of relatively high labour costs corresponds to the high capacity to create value added. In consequence, there are considerable amounts of the operating surplus and generally high profitability.

Table 5. Employment costs in the furniture industry in the EU countries in 2014.

| Specification | Average personnel costs | | Share of labor costs in production costs | | Employer's social charges as a percentage of personnel costs | | Wage adjusted labour productivity | |
|---|---|---|---|---|---|---|---|---|
| | thous. €/ person | % EU-28 | % | % EU-28 | % | % EU-28 | % | % EU-28 |
| EU-28 | 24,9 | 100 | 23,1 | 100 | 21,4 | 100 | 123,0 | 100 |
| Germany | 39,0 | 156,6 | 26,2 | 113,4 | 17,2 | 80,4 | 122,7 | 99,8 |
| Spain | 27,1 | 108,8 | 27,4 | 118,6 | 23,7 | 110,7 | 102,0 | 82,9 |
| France | 43,7 | 175,5 | 27,6 | 119,5 | 27,7 | 129,4 | 97,7 | 79,4 |
| Italy | 33,1 | 132,9 | 18,3 | 79,2 | 29,2 | 136,4 | 117,1 | 95,2 |
| Netherlands | 45,1 | 181,1 | 25,1 | 108,7 | 19,9 | 93,0 | 105,9 | 86,1 |
| **Poland** | **9,6** | **38,6** | **16,8** | **72,7** | **17,8** | **83,2** | **154,6** | **125,7** |
| United Kingdom | 34,4 | 138,2 | 26,7 | 115,6 | 10,8 | 50,5 | 141,3 | 114,9 |
| EU-7 | 33,1 | 133,1 | 24,0 | 104,0 | 20,9 | 97,7 | 120,2 | 97,7 |

*Source: Annual detailed enterprise statistics for industry (NACE Rev. 2, B-E) EUROSTAT (http://ec.europa.eu/eurostat/data/database)*

## SUMMARY

The analysis of the structure and economic and financial efficiency of furniture manufacturing sector in selected EU countries leads to the following conclusions:

- the entity structure of the furniture industry in the major furniture manufacturing countries in the EU is chiefly determined by microenterprises, which make nearly 90% of the total number of enterprises in this sector,
- the furniture industry in Poland, Germany and the UK is characterised by a relatively better entity structure and employment structure, because in these countries there are relatively more medium and large enterprises employing at least 60% of the total number of people working in the furniture industry,
- the furniture industry in Germany, the UK, the Netherlands and France is characterised by the highest economic efficiency, measured with labour efficiency and outlay productivity; the lowest economic efficiency was observed in the furniture industry in Poland,
- the furniture industry in Poland, the UK and the Netherlands is characterised by the highest financial efficiency, which is measured with profitability. The high rate of financial efficiency in Poland results from very low labour costs, which are decisive to a relatively high operating surplus and in consequence, to high profitability of production. On the other hand, in the UK and the Netherlands the high financial efficiency is strictly correlated with the high labour efficiency, which considerably compensates for high labour costs and in consequence, it has positive influence on the profitability of furniture production in these countries.

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# CULINARY HERITAGE AND ITS ROLE IN THE DEVELOPMENT OF TOURIST PRODUCT ON THE EXAMPLE OF AGRITOURISM OFFER IN POLAND

**Abstract:** The paper reports on a research project aimed at analysing the role of regional culinary traditions and local foods in the development of the tourist product from the perspective of both the hosts and the visitors to agritourism farms. Following a questionnaire-based survey conducted at the beginning of 2017, authors note a divergence of opinion about the importance of traditional foods and recipes between the agritourism service providers and their clients. The former are aware of local traditions but they use them to a limited degree in creating the tourist offer. The latter, in turn, expect that regional culinary traditions will be present among the food they are offered on site and available to purchase as souvenirs. Importantly, the questionnaire results suggest that agritourism visitors base their choices of holiday destinations as much on the presence and style of the local cuisine as on other features of the local culture, as well as such regional characteristics as landscape and climate.

**Key words:** agritourism, gastronomy, culinary heritage, regional products, tourism attractions

## INTRODUCTION

The main objective of the paper is to explore the role of regional culinary heritage as a factor influencing the development of the tourist product on the example of agritourism offer in Poland. The authors selected two specific regions that are substantially different from one another in terms of their local culinary traditions and the character of the tourist offer, namely Podhale and Śląsk (Silesia). The former is both geographically and ethnographically a very particular region, inhabited by the same people who had settled it centuries ago, with its own, very distinctive culture and identity [Kroh 2002]. In the case of Silesia, the region is nominally and historically divided into the Lower and the Upper parts. However, due to the lack of inheritance in the Lower Silesia, as part of the II World War repercussions, the notion of Silesian culture – including the cuisine – remains limited to the former Poland-Germany borderline regions of Upper Silesia and the today's Opole voivodship [Szołtysek 2005].

Currently, consumers increasingly often seek high quality food products. Agritourism farms have the potential to satisfy this rising demand by offering traditional foods along their hospitality offer [Jęczmyk, Maćkowiak, Uglis 2014]. Regional culinary traditions can exist as tourist attractions in their own right, which creates an opportunity for traditional foods' producers, in particular when local foods become a popular fixture in visitor's menus. Regions that boast rich culinary traditions are reportedly more appealing to tourists, too, and traditional foods are often part of the branding of the region; site-specific tastes and scents can therefore become tourist products [Szauflera & Zwolińska 2004].

Rural areas, which choose to develop in the direction associated with agritourism and local food production, become increasingly attractive to consumers who value high food quality [Sieczko 2008]. The quality of traditional food is obtained through the use of natural and traditional technologies, and natural resources typical for the destination [Grębowiec 2012].

Local foods belong to the combination of tourism development factors, particularly in the agritourism sector, along with landscapes, climate, culture and other local features. Local hosts are

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therefore often encouraged to make all the effort to offer their guests tasteful and presentable foods, based on local ingredients. Satisfactory culinary experiences can hugely affect the visitor's propensity to return to the given destination. But the role of local gastronomic traditions is not limited to the catering on offer *in situ* – tourists are also usually keen to purchase culinary products as souvenirs, especially if they sampled them during their stay. Local producers are therefore invited to secure a supply of foods to be consumed outside their place of production. This poses specific risks, not least because foods produced using traditional methods – free of chemical components that would otherwise extend their due-by date – typically need to be consumed relatively shortly after the purchase [Młynarczyk & Maksa 2002]. Consumers can purchase products directly from the producer. This creates additional opportunities for promoting them, and, *vice versa*, selling local products is an opportunity to promote the farm at which tourists can be hosted [Sieczko 2013]. Guests are often offered foods, preserves and vegetables produced by the farmers themselves which makes it easier to sell them on-site, and creates additional economic benefits for the farm [Jęczmyk and others 2011].

## METHODOLOGY, SUBJECT, AREA AND OBJECTIVES OF THE SURVEY

In order to establish to what extent the above observations are shared by the agritourism sector and its clients, the authors carried out a two-pronged survey of agritourism hosts and of their visitors in two selected regions of Poland: Podhale and Silesia. The data collection method of choice were two, specifically designed questionnaires. The first part of the survey included 70 agritourism farms in the period of January through March 2017 and was based around a set of questions, whose objective was to identify how local hosts perceive the role of culinary aspects in designing and creating an attractive tourist offer. The survey was anonymous which encouraged honest answers. The second part of the survey included a group of 100 visitors to agritourism farms in the two regions within the same time frame. The questionnaire's objective was to find out the culinary preferences and other behavioural characteristics of the respondents.

## OVERVIEW OF THE RESULTS OF THE FIRST (HOST) QUESTIONNAIRE

Respondents to the first questionnaire were predominantly women (85%). Almost all of them (95%) agreed that traditional, local food is an important element of the tourist product they offered, and that in rural locations it plays a key role in attracting visitors. At the same time, however, only 40% of respondents in this group confirmed that the food they offered to visitors was fully based on traditional, local products. Over 80% of respondents admitted that they based their catering offer largely (i.e. not less than 2/3 of it) on local foods and ingredients.

Encouragingly, respondents exhibited extensive knowledge of local culinary traditions and regulations that affect them: 85% of respondents reported using foods registered as products of protected designation of origin or protected geographical indication amongst the food they offer to their visitors. In the opinion of over 30% of respondents such products are markedly important as part of what the tourist is offered for consumption, even if they are not produced on-site.

The survey also sought evidence of traditions of food preparation and/or consumption being practiced by hosts together with their guests on agritourism farms. Over 45% of respondents mentioned such practices, but only in the form of workshops for children.

Another objective of the survey was to find out if local and traditional foods were available to visitors to purchase as souvenirs. As a result, 35% of respondents were found to have a variety of traditional foods on offer with extended expiration date such as preserves and smoked charcuterie. Additionally, 60% of farms offered their visitors the opportunity to purchase locally produced vegetables, fruits, cheese, bread and processed products, such as pierogi.

In general, 75% of surveyed hosts admitted using some elements of the regional culinary heritage in their promotional materials and/or described their own cooking as embedded in the regional tradition. However, only 15% of them advertised specific regional foods on their websites.

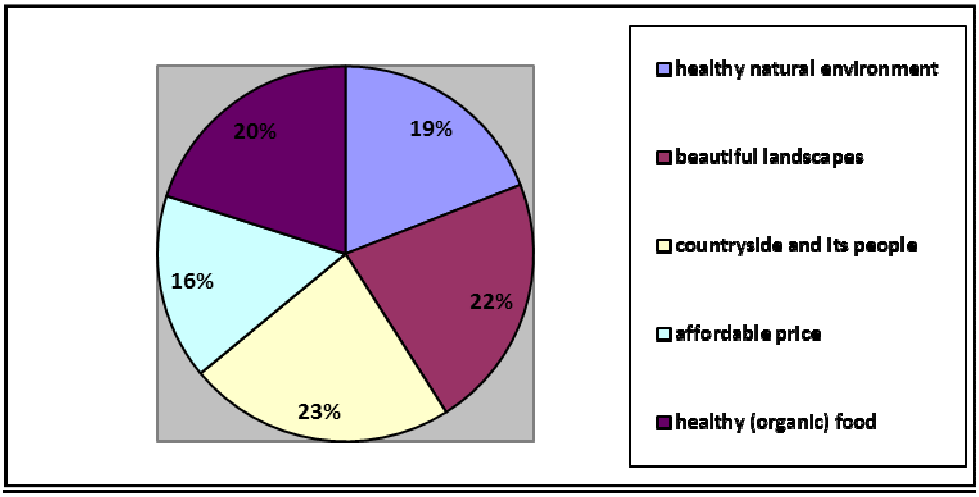
**OVERVIEW OF THE RESULTS OF THE SECOND (VISITOR) QUESTIONNAIRE**

Respondents to the second questionnaire were also predominantly women (70%). Majority of them were aged 30 to 40, and possessed a higher education degree. Also, majority of them (58%) lived in large cities of more than 100.000 inhabitants; 25% lived in cities of more than 10.000 inhabitants, 9% in small cities (up to 10.000 inhabitants), 6% in cities of 5.000 inhabitants, and only 2% lived in the countryside.

The objective of the questionnaire was to identify if regional foods influence the choice of holiday destinations by visitors. Majority of respondents (63%) confirmed this kind of connection, while 37% declared it irrelevant. Responses to questions regarding catering preferences indicate that 47% of participants chose to purchase a full board at the place of stay, 29% used local restaurants and bars, 11% prepared their own meals, and 7% used local small gastronomy.

Asked about their decision to spend holiday on an agritourism farm (see Graph 1), 23% of respondents admitted they did so because liked the countryside and its people, 22% pointed to picturesque landscapes, 20% highlighted healthy (organic) food, and 19% the natural environment. Only 16% of respondents indicated affordable prices as the key factor affecting their decision.

Graph 1. Motivation to spend holiday at an agritourism farm

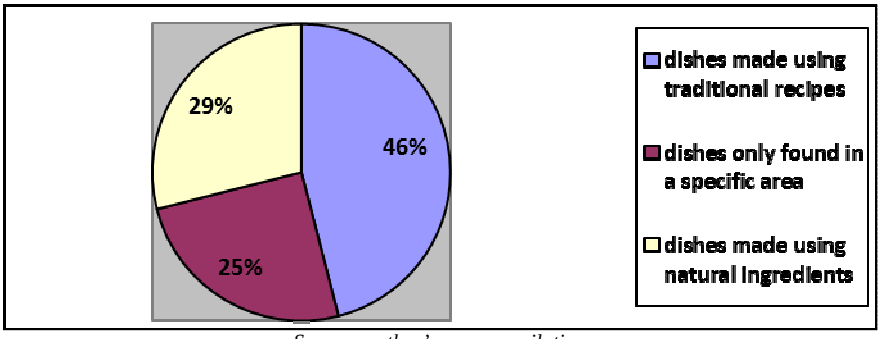



*Source: author's own compilation*

The questionnaire also sought to establish if events featuring regional culinary heritage also affect respondents' choice of a holiday destination. Results are almost evenly split in this respect, with 51% of responses for and 49% against any such influence.

Interestingly, the questionnaire results also help to explore the popular understanding of the term *regional cuisine* (see Graph 2). Respondents usually indicated that regional cuisine meant for them 'foods prepared using traditional recipes' (46%), followed by 'dishes that can only be found in a specific area' (29%), and 'dishes based on natural ingredients' (25%).

Graph 2. Regional cuisine in the eyes of the questionnaire participants




*Source: author's own compilation*

Lastly, the questionnaire collected information about the popularity of selected traditional foods as a tourist product. Among the survey participants, the most popular traditional product of Podhale was oscypek (52%), followed by bryndza podhalańska (19%) and bundz/bunc (13%), redykołka (6%) and żentyca (6%). In Silesia, the most popular dish proved to be white Silesian potato dumplings (białe kluski śląskie), indicated by as many as 65% of respondents, followed by żur (55%), red cabbage (40%), and Silesian rolada (35%). A popular Silesian soup named wodzianka was indicated by only 15% of respondents as a typical regional specialty, next only to karminadle (10%) and hekele, which were known as a traditional Silesian dish only to 5% of survey participants.

## SUMMARY

Local foods and culinary traditions play an important role in the current agritourism offer in Poland, but their potential as tourist products is not fully realised. The questionnaire usefully highlights the limited use that agritourism hosts make of the culinary heritage of the surveyed regions, and the potential that lies in the fact that visitors to agritourism farms are usually happy to sample local gastronomy and traditional foods. The research demonstrates that culinary aspects are among the key criterions of choosing a holiday destination, alongside such recognised aspects as local natural and cultural attractions, events and recreational opportunities.

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# PATENT PROTECTION: FUNCTIONS AND WEAKNESSES

**Abstract**: While patent protection has been established for many centuries, its criticism has been growing. The aim of this article is to identify the main functions of the patent protection system as well as its weaknesses. This article shows that main functions of patent protection may be grouped into following categories: protection, information disclosure, trade and finance, defensive functions and an input in the innovation process. On the other hand, main weaknesses of patent protection system are: slowing down the technological progress, hindering the commercial application of innovative ideas, possible hostile take-overs of patent owners, creating barriers to innovation due to complementary patents and patent thickets, patent wars and patent trolls. Despite those downsides, patent protection system seems to be unrivaled.

**Keywords**: intellectual property rights, patent rights, patent protection, patent management.

## INTRODUCTION

Patent is a set of exclusive rights granted for a limited period of time in exchange for detailed public disclosure of an invention. The patentee has the right to prevent others from commercially making, using, selling, importing, or distributing a patented invention without permission. Patent protection dates back to XVth century and is a commonly used system all over the world [Johns 2009, s. 8]. However, it has gained a notable critique as detrimental in many ways and not serving one of its basic functions – improving the innovativeness of the economy [Jaffe and Lerner 2011]. Therefore the aim of this article is to identify the main functions of the patent protection system as well its weaknesses.

## FUNCTIONS OF PATENTS

It is commonly acknowledged that state-of-the-art inventions ought to be hedged against imitation and be a spur for conducting further research. Often a moment of granting a patent for an invention is a transition point between research and development (R&D) activities and its economic use [Schmeisser and Mohnkopf 2008, p.136-141]. According to the guide published by WIPO (World Intellectual Property Organization), a patent has basically two functions: protection and disclosure [2012, p.4]. Firstly, the patent owner is allowed to exclude competitors from commercial exploitation of an invention covered by the patent and the binding right might be utilized for a certain period of time and within a specific country or internationally. This function is the one most often distinguished amongst researchers [Guellec and van Pottelsberghe de la Potterie 2004, p.648-650; Gassmann and Bader 2011, p.137]. The second function refers to the disclosure of information: a granted patent right provides access to knowledge concerning the new technology which should contribute to the stimulation of the innovativeness and faster economic growth. In addition, according to WIPO, patent documentation contains information on filing trends, which are important for public policy makers (for instance for national innovation and industrial strategies [2012, p.8]).

This basic division has been reformulated by Corbel and Le Bas [2011, p.1-3]. They prove that the role and functions of patents have evolved over time. Patents are not only instruments facilitating the achievement of a monopoly position, but also tools enabling protection of products or processes, which constitute the source of differentiation from competition. Furthermore, an individual patent cannot be perceived as a guarantee to obtain a temporary monopoly anymore.

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Mentioned authors classified functions of patents into four categories: (1) innovation protection, (2) trade and finance, (3) defensive roles and (4) input in the innovation process. The first function was admittedly discussed in the previous paragraph, however, it needs to be added that lately important improvements have been implemented to protect successfully an innovation, namely probabilistic patents [Lemley and Shapiro 2005, p.75-98], strategic patents, as well as patent portfolios and families [Blind et al. 2006]. Secondly, functions related to trade and finance comprise such aspects as technology exchange (licensing), treating patents as quasi financial assets and a contribution to tax optimization [Schmeisser and Mohnkopf 2008, p.136-141]. On the other hand, the defensive function of patents is based on defensive blockades, deterring character of large patent portfolios and the role of patents as a "currency", since in case of a patent-infringement a cross-licensing deal may be proposed to the competitor. The fourth category of patent's functions refers to signaling function, which seems to be relevant especially for SMEs (small and medium enterprises), since they can signal the growth potential to potential investors. Furthermore, a patent may be used as an innovativeness index and a basis for further development, due to the fact that innovations have a cumulative character.

Some authors additionally stress the chance to create added value by setting up joint ventures or following other exploitation strategies and consequently sharing benefits from the economic use of patents. Furthermore, the reputation of a legal subject submitting a patent application grows significantly. Moreover, patents may contribute to a standardization of products or processes and become thus profitable in the long term, due to royalties achieved from its competitors for permission to use it [Corbel and Le Bas 2011, p.12-13]. Finally, patents make the transfer of technology easier. Table 1 summarizes the divagations on patent functions.

Table 1: Overview of functions of patents.

| | | |
|---|---|---|
| Protection | • Exclusion of competitors<br>• Strategic patents | • Probabilistic patents<br>• Patent families and portfolios |
| Information disclosure | • Technical information<br>• Legal information | • Economical information<br>• Filling trends |
| Trade and finance | • Technology exchange<br>• Collateral in financing | • Licensing<br>• Tax optimization |
| Defensive functions | • Blockades<br>• Defensive publications | • Deterrent patent portfolios<br>• "Currency" in case of infringements |
| Input in the innovation process | •Signaling<br>•Innovativeness indicator | • Basis for further development<br>• Transfer of technology |

*Source: authors' own elaboration, based on aforementioned literature.*

## DOWNSIDES OF PATENT PROTECTION

The role of patent protection cannot be uncritically evaluated. Although patents have many vital functions, there are also some significant disadvantages. First of all, the monopoly position achieved through patent rights leads, as other monopolies on the market, to a non-effective allocation of public resources. Secondly, patent system contributes to waste of resources, since other companies are required to patent or invent around the patented inventions. Thirdly, the idea of the patent right to be an award for inventors for technological development is misguided, because there are other institutional and technological methods bringing benefits for the innovators. Furthermore,

patent holders may deliberately postpone developing new inventions in order to gain profit from already patented invention. In addition, high collateral costs incurred in patent protection without a guarantee of financial return cannot be ignored. Consequently, patent rights could have both a negative impact on national economies and on companies.

**SLOWING DOWN THE TECHNOLOGICAL PROGRESS**

Although patent systems are generally recognized as instruments driving or even speeding up the technological development, Kortum and Lerner [1999] challenged this statement due to the monopoly position gained through patents. Accordingly, patent commercialization requires time, which contributes to slowing down the technological advancement [Kortum and Lerner 1999, p.1105-1107]. Furthermore, patent rights on the one hand stimulate propensity to innovate, but on the other hand, contribute to reducing the amount of technology spillovers and following "non-risky research strategies". The issue of hindering the global technology development has rarely been raised by researchers and business policy makers.

**UNTAPPED POTENTIAL OF INNOVATIVE IDEAS**

The total amount of granted patents has been constantly growing due to possible high revenues, generated thanks to achieved competitive advantage [EPO 2016]. Innovative companies try to take the maximum benefit of continuous conversion of intangible assets into a measurable profit, since significant investments in R&D and hedging may pay off in the long term. Nevertheless, many of patented inventions never find an industrial application, for instance due to the lack of an effective cooperation between scientists and industrial entrepreneurs. Literature provides examples of patented innovations in the field of advanced materials, for which their applicability has not been known of at the time of their invention. One such example is the invention of CZ-method (Czochralski method) in the beginning of XXth century. Nowadays, scientists struggle to find a commercial applicability for a promising semi-metal – graphene [Waszak 2011]. In 2011 Polish scientists managed to develop a method of industrial mass production of this material without the quality deterioration and high expenses. The process was granted a worldwide patent protection and thus became a big hope of the Polish science for a development of new, high-growth potential markets or a formation of a new industry. Proper patent management is crucial in order to find an appropriate way of its commercialization.

**HOSTILE TAKEOVERS OF PATENT OWNERS**

Although small companies and individual inventors contribute to enlarging of global knowledge and technological development through ground-breaking inventions, innovation management within such organizations is especially difficult, due to risks and threats caused by large, well established corporations. Hixon [2013] evaluated the role of patent rights held by small enterprises indicating their lack of usefulness in most of cases (with some exceptions, such as pharma industry). Accordingly, many entrepreneurs incorrectly understand the patent value creation process. To begin with, in contrast to common opinions, patent should not be perceived as a defensive tool (a "shield") safeguarding a freedom to operate, but rather as an offensive one (a "sword"), which gives the right to challenge competitors infringing intellectual property. With reference to the new understanding of this approach, as well as having in mind the length and costs involved in the average lawsuit, international corporations are thus often resistant to any suits filed by small competitors. Moreover, large companies often pursue offensive legal strategies against start-ups, e.g. by an alleged infringement of their patent, since the incurred litigation costs substantially harm small companies' liquidity. Therefore they are more exposed to hostile takeovers. All in all, small enterprises may improve their reputation through patenting which leads to attracting potential inventors, but on the other hand it can also grasp the attention of hostile competitors. Accordingly, general business strategy should not be based on patent rights. Hixon

[2013] advises small entrepreneurs to develop their business on real competitive advantages such as: rapid innovation and long-term customer relationship management.

**PATENT THICKETS**

The cumulative character of innovations leads to building of patent thickets, required to commercialize the state of the art inventions. This concerns especially industries with "complex" technologies (e.g. biotechnology, software, semiconductors), namely those with dispersed ownership [Shapiro 2000, p.121-122]. Should a company have developed a new product consisting of numerous other complementary patents, for each component a license has to be gained, which often makes it unprofitable. Therefore, enterprises are often forced to sign patent pools agreements and cross-licensing deals to assure themselves a bigger chance for the freedom-to-operate [Shapiro 2000, p.121-122].

**PATENT WARS**

Since the competition between companies all over the world has become so harsh, the importance of legal patent strategies has also grown. Having in mind the increasing role of patent rights in the contemporary knowledge-based economies, enterprises are forced to struggle for enhancement of their competitive positions through available patent-related measures. Especially vulnerable sectors for patent rights infringements are those with high competitiveness rate and complex high-tech technologies, due to the dispersed ownership of patent rights. A patent war is a legal "battle" between corporations or individuals in order to secure patent rights, often in the form of multiple lawsuits. This forces firms to allocate time and money that could have been spent on research and development in multiple patent litigations. Suits between Apple and Samsung or RIM against NTP are flagship examples of multimillion patent wars.

**PATENT TROLLS**

Another negative aspect related to patent management refers to the growing share of non-practicing entities (hereafter called "patent trolls" or "NPEs") [Reitzig, Henkel and Heath 2007, p.137]. The goal of a patent strategy pursued by patent trolls is to acquire patent rights and then sue potential violators of their patent portfolio in order to obtain either royalties in case of a settlement or damage compensation for an infringement based on the court's ruling. Therefore business model of NPEs is to benefit from innovation only through litigation without commercializing the patent-protected inventions. In addition, an important element of the business strategy pursued by patent trolls is not to offer their competitors a possibility to license-in patent rights [Fischer and Henkel 2012, p.1520-1521]. Due to the fact that small companies are especially vulnerable to measures taken by NPEs, three hints can be provided in order to avoid or minimize damages caused by patent trolls: (1) being proactive – determining which innovations are already patented, (2) purchasing insurance – insurance companies offer protection against infringement lawsuits, (3) attorney consultation – usually requires high costs, although these expenses are incomparably lower than expenditures incurred in the lawsuit.

**SUMMARY**

This article shows that main functions of patent protection may be grouped into following categories: protection, information disclosure, trade and finance, defensive functions and an input in the innovation process. On the other hand, main weaknesses of patent protection system are: slowing down the technological progress, hindering the commercial application of innovative ideas, possible hostile take-overs of patent owners, creating barriers to innovation due to complementary patents and patent thickets, patent wars as well as patent trolls. While the downsides of patent protection system may seem overwhelming, two issues need to be underlined. Firstly, in most cases aforementioned functions of patent protection are fulfilled and presented weaknesses are either less common or not as impactful on whole economy and single companies. Secondly, other systems

alternative to patent protection have been proposed, but it is agreed that they are not a valid alternative to the patent protection system [Mazzoleni and Nelson 1998].

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# DETERMINANTS OF GAINING COMPETITIVE ADVANTAGE OF A BANK FROM THE PERSPECTIVE OF RETAIL BRANCH MANAGERS

**Abstract:**Polish market of retail banking services is characterized by a high dynamics of development.
The consequence of this fact is a clear intensification of competitive actions of other banks, and in particular those that have focused less attention on the retail business. In result market concentration increases due to consolidation of the banking sector, and the entities that in result of insufficient capital base or insufficient flexibility in adapting to market changes, are taken over by large international banking groups. Accordingly a strong competitive position in retail banking can be ensured primarily due to high efficiency of use of existing resources, which in particular should include human, technological and financial resources. Sustainable competitive advantage in the retail sector can provide implementation of appropriate business processes that allow for systematic measurement and continuous monitoring of effectiveness, both in terms of operational and financial performance.

**Keywords:** Competitive advantage, quality of service, retail branch, organisational resources, human capital.

## INTRODUCTION

Every year in Poland a growing number of customers use bank services who are also increasingly convinced to use modern technological solutions offered by banks for self-service in the field of financial management. An important part of the old banks' responsibilities in terms of operational service has been taken over by the customers themselves through activities such as data entry for money transfers, making money deposits in the internet system or cash deposits and withdrawals in dedicated devices. This does not mean at the same time that the role of bank branches gets marginalized, although indeed their functionality takes on a whole new nature. To some extent however, the scope of activities for the bank branches gets shifted towards performing rather advisory functions for the customer. It is also a side effect of another phenomenon, which is the reduction of operating expenses by banks and promoting the use of electronic money instead of cash [Wierzejska 2014, p. 78-79].

An important challenge for managers of retail bank branches and banking advisors is to reach the customer and maintain solid ties with them at an acceptable cost for the organization and in the form adequate to the one through which the client communicates with the environment. Furthermore, they must find a way to effectively convince customers to work just with them, which can be a difficult task in the context of substantial homogeneity of banking products and services.

Managers need to create and take appropriate action in order to differentiate themselves in a highly competitive local banking market. Branch employees, having direct contact with the client, through their attitude, knowledge and commitment create an image of a banking institution. Therefore managers are responsible for a good substantive preparation of employees and motivating them to achieve the highest quality of customer service [Lis *et al*. 2010, p. 190-192; Mydlarz *et al*. 2011, p. 117-121].

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## INFLUENCE OF ORGANISATIONAL RESOURCES ON THE COMPETITIVENESS OF RETAIL BANKING BRANCH

When reviewing concepts of the notion of competition in the literature it can be concluded that its nature on the modern Polish banking market is close to the concept presented in the science of economics by the strategic and resource-based economy field [Klus and Wanat 2013, p. 39-58]. With regard to the first of these, the competitive struggle manifests itself on the one hand, in the context of constant rivalry between banks in order to win customer's favour and market share, and the other in the implementation of innovation in banking processes (reducing operating costs), and product innovations. The competition takes place within existing resources, and the advantage is gained by a bank, that allocates them appropriately as well as properly and effectively manages them.

Amongst the main features of services provided by banks the following should be mentioned: intangibility, inseparability of services from the performing person, the similarity of banking services, the importance of trust in the provision of services, the rapid pace of technological progress and implementation of new products. Having regard to the specifics of banking services, it must be noted that the sources of competitive advantage must be sought in the skills and resources of the bank, which primarily determine the image and reputation of the bank, its credibility, as well as the degree of awareness and satisfying the customer's needs. Thus, the essential meaning in the matter has the staff, their qualifications, the procedures implemented within the bank and its branches, the ability of coordinating bank units, but also the tangible resources, such as the infrastructure of branches, availability of services as well as the modernity of existing technologies.

It is widely recognized that employees constituting a strategic resource of modern organizations, become source of value creation. Organisations depart from treating a worker as a resource in terms of a static, depending on the tools used towards them, and is seen as an invaluable asset constituting a lever of profits. This capital requires constant investments by providing employees with appropriate conditions conducive to the development of key competencies for the organization. In the variable market conditions, which undoubtedly is the competitive environment of bank branches in Poland subjected to, it requires employees to take the initiative, activate proactive behavior and a high commitment to the functions performed [Hydzik and Lewicka 2012, p. 37]. Bratnicki [2009, p. 49-62] notes that the differences in terms of use of available resources primarily determine the competitive potential between different organizations. According to Harasim [2009, p. 91] „intangible resources, in comparison with the tangible, have more features which are of a strategic importance for a company". In addition, the fact that they are rare, unique, and thus durable make them difficult to reproduce and use outside a given organization.

In the research process, conducted among managers of selected retail bank branches within the Poznan agglomeration, verified how managers evaluate the resource-based approach in building a competitive advantage in retail banking market, assuming that success of a company depends on the applied configuration of its unique skills and resources. Among the tangible and intangible resources the following were assessed by managers: human capital (competencies, attitudes, experience and skills of employees, capital of the client (components of the offer value, brand value and value of relationship, ability of customer acquisition and maintaining profitable and long-term relationships), organizational capital (value of management, qualifications, competencies forming the value), financial capital (liabilities, business profitability and sources of funding loan activity), material resources (bank's infrastructure: buildings, operating systems, IT systems, equipment and computer technology).

Results of the study clearly indicate, that managers recognize human resources as crucial in building the market advantage (Figure 1).

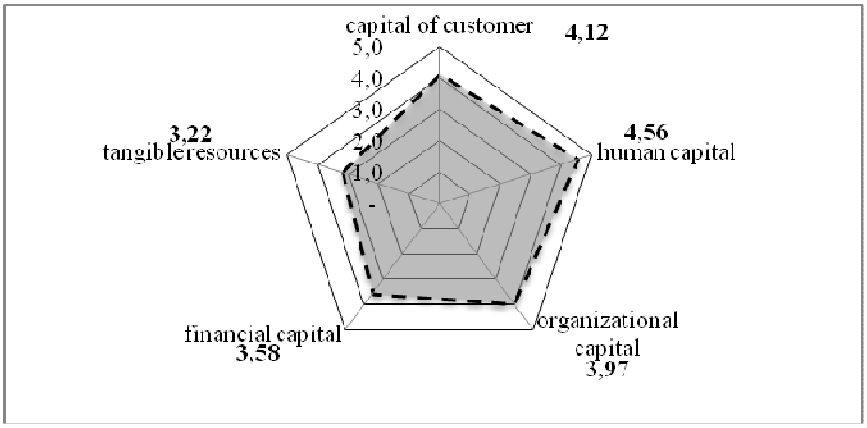


Figure 1. The resources of a bank contributing to building a competitive advantage in the opinion of managers of selected bank branches in the Poznań agglomeration

*Source: own elaboration based on the author's research "Building a competitive advantage by bank branches in retail banking - analysis of selected branches in the Poznań agglomeration" in 2014*

In the assessment of managers (in scale of 1-5) the involvement of employees, deriving from well-calibrated incentive systems and appropriate working environment, has a clear direct impact on better customer service. Moreover, branch directors are aware that in order to achieve this goal a matter of great importance constitute a satisfied customer, permanently associated with the bank through the use of a wide range of products and relationship with bank personnel involved in direct service. Subset of these factors was defined in the study as the capital of customer. Tangible resources, being in a bank's possession, have relatively little importance in achieving market advantage and are certainly a least unique factor that can be easily copied by competitors. For providing high-quality customer service banks must essentially focus on cost-effective and conveniently located bank branches network.

Results of the survey conducted among customers of selected banks in Poznan agglomeration explicitly confirm that location of the branch has vital importance for retail customers who want quickly and easily make necessary operations at the branch. It is also the most important factor in process of choosing a bank (49% of responses). Managers of retail branches, assessing the impact of tangible resources on the bank's competitiveness, as the most important indicate: the location of branches, electronic banking system and a well-developed network of ATMs. Also they recognized that the grandeur or the prestige of the building, furnishing of the operating rooms of customer service and facilities have become of considerably less importance for the competitiveness of retail branch.

## MANAGERS ACTIVITIES FOR BUILDING COMPETITIVE ADVANTAGE OF RETAIL BANK BRANCH

Manager of retail branch plays a key role for the smooth functioning of the operational bank unit, and thus has a significant impact on the creation of organisation's image within the area, where their holds their function. Among basic tasks belonging to retail branch director branch are the following:

- planning, organizing, and direct supervision over execution of daily tasks,
- responsibility for the quality of customer service,
- active management of sales operations of subordinate employees,
- responsibility for cost efficiency and profitability of branch,
- organizing and planning sales campaigns,
- internal control and reporting.

Blanchard *et al.* [2015, p. 36] note that in effective organizations, managers should maintain constant and direct contact with customers, collect feedback from them as well as the market, in order to understand current trends and share knowledge with the team. Therefore it is important that directors of retail branches always have direct contact with customers, so that they could monitor the level of service quality provided by bank advisors on regular basis. Apart from the above mentioned functions of branch managers they play crucial role in recruiting suitable persons, taking care of competence development of subordinate employees, setting the standards of customer service, providing employees with regular feedback on the performance and quality of their work. Buckingham and Coffman [2012, p. 35-44] note that the competitiveness of the company is determined not only by its products or services, but people who directly perform or directly deliver these products and services.

The study, conducted on a sample of selected retail banks managers within the Poznań agglomeration, was identified the most important actions of managers used to reinforce bank's competitiveness. To do this, managers were asked to indicate three among those below listed, most effectively used in daily work in their banks:

- building and maintaining long-term relationships with customers,
- learning about customer needs,
- analysis of profitability of customer business relations,
- working with current customer database,
- implementing of innovative internal processes,
- implementing of innovative services offered to customers.

As the results of the study presented in Table 1 show, in the opinion of managers most important issue constitutes the ability of building long-term relationships with clients (76% of responses). In addition, they emphasize the importance of a good knowledge of customer needs and expectations, which indicated an average of 67% of managers in the research sample. In service activity it is increasingly recognized that precise identification of customer expectations and reaching the client out with individually prepared solution become the strength of product offer in relation to the competitors. For that purpose, in the opinion of managers, it may be useful to work on a daily basis with current database of clients. More than 40% of managers of branches indicated that factor as an essential aspect in obtaining competitive advantage. Headquaters of banks invest funds in modern systems of customer relationship management (*Customer Relationship Management* so-called „CRM"), which at any time are able to generate accurate information about the contacts with the customer, their activity in use of bank services, transactions carried out or financial balance surplus or balance of loans incurred. With such information, an effective financial counselor can effectively reach out to the customer with precisely selected product or service.

In the opinion of surveyed managers similar importance for achieving market advantage has implementing of innovative services to customers, as indicated in the study by 40% of respondents. Skilful encouraging customers to use solutions such as: mobile banking, CDMs, or platform for currency exchange provides reaching a wider customer base and higher level of cross-sell among existing customers.

Table 1. Factors most effectively undertaken in order to build a competitive advantage

| Factors most effectively used in the bank | PKO BP S.A. | Pekao S.A. | Crédit Agricole Bank Polska S.A. | Citi Handlowy S.A. | BZ WBK S.A. | Millennium S.A. | Average |
|---|---|---|---|---|---|---|---|
| Knowledge of customer needs | 64% | 71% | 60% | 100% | 64% | 45% | 67% |
| Building and maintaining long-term relationships with customers | 100% | 94% | 90% | 0% | 89% | 82% | 76% |
| Analysis of the profitability of bank customers | 9% | 6% | 0% | 0% | 13% | 9% | 6% |
| Working with current database of customers | 18% | 47% | 40% | 50% | 44% | 45% | 41% |
| Implementation of innovative internal processes | 27% | 12% | 0% | 50% | 11% | 18% | 20% |
| Implementation of innovative services for clients | 36% | 53% | 20% | 50% | 33% | 45% | 40% |

*Source: own elaboration*

## CONCLUSIONS

Managers of retail branches are facing increasingly intensifying competitive struggle for customers in extremely difficult and unfavorable for the banking sector circumstances. Low interest rates, additional capital charges or implemented bank tax have had a measurable impact on the banks earnings and their returns on equity. These factors are forcing banks to make additional savings, but also an even greater mobilization in order to build the revenue base by acquiring new customers, which is still possible due to continuous improvement of competitive position in relation to other banks. Managers of retail branches attach the greatest importance to the development and keeping long-term relationships with customers, which provide high quality of service and flexibility in product offerings. Relationships are built through the use of banking services, discussions with customers and good recognition of their needs.

However, equally important role plays by the perception of a bank, image of the institution and its reputation. Managers agree that the key factor in achieving a sustainable competitive advantage in the banking sector is human capital. It is well-trained and committed bank advisors, having daily contact with clients, who guarantee gaining competitive advantage and creating a positive image of the bank to which customers are willing to come back and highly recommend.

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# IMPACT OF INFLATION ON ECONOMIC PROCESSES IN THE POLISH TIMBER INDUSTRY

**Abstract**: A major macroeconomic index, inflation is a price increase process affecting the distribution of national income. According to estimations, even up to 90% of new money issued in Poland is generated by commercial banks. Each bank loan means generating such new money. In economic theory, this process is referred to as "money creation." This paper presents the impact of inflation and deflation on economic processes in the Polish timber industry.

**Key words:** inflation, economic process

## INTRODUCTION

While inflation is common in the global economy, its intensity may vary across countries and periods. The intensity is determined by the inflation rate: the increase in price levels in a specific period compared to the baseline period, expressed in percentages. Based on the yearly inflation rate, the following classification is adopted: creeping inflation (up to several percent), walking inflation (over a dozen percent), galloping inflation (over 20%) and hyperinflation: a situation where rational management, sound business cases and business activity planning become infeasible, and incentive schemes are ineffective due to intense inflation processes. As a consequence, social life progressively falls into anarchy.

The complexity of the inflation process results from the multiplicity of its causes, manifestations and impacts. The causes of inflation are as follows: in the case of demand-pull inflation: excessive amounts of money in circulation;

in the case of cost-push inflation: increasing production costs.

To restrict and counteract inflation, adequate policies need to be implemented by the government as regards incomes of the nation, limiting the government deficits (fiscal policy), the central bank's supervision over money issuance, and money creation by commercial banks (monetary policy).

The inflation rate is an economic index closely followed by virtually all market actors: consumers, producers, traders, central banks, commercial and investment banks, and politicians. Inflation level and the axis of expected inflation changes is what decides of future costs, profits, standards of living and social attitudes. These factors have a direct effect on support levels revealed by opinion polls which are closely monitored by politicians.

This paper presents the impact of inflation and deflation on management processes in the Polish timber industry.

## INFLATION MEASUREMENT

Inflation may be measured in multiple ways. The results may vary depending on the measure employed.

General inflation, or the consumer price index, is a widely adopted indicator. Known internationally as CPI, it shows the change in prices of a basket of goods purchased by an average

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household. International analyses are based on comparing the shares of specific groups of goods in the basket.

Recently, the highest inflation rates were reported in Zimbabwe (previously, Southern Rhodesia). Already in 2008, there was not enough space to display the zeros on the calculators' screens. In mid-2008, the inflation level reached 2.2 million %. When 231 million % was attained, the government worksheets went out of scale, and official data was no longer published. As estimated by the economists, the peak inflation rate was 500 billion % or even more. The galloping inflation could be stopped by replacing the local currency (Zimbabwean dollars) with foreign currencies in the calculations. From December 2008, the estimations of price dynamics have been based on US dollars. Several months later, other currencies (South African rand, Botswana pula and British pound) started to be used as a reference even in day-to-day transactions. In 2009, as a consequence of the above stabilization measures, the Zimbabwean consumer price index decreased to 7.7%, and signs of economic recovery became visible for the first time since 2000. In December 2010, the inflation rate in Zimbabwe was 3.2%: the inflation was over.

At the beginning of 2015, high inflation levels were reported in Venezuela, a country going through recession (with a GDP growth rate of -2.5%) and struggling with hyperinflation (64% in 2014). The main reasons were the shortage of goods and political and social tensions. The crisis was strengthened by the risk of nationalization, restricted imports and price and margin controls. Under these circumstances, the difficult situation of local entrepreneurs was getting even worse.

## MONEY CHANGEOVER AND REDENOMINATION

In the case of excessive inflation, the government may decide to put in place money changeover and redenomination measures. In Poland, after world war 2, money changeover took place three times. The first changeover was performed under the decree of the Polish Committee of National Liberation of August 24, 1944, depriving the majority of the population of their savings. The second monetary reform was announced in the Act of October 28, 1950 and performed on October 30, 1950. Coming as a total surprise, the 1950 changeover was also a redenomination. Polish zlotys in circulation from 1948 to 1950 were quickly replaced (within a couple of days) with the newly issued money. The underlying principle was to convert bank deposits, all prices and employee remunerations using the same rate, i.e. 100 old zlotys against 3 new ones. The cash conversion rate was definitely less advantageous: 100 old zlotys against 1 new zloty. Strict financial discipline was also imposed, reducing the high inflation levels for nearly 25 years (from 1957 to 1981; Table 1, Table 2).

The third changeover, and the second redenomination, took place on January 1, 1995. A new monetary unit referred to as "zloty" (PLN) was introduced to replace the "old zloty" (PLZ). In all conversion cases, 10,000 old zlotys were replaced with 1 new zloty. The redenomination was caused by hyperinflation, reaching a level of 2,408% in 1989-1990 (Table 1, Table 2) and as much as 10,488% in 1989-1994 (which is more than the 1995 redenomination rate). It may be concluded that the 1995 redenomination compensated for the hyperinflation effects taking place during the transformation period (1989 – 1994). Inflation rates are shown on a cumulative and rolling basis in Table 1 and Table 2, respectively.

If the analysis excludes the 1989-1994 period, i.e. under the assumption that the 1988 inflation rate was immediately followed by that of 1995, the price increase from 1949 to (and including) 2016 was 10,481.67% (Table 2) which is slightly less than during the economic and political transformation (1989 – 1994).

Table 1. Yearly cumulative consumer price indexes in 1950-2016

| Cumulative consumer price indexes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| YEAR | CPI | YEAR | CPI | YEAR | CPI | YEAR | CPI | YEAR | CPI |
| 1950 | 100,00 | 1970 | 203,97 | 1990 | 71 595,11 | 2010 | 305,04 | 1988 | 100,00 |
| 1951 | 109,60 | 1971 | 203,77 | 1991 | 121 926,46 | 2011 | 318,15 | 1989 | 351,10 |
| 1952 | 125,38 | 1972 | 203,77 | 1992 | 174 354,84 | 2012 | 329,93 | 1990 | 2 407,84 |
| 1953 | 177,92 | 1973 | 209,47 | 1993 | 235 902,11 | 2013 | 332,89 | 1991 | 4 100,56 |
| 1954 | 166,71 | 1974 | 224,35 | 1994 | 311 862,58 | 2014 | 332,89 | 1992 | 5 863,80 |
| 1955 | 162,71 | 1975 | 231,08 | 1995 | 127,80 | 2015 | 329,90 | 1993 | 7 933,72 |
| 1956 | 161,08 | 1976 | 241,24 | 1996 | 153,23 | 2016 | 327,92 | 1994 | 10 488,38 |
| 1957 | 169,78 | 1977 | 253,06 | 1997 | 176,06 | | | | |
| 1958 | 174,36 | 1978 | 273,56 | 1998 | 196,84 | | | | |
| 1959 | 176,28 | 1979 | 292,71 | 1999 | 211,21 | | | | |
| 1960 | 179,45 | 1980 | 320,23 | 2000 | 232,54 | | | | |
| 1961 | 180,71 | 1981 | 388,11 | 2001 | 245,33 | | | | |
| 1962 | 185,23 | 1982 | 779,33 | 2002 | 249,99 | | | | |
| 1963 | 186,71 | 1983 | 951,57 | 2003 | 251,99 | | | | |
| 1964 | 188,95 | 1984 | 1 094,30 | 2004 | 260,81 | | | | |
| 1965 | 190,65 | 1985 | 1 259,54 | 2005 | 266,29 | | | | |
| 1966 | 192,94 | 1986 | 1 482,48 | 2006 | 268,95 | | | | |
| 1967 | 195,83 | 1987 | 1 856,06 | 2007 | 275,68 | | | | |
| 1968 | 198,97 | 1988 | 2 973,41 | 2008 | 287,25 | | | | |
| 1969 | 201,75 | 1989 | 10 439,65 | 2009 | 297,31 | | | | |

*Source: the Information Portal of the Central Statistical Office (accessed on August 23, 2017)*
*Price index (previous year = 100)*

Table 2. Yearly rolling consumer price indexes in 1949-2016

| Rolling consumer price indexes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| YEAR | CPI | YEAR | CPI | YEAR | CPI | YEAR | CPI | YEAR | CPI |
| 1950 | 107,50 | 1970 | 219,27 | 1990 | 0,00 | 2010 | 9 750,26 | 1988 | 100,00 |
| 1951 | 117,82 | 1971 | 219,05 | 1991 | 0,00 | 2011 | 10 169,52 | 1989 | 351,10 |
| 1952 | 134,79 | 1972 | 219,05 | 1992 | 0,00 | 2012 | 10 545,80 | 1990 | 2 407,84 |
| 1953 | 191,26 | 1973 | 225,18 | 1993 | 0,00 | 2013 | 10 640,71 | 1991 | 4 100,56 |
| 1954 | 179,21 | 1974 | 241,17 | 1994 | 0,00 | 2014 | 10 640,71 | 1992 | 5 863,80 |
| 1955 | 174,91 | 1975 | 248,41 | 1995 | 4 085,02 | 2015 | 10 544,94 | 1993 | 7 933,72 |
| 1956 | 173,16 | 1976 | 259,34 | 1996 | 4 897,94 | 2016 | 10 481,67 | 1994 | 10 488,38 |
| 1957 | 182,51 | 1977 | 272,04 | 1997 | 5 627,73 | | | | |
| 1958 | 187,44 | 1978 | 294,08 | 1998 | 6 291,81 | | | | |
| 1959 | 189,50 | 1979 | 314,66 | 1999 | 6 751,11 | | | | |
| 1960 | 192,91 | 1980 | 344,24 | 2000 | 7 432,97 | | | | |
| 1961 | 194,26 | 1981 | 417,22 | 2001 | 7 841,78 | | | | |
| 1962 | 199,12 | 1982 | 837,78 | 2002 | 7 990,78 | | | | |
| 1963 | 200,71 | 1983 | 1 022,93 | 2003 | 8 054,70 | | | | |
| 1964 | 203,12 | 1984 | 1 176,37 | 2004 | 8 336,62 | | | | |
| 1965 | 204,95 | 1985 | 1 354,00 | 2005 | 8 511,69 | | | | |
| 1966 | 207,41 | 1986 | 1 593,66 | 2006 | 8 596,80 | | | | |
| 1967 | 210,52 | 1987 | 1 995,27 | 2007 | 8 811,72 | | | | |
| 1968 | 213,89 | 1988 | 3 196,42 | 2008 | 9 181,82 | | | | |
| 1969 | 216,88 | 1989 | 0,00 | 2009 | 9 503,18 | | | | |

*Source: the Information Portal of the Central Statistical Office (accessed on August 23, 2017)*
*Price index (previous year = 100)*

**INFLATION INDEXES**

Table 3 shows a summary of annual consumer price indexes systematically calculated by the Central Statistical Office over the 1950-2016 period Accordingly, in Poland, deflation was reported 6 times, at the end of: 1954 (93.7%), 1955 (97.6%), 1956 (99%), 1971 (99.9%), 2015 (99.1%) and 2016 (99.4%). The highest price decrease took place in 1954 (by 6.3% vs. 1953). In 1972 and 2014, prices remained stable, and the annual price index was 100%. Also, the annual inflation rate was below 1% five times: in 1961 (100.7%), 1962 (100.8%), 1965 (100.9%), 2003 (100.8%) and 2013 (100.9%).

The highest annual inflation rate (685.8%) was recorded in 1990. Also, two times, in 1989 (351.1%) and 1982 (200.8%), the inflation rate went beyond 200%. Ten times, it ranged from 121.2% to 170.3%, reaching the levels of galloping inflation (over 20%). Poland faced galloping inflation 13 times (in the 68-year period under consideration), including in nine consecutive years, from 1987 (125.2%) to 1995 (127.8%). Since 1995, inflation has been mastered. Thus, Poland has not experienced galloping inflation for the last 22 years.

Based on data consistently published by the Central Statistical Office (as per the Public Statistics Program, by the 15th calendar day of each month following the reporting month), the Money Portal publishes 4 inflation indexes each month:

Inflation 1: the corresponding month of the previous year is used as the calculation baseline,

Inflation 2: the previous month is used as the calculation baseline,

Inflation 3: last December is used as the calculation baseline,

Inflation 4: average inflation rate from the last 12 months = the annual average inflation index.

Inflation indexes of particular economic importance include Inflation 1 and Inflation 2 which will be thoroughly analyzed later in this paper.

Table 3. Consumer price indexes in 1950-2016

| Yearly consumer price indexes | | | | | | | |
|---|---|---|---|---|---|---|---|
| YEAR | CPI | YEAR | CPI | YEAR | CPI | YEAR | CPI |
| 1950 | 107,5 | 1970 | 101,1 | 1990 | ***685,8*** | 2010 | 102,6 |
| 1951 | 109,6 | 1971 | 99,9 | 1991 | ***170,3*** | 2011 | 104,3 |
| 1952 | 114,4 | 1972 | 100,0 | 1992 | ***143,0*** | 2012 | 103,7 |
| 1953 | ***141,9*** | 1973 | 102,8 | 1993 | ***135,3*** | 2013 | **100,9** |
| 1954 | 93,7 | 1974 | 107,1 | 1994 | ***132,2*** | 2014 | 100,0 |
| 1955 | 97,6 | 1975 | 103,0 | 1995 | ***127,8*** | 2015 | 99,1 |
| 1956 | 99,0 | 1976 | 104,4 | 1996 | 119,9 | 2016 | 99,4 |
| 1957 | 105,4 | 1977 | 104,9 | 1997 | 114,9 | | |
| 1958 | 102,7 | 1978 | 108,1 | 1998 | 111,8 | | |
| 1959 | 101,1 | 1979 | 107,0 | 1999 | 107,3 | | |
| 1960 | 101,8 | 1980 | 109,4 | 2000 | 110,1 | | |
| 1961 | **100,7** | 1981 | ***121,2*** | 2001 | 105,5 | | |
| 1962 | 102,5 | 1982 | ***200,8*** | 2002 | 101,9 | | |
| 1963 | **100,8** | 1983 | ***122,1*** | 2003 | **100,8** | | |
| 1964 | 101,2 | 1984 | 115,0 | 2004 | 103,5 | | |
| 1965 | **100,9** | 1985 | 115,1 | 2005 | 102,1 | | |
| 1966 | 101,2 | 1986 | 117,7 | 2006 | 101,0 | | |
| 1967 | 101,5 | 1987 | ***125,2*** | 2007 | 102,5 | | |
| 1968 | 101,6 | 1988 | ***160,2*** | 2008 | 104,2 | | |
| 1969 | 101,4 | 1989 | ***351,1*** | 2009 | 103,5 | | |

*Source: the Information Portal of the Central Statistical Office (accessed on August 3, 2017)*

*Price index (previous year = 100)*

deflation | galloping inflation | inflation below 1%

*hyperinflation above 200%*

## INFLATION CALCULATIONS WITH THE CORRESPONDING MONTH OF THE PREVIOUS YEAR USED AS THE BASELINE

Table 4 shows a summary of Inflation 1 indexes, calculated with the corresponding month of the previous year used as the baseline. The analysis period extends from 1989 to 2017. In 1H 1990, that index went beyond 1,000%, reaching the peak value (1,183.1%) in February 1990. In 2H 1989 and throughout 1990, Inflation 1 remained above 100%. For the last time, Inflation 1 exceeded 20% in August 1996. Thus, it may be concluded that this date marked the end of galloping inflation in Poland.

Table 4. Monthly price indexes compared to previous year in 1989-2017

| Monthly price indexes (Inflation 1: with the corresponding month of the previous year used as the baseline) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| year | month | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1989 | | 70,3 | 74,2 | 77,8 | 85,4 | 91,3 | 103,9 | 182,7 | 269,2 | 457,1 | 557,0 | 639,6 |
| 1990 | 1007,6 | **1183,1** | 1132,8 | 1102,9 | 1076,5 | 1051,2 | 994,0 | 748,5 | 558,0 | 356,0 | 285,9 | 249,3 |
| 1991 | 94,9 | 80,0 | 81,8 | 71,0 | 67,8 | 72,4 | 68,3 | 67,6 | 67,1 | 64,8 | 62,7 | 60,4 |
| 1992 | 45,4 | 40,1 | 38,1 | 40,2 | 43,2 | 39,0 | 41,3 | 44,3 | 46,5 | 46,4 | 45,4 | 44,3 |
| 1993 | 37,5 | 39,7 | 39,7 | 38,1 | 35,8 | 34,3 | 34,8 | 34,4 | 31,0 | 29,8 | 33,0 | 37,6 |
| 1994 | 32,4 | 29,9 | 30,2 | 31,2 | 31,2 | 32,7 | 32,8 | 32,2 | 34,6 | 36,1 | 33,5 | 29,5 |
| 1995 | 32,3 | 33,6 | 33,1 | 32,4 | 32,3 | 30,3 | 27,6 | 25,7 | 24,2 | 22,4 | 22,0 | 21,6 |
| 1996 | 21,0 | 20,4 | 20,4 | 20,3 | 19,8 | 19,5 | 20,4 | 20,5 | 19,5 | 19,5 | 19,1 | 18,5 |
| 1997 | 17,8 | 17,3 | 16,6 | 15,3 | 14,6 | 15,3 | 14,9 | 14,5 | 13,6 | 13,1 | 13,2 | 13,2 |
| 1998 | 13,6 | 14,2 | 13,9 | 13,7 | 13,3 | 12,2 | 11,9 | 11,3 | 10,6 | 9,9 | 9,2 | 8,6 |
| 1999 | 6,9 | 5,6 | 6,2 | 6,3 | 6,4 | 6,5 | 6,3 | 7,2 | 8,0 | 8,7 | 9,2 | 9,8 |
| 2000 | 10,1 | 10,4 | 10,3 | 9,8 | 10,0 | 10,2 | 11,6 | 10,7 | 10,3 | 9,9 | 9,3 | 8,5 |
| 2001 | 7,4 | 6,6 | 6,2 | 6,6 | 6,9 | 6,2 | 5,2 | 5,1 | 4,3 | 4,0 | 3,6 | 3,6 |
| 2002 | 3,4 | 3,5 | 3,3 | 3,0 | 1,9 | 1,6 | 1,3 | 1,2 | 1,3 | 1,1 | 0,9 | 0,8 |
| 2003 | 0,5 | 0,5 | 0,6 | 0,3 | 0,4 | 0,8 | 0,8 | 0,7 | 0,9 | 1,3 | 1,6 | 1,7 |
| 2004 | 1,7 | 1,6 | 1,7 | 2,2 | 3,4 | 4,4 | 4,6 | 4,6 | 4,4 | 4,5 | 4,5 | 4,4 |
| 2005 | 4,0 | 3,6 | 3,4 | 3,0 | 2,5 | 1,4 | 1,3 | 1,6 | 1,8 | 1,6 | 1,0 | 0,7 |
| 2006 | 0,7 | 0,7 | 0,4 | 0,7 | 0,9 | 0,8 | 1,1 | 1,6 | 1,6 | 1,2 | 1,4 | 1,4 |
| 2007 | 1,6 | 1,9 | 2,5 | 2,3 | 2,3 | 2,6 | 2,3 | 1,5 | 2,3 | 3,0 | 3,6 | 4,0 |
| 2008 | 4,0 | 4,2 | 4,1 | 4,0 | 4,4 | 4,6 | 4,8 | 4,8 | 4,5 | 4,2 | 3,7 | 3,3 |
| 2009 | 3,1 | 3,3 | 3,6 | 4,0 | 3,6 | 3,5 | 3,6 | 3,7 | 3,4 | 3,1 | 3,3 | 3,5 |
| 2010 | 3,6 | 2,9 | 2,6 | 2,4 | 2,2 | 2,3 | 2,0 | 2,0 | 2,5 | 2,8 | 2,7 | 3,1 |
| 2011 | 3,6 | 3,6 | 4,3 | 4,5 | 5,0 | 4,2 | 4,1 | 4,3 | 3,9 | 4,3 | 4,8 | 4,6 |
| 2012 | 4,1 | 4,3 | 3,9 | 4,0 | 3,6 | 4,3 | 4,0 | 3,8 | 3,8 | 3,4 | 2,8 | 2,4 |
| 2013 | 1,7 | 1,3 | 1,0 | 0,8 | 0,5 | ***0,2*** | 1,1 | 1,1 | 1,0 | 0,8 | 0,6 | 0,7 |
| 2014 | 0,5 | 0,7 | 0,7 | 0,3 | ***0,2*** | 0,3 | -0,2 | -0,3 | -0,3 | -0,6 | -0,6 | -1,0 |
| 2015 | -1,3 | **-1,6** | -1,5 | -1,1 | -0,9 | -0,8 | -0,7 | -0,6 | -0,8 | -0,7 | -0,6 | -0,5 |
| 2016 | -0,7 | -0,8 | -0,9 | -1,1 | -0,9 | -0,8 | -0,9 | -0,8 | -0,5 | -0,2 | 0,0 | 0,8 |
| 2017 | 1,8 | 2,2 | 2,0 | 2,0 | 1,9 | 1,5 | 1,7 | 1,8 | | | | |

*Source: own study based on the Money Portal (accessed on August 23, 2017)*

inflation above 1000% inflation below 1% deflation

Table 5. Monthly price indexes compared to previous month in 1989-2017

| Monthly price indexes compared to previous month (linflation II - to the previous month used as the baseline) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| year | month | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 1989 | | 7,9 | 8,1 | 9,8 | 7,2 | 6,1 | 9,5 | 39,5 | 34,4 | 54,8 | 22,4 | 17,7 | |
| 1990 | **79,6** | 23,8 | 4,3 | 7,5 | 4,6 | 3,4 | 3,6 | 1,8 | 4,6 | 5,7 | 4,9 | 5,9 | |
| 1991 | 12,7 | 6,7 | 4,5 | 2,7 | 2,7 | 4,9 | 0,1 | 0,6 | 4,3 | 3,2 | 3,2 | 3,1 | |
| 1992 | 7,5 | 1,8 | 2,0 | 3,7 | 4,0 | 1,6 | 1,4 | 2,7 | 5,3 | 3,0 | 2,3 | 2,2 | |
| 1993 | 4,1 | 3,4 | 2,1 | 2,3 | 1,8 | 1,4 | 1,1 | 2,3 | 2,5 | 1,9 | 4,0 | 5,6 | |
| 1994 | 1,9 | 1,1 | 2,0 | 2,9 | 1,7 | 2,3 | 1,5 | 1,7 | 4,5 | 2,9 | 1,8 | 1,9 | |
| 1995 | 3,9 | 2,1 | 1,7 | 2,3 | 1,8 | 1,0 | **-0,9** | 0,4 | 3,0 | 1,7 | 1,3 | 1,5 | 1 |
| 1996 | 3,4 | 1,5 | 1,5 | 2,2 | 1,4 | 1,0 | -0,1 | 0,5 | 1,9 | 1,4 | 1,3 | 1,3 | 1 |
| 1997 | 2,9 | 1,1 | 0,8 | 1,0 | 0,6 | 1,5 | -0,2 | 0,1 | 1,4 | 1,1 | 1,2 | 1,0 | 1 |
| 1998 | 3,2 | 1,7 | 0,6 | 0,7 | 0,4 | 0,4 | -0,4 | -0,6 | 0,8 | 0,6 | 0,5 | 0,4 | 2 |
| 1999 | 1,5 | 0,6 | 1,0 | 0,8 | 0,7 | 0,2 | -0,3 | 0,6 | 1,4 | 1,1 | 0,9 | 0,9 | 1 |
| 2000 | 1,8 | 0,9 | 0,9 | 0,4 | 0,7 | 0,8 | 0,7 | -0,3 | 1,0 | 0,8 | 0,4 | 0,2 | 1 |
| 2001 | 0,8 | 0,1 | 0,5 | 0,8 | 1,1 | -0,1 | -0,3 | -0,3 | 0,3 | 0,4 | 0,1 | 0,2 | 3 |
| 2002 | 0,8 | 0,1 | 0,2 | 0,5 | -0,2 | -0,4 | **-0,5** | -0,4 | 0,3 | 0,3 | -0,1 | 0,1 | 5 |
| 2003 | 0,4 | 0,1 | 0,3 | 0,2 | 0 | -0,1 | -0,4 | -0,4 | 0,5 | 0,6 | 0,3 | 0,2 | 3 |
| 2004 | 0,4 | 0,1 | 0,3 | 0,8 | 1,0 | 0,9 | -0,1 | -0,4 | 0,3 | 0,6 | 0,3 | 0,1 | 2 |
| 2005 | 0,1 | -0,1 | 0,1 | 0,4 | 0,3 | -0,2 | -0,2 | -0,1 | 0,4 | 0,4 | -0,2 | -0,2 | **6** |
| 2006 | 0,2 | 0 | -0,1 | 0,7 | 0,5 | -0,3 | 0 | 0,3 | 0,2 | 0,1 | 0 | -0,2 | 3 |
| 2007 | 0,4 | 0,3 | 0,5 | 0,5 | 0,5 | 0 | -0,3 | -0,4 | 0,8 | 0,6 | 0,7 | 0,3 | 2 |
| 2008 | 0,7 | 0,4 | 0,4 | 0,4 | 0,8 | 0,2 | 0 | -0,4 | 0,3 | 0,4 | 0,2 | -0,1 | 2 |
| 2009 | 0,5 | 0,9 | 0,7 | 0,7 | 0,5 | 0,2 | 0,1 | -0,4 | 0 | 0,1 | 0,3 | 0 | 1 |
| 2010 | 0,6 | 0,2 | 0,3 | 0,4 | 0,3 | 0,3 | -0,2 | -0,4 | 0,6 | 0,5 | 0,1 | 0,4 | 2 |
| 2011 | 1,2 | 0,2 | 0,9 | 0,5 | 0,6 | -0,4 | -0,3 | 0 | 0,1 | 0,7 | 0,7 | 0,4 | 2 |
| 2012 | 0,7 | 0,4 | 0,5 | 0,6 | 0,2 | 0,2 | **-0,5** | -0,3 | 0,1 | 0,4 | 0,1 | 0,1 | 2 |
| 2013 | 0,1 | 0 | 0,2 | 0,4 | -0,1 | 0 | 0,3 | -0,3 | 0,1 | 0,2 | -0,2 | 0,1 | 3 |
| 2014 | 0,1 | 0,1 | 0,1 | 0 | -0,1 | 0 | -0,2 | -0,4 | 0 | 0 | -0,2 | -0,3 | 5 |
| 2015 | -0,2 | -0,1 | 0,2 | 0,4 | 0 | 0 | -0,1 | -0,4 | -0,3 | 0,1 | -0,1 | -0,2 | **7** |
| 2016 | -0,4 | -0,1 | 0,1 | 0,3 | 0,1 | 0 | -0,3 | -0,2 | 0 | 0,5 | 0,1 | 0,7 | 4 |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 0 |
| total | 23,1 | 10,5 | 11,7 | 15,0 | 11,1 | 5,2 | -4,2 | -3,8 | 13,2 | 12,6 | 7,7 | 6,9 | |
| + | 20 | 17 | 21 | 21 | 17 | 11 | 3 | 5 | 18 | 21 | 16 | 16 | |
| **-** | **2** | **3** | **1** | **0** | **3** | **6** | **17** | **16** | **1** | **0** | **5** | **5** | deflation |
| 0 | 1 | 3 | 1 | 2 | 3 | 6 | 3 | 2 | 3 | 1 | 1 | 1 | |
| >= | 21 | 20 | 22 | 23 | 20 | 17 | 6 | 7 | 21 | 22 | 17 | 17 | |
| together | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 22 | 22 | 22 | 22 | |

| The number of months where deflation occurred in the year under consideration (in the period covered by this study: from 1995) | | |
|---|---|---|
| | 0 | 1 |
| | 1 | 6 |
| | 2 | **7** |
| | 3 | 4 |
| | 4 | 1 |
| | 5 | 2 |
| | 6 | 1 |
| | 7 | 1 |

*Source: own study based on the Money Portal (accessed on August 23, 2017)*

inflation below 10% | inflation 0% | deflation

Inflation 1 remained at a very low level (below 1%) for a total of 32 months (Table 4), in 2002 (2 times), 2003 (9 times), 2005 (once), 2006 (6 times), 2013 (6 times), 2014 (6 times), 2016 (twice). In August 2014, for the first time since the social, economic and political transformation, negative inflation (deflation) was recorded in Poland. Initially, it was quite low: -0.2% compared to the corresponding month of the previous year. Previously, negative (annual) inflation was reported 43 years ago, in 1971 (Table 1). Inflation 1 remained negative throughout 2H 2014, consistently growing from -0.2% in July to -1% in December 2014. The levels of -1.3% and -1,6% (the negative peak rate in the period concerned) were reached, respectively, in January and February 2015. In March 2015, the deflation rate slightly decreased to -1.5%. The total duration of the 2014-2016 deflation was 28 months, from July 2014 to October 2016 (Table 4).

The economy, including the timber industry, dealt well with the Polish deflation. However, generally, the decrease in consumer prices is accompanied by recession or a major economic slowdown. For reasons which include preventing the growing deflation, the Monetary Policy Council reduced the interest rates. However, they did so only at the beginning of March 2015 (i.e. 8 months after the deflation started to grow increasingly faster). The one-time decrease was very high (50 basis points), so that the interest rates reached the lowest level ever. The consequence was a very limited decrease of deflation, by -0.1 percentage points, in March 2015. It took more than one and a half year to fully suppress deflation.

**INFLATION CALCULATIONS WITH THE PREVIOUS MONTH USED AS BASELINE**

After 1989, deflation against previous month (Inflation 2) was reported for the first time in July 1995, reaching a quite significant level of -0.9% (Table 5). Also, it was the highest month-over-month deflation in the period concerned. The levels recorded in August 1998, July 2002 and July 2012 were -0.6%, -0.5% and -0.5%, respectively. Since 1995, deflation has occurred on a regular basis, initially once a year (before 2000) and usually twice a year (7 times) or three times a year (4 times) thereafter. Before 1997, deflation was recorded in July only. In 1998, it was experienced both in July and August. In Poland, these are the two months with the most frequent occurrence of monthly deflation: 17 times in July, 16 times in August (over a 23-year period). In 2015 and 2005, deflation occurred 7 and 6 times, respectively, reaching the highest frequency in the 23-year period under consideration. In 2002 and 2014, deflation was recorded 5 times, with 4 occurrences in 2016. In 2015, deflation was experienced for the first time in January and September. No deflation was recorded in April or October. Inflation reached 0 in January 2017 for the first time. In the 8-month period from January to August 2017, the Inflation 2 index was 0 (Table 5).

**DEFLATION**

The opposite of inflation, deflation means a long-term decrease in the average price levels. However, this is neither a desired nor an expected price decrease resulting from technological progress or reduced manufacturing costs. Generally, deflation is caused by the shortage of money in the economy. Low amounts of money in the market translate into in low levels of demand. For the producers, this means problems with selling their goods and services. Growing stocks of products and merchandise make them reduce their prices and reduce output. When selling outstanding merchandise at discounted prices, they incur losses they try to minimize. Thus, they reduce expenditure, including personnel costs, in two ways: either by reducing remunerations or by reducing employment. The latter measure means growing unemployment which reduces demand more rapidly. This is putting greater pressure on further reduction of prices and output. A deflationist spiral is initiated.

Noticing the consecutive price reductions, consumers decide to make their purchases at a later time, even if they can afford it now. This results in a consistent reduction of consumption, and has a devastating effect on economic growth as it is largely contributed to by domestic consumption, in addition to exports and investments.

Deflation is believed to be a symptom of a deepening economic recession, resulting in decreased wages and increased unemployment. But that is not all. The decreasing prices trigger the increase of real interest rates. Companies and individuals with bank loans find themselves in a deteriorating situation: on one hand, their revenue is dropping (and this fact alone makes it more difficult to repay the liabilities and loans) while on the other, the real cost of loans becomes higher.

The consequence of deflation is a wave of bankruptcies and insolvencies, hitting hard the banking system. Deflation also means losses for the state budget: tax revenues are decreasing due both to the reduced value of goods and services sold, and to the deteriorating financial standing of companies and banks. Budget expenditure does not decrease too rapidly (if at all); the amount of unemployment benefits certainly rises. Generally, the state budget deficit and government debt increase as a consequence of deflation.

The deepest deflation took place during the Great Depression, i.e. the 1929-1933 global economic downturn. Also, deflation had a disturbing effect on business relationships in Japan in the 1995-2005 period.

Major deflation, which means persistent long-term decrease in prices with adverse effects on the economy, is very rate in today's economy.

## INFLATION TARGET

Deflation is compared to sand being thrown into an efficiently operating gearbox (increasing friction between the interoperating parts and hampering their operation). In turn, low inflation rates are considered to be the correct lubrication of the gearbox (reducing the friction but only to an appropriate level, without slippage).

The key principle of monetary policies adopted by many central banks is a commitment to achieve a specific inflation level, i.e. the inflation target. The optimum target level was formulated by Peter Howitt, a Canadian economist, and is referred to as the Howitt's rule. The target level is such an inflation rate where further reduction brings more disadvantages than advantages to the economy. This means an excessive restriction of the price increase rate is not always beneficial.

When setting the optimum inflation target, impact of reduced inflation rates on the economic growth and unemployment is taken into consideration. The optimum inflation target is not equivalent to the lowest possible inflation and may vary over time. It depends on the current phase of the economic cycle.

Central banks usually assume that an inflation rate of around 2% (+/- 1%) is an advantageous level for the economic development. It enables reaching a growth rate close to the potential rate. Therefore, the inflation targets set by the US Federal Reserve (Fed) and by the European Central Bank (ECB) for the dollar and euro, respectively, are 2%. The inflation target set by the National Bank of Poland for the zloty is slightly higher: 2.5%.

Also, it is recommended to keep the inflation above 1-1.5%. That dogma exerts a certain pressure on the world's largest banks, making them keep their interest rates at a very low level (often reaching zero), even with low unemployment figures and very moderate GDP growth rates.

## CONCLUSIONS

Today, an increase of living costs at an annual rate of 2-4% is believed to be a positive development which means the economy is in a healthy condition. However, the zero-inflation policy results in high costs in the short term while providing illusive long-term benefits. It may easily turn into deflation. And fighting against deflation is a lengthy process which involves serious problems. Usually, it requires much more time and effort than fighting against inflation.

The situation of industrial companies, including timber processors, strictly depends on inflation rates, just as the entire economy. Mastering the inflation definitely promotes economic development and helps entrepreneurs running their businesses. The Polish economy, especially the timber

industry, have undergone the 28-month deflation period (July 2014 – October 2016) in a healthy condition.

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# FINANCING THE PROMOTION OF RURAL TOURISM AND AGRITOURISM WITHIN SOCIAL AND PRIVATE PARTNERSHIP

**Abstract**: In practice the financing of rural tourism and agritourism is a project which always combines social and private partnership. The aim of the article is to show how to promote rural tourism and agritourism effectively and efficiently so as to achieve the synergistic effect based on social and private partnership.

**Keywords:** rural tourism, agritourism, financing, effectiveness and efficiency of promotion, private and social actions, synergy.

## RURAL TOURISM AND AGRITOURISM

In the last fifty years there have been considerable transformations which affected nearly all aspects of human life. The welfare of a large part of the world population has increased. Modern information technologies have been developing dynamically. We have seen increasing globalisation and continuous transformations in the development of modern tendencies in lifestyles. As a result, the significance of tourism has increased. It is an important element of the development of national economies. This aspect is commonly emphasised by economists. According to Mikuta & Świątkowska [2008], for long years tourism has been an important factor stimulating economic development in many countries around the world. It influences the development of new products and services. At present tourism is considered to be one of the most important branches of the world economy due to the capital invested, profit generated, the number of people employed and the range of the market of tourist services.

International institutions and organisations, such as the UNWTO, OECD, Eurostat, and private enterprises, e.g. Knoema [2017] and the World Travel & Tourism Council [2016], thoroughly monitor the development of tourism around the world. For example, Knoema is a special data generation system, which enables collection of statistical data concerning global tourism and tourism in individual countries. The data about Poland refer to the last thirty years. For example, in 2014 16 million tourists visited Poland, whereas 83.7 million visited France. Poland is the eighteenth most popular tourist destination in the world. There were 56 million tourist trips from Poland (the fifth country in the world ranking), whereas there were 84.5 million tourist trips from China. Unfortunately, this mechanism does not generate statistical data concerning rural tourism and agritourism.

There are a lot of definitions of tourism, which range from literature interpretation to articulation of tourists' real needs. The definition given by the United Nations World Tourism Organization [UNWTO[19]] deserves attention as it defines tourism in the following way: *"Tourism comprises the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited."*

At present tourism is a very strong and dynamically developing branch of many national economies. Simultaneously, it is one of the most important world branches [UNWTO 2016]. In nearly all countries around the world we can see the increasing importance of alternative tourism, which emphasises environmental protection. This tourism should develop in harmony with the natural, social and cultural environment. It comprises nature tourism, ecotourism, etc. Rural tourism

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is a special trend in this development. It is one of desirable forms of business activity in rural areas. As far as the social aspect is concerned, it is a relatively new form of tourism, supported by national governments. On the one hand, it increases rural inhabitants' income. On the other hand, it is a desirable method of increasing people's quality of life. According to Lane & Majewski [2001], tourism in rural areas, i.e. rural tourism, is any form of tourism exercised in a rural environment and making use of its values. Rurality (nature, landscape, culture, buildings, etc.) is the main attraction of rural tourism. Tourism which involves staying on a farm is defined as agritourism. It is part of rural tourism. Agritourism is related with different forms of leisure and tourist services provided on a farm. Agritourism has already become a specific global brand. It is widely known and commonly used. People became aware of the term 'agritourism' when it boomed in the 1990s and the first decades of the 21st century. In consequence, the colloquial term 'rural tourism', which was of secondary significance, was replaced by the terms 'agritourism and rural tourism', which are used by experts.

## SOCIAL AND PRIVATE PROJECTS

A human is both an individual and a member of society, because the community is a group of individuals living in a particular area. People pursue their personal, individual goals by taking personal, private actions and by participating in a group which takes social actions. Similarly, the community pursues its goals both by social and individual actions taken by group members on their own. Therefore, it is natural to implement projects which are both social and private. On the one hand, social and private projects are a powerful driving force for the development of local communities and individuals. On the other hand, they involve the risk of abuse. Transparency is a significant postulate made by contemporary people about social and private projects. This means that all investors should have full knowledge what they finance and what effects they can expect. There is a risk that individuals may abuse social actions for their private needs and that the community may impose too far-reaching obligations on individuals. The search for the golden means, or in contemporary economic terms – for sustainable development, is an important element in the creation of social and economic order in a particular community. In order to achieve the desirable trend of development and progress the community sets useful standards, which make the development desirable and transparent.

Contemporary sciences, including economics, support the idea of harmonious development of individuals and communities. It is particularly necessary to develop transparent methods of planning and implementation of actions when a project is co-financed from public and private funds.

Rural tourism and agritourism are key leverages of economic and social development in many macroregions almost all over the world. France, Italy, Austria, the USA and many other countries are areas of mature rural tourism and agritourism. Poland, Slovenia, Croatia and many other countries are on the way of their dynamic development. Turkey is discovering its great potential for the development of rural tourism and agritourism [Sznajder 2015]. Even Afghanistan, an unstable and dangerous place, is also a potential place for such tourism. Apart from tourist and recreational purposes, international rural tourism and agritourism can play a significant role in peaceful coexistence between nations, which can contribute to peace in the world [Sznajder 2015].

Agritourism is usually a private undertaking, whereas rural tourism is mostly a public initiative. Therefore, agritourism should be financed from private funds, whereas rural tourism should be financed from public funds. Although there is noticeable separateness of agritourism and rural tourism in terms of property, both types of tourism should be coordinated in a particular area to produce the synergistic effect. Promotion of agritourism and rural tourism is a particularly sensitive aspect of coordinated activity. It can be implemented in different forms, usually resulting in social and private partnership.

**EFFECTIVENESS AND EFFICIENCY OF PROMOTION**

Contemporary tourism, rural tourism and agritourism enables efficient and sustainable use of the economic and cultural potential. As results from general experience, effective and efficient promotion is necessary to make use of this potential. National and local governments at different levels as well as tour operators spend considerable amounts of money to promote regions. Increasing amounts of money are spent to promote rural tourism and agritourism. The efficient promotion of rural tourism and agritourism should create the image of a particular region which would be noticeable and acceptable to the inhabitants. In consequence, it will attract domestic and foreign tourists.

The effectiveness of promotion of rural tourism and agritourism is considered in different ways. Sometimes the direct economic effect is less important than recipients' long-lasting, general, rational and emotional impressions about individual groups of products and services, the people or enterprises that offer them and the credibility of their offers. The effectiveness of actions promoting rural tourism and agritourism (PE) should be understood as the extent to which planned actions have been implemented. It is expressed as the ratio between the goal and its implementation:

$$PE = \frac{\text{rural tourism and agritourism promotion goal implemented}}{\text{rural tourism and agritourism promotion goal planned}}$$

The closer the actions promoting rural tourism and agritourism bring them to the goal, the greater their effectiveness is. In practice, the effectiveness of promotion of rural tourism and agritourism is analysed while making projects, preparing promotional campaigns, implementing development strategies, promoting regional and local products and while preparing events promoting rural tourism and agritourism at domestic and foreign fairs. Effectiveness is not equivalent to efficiency. If promotional actions are effective, i.e. they give the expected results, it usually means that the promotion is efficient, but it is not always so. Even if the effectiveness of promotional actions is high, their efficiency may be low or they may be inefficient. The efficiency of promotion of rural tourism and agritourism depends on the amount of outlay and income. It is difficult to identify the effects of promotion, because they cannot be precisely assigned to a particular point in time. It is natural that there may be a relatively long period of time between a promotional action and its effects. The current results should be interpreted as the effect and past and present outlay on promotion.

Figure 1 shows a scheme of the efficiency of promotion of rural tourism and agritourism and the dependences between its components. Income and outlay have considerable influence on promotion, the effects of promotion of rural tourism and agritourism as well as the rural tourism and agritourism promotion efficiency ratio. There are qualitative and quantitative effects of promotion.

The effects of money spent on the promotion in a particular year can be seen only in later years. As the promotion financing process continued in the previous years, the final effect of a particular year is the accumulated effect of financing in that year and in a few preceding years. In practice, the efficiency of promotion of rural tourism and agritourism can be estimated by the increasing number of tourists, higher income gained from non-agricultural activity, more visits to websites in a particular region and more information about the region given in the media.

Partnership and cooperation

In general, partnership cooperation involves working together to achieve a goal. Apart from the entities that provide tourist services directly, local authorities, tourist organisations, inhabitants and institutions supporting the development of tourism and functioning in the regulatory branch are the most important entities which participate in the implementation of tourist undertakings in rural

areas. Market environment institutions and tourist administration are the most important entities which support the development of tourism indirectly [Zmyślony 2008].

The activities performed by individuals, local governments, institutions, organisations and enterprises within a specific social area can be antagonistic, competitive, neutral or complementary to each other.

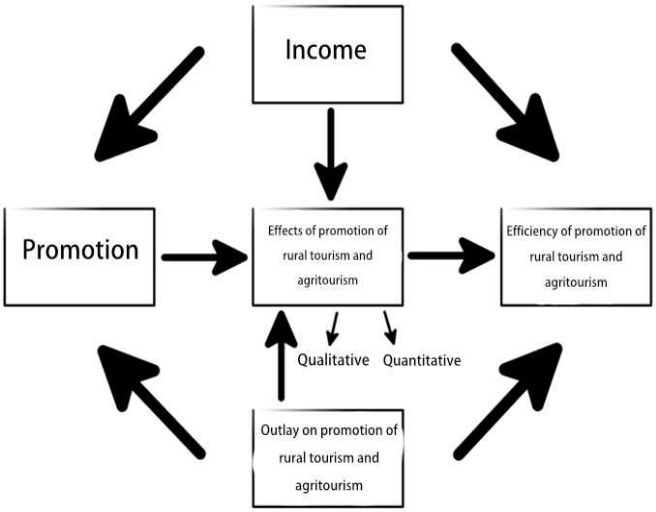


Figure 1. A scheme of the efficiency of promotion of rural tourism and agritourism.

*Source: The author's scheme based on Wrzosek W., (2005): Efektywność marketingu. Collective work, PWE, Warsaw, p. 19.*

The efficiency of promotion of rural tourism and agritourism ($E_{prta}$) is defined as the ratio between the outlay/budget for the promotion of rural tourism and agritourism and its effects.

$$E_{prta} = \frac{\text{effects of promotion of rural tourism and agritourism}}{\text{outlay on promotion of rural tourism and agritourism}}$$

Antagonistic activities lead to the elimination of other stakeholders from the social activities. They have egoistic nature and generate numerous social and economic problems in a particular community.

The aim of competitive activities is to strengthen one's own position as a stakeholder at other stakeholders' (competitors') expense. The effects are taken over by the most competitive stakeholder.

One stakeholder's neutral activities do not influence another stakeholder. However, it does not mean that they do not have negative influence on the effects of their activities.

We can speak of complementary activities when one stakeholder's activities favour other stakeholders and increase the efficiency of all stakeholders' activities.

Financing the promotion of rural tourism and agritourism

In general, agritourism is usually a private undertaking, whereas rural tourism is mostly a public initiative. Therefore, agritourism should be financed from private funds, whereas rural

tourism should be financed from public funds. Although there is noticeable separateness of agritourism and rural tourism in terms of property, both types of tourism should be coordinated in a particular area to produce the synergistic effect. Promotion of agritourism and rural tourism is a particularly sensitive aspect of coordinated activity. It can be implemented in different forms, usually resulting in social and private partnership.

There are various multifaceted relations and connections between the development of rural tourism and agritourism. The people, organisations and institutions that are interested in the expected economic effects of rural tourism and agritourism need to invest money on their promotion, maintenance and development. Agritourism is an inadvertent beneficiary of investments in rural tourism. It particularly results from expenditures on promotion – the effects of investments become intertwined. The promotion of rural tourism in a commune includes the financing of numerous general development projects from public funds.

As can be seen in many countries all over the world, rural tourism is usually promoted from public funds (local budgets, central budget) when promoting the entire region or country. By contrast, agritourism is promoted from private funds belonging to farmers or other business entities operating in this branch. Sometimes there are opposite situations, causing misunderstandings and conflicts. In spite of the fact that the promotion of these forms of tourism is financed from different sources and by independent business entities, it results in joint economic effect, i.e. the maximum return on private and public funds invested together.

As the promotion of rural tourism and agritourism is financed from public and private funds, which are independent from each other, it is reasonable to take actions that are not antagonistic or in opposition to each other. This situation may occur when promotional actions are not coordinated or when destructive (diversionary) actions are financed deliberately so as to make the operation of competitive entities more difficult. From the social point of view, the financing of diversionary actions is a waste of funds, which are spent to cause problems or eliminate competitors from the market. This action is egoistic and socially unacceptable. Local cooperation between stakeholders of rural tourism and agritourism should eliminate this evident irrationality.

**SYNERGY**

The financing of the promotion of rural tourism and agritourism should be oriented so as to achieve common goals and produce synergy. It is unquestionable that the promotion of rural tourism as part of the promotion of a region favours the development of agritourism because it refers to the values of the tourist areas where these agritourist farms are located. In consequence, more tourists arrive at these places. The self-promotion of agritourist farms also increases the number of tourists arriving at particular rural areas and, in consequence, it accelerates their development. We can speak of a synergistic effect in both cases. Only when the promotion of rural tourism and agritourism is coordinated by the right stakeholders, private and public funds produce a synergistic effect. The perspective of synergy shows that the territorial integration of stakeholders engaged in the development of rural tourism and agritourism is rational.

Synergy can be expected when funds are used voluntarily and independently in a coordinated manner. It does not result from the obligatory joining of private and public funds combined by one manager who finances particular social and private actions together. It is important that stakeholders' short-term (1-5 years) and long-term needs (6-10 years) should be taken into consideration.

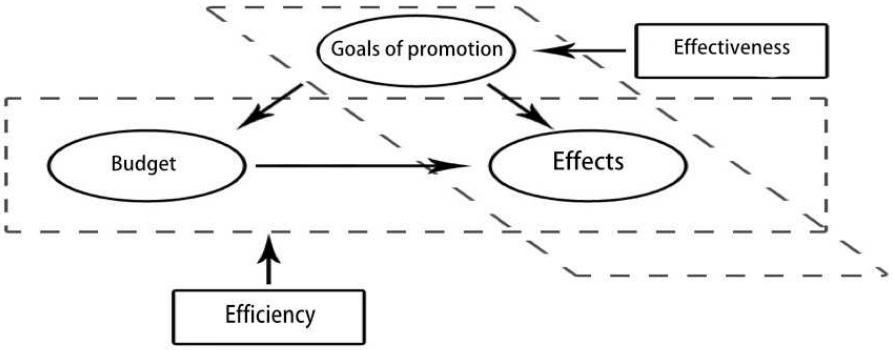


Figure 2. The effectiveness and efficiency of promotion

*Source: Wiktor J. W., (2001): Promocja. System komunikacji przedsiębiorstwa z rynkiem, Wydawnictwo Naukowe PWN, Warsaw, p. 102.*

Figure 2 shows the idea of effectiveness and efficiency, using the example of promotion, which is the subject of consideration in this article. The degree of effectiveness and efficiency can be specified both in a quantified form and in an unquantified manner – verbally. The effectiveness of promotional actions shows whether and to what extent the goals of these actions were achieved. The funds used for promotion are the promotion budget. Promotion efficiency is the ratio between the funds expended on promotion and its effects. An action can be considered efficient if it resulted in a surplus of effects over the costs of promotion. We can speak of synergy in promotion when the total effectiveness and efficiency of promotion resulting from the implementation of solutions is greater than individual promotion of these solutions [Wiktor 2001].

## SUMMARY

The promotion of rural tourism and agritourism is financed ad hoc from the community budget and farmers' funds, without coordination at the local level. In consequence, the synergistic effect is lost. Uncoordinated promotion may be ill-advised, costly and inefficient. The question arises who should coordinate cooperation in a particular region and how it should be coordinated. Farmers are often sceptical about coordinated actions in which they should invest their private funds. Institutions and organisations may also be sceptical about coordination of common goals because of their particular interests. However, the synergistic effect resulting from the financing of coordinated goals may be tempting enough to encourage farmers and institutions to take the risk. Rural leaders should initiate and coordinate these actions. The promotion of rural tourism and agritourism is a very good area for positive analysis of social and private partnership so as to achieve the synergistic effect.

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*Elżbieta Mikołajczak*[20]

# IMPACT OF LEGAL REGULATIONS ON THE ACCESSIBILITY OF WASTE PAPER AND CARDBOARD AS A SOURCE OF RAW MATERIAL FOR PAPER INDUSTRY

**Abstrakt:** The basic material used in paper production is wood. However, paper industry, in accordance with sustainable development ever more often opts for solutions facilitating substitution of wood with other valuable raw material, namely waste paper and cardboard. This material is used for the production of packaging paper, newsprint, as well as sanitary and household paper. Significant growth of the production of packaging paper with a 100% share of wastepaper in the recent years caused an increase in the demand for that material. Abundant, yet not fully used source of waste paper and cardboard is offered by municipal waste included in the system of selective collection. This article presents an evaluation of the impact of legal regulations in Poland on functioning of this system and as a consequence on the availability of waste paper as the source of raw material for paper industry.

**Key words:** waste paper and cardboard, paper industry, legal regulations, Poland

## INTRODUCTION

Limited resources of raw material, as well as the concern for natural environment encourage paper industry to a wider substitution of wooden pulp with pulp made through recycling of waste paper. In 2015 in member states of CEPI 47 710 thousands of tons of waste paper and cardboard was used which constituted 52,6% of the total volume of utilized material while in Poland this ratio reached the level of 50% [Godlewska, Jastrzębski 2016]. Up to 10 states reached a better result that Poland and five of them may boast over 80% share of waste paper usage in the production of paper and cardboard (Figure 1).

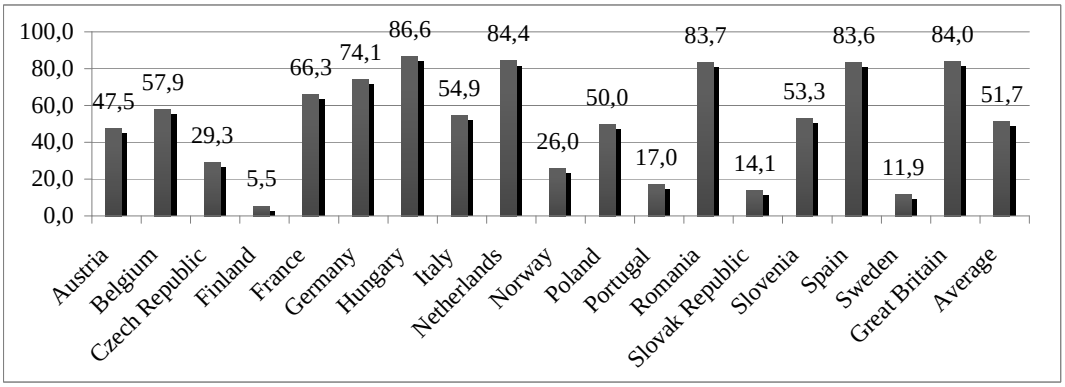


Figure 1. Ratio of usage of waste paper in CEPI 21 countries in 2015
*Source: [Annual Statistics 2015]*

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[21] CEPI – The Confederation of European Paper Industries (member states of CEPI in 2016: Austria, Belgium, Czech Republic, Finland, France, Germany, Hungary, Italy, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and Great Britain).

The value of ratio of waste paper usage, apart from market potential, technological possibilities and the level of economic development of a given country depends on the efficiency of the recycling process. In highly developed economies waste paper is recovered and reused for paper production or exported to Asia as a valuable raw material. Countries such as Germany and Japan rely on their own domestic material while china has to use the supply of exporters from Europe, the USA and Japan [Godlewska 2012]. Simultaneously it is estimated that in Poland 2.5 million tons of waste paper fills up landfills or is incinerated [Gawrych M. 2012].

The increase of waste paper usage in paper production is supported by the need for expansion of raw material base, which is justified by environment-friendly approach. According to Surewicz [Surewicz 1999] substituting 1 ton of cellulose pulp generated from waste paper results in the following savings: 5,5 $m^3$ of wood, 400 kWh of electric energy, 80 $m^3$ of water and 1200 kJ of heat energy. Motivation is clear and leads to a consideration of reasons limiting the increase of waste paper usage in domestic paper industry.

## CONSUMPTION OF PAPER AND CARDBOARD IN POLAND AS COMPARED TO OTHER EUROPEAN COUNTRIES

One of the determinants of the level and quality of life, and at the same time the cultural competitiveness of societies and regions is the volume of paper consumption per capita. Annual paper usage per capita in Poland oscillates at 130 kg (Figure 2), with general upward tendency, however the pace of this growth is slightly decreasing (Figure 3). In years 1995-2015 Poland recorded a trifold increase of this ratio that was the highest among the states included in the study. In comparison with countries of Western Europe where paper consumptions per capita is about twice this volume (Austria, Belgium, Spain, Germany), with an average of 177 kg per person, indicates a possible increase of domestic demand for paper and cardboard goods. Despite a decrease in the demand for printing paper in Poland one should expect that the ratio of paper consumption per capita in Poland will continue to grow, due to a growing demand for sanitary paper as well as packaging paper and cardboard. [Jastrzębski 2017, Werner 2017].

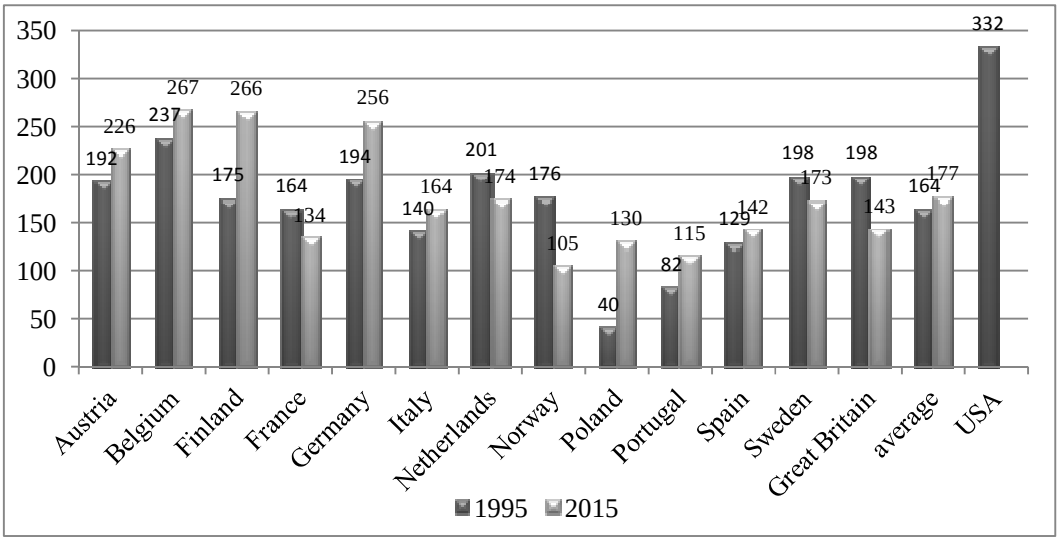


Figure 2. Comparison of paper and cardboard consumption in Poland and the selected European countries in 1995 and 2015 [kg/person]

*Source: own elaboration based on: [Woźniczko 1999, Godlewska, Jastrzębski 2016]*

This tendency confirms the forecast for increase in the supply of waste paper and cardboard and it correlates with a growing demand for this raw material within paper industry. For example in Ostrołęka as the result of investment in the line for the production of packaging paper made only from waste paper, the demand for this material in the recent years tripled to 600 000 tons annually [Gawrych 2012]

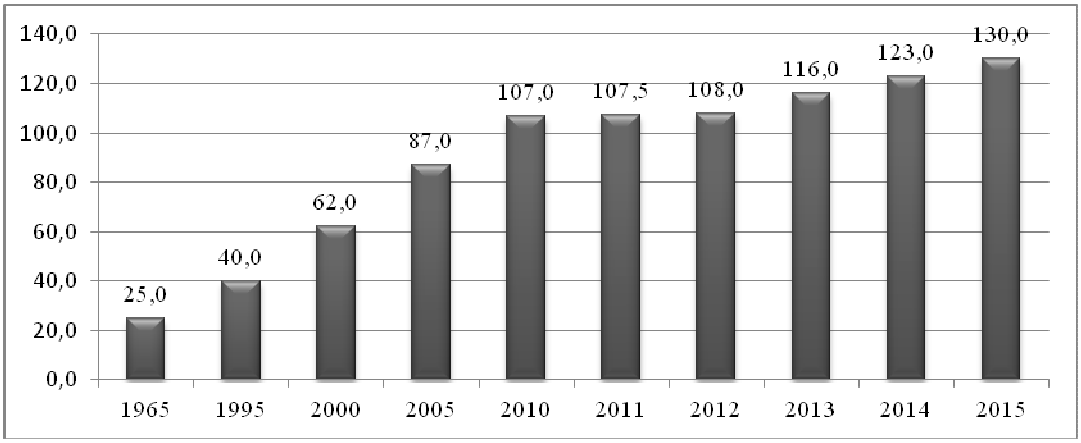


Figure 3. Paper consumption per capita in Poland [kg/person] in years: 1965, 1995, 2000, 2005, and 2010-2015

*Source: own elaboration based on [Cupryn. 1969, Gospodarka materiałowa 1996, 2001, 2006, Fornalski 2012, 2013, 2014, 2015,2016]*

## LEGAL DETERMINANTS OF SELECTIVE COLLECTION OF MUNICIPAL WASTE

The volume of waste paper usage by paper industry is determined by its availability. The analysis of paper usage in Poland shows that large volumes of this material should be recovered for recycling. Only selective waste collection was able to supply over 70% of the volume of recovered paper used by paper industry in 2015 [Mikołajczak 2017]. The barrier is however created by the need for extraction of paper and cardboard fraction from municipal waste, as well as their low quality. Despite EU recommendations Poland belongs to the group of ten countries which achieve the least efficient results in the area of selective waste collection. The main problems related to the management of municipal waste were indicated in the domestic plan for waste management 2022 [Krajowy plan 2016], and among them there were:

- *too low a share of selectively collected waste in their overall resources,*
- *inadequate quality of collected waste caused by the lack of unified standards of selective municipal waste collection,*
- *too big a share of mixed municipal waste in the overall stream of collected waste,*
- *insufficient education related to waste management and too low market prices of some secondary raw materials – SRMs.*

Without solution of diagnosed problems also by means of adequate legal regulations it'll be difficult to reach adopted in the domestic plan for waste management assumptions that 50% of municipal waste should be recycled by 2020 and 60% by 2025.

Legal acts related to the recovery of waste paper may be considered in three areas:

I. *general waste management,*
II. *selective municipal waste collection*
III. *obligations of entrepreneurs launching packaging products onto the market*.

Regulations linked to the first area (I) are mainly based on two acts:

1. Act on waste of 14 December 2012 [Ustawa 2012], which „determines the means of protection of environment, life and health which decrease negative impact on environment and health resulting from generating and managing waste, as well as limiting overall consequences of resources utilization improving the efficiency of such utilization." (art. 1). Article 3, paragraph 1, point 2 of the act defines waste management as „collection, transport, processing waste including the supervision of those activities, as well as the subsequent handling of places dedicated to waste disposal and activities done by waste dealers or brokers". Activities related to waste management should be based on sustainable development taking into consideration the hierarchy of dealing with waste and should be implemented by all levels of administration. Activities considered to be the most significant: are the prevention of waste generation, preparation for re-usage, recycling, disposal via incineration, and finally storage.
2. Act of 27 April 2001 Environmental Law [Ustawa 2001], which determines „standards of environment protection and the conditions of using its resources including the demands of sustainable development especially:
   a) rules determining conditions of environmental resources protection and conditions of launching substances or energy, as well as the costs of using the environment and the costs of environment utilization,
   b) obligations of administration authorities
   c) responsibility and penalties

Issues related to municipal waste management (II) specifically regulate:

1. The Act of 13 September 1996 on the maintenance of cleanliness and order in municipalities [Ustawa 1996], introducing the obligation of selective collection. This law determines the tasks of communities and obligations of property owners with regards to maintaining cleanliness and tidiness, conditions of collection of municipal waste from property owners, means of utilization of this waste and the conditions of awarding licences to institutions providing services related to issues regulated by this act. In line with this act each town is obliged to collect municipal waste from property owners. The obligation is mutual, each property owner is obliged to pass such waste to the company which won a tender for municipal waste collection. The law requires selection of at least the following fractions of waste: paper, metal, plastics, glass and multi-material packaging, as well as biodegradable municipal waste. In practice in many cases municipalities eagerly use the possibility to implement dual collection system dividing the waste into dry, assigned for segregation and further management and wet, assigned for composting which significantly lowered the efficiency of selective waste collection.
2. Regulation of the Minister of the Environment from 29 December 2016 (binding from 1 July 2017) concerning detailed regulations regarding selective collection of individual waste fractions [Rozporządzenie 2016], complementary to the act summarized in point 1. This law introduces a fundamental change with regards to the means of collection, which adds one more container to the three existing ones: blue (fraction 1 – paper), green (fraction 2 – glass), yellow (fraction 3 – metal and fraction 4 plastic including multi-material packaging) the fourth container – brown for biodegradable waste (fraction 5). The regulation allows for the collection of metal and plastic plus multi-material packaging in one container but does not allow for narrowing the selection beyond 5 fractions. A modernized system has been called Joint System of Waste Segregation

(Wspólnym System Segregacji Odpadów-WSSO), and its aim is to improve the ratios of recovery and recycling as well as enhance the quality of collected secondary raw material.

The main legal regulations concerning the obligations of entrepreneurs (III) are as follows:

1. The Act of 13th June 2013 on the management of packaging and packaging waste [Ustawa 2013], determining :
   a) requirements to which packaging launched on the market should adhere,
   b) the principles governing the operations of companies specializing in packaging recycling
   c) the rules governing handling of packaging and packaging waste,
   d) the rules of determining and collecting product fees

   In accordance with the act entrepreneurs launching packaging products onto domestic market are obliged to guarantee recovery and recycling of this waste **packaging. They** should recycle the same type of packaging waste which remained following the consumption of their products. This obligation may be done independently or via recycling unit. Clearance of the obligatory levels of recovery and recycling is done at the end of calendar year based on the volume of packaging launched onto the market in the previous financial year. Currently the demanded level of recovery and recycling for paper and cardboard packaging is 61%.
2. Decree of the Minister of the Environment of 16 December 2014 concerning the level of product fees for individual types of packaging [Decree 2014b] (Journal of Laws from 2014 item 1972), which indicates product fees for individual types of packaging binding for entrepreneurs who do not meet the required levels of recovery and recycling. The fee for paper and cardboard packaging is 0.70 PLN.
3. Decree of the Minister of the Environment of 12 March 2014 concerning annual levels of recovery and recycling of household packaging waste [Decree 2014a], determining the required levels of these ratios in given years. (Table 1).

Table 1. Annual levels of recovery and recycling of household packaging waste

| Ratio [%] | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|
| recovery | 32 | 35 | 38 | 41 | 44 | 47 | 50 |
| recycling | 32 | 35 | 38 | 41 | 44 | 47 | 50 |

*Source: [Decree 2014]*

**CONCLUSION**

Ratio of waste paper utilization in Poland which in 2015 reached 50%, is lower than the average determined for member states of CEPI. The thesis that the increase of this ratio is prevented by technological barrier has not been justified. Paper industry in Poland is constantly enhancing the technology of waste paper processing increasing the possibilities for its more efficient recycling. Identified as the main barrier was an inadequate system of selective municipal waste collection being the result of weaknesses in legal regulations .

The majority of municipal waste is delivered to landfills as mixed waste without the possibility of its recycling. In such form this waste constitutes unused source of secondary material including waste paper. The forecast rise in the consumption of paper in Poland indicates a possible increase in the demand for waste paper and cardboard. Only efficiently handled selective collection of waste

may guarantee reaching referential values of ratios of consumption, recovery and recycling of waste paper simultaneously ensuring an adequate volume and high quality of recovered material. It'll be determined by both institutional and legal factors, as well as practical and organizational elements. Positive changes are being promoted by new legislation, which imposes and absolute obligation for waste segregation into at least 5 fractions (paper, glass, metal, plastic and biodegradable waste).

Legal regulations require verification in relation to the rules governing launching packaging products onto domestic market. The lack of efficient control of packaging waste market results in a number of irregularities when confirming the required levels of recycling. It results in a drastic decrease of revenue from product fees which were intended to finance the system of selective waste collection. The lack of sufficient financial resources means that the costs of recovering waste paper is paid by those who purchase it and hinders the development of the whole system of waste maintenance, especially in rural and peripheral areas, where due to logistic problems, costs of selective waste collection are higher.

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# METHODS TO DETERMINE BATCH SIZE IN MANUFACTURING PROCESSES IN WOOD INDUSTRY ENTERPRISES

**Abstract**: The paper discusses methods to determine the size of a batch of products (parts), which may be applied in the organisation of manufacturing processes in wood industry enterprises, particularly furniture industry enterprises. Three basic methods are characterised: economic analysis based on technical indicators, the costing method and the graphic method, respectively. For the first two methods formulas are derived and discussed for the determination of batch size.

**Key words**: woodworking industry, organisation of manufacturing processes, batch of manufactured parts, methods to determine batch size

## INTRODUCTION

The most common method to determine batch size in wood industry enterprises is to consider solely the size of an order for final products. Then batch size is calculated as a product of the multiplicity of parts within a final product and the size of the initiated batch of the final product. Typically batch size is equivalent to the size of the order for the product. This method to determine batch size neglects adequate utilisation of workstations and potential for minimisation (optimisation) of manufacturing costs.

Increasing competition on both the domestic and EU markets between wood industry enterprises requires continuous efforts to reduce manufacturing costs. The aim of this paper is to present methods, which will reduce production costs in a manner requiring no investments. The methods may be applied when preparing manufacturing processes in terms of their organisation.

Appropriate identification of the number of parts (unit products) for a manufactured batch is a complex issue, since batch size affects several parameters of the manufacturing process at the same time causing various economic effects. An increase (decrease) of the number of products in a manufactured batch results respectively in (Durlik 2007):

- an increase (decrease) in the share of effective working time of machines in the available standard hours of workstations,
- a decrease (increase) in changeover time of a workstation or setup time per production unit,
- an increase (decrease) in efficiency of assembly line employees,# extension (shortening) of the manufacturing cycle of a given product,
- an increase (decrease) of the work in progress stock and the related manufacturing costs,
- an increase (decrease) in demand for warehousing space and an increase (decrease) of warehousing costs,
- an increase (decrease) in frozen working assets and interest paid to financial institutions.

In the case of an increase in the number of product units in a batch the first three effects are advantageous economically, while the others are disadvantageous.

Three basic methods to determine batch size may be distinguished (Liwowski, Kozłowski 2007, Brzeziński 2015):

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– economic analysis based on technical indicators (the method based on the share of changeover time) – facilitates high utilisation of manufacturing resources,
– costing (optimisation method) – facilitates minimisation (optimisation) of manufacturing costs,
– graphic – using costing criteria, minimising manufacturing costs.

## DETERMINATION OF BATCH SIZE USING ECONOMIC ANALYSIS BASED ON TECHNICAL INDICATORS

**Economic analysis based on technical indicators** is used to determine an economically sound batch size. This makes it possible to determine the smallest size of a manufactured batch guaranteeing an economically viable degree of utilisation of a workstation. This method is based on the structure of lead time of a manufacturing operation (a single operation step). This operation is presented in Fig. 1.

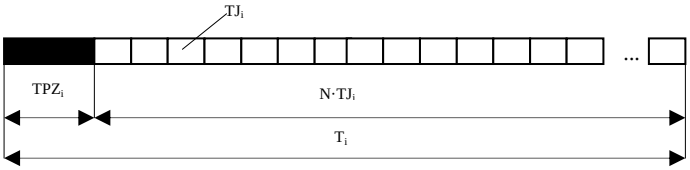


Fig. 1. Structure of lead time for a single operation step, denotations as in formulas (1)

*Source: own study.*

Duration of a single operation step (the time a workstation is occupied in a single operation step) may be divided into two basic periods. The first covers the time required to execute actions connected with the preparation, changeover and clearing of a workstation after a part has been processed. The second period covers the time, during which all parts comprising a manufactured batch are processed. The former time category is a component of the preparation phase, while the latter is a component of the execution phase of a manufacturing operation.

The starting point for the determination of an economically viable batch size is the time, during which a workstation is occupied by a single operation step (the duration of a single operation step). It is determined from a formula:

$$T_i = TPZ_i + N_i \cdot TJ_i \tag{1}$$

where:

$T_i$ – time when a workstation is occupied by the i-th single operation step (the duration of the i-th single operation step),
$TPZ_i$ – time of the preparation phase of the i-th single operation step,
$N_i \cdot TJ_i$ – time of the execution phase of the i-th single operation step,
$TJ_i$ – time per unit, i.e. the time of manufacture of a single part in a batch,
$N_i$ – the number of parts in the batch manufactured during the i-th single operation step,
i – type of the single operation step, i = 1,..., k.

In the economic analysis based on technical indicators it is assumed that for a specific duration of a single operation step the ratio of the time period connected with the preparation phase (TPZ) to

the time required for the execution phase of this single operation step (N·TJ) may not exceed the empirically adopted value or the value adopted based on standard (catalogue) values. This dependence is expressed in coefficient $A_i$, determined from formula:

$$A_i \geq TPZ_i/(N_i \cdot TJ_i), \quad (2)$$

where:

- $A_i$ – coefficient specifying the share of time for the preparation phase in the time of the execution phase for the i-th single operation step,
- the other denotations as in formula (1).

The duration of the preparation phase is treated as non-effective working time, reducing the capacity of a manufacturing workstation. Thus the greater the value of this coefficient, the lower the degree of utilisation of a workstation in the course of execution of a single operation step. The lower limit for the batch size is identified by the equality sign between the sides in this inequality (2). Thus the economically viable number of manufactured parts for the i-th single operation step ($NE_i$) is:

$$NE_i = TPZ_i/(A_i \cdot TJ_i), \quad (3)$$

where:

- $NE_i$ – economically viable size of a batch of parts,
- the other denotations as in formulas (1) – (2).

The standardised value of coefficient $A_i$ is selected from the catalogue table based on the type of production and manufacturing costs of parts. In the first case the coefficient takes the lowest values for piece production and the highest for large-lot production. In the other case it takes values from 0.02 to 0.05 for low-cost parts and from 0.06 to 0.15 for high-cost parts (Brzeziński 2016).

Formula (3) is used to determine the economically viable number of parts in a batch for a specific (i-th) single operation step. Typically this number is established for the workstation with the greatest workload or completing the manufacturing process. In the latter case products

$$NE = \sum_{i=1}^{k} TPZ_i / A \cdot \sum_{i=1}^{k} TJ_i, \quad (4)$$

manufactured at such a workstation are characterised by the highest cost accrual coefficient. Occasionally the ratio of the sum of TPZ times to the sum of TJ times for the adopted sequence or all operations performed on a specific batch of parts is assumed as the basis for the determination of batch size. Then the number of products in a batch is established using formula:

where:

- A – coefficient determining the mean share of the time of the execution phase of all single operation steps in the total time of the preparation phase of these operations,
- the other denotations as in formulas (1) – (2).

The approach described by formula (4) is criticised in literature on the subject (e.g. Lis[23]). It is pointed out that at large differences between individual TPZ or TJ times formula (4) is no longer meaningful.

Using the economic analysis based on technical indexes batches with a small number of parts are established. These results need to be corrected taking into consideration manufacturing

[23]Lis S. (1984), *Organizacja i ekonomika procesów produkcyjnych w przemyśle maszynowym.* PWN, Warszawa.

conditions. Values of coefficient A are sometimes assumed with no analysis of such conditions, thus the established NE value may be incorrect.

**DETERMINING THE SIZE OF A BATCH OF PARTS USING THE COSTING METHOD**

In **the costing method** the optimal size of a manufactured batch is such a number of parts, at which total costs per production unit (unit costs) are the lowest. Total costs are a sum of costs of the preparation phase of an operation, direct costs and costs connected with interest on current assets frozen in the batch. Total costs per unit product are determined following formula:

$$JKC = JKB + \frac{KPZ}{N} + JKZ, \tag{5}$$

where:

- JKC – total unit cost (total costs per product unit),
- JKB – direct unit costs (costs of direct materials and direct labour per product unit),
- KPZ/N – costs of the preparation phase of an operation (costs of workstation preparation, clearing and changeover) per product unit,
- JKZ – costs of freezing current assets in a batch per product unit,
- N – number of parts (product units) in a manufactured batch.

Unit costs of freezing current assets in a manufactured batch are determined using formula:

$$JKZ = (JKB + \frac{KPZ}{N}) \cdot STC \cdot \frac{PSB}{100}, \tag{6}$$

where:

- STC – mean waiting time of a single part in a manufactured batch before and after processing,
- PSB – interest on current assets frozen in a manufactured batch [%],
- – the other denotations as in formula (5).

Costs of freezing current assets in a manufactured batch result from interest (PSB) on current assets (capital) spent on the performance of a manufacturing operation on a batch of parts and mean waiting time (STC) of these parts during the execution of the manufacturing operation (see formula (6)). Used current assets refer to direct costs and constitute the sum of costs of direct materials, direct labour and costs of the preparation phase of the operation (costs of preparation, clearing and changeover of a workstation).

During the waiting period of parts in the course of the operation current assets spent on processing of parts remain frozen. Interest on capital loaned for the execution of the operation is charged for the waiting period.

Individual parts in the batch wait (are passive) at the workstation twice, i.e. before and after processing. The manner, in which the total waiting time of a product unit (before and after processing) is determined, is explained in Table 1. It is assumed that receipt of manufactured parts follows production pace[24].

For the first part (piece) waiting time before and after processing is zero (at the assumption that the part is immediately transferred to the next operation). The next part is waiting for processing throughout the execution phase of an operation (processing time) executed on the previous part. In turn, waiting time of a part after processing results from the difference between production pace and processing time of this part (T). The further procedure for the successive parts is analogous and is shown in Table 1.

[24]Brzeziński M. (2013), *Organizacja produkcji w przedsiębiorstwie*. Wyd. Difin, Warszawa.

Table 1. Determination of total waiting time of a single part in a manufactured batch before and after operation (processing)

| Part number in batch | Waiting time | | |
|---|---|---|---|
| | before processing | after processing | total |
| 1 | 0 | 0 | 0 |
| 2 | T | TPR-T | |
| 3 | 2·T | 2·TPR-2·T | 2·TPR |
| … | | | |
| N | (N-1)·T | (N-1)·TPR-(N-1)·T | (N-1)·TPR |

*Source: own study on based Brzeziński (2013, p.61), where:T – time of execution phase of an operation, TPR – production pace.*

The total waiting time of individual parts of a manufactured batch changes incrementally. For the first product unit it is zero. In turn, the total waiting time for the last part is (N-1)·TPR. Thus the mean waiting time of a product unit before and after processing is determined following formula (7):

$$STC = (N-1) \cdot TPR / 2, \tag{7}$$

where:

TPR – production pace,
– the other denotations as in formulas (5) and (6).

Production pace is a period from the execution (transfer) of one to the next product unit. The production pace length is determined by formula:

$$TPR = EFC / PPC, \tag{8}$$

where:

EFC – periodic (e.g. annual) effective available standard hours of a workstation,
PPC – periodic (e.g. annual) production plan of parts,
– the other denotations as in formulas (6) and (7).

After the dependences presented in formulas (6) – (8) are included, formula (5) takes the form:

$$JKC = JKB + \frac{KPZ}{N} + (JKB + \frac{KPZ}{N}) \cdot \frac{(N-1) \cdot EFC \cdot PSB}{200 \cdot PPC}, \tag{9}$$

while after reduction of terms of equation (9) we obtain formula:

$$JKC = (JKB + \frac{KPZ}{N}) \cdot (1 + \frac{(N-1) \cdot EFC \cdot PSB}{200 \cdot PPC}), \tag{10}$$

where:

– denotations as in formulas (5) – (8).

In order to establish the optimal size of a manufactured batch (NPP = N) the first derivative of total unit cost is calculated in relation to N, equating it to zero (dJKC/dN = 0). These calculations

$$NPP = \sqrt{\frac{200 \cdot KPZ \cdot PPC}{JKB \cdot PSB \cdot (EFC - 1)}} \tag{11}$$

produce formula:

where:

NPP – optimal size of a manufactured batch,

– the other denotations as in formulas (5) – (8).

The value (-1) found in formula (11) has a negligible effect on the final optimal batch size. For this reason it is typically omitted. Then formula (11) takes the form (12):

$$NPP \cong \sqrt{\frac{200 \cdot KPZ \cdot PPC}{JKB \cdot PSB \cdot EFC}}, \tag{12}$$

where:

– denotations as in formulas (5) – (8).

**DETERMINING THE SIZE OF A BATCH OF PARTS USING THE GRAPHIC METHOD**

In the graphic method to determine the size of a manufactured batch we use the same groups of costs, which are applied in the costing method. However, in this approach we need to know values of these costs for various batch sizes (N) and to plot on their basis respective cost curves. The application of the graphic method is possible only using a special computer programme, which will reduce labour consumption of this method.

The graphic manner to determine optimal batch size in the graphic method is presented in Fig. 2.

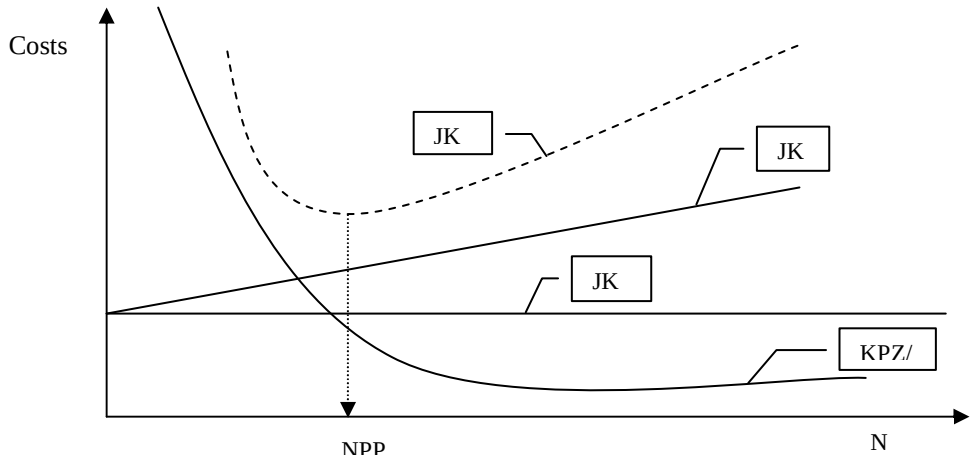


Fig. 2. Graphic determination of optimal batch size using the costing method

*Source: own study on based Wróblewski K.J. (1993) and Pasternak K. (2005).*

Denotations:

JKC – total unit cost,
JKZ – unit costs of freezing current assets,
JKB = const – direct unit costs,
KPZ/N – unit costs of the preparation phase for an operation (decrease hyperbolically with an increase in the number of pieces in the batch),
NPP – optimal batch size.

The curve of total unit cost (JKC) presented in Fig. 2 is a sum of all unit costs incurred by an enterprise when manufacturing a batch of parts and it changes depending on the number of pieces in the batch. The curve takes a parabolic form, which minimum (the lowest value) determines the optimal number of pieces of unit products (NPP), i.e. at which the unit production cost takes the lowest value.

Unit costs of freezing current assets (JKZ) change proportionally to the number of product units in the batch and in Fig. 2 they are represented by a straight line. An increase in these costs with batch size results from the length of waiting time for processing and after processing for a product unit, which also increases proportionally. In contrast, the number of pieces in a batch has no effect on direct unit costs (JKB). They remain constant, which in Fig. 2 is illustrated by the horizontal straight line. These costs comprise costs of used materials and consumed direct labour as well as consumed direct labour. Their level in relation to a single unit does not change during the execution of a specific operation on a manufactured batch. The last group of costs, which has an effect on the optimal batch size comprises unit costs of the preparation phase for an operation (unit costs for the preparation, clearing and changeover of a workstation). Along with the size of a manufactured batch they decrease following the hyperbolic curve. The sum of the above-mentioned types of costs produces a curve of total direct unit costs for the manufacture of a batch with a varying number of parts. It assumes a parabolic form and in Fig. 2 it is marked with a broken line.

## CONCLUSIONS

Economic analysis based on technical indexes may be applied when an enterprise has - at least for the most important workstations - a set of coefficients, which determine the share of time of the preparation phase for an operation in its execution phase at individual workstations. This method makes it possible to determine the smallest economically viable size of a batch in terms of the degree of workstation utilisation.

In the costing method we have to know values of direct manufacturing costs. This type of costs is generally available from bookkeeping records. The costing method makes it possible to determine the optimal size of a batch in relation to direct manufacturing costs. In the graphic method we use the same types of costs, which are applied in the costing method. This method well illustrates the principles for the establishment of batch size. However, it is the most labour-intensive method, requiring the largest number of calculations. It is not recommended unless an appropriate computer programme is available.

When using computational methods to determine batch size a two-stage procedure is most recommended. First the number of pieces in the batch is preliminarily determined, which is done based on the size of an order for the final product and the multiplicity of its parts. Next one of the computational methods may be applied. If economic analysis based on technical indexes was used, the result of calculations defines the minimal batch size. It is compared with the preliminarily established number of pieces in the batch. If the value determined in economic analysis with technical indexes is greater, then the enterprise should strive to obtain a higher price for the execution of that order or refuse to execute it. When the result calculated in economic analysis with technical indexes is lower, then the manufacture of a larger batch, as it was determined in the beginning, will be economically advantageous for the enterprise.

If calculations were conducted using the method optimising batch size in relation to direct manufacturing costs, then the established number of pieces in the batch guarantees the lowest cost of its manufacture. Around the optimal point the curve of total direct unit cost is gently sloping within a wide range of batch size values. This means that costs change slightly despite changes in batch size. Such a characteristic of the curve makes it possible to determine the limit ranges of batch size, for which changes in costs have no significant effect on the enterprise. If the preliminarily established batch size falls within the established range, acceptance of an order placed for the execution of such a batch of products is economically justified. Otherwise, the price for the execution of the order needs to be increased or the order should not be accepted.

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*Katarzyna Mydlarz*[25]

# PROMOTION OF INDUSTRIAL PRODUCTS ILLUSTRATED WITH AN EXAMPLE OF A MACHINE MANUFACTURER FOR WOOD INDUSTRY

**Abstract:** Each enterprise aims at achieving a success. Company's success is its ability to reach profit level which would guarantee its stabilization and as a consequence its further development. In order to achieve this goal an enterprise has to reach new areas of the market. It constitutes a kind of fight with competition for which every enterprise should always be prepared.

The article emphasizes the significance of advertising and marketing in enterprises manufacturing industrial goods for wood sector, strategy of such enterprises has been drawn and the importance of the marketing tools used for improving their financial results has been pointed out here.

**Key words:** marketing, advertising, wood industry

## INTRODUCTION

In the recent years in Poland one may observe an intensive development of small and medium size enterprises. They are active in various sectors of economy and fight to win their share of the market. Due to an adequate usage of promotional and developmental instruments they successively and effectively expand the area of their influence.

Promotion is a form of communication which aim is to attract the consumers to the offered ideas and concepts. Its task is to achieve planned benefits by market oriented enterprises. It is a non-price competition, which has a significant impact on the consumers.

One of the tools of promotion is advertising. It is the field of human activity which requires creativity, intelligence and due diligence. Over the recent years it has been frequently transformed. Advertising does not only spread simple slogans. It often uses a versatile knowledge of specialists in marketing, economy, psychology and media studies (Grzegorczyk A. 2010). As it may be concluded from the activities of enterprises manufacturing industrial goods for wood sector it is also efficient in this area.

## PLANNING PRODUCT PROMOTION

Promotion means establishing contact with potential consumers. For that contact to be possible an enterprise launches a whole chain of activities, first in order to obtain information on client needs and subsequently fulfilling those needs, and eventually it tries to encourage the client to purchase its product. In order to fulfil all those tasks an enterprise needs to organize an adequate system of information that is promotion. It is the system of coupled means which facilitate the communication between an enterprise and its environment. System of promotion has to guarantee a smooth flow of information both ways, between an enterprise, dealer and consumer.

Promotional system includes activities which facilitate communication of an enterprise with its environment, gaining a certain position on the market, as well as presenting its offer of services and products (Drzazga,2006). Hence promotional system has to mainly help the information about a product to reach the selected market segment, convince the potential buyers to purchase the product and create a positive climate between the manufacturer and the seller. Creating a system of promotion is a very serious venture for an enterprise because it requires an adequate market and consumer approach. System of promotion includes many variables, one of which is advertising, occupying a key role in this system. System of promotion is a set of means through which an

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enterprise communicates with its environment. All systems of information need to be two-way and in the system of promotion both formal and informal channels are of equal importance. As far as formal and informal channels are concerned, the information circulating between the consumers is of special significance (Woźniczka J. 2009). Therefore, it may be concluded that in the informal channels of communication, especially important are people perceived as authorities in a certain field.

## PROMOTION AND ADVERTISING IN AN ENTERPRISE MANUFACTURING MACHINES FOR WOOD INDUSTRY

Promotional activities, although they refer to all enterprises active on the market, differ depending on the profile of each firm. Not all marketing tools can be used in a certain situation. As an example we may take industrial enterprises, which are forced to modify the accessible promotional instruments. Significant premise for such enterprises is often the implementation of a long-term development programme and not focusing on achieving profit within a short time. The implementation of an adopted plan typically establishes the best possible work conditions for the employees who are essential for the high quality of a final product. In case of manufacturers of machines for wood industry attention is usually paid to energy efficiency, precision of processing, user-friendliness or high quality of the finished product.

For this group of producers it is important that the information about their product will reach a specific targeted segment of the market and convincing the potential buyers to purchase their product. Industrial enterprises also have to know how in the best and most efficient way to inform the market and consumer about the benefits of the products they offer and how to convince the consumer to eventually purchase the product and what makes the clients to buy products from a certain producer.

Producers of industrial goods also use advertising. Producer of such goods needs to answer the question: „How to advertise their products in the most efficient way?" The choice of form of advertisement, as well as the medium depends on the character and type of the product or the market segment which the advertisement is due to target. One also needs to consider the communication capacity of each form of communication.

Figure 1 presents the results of a questionnaire carried out in an enterprise manufacturing machines for wood industry.

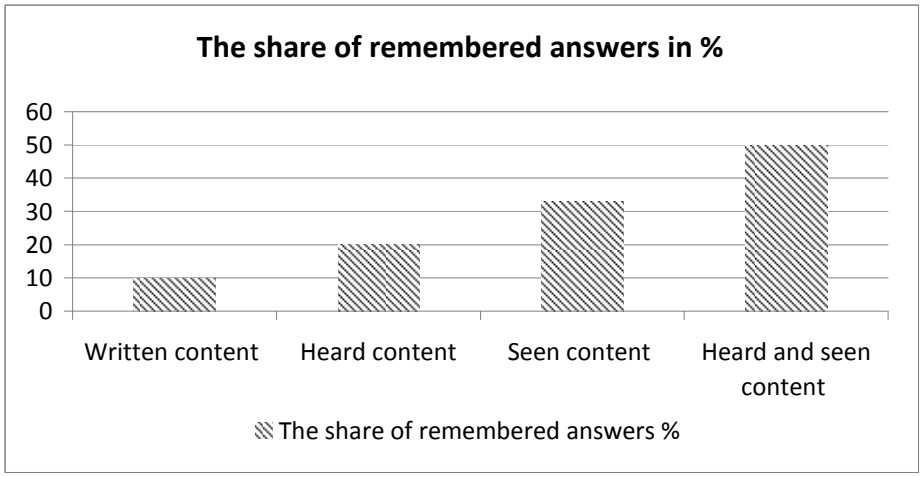


Fig. 1 Type of advertisement

*Source: Own elaboration based on the questionnaire results.*

As it may be concluded from the research, the potential clients remembered best the advertisement which they heard and saw, which suggests that this form of advertising is the most efficient.

An important element which is taken into consideration when selecting the type of advertising and its source is also the frequency of ad exposure . It is possible to use high frequency of ad exposure which results in a fast growth of brand awareness, but also means that within a short period of time there comes a fast decrease in this awareness or the implementation of a so called pulsing advertising, which has a significantly slower impact on the potential client, however the final effect is much more positive (Kotler P. 2006). Therefore, companies use those tools depending on product life-cycle and the sales season. Reminding advertising is used both at the beginning of sales when the expansion of the first distribution channels takes place but also further on, following the channels expansion. This type of advertising is used to remind the consumers about the company and its brand. It informs the consumers that the company is still in operation and manufactures its goods. Client has to know that the products of a certain manufacturer are still perfect and reliable. In order to maintain its position on the market, an enterprise in line with technical progress launches advanced editions of machines. For that reason it also uses launching advertising which explains the advantages and modern technology used in new products and points at benefits which product user may get.

The frequency of ad exposure is, to a large extend, determined by seasonality. Figure 2 shows the frequency of ad exposure throughout a year for a producer of machines for wood industry (company's internal data).

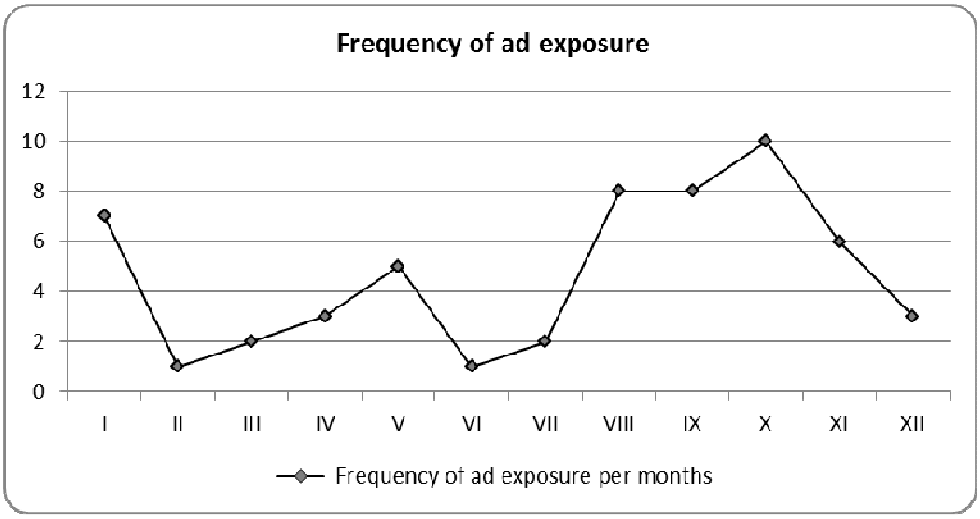


Fig. 2 Frequency of ad exposure in a company throughout a year

*Source: Own elaboration based on company's internal data*

As can be seen from figure 2 the highest ad exposure is recorded in January which is a month of stability of production following an intensive Christmas holiday period in wood industry enterprises. It mostly concerns the producers of furniture, floors, wood-based panels and so forth, as well as early autumn which is considered to be the most important moment for a company. It's the time when the frequency of ad exposure is the highest. A large scale of promotional articles and

advertisements encourages potential clients to make purchasing decisions or at least awaken interest and the urge to obtain detailed information on a selected product. Due to such activities company gets measurable results in a form of a higher number of orders.

Each company with a high market status values its customers opinion on their products and services. Therefore, producer's help is of significant importance as far as machine handling is concerned and not only at the introductory phase but also as an element of post-sales service. It is also important from the point of view of experience in handling such machines by potential buyers. Due to promotional campaign, adequate form of advertising,, as well as company's endeavour achieving clients satisfaction is possible, which to a large extend, boosts the sales of these machines. For industrial enterprises manufacturing machines for wood industry customer service is of key importance because cooperation between a producer and customer does not end at a purchase of a given machine. Often it is extended for the duration of this machine usage by a given buyer. Therefore, department of customer services offers a complex help with technical preparation for machine handling and delivers a whole package of information which might be useful when exploiting the purchased machine. The most important is that the client who is in possession of a certain machine could if needed as soon as possible use the services of the company which manufactured that machine. Such client approach results in a high level of satisfaction of the client which for the company under the current study reaches 96%. That help facilitates the purchase of specialized machines for wood industry by people with a different level of knowledge, experience and education. It is confirmed by the results of a questionnaire presented in figure 3 which focus on the education of those who purchased machines manufactured by a company under the study (company's internal data).

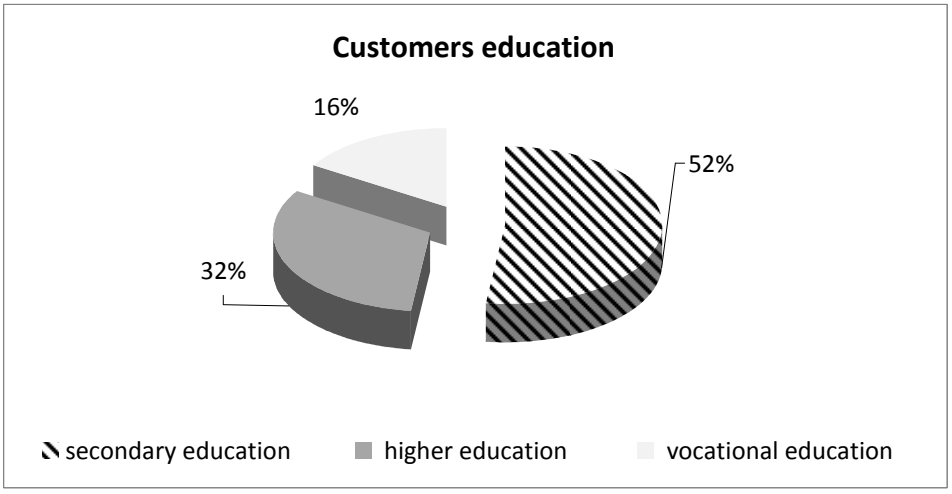


Fig. 3 Results of a questionnaire carried out at the company under the study.

*Source: data based on the questionnaire from the company*

In order to maintain such high level of satisfaction among its clients the company organizes quarterly seminars for people who use their machines. Seminars are aimed at clients and providing them with information on modern achievements in the sector of wood industry, recent changes and further plans for implementing new solutions in this field. Apart from the lecture and presentation, there are machine demonstrations and their preparation for work. The employees of customer

service department present how to handle the machines manufactured by the company, the means of adequate saw sharpening so that the product during processing achieves the highest quality. Using such meetings company employees have a unique chance to present the gathered guests with the new models of machines which have been launched by the company.

Once all lectures end there is also time for discussions, during which the guests may ask questions and obtain thorough answers from specialists. Following the training very valuable data is collected concerning the efficiency of those meetings and thus validity of organizing them in the future. There is a great demand for such seminars and all their guests declare the willingness to participate in them in the future.

## CONCLUSION

The experience of highly developed countries shows that manufacturing a certain product and even more so its subsequent sales on a competitive market is very problematic. Problems with the sales of manufactured products are solved by implementing promotional and advertising operations by a company. Advertising stimulates the activity of customers in finding products and services.

In contemporary economy in order to increase production and sales, company needs to manufacture better and better products and launch them both in a domestic and foreign markets using various forms of advertising which would build the knowledge of their recipients. In order to make a purchase a buyer needs to "buy" its advertisement and believe in advantages of the advertised product.

Companies which specialize in the production of machines for wood industry do what they can to meet the requirements of their customers in terms of equipping and continuous refining of their products. The aim of those companies is to guarantee high quality of their products and services.

Advertising products for example in specialized magazines or exhibiting at tradeshows facilitates reaching with the information to the targeted market and helps to convince a larger number of potential buyers to purchase certain product and simultaneously build positive relations between the producer and the seller („Gazeta przemysłu dzrewnego" 2007). The most important rule is not to forget about the client, who has already purchased their product. They need to take care of him also after the purchase, guaranteeing all kind of help and assistance.

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# DEVELOPMENT OF THE SOCIAL FUNCTIONS OF FOREST AREAS KRUCZ FOREST DISTRICT CASE STUDY

**Abstract:** The article presents the development of the non-productive functions of forest areas, with particular consideration of social functions, which include educational, tourist and recreational activity. The development of these functions has been presented using the example of the Krucz Forest District. The authors point to the visitors' growing interest in the development of infrastructure and forms of activity. They emphasize that, the forest's social functions in the forest district in question balance its productive (commercial) functions.

**Key words:** tourist and educational functions of forest areas, sustainable development, forestry educational infrastructure

## INTRODUCTION

Forest areas are the most complex land ecosystems on Earth, consisting of plant and animal organisms which coexist, forming the biocoenosis. Exploiting the forest is considered to be one of the oldest forms of human activity. As the wildlife habitat, forests are the source of wood and undergrowth (mushrooms, blueberries and blackberries), which sustain local communities, as well as a reservoir of natural resources used in food industry. Forest areas undoubtedly perform various, often complementary functions, either in a natural way or as a result of human activity. The literature on the subject provides descriptions of over 100 such functions [Mandziuk, Janeczko 2009]. The possibilities of performing individual functions by forest areas largely depend on their natural conditions (the area, state, habitat and species-age structure of the forest stand), as well as on the amount of non-productive infrastructure, which is the effect of human activity (tourism and recreation infrastructure).

The article presents the Krucz Forest District as a district making up "The Noteć Forest Promotional Complex". It is an attempt to evaluate the realisation of the social functions and tasks by the Krucz Forest District.

The authors used the case study method, assuming that the past situation analysed with reference to this particular case is the same or similar to the situation concerning other cases [Wójcik 2013]. The authors also made a review of the literature on the subject and the studies conducted by other authors, using the desk research method. They used source materials provided by the Krucz Forest District, concerning the creation and development of the forest educational infrastructure – reports on the educational activity run in 2012-2016. They were supplemented with State Forests data regarding forest promotional complexes created in Poland.

## THE PLACE OF THE EDUCATIONAL FUNCTION IN THE DEVELOPMENT OF FOREST AREAS

The total area of Polish forests cover 9.2 million hectares, and the forestation level comes to 29.5%[28], which makes Poland one of the European leaders in this respect. In a report devoted to studying the function of forests, Poles were asked whether going to the forest was a purpose in itself for them, or whether it was incidental (happened, e.g., while going on holiday, on a weekend trip, to

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[28] According to the National Forestation Program, in 2020, forests are to make up 30% of the country's area, and in 2050 – 33% [see Jalinik 2016, p. 314].

visit the family or on business). The majority of respondents chose the first answer[29]. The same study sheds light on the behaviours and needs of Poles visiting forests. It shows that they choose national parks and nature reserves rather than other forest areas, mostly due to safety reasons and the fact that they do not know the rules of staying in forest areas, which confirms the common opinion that regardless of their incomes, Poles willingly visit forest complexes. However, this starts a discussion about the economic sense in developing this aspect of using forests, usually treated as a profitable component of the national economy [Piekutin, Superson 2008].

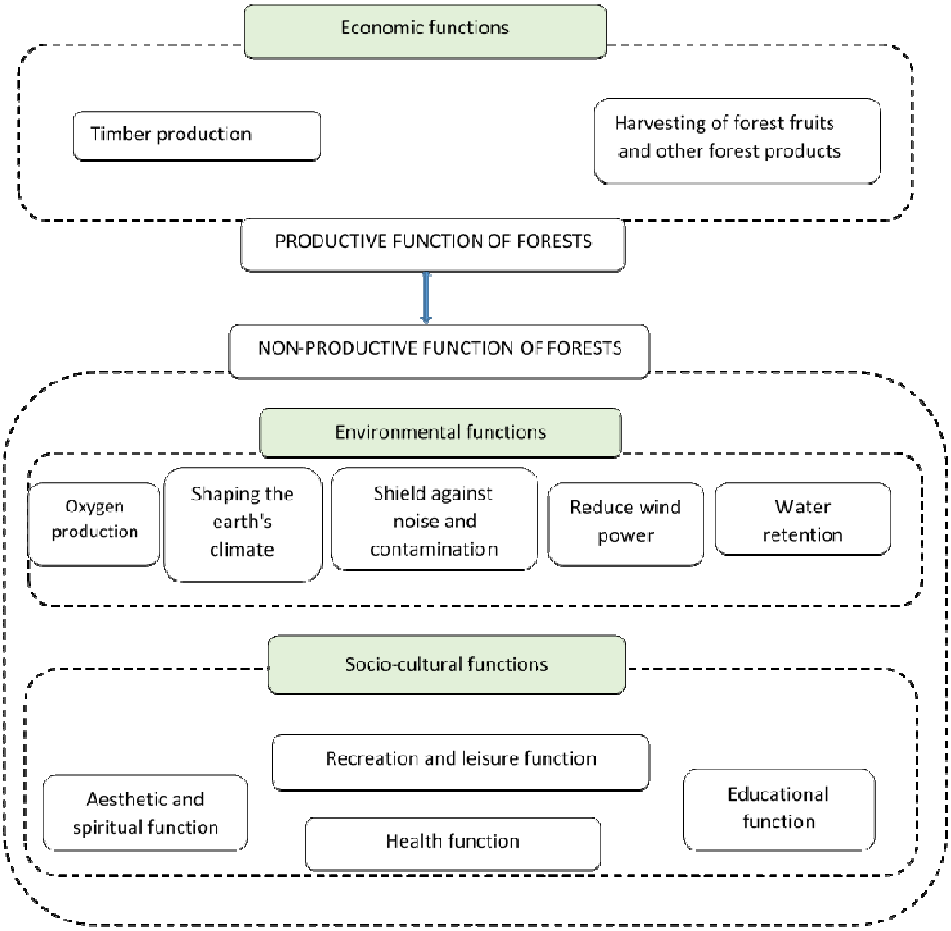


Figure 1. Productive and non-productive functions of forest areas

*Source: author's elaboration*

[29] The study was carried out on the sample of 1.000 inhabitants of Poland, who declared that in the past 12 months they had visited a forest in Poland at least once and for recreational purposes [more Żylicz, Giergiczny 2013].

Many typologies of forest functions refer to its commercial and non-commercial use. Other classifications refer to using the forest's universal material and immaterial natural resources [Drozdowski 2008]. They are usually used non-commercially and serve educational and promotional purposes. At the same time, they make it possible to implement the rules of sustainable development in forest areas, taking the needs of the economy, environment and people into consideration [Rykowski 2002, Siry et al. 2005, Bettinger et al. 2017]. The tourist function of the forest is an aspect of its non-commercial use and sustainability. It also opens relatively new or so far unpopular opportunities for people, such as silvotherapy (tree healing), aesthetotherapy (healing through sensual experience) or kinesiotherapy combined with relaxation classes [Przezbórska 2010]. Although nearly every forest function arising from the wish to achieve different goals (economic, environmental or social) assumes caring for its endurance and future, a particular role is played by the educational function, supported by the tourist and recreational functions. It is worth mentioning, however, that recreational activity has changed from passive to more active [Wilkes-Allemann et al. 2017], which additionally predestines it to supporting educational activities run in forests and for their benefit.

Given the common implementation of sustainable development, it seems that the discussion on the classification of forest functions is not a major problem, which is obvious if we just list these functions (Figure 1). They clearly show that the whole forest management will be affected by the economic, environmental and social (socio-cultural) functions alike.

A comprehensive look at the forest functions, especially from the point of view of sustainable management, requires considering the economic benefits of forest management not from the perspective of, e.g., a single forest sub-district, but a superior unit - in this case – a forest district. Thus, the diversity of the resource and forest management should be rationally correlated: the benefits brought by the productive functions should be maximized where the benefits due to social and protective functions are smaller than average and the other way round [Żylicz, Giergiczny 2013].

In recent years, we have observed a growing interest in and demand for nature-forest education. Since 2004, the educational function of forests has been planned and its purpose has been to popularize the knowledge about forest environment and sustainable forest management, and in this way to increase people's awareness as regards rational and responsible use of forest products. It appears that the Krucz Forest District puts this rule into practice.

## THE EDUCATIONAL, TOURIST AND RECREACTIONAL INFRASTRUCTURE OF THE KRUCZ FOREST DISTRICT

The Krucz Forest District, together with the Międzychód, Oborniki, Potrzebowie, Sieraków and Wronki forest sub-districts, make up the Noteć Forest Promotional Complex (established on the strength of Decree 62 of the Director General of State Forests, of 14th October 2004, on the Noteć Forest Promotional Complex). The complex, situated in the drainage basin of the Warta and Noteć Rivers occupies an area of over 137,000 hectares. It shows considerable topographic diversity, with relatively homogenous stand (the majority are pure and single-storey stands). The aims of a promotional forest complex include promoting multifunctional and diversified forest management, perfecting forms of cooperation with the society as regards forest management, as well as perfecting the system of the Forest Services and education of society[30]. The Krucz Forest District has been striving to achieve these aims for years by propagating nature protection combined with forest tourism and agritourism. The infrastructure of the Krucz Forest District has been oriented towards four groups of activity, including walking, cycling, kayaking and horse-riding.

[30] http://www.puszczanotecka.lasy.gov.pl/

One of the first large-scale[31] educational activities, however, was the opening of a nature-forest path in the Kruczlas sub-district in 2013. The path has the shape of a loop, about 3.5 km long. Its beginning and end are in the immediate vicinity of the forest district buildings, at the, so called, Educational Canopy. It includes a place for a bon-fire, near a pond, a "green classroom" with many outdoor exhibits, and an educational room, where, depending on the needs and weather conditions, classes for children and teenage students are held. Approximately at the same time, in the area of Ciszkowo and Hamrzysko, some trails intended for walking or cycling tourism were prepared (a 15 km long path).

The forest districts financed many educational activities themselves[32]. Some other activities were also possible due to effective search for external funding, such as the subsidies from the Wojewódzki Fundusz Ochrony Środowiska i Gospodarki Wodnej (the Regional Fund for Environmental Protection and Water Management) in Poznan.

In 2016, it resulted in completing two tasks: creating two nature-ecological paths in the Goraj forest sub-district ("Morena Czarnkowska" / "Czarnkowska Moraine", and "Z biegiem Natury" / "In the course of Nature")[33], as well as an educational path called "The Forest teaches Us" in the Kruczlas forest sub-district. The money was spent, among other things, on teaching aids (educational games, such as nature and ecology dice, Forest Jump Records, a guessing game, Wooden Fruits), building the path gate, installing educational boards in wooden cases, signposts, welcoming boards, buying educational toys, etc.

In 2016-2010, the Krucz Forest District is planning to carry out the tasks of a national project entitled "A comprehensive project of adapting forests and forestry to climatic changes – small retention and preventing water erosion in lowland areas". The financial sources in this case will be mostly EU funds. The plans include building two water reservoirs (for the purpose of increasing retention) and restoring functionality to the marshes area by building melioration amenities.

**FORMS AND ECONOMIC ASPECTS OF EDUCATIONAL ACTIVITIES**

As regards forest education, the Krucz Forest District takes advantage of elements directly connected with forest management (such as the tree stand, small retention objects, a nursery), as well as those which are not closely related (cultural sites, tradition, a garden, a dendropark / an arboretum). An important role is played by the forest education centre, including the forest educational canopy (the green classroom), as well as two educational paths.

Educational activity involves many forms of teaching, such as field classes and guided excursions, lessons in the green classroom, competitions, educational campaigns, exhibitions, festivals or workshops. The analysis of available data (Table 1) shows that the largest number of participants using those forms of education was recorded in 2013 – over 6,800 people. The most popular were campaigns and events held in the forest district in question. Other very popular forms of education were field classes and guided excursions, attended by nearly 1000 people in 2015. The number of people taking part in various forms of education in the Krucz Forest District in the studied period reached over 31,700 people, half of whom (52.7%) participated in theme-oriented educational forms.

[31] Fully financed from the State Forests means and the state budget

[32] In a great majority of forest districts in Poland, the educational activity is financed by the districts themselves [see Ankudo-Mankowska, Starosta-Grala 2016; Czarnecki et al. 2016].

[33] A path created as a part of the Regional Centre of Forest Education in Goraj Castle, the area of the Krucz Forest District.

Table 1. Forms of forest education implemented by the Krucz Forest District and attendance in 2012-2016

| Form of education | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| | No of participants (No of classes) | | | | |
| Field classes and guided excursions | 742 (17) | 794 (19) | 880 (21) | 998 (20) | 659 (13) |
| Classes in the forest education room | 169 (4) | 175 (5) | 141 (4) | 165 (5) | 125 (3) |
| Meetings with a forester in schools and kindergartens | 205 (3) | 186 (6) | 182 (5) | 118 (3) | 156 (2) |
| Forest competitions (knowledge, art, literature, etc.) | 276 (4) | 297 (5) | 266 (6) | 490 (5) | 325 (4) |
| Campaigns, events | 1298 (5) | 1358 (5) | 1490 (5) | 1380 (5) | 1260 (4) |
| Educational exhibitions | 560 (2) | 612 (2) | 490 (2) | 493 (2) | 420 (2) |
| Other, e.g. festivals, fairs, workshops, etc.* | 3 300 | 3 400 | 3 000 | 2 900 | 2 400 |

*estimates

*Source: author's elaboration, based on the Krucz Forest District data*

Considering the expenses per one participant of education at the Noteć Forest Promotional Complex (12.69 PLN) in 2015, it is possible to estimate expenses incurred for the educational function by the Krucz Forest District at over 83 thousand PLN. In order to estimate the non-productive benefits, particularly those drawn from recreation and tourism in the Krucz Forest District, the travel cost model was applied. Assuming that the average cost of travel for one participant is 20 PLN [after: Bartczak et al. 2008], the forests of the Krucz Forest District generate a stream of recreational-tourist benefits worth over 128.000 after tax, annually.

## CONCLUSIONS

In recent years the society has become increasingly interested in recreation and tourism, as well as education in forest areas. Forests are perfectly suitable for practicing both these forms of activity. They have many natural assets which attract enthusiasts of active recreation in the open air, as well as tourists. Aware of the growing interest in forests, forest districts develop and modernize tourism and education infrastructure, setting new educational paths, and walking, cycling and horse-riding trails. At present, there are 20,000 km of walking trails, 4,000 km of cycling trails and 7,000 km of horse-riding trails in Poland, prepared for tourists. They are supplemented with 500 camping sites, 300 bon-fire sites and over 200 designated campsites. In order to make the forests more available, 3,000 parking spaces and 87 forest car parks have been established.

The activity of the Krucz Forest District is the response to the increasing public demand for recreational-tourist and educational infrastructure. At the same time, it is an example of practical implementation of complementarity, which means developing the educational and tourist-recreational infrastructure in areas of lower economic value, and at the same time intensively using areas of high economic value. In this way, the forest management in the Krucz Forest District is optimized, which means maximizing total economic benefits. Optimalization partly results from realizing the non-productive functions of the forest. It is worth stressing that the economic benefits of the educational activity of the forest district surpass the incurred costs.

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# THE EFFICIENCY OF BEECH TIMBER PRODUCTION FOR THE DOMESTIC MARKET

**Abstract:** The research on the efficiency of production of timber and sawmill products was based on averaged results obtained from elementary wood processing enterprises characterised by medium volume of production. The data covered one calendar year. The production and sales of edged and unedged timber, chiefly produced from WC0 class wood, was analysed in the study. The raw material for processing was supplied by the 'State Forests' National Forest Holding. The ratios of the efficiency of production of timber and sawmill products for sale on the domestic market were verified and compared. The research showed that the average unedged timber production efficiency was higher than the edged timber production efficiency. The economic ratios for the year under analysis showed improvement in the efficiency of production of low-processed products. There was a simultaneous increase in the costs of further processing and in the demand for unprocessed timber, which enabled wider use of the product in different areas of the wood sector.

**Keywords:** sawn wood, wood quality, efficiency, wood prices

## INTRODUCTION

The sawmill industry largely depends on raw material resources. The availability of raw material depends on the forestation rate in a particular area. Forests occupy 9.4 million ha, i.e. 29.7% of the area of Poland(www.lasy.gov.pl).

Most forested areas, i.e. 7.6 million ha, are managed by the 'State Forests' National Forest Holding. Coniferous forests are predominant – they make about 69.1% of the tree stand. Pine-trees are the most common species in the forests (58%). The share of deciduous forests is much smaller. The predominant species are: birch-trees (about 8%), oak-trees (about 7%), and beech-trees (about 6%) (www.lasy.gov.pl).

The aim of the sawmill industry in Poland is to rationally process different round wood species into solid wood materials. According to the Eurostat data, Poland is the sixth largest European producer of timber, making about 5.6 million $m^3$ a year. Hardwood makes 20%, whereas softwood makes 80% of the total volume (www.sosnowemeble24.pl).

The sawmill industry is the second largest sector of the wood industry, following the furniture industry. It is an important part of the European manufacturing industry (Jarvinen, 2014).

The share of the wood industry in the GNP exceeds 2%.The employment rate in the wood industry amounts to 6%. The technological equipment used by Polish wood processing enterprises is constantly improving. The efficiency of material processed in Polish enterprises is about 65-68%. It is similar to the efficiency in the German and Swedish sawmill industries although Polish companies are not so modern and do not use such a wide variety of machinery (Ratajczak et al., 2010).

In order to improve the competitiveness and increase the processing efficiency in small and medium sawmills it is necessary to increase automation and modernise the technological process

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(Gotych et al., 2008). The improvement of the technological process involves numerous challenges. Maintaining the highest quality and high material efficiency are the most important elements which will guarantee keeping the current position in the market. It is necessary to shorten the sawmill production process and extend the period of using sawn materials.

Production profitability can be increased by standardising the specification of products and improving quality control. It is very important for sawmill enterprises to have stable access to wood material. As far as the costs of transport are concerned, it is very important to limit the distance to raw materials bases. The process of timber production unquestionably depends on the quality of material processed (Ratajczak 2011).

The development of the sawmill sector and the modernisation of individual companies give a possibility to increase the sawmill production effectiveness and efficiency. The automation of wood processing reduces employment per 1 $m^3$of material processed (Hruzik 2006).

## AIM AND RANGE OF STUDY

The aim of the study was to determine the correlation between the efficiency of production of selected types of beech timber in the domestic market and the dimensional and qualitative variability of the products. The research was conducted on small and medium wood processing enterprises, which are the most common in Poland.

The research encompassed analysis of wood processing in a full financial year as well as verification of qualitative and quantitative data concerning the processing of beech wood into sawn materials. The results were analysed by describing how variability in the material type, quality and dimensions influenced basic processing parameters.

## METHODOLOGY

The volume of timber and other materials was measured according to the guidelines of the Polish Standard PN-EN 1309-1:2002Round Wood and Timber – Dimensions Measurement – Part 1: Timber. The data analysis consisted in classification of the assortments according to their type, dimensions and quality. Third quality class logs (WC0) of three thickness classes were used as the material for comparing the processing efficiency.

The index of technological processing efficiency was calculated according to the assumptions, using the formula below (1) (Hruzik et al., 1996). The efficiency was expressed as percentage. It was the ratio between the total volume of products made from the raw material and the purchase price of the material used in production.

$$E(p)=(\Sigma Vw*Cw+\Sigma Vz*Cz+\Sigma Vo*Co\Sigma Vs*100)\ /(Cs+Tr)\ [\%] \quad (1)$$

$Vw$ – volume of products processed for the domestic and European market,
$Cw$– unit price of products,
$Vz$– volume of woodchips,
$Cz$ –contractual price of woodchips,
Co– volume of waste and sawdust,
$Vs$– contractual price of waste and sawdust,
$Vs$ –volume of raw material,
$Cs$– contractual price of raw material,
$Tr$ – cost of transport of raw material.

**RESULTS**

Table 1 shows the data concerning the structure of beech wood sawn per annum. If we assume that the real volume of beech timber production amounted to about 10,000 $m^3$, we can see that the processing was relatively equal in the consecutive months of 2016. The amount decreased in the summer months and at the end of the year.

The highest production (Table 1) was noted in the first months of the year. The monthly production of timber amounted to about 960 $m^3$. Beech wood was chiefly processed into un edged assortments (79%), where medium-length timber, made by shortening side timber, had a considerable share (12%). The analysis of the annual amount of beech wood processed into sawn materials showed that the production of 50 mm logs and 26 mm timber was predominant – these were the main products made from sawn wood (Fig. 1).As far as edged assortments are concerned, laths up to 1 m in length were the largest group of products made from beech wood.

It is necessary to take the quality of raw material into account when analysing the quality of sawn products (Fig. 2). The third class of wood quality was predominant in the products sawn from lower quality round wood – about 52%. The share of the first quality class amounted to about 27%. About 8,000 $m^3$ of timber was made from un edged beech wood. The share of the third quality class wood amounted to about 63%, whereas the share of the first quality class amounted to about 20%. About 2,000 $m^3$ of timber was made from round wood. The share of the first class sawn assortments amounted to about 56%, whereas the share of the second class amounted to about 34%.

Table 1. The structure of beech wood sawn per annum in 2016

| Thickness [mm] | The thickness of the obtained sorts - share in months [%] | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total |
| n/o 20 | 0,00 | 0,41 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,56 | 0,97 | 0,00 | 0,13 | 0,00 | 2,07 |
| n/o 22 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,61 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,61 |
| n/o 26 | 1,54 | 2,08 | 1,69 | 1,17 | 2,15 | 1,68 | 1,80 | 0,35 | 0,38 | 0,90 | 1,81 | 0,00 | 15,54 |
| n/o 32 | 1,54 | 0,52 | 0,16 | 1,12 | 0,00 | 0,00 | 0,00 | 0,41 | 1,34 | 0,71 | 1,69 | 0,00 | 7,48 |
| n/o 35 | 0,29 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,36 | 0,65 |
| n/o 42 | 1,42 | 1,89 | 1,55 | 1,69 | 0,98 | 1,30 | 0,94 | 0,57 | 0,60 | 2,03 | 0,00 | 0,00 | 12,98 |
| n/o 50 | 2,05 | 1,81 | 2,41 | 2,80 | 1,69 | 1,85 | 2,92 | 1,76 | 2,36 | 2,27 | 2,52 | 3,13 | 27,59 |
| n/o 55 | 0,00 | 0,00 | 0,00 | 0,00 | 0,74 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,74 |
| 42x88 | 0,00 | 0,21 | 0,29 | 0,00 | 0,00 | 0,00 | 0,20 | 0,20 | 0,00 | 0,00 | 0,00 | 0,00 | 0,91 |
| 68x68 | 0,19 | 1,28 | 0,45 | 0,67 | 0,45 | 0,45 | 0,22 | 0,00 | 0,22 | 1,12 | 0,90 | 0,45 | 6,38 |
| 85x145 | 0,84 | 0,21 | 0,21 | 0,00 | 0,61 | 0,42 | 0,21 | 0,24 | 0,00 | 0,21 | 0,36 | 0,00 | 3,31 |
| 120x220 | 0,00 | 0,21 | 0,18 | 0,36 | 0,19 | 0,19 | 0,00 | 0,00 | 0,22 | 0,00 | 0,43 | 0,22 | 2,01 |
| 150x240 | 0,00 | 0,00 | 0,33 | 0,00 | 0,00 | 0,92 | 0,59 | 1,62 | 1,06 | 0,31 | 0,34 | 0,52 | 5,68 |
| 160x250 | 0,28 | 0,02 | 0,23 | 0,24 | 0,22 | 0,44 | 0,00 | 0,00 | 0,00 | 0,00 | 0,43 | 0,21 | 2,08 |
| Unedged timber, medium length | 1,47 | 1,07 | 1,02 | 0,90 | 0,83 | 1,13 | 0,85 | 0,44 | 0,97 | 1,19 | 1,17 | 0,94 | 11,98 |
| Total | 9,62 | 9,70 | 8,53 | 8,96 | 7,85 | 8,98 | 7,73 | 6,16 | 8,12 | 8,73 | 9,79 | 5,83 | 100 |

*Source: compiled by the author*

n/o – un edged timber

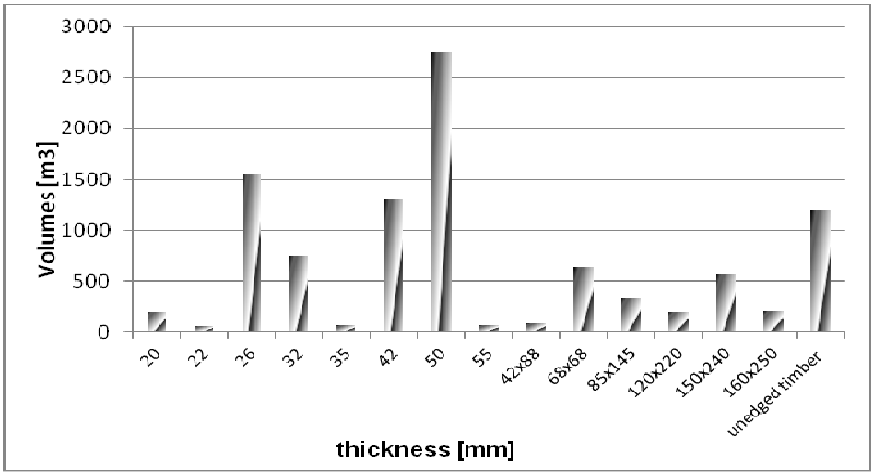


Fig. 1. The annual hardwood processing

*Source: compiled by the authors*

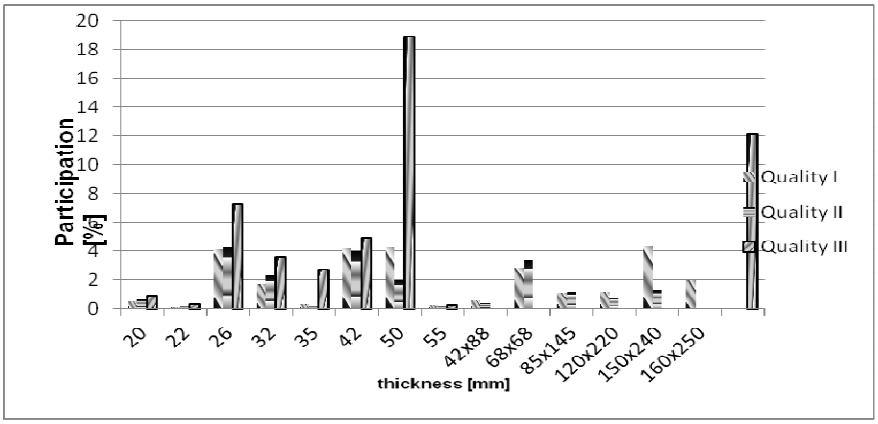


Fig. 2. The volume of beech wood sawn according to quality classes

*Source: compiled by the authors*

## SALES PRICES OF SAWN MATERIALS

The average purchase prices of beech wood were verified in order to assess the profitability of round hardwood processing (Fig. 3). The results of sales of edged and un edged sawn materials are shown in Fig. 4 and 5. In view of the fact that WC0 class beech wood is mostly sold in Poland at 269-430 zlotys/$m^3$, the average price of 345 zlotys/$m^3$ was assumed for calculations. Table 4 shows the prices of timber with division into different thicknesses of un edged assortments and quality classes. The value of individual sawn materials was assessed when they were wet. It ranged from 700 to 1,470 zlotys/$m^3$. The thicker the timber was and the better the quality class was, the higher the price per $m^3$ was.

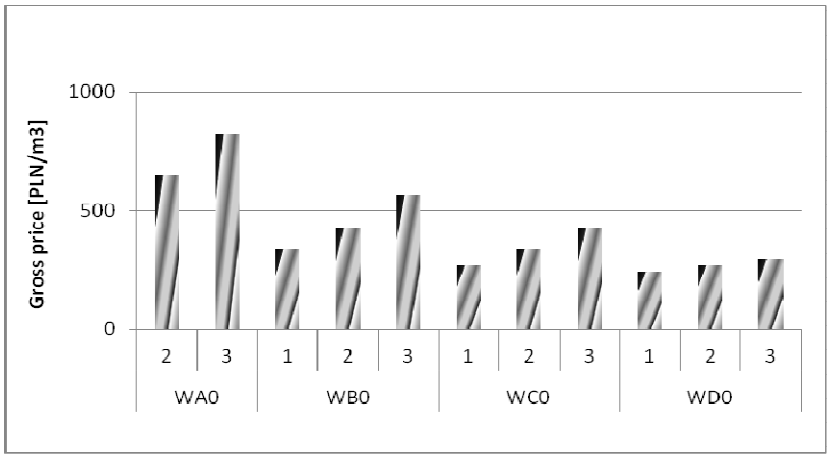


Fig. 3. The prices of beech wood according to its thickness and quality class

*Source: the author's compilation based on enterprises' documentation*

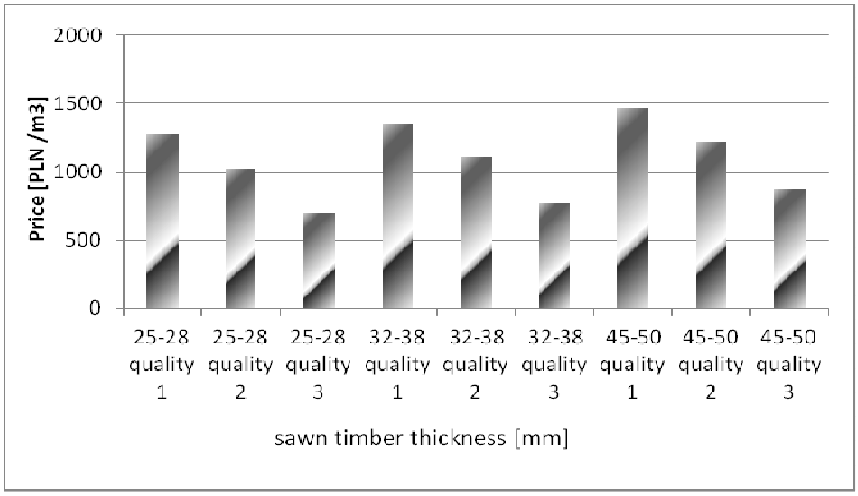


Fig. 4. The prices of unedged beech timber according to its thickness and quality class on the local market

*Source: the author's compilation based on enterprises' documentation*

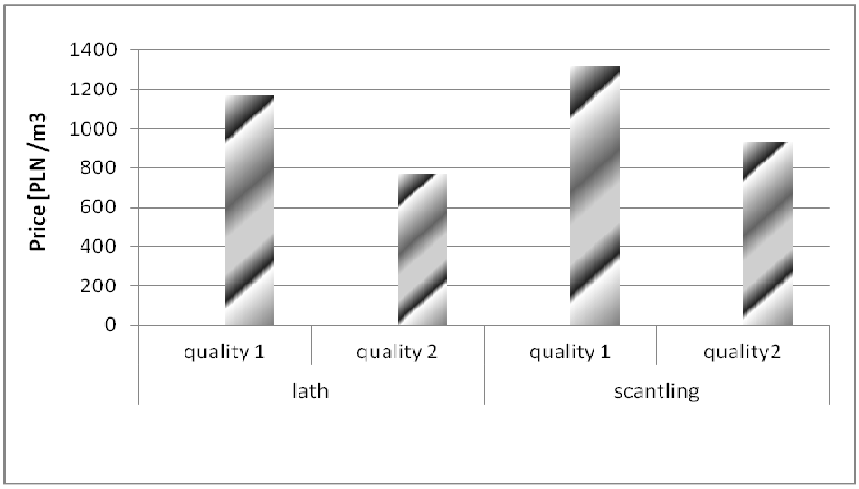


Fig. 5 The prices of beech timber according to its thickness and quality class on the local market

*Source: compiled by the authors*

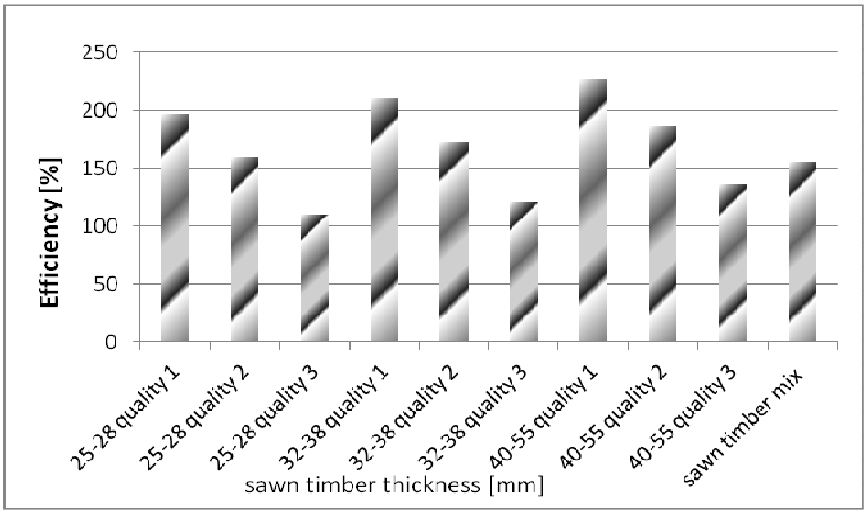


Fig. 6. The efficiency of un edged timber production for the local market

*Source: compiled by the authors*

Table 6 shows the efficiency of un edged timber production for the local market. The highest efficiency of beech wood processing, i.e. about 195-223% was noted in the first quality class of timber. The lowest efficiency, i.e. 110-136%. was noted in the third quality class of sawn materials. The average efficiency was 167%. The weighted average, which depended on the price of timber and the quality class of elements for sale, amounted to 156%.

The research showed that it is necessary to search for the possibilities to increase the share of higher quality timber in the total amount of beech wood processed.

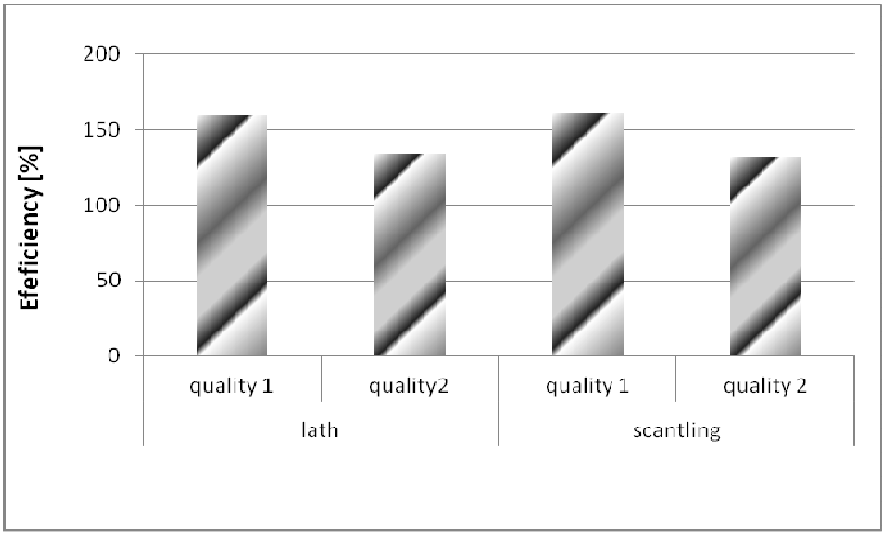


Fig. 7. The efficiency of edged timber production for the local market

*Source: compiled by the authors*

Figure 7 shows the efficiency of edged beech timber production for the local market. The lath and square timber production efficiency ranged from 134% to 160%. The average efficiency, which depended on the price of timber and the quality class of elements for sale, amounted to 146%, whereas the weighted average exceeded 150%.

Lower processing efficiency ratios, which were noted for edged beech timber, resulted from lesser processing efficiency. Deeper processing involves extra costs of processing and employment. It may also significantly reduce the processing efficiency.

**SUMMARY**

The available data concerning the amount of domestic beech wood sawn into timber enabled analysis of its processing and verification of the economic aspects of manufacturing low-processed sawmill products. The research resulted in the following conclusions:

1. The sawing data showed that un edged timber was predominant in the total amount of beech wood processed.
2. There were equal amounts of timber produced from beech wood during the year under study.
3. The analysis of the domestic market of beech timber purchasers showed that there was the highest demand for high-thickness un edged timber. It resulted in higher prices of this timber. Simultaneously, this quality class had a smaller share in the total sawmill production.
4. The share of edged beech timber was significantly smaller (by about 20%).Simultaneously, this was higher quality timber. However, it did not result in higher efficiency ratios. The average ratio for the first quality class was 160%. The weighted average for timber amounted to 150%.
5. The production efficiency is influenced by the price of raw material acquired for processing and the possible sales value of processed assortments. The weighted average of un edged timber production efficiency was 159%. The maximum efficiency of 227% was noted for the first quality class assortments, which were 40-55mm thick.

6. The difference between the efficiency of beech wood processing into un edged and edged assortments is caused both by the production process and the demand for a particular type of timber. There was much higher efficiency in the processing of beech wood into un edged timber. There was high demand for this product as it can be flexibly used in different branches of the wood industry.

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