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## Research Articles

## HOW SINGLE TAXES IMPACT THE CONVERGENCE OF THE TAXATION IN THE EUROPEAN UNION

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### Abstract

As a result, the original purely economic-oriented cooperation gave birth to a community named the European Union, which is now cooperating in a number of areas, not excluding the tax policy issues. This paper results from works which point out the tax convergence in the EU. The aim of this paper is to quantify the impact of the tax mix and tax competition on the convergence of tax systems in the EU. The empirical part of the paper makes use of the panel regression with fixed-effects for the 28 EU countries between the years 1965 and 2011. Two designed models report a statistically significant positive impact of all determinants on the effective tax burden. On the basis of final values, tax competition and property taxes have been assessed as the most important determinants of tax convergence. All models meet diagnostic tests and are econometrically robust. The obtained results can be considered as relevant with sufficient information capability.

### Introduction

Increasing globalization and the European Union (hereinafter referred to as “EU”) enlargement have an influence not only on human culture or politics, but mainly on the economies of the countries in which integration is on different levels of their development [1].

The first step in the European integration consisted of strengthening the economic cooperation between the member states whose goal was to establish a single market. That means free movement of goods, persons, services, and capital [1] and the introduction of a common currency, the Euro [2].

The homogeneity in terms of the tax burden of individual member states may be questionable [3]. Due to the existence of differences in economic structures and political preferences, together with national fiscal autonomies, the European tax systems are far from being uniform. However, the European Union has been trying to converge tax systems, which should lead to the removal of all obstacles to the creation of the single market.

Tax-coordination, as a tool for avoiding the emergence of very diverse politics, and tax-harmonization, as a tool for the approximation of tax systems, has been the subject of much debate since the beginning of the European integration. The issues of the coordination, approximation, and harmonization of the tax systems in the EU are discussed, for instance, in [4], [5], [6], [7], who make readers familiar with various directives and regulations that affect the tax systems of the member states.

However, tax convergence has supporters as well as opponents. Cultural dissimilarities and freedom of adopting tax legislation, which are based on different structures, are the main arguments to reject the convergence of taxes. Another negative aspect is a loss of tax competitiveness of individual Member States [8]. Serna [4] believes that convergence is

a positive phenomenon because it reduces the scope of “unfair” tax arbitrage for the price of higher transaction costs. All member states would be able to benefit from the single tax system and no distortions would emerge. He prefers full harmonization and integration. Thus it is evident that since the EU establishment, there have been continuous clashes of views in the EU regarding the question whether to maintain tax competition or rather press for tax harmonization.

Kubátová [10] pursued the controversy between tax harmonization and competition as well, and she came to the conclusion that it was impossible to identify the more favourable one – tax competition or harmonization. In her work, she draws attention to the fact that tax harmonization brings the threat of the disproportionate growth of tax burden borne by taxpayers, and if not applied within the whole territory of the community, it is ineffective. However, according to this author, competition in taxes can cause under-sizing of the public sector under the tolerable rate and it can bring a risk of tax-overload of immobile bases, especially work. Nevertheless, tax competition itself should lead to the convergence of taxation systems as well because the reduction of the tax burden in one state will cause the growth of tax incomes by the relocation of tax bases and the outflow of tax revenues of other states. In order to prevent this phenomenon, they will reduce their tax burden too and according to economic theory, the whole process leads to the convergence of tax burden in one area [11].

Nerudová [12] states that tax competition should result in a responsible, complex and effective tax policy with a lower tax burden, which produces the positive and effective climate for a greater economic growth.

In her work on the impact of tax competition on economic growth, Szarowská str. 40 [13] defined tax competition as “*A process of lowering effective tax burden to make investors and factors of production owners allocate their tax bases in a given country, provided that identical conditions are respected for all subjects.*”

In spite of these problems there are lots of authors who have been trying to find out whether taxation converges in the EU. Foltysová [14] and Serna [15] deal with a cluster analysis of 22 OECD countries in several time periods between 1965 and 2003. They make use of five chosen main variables of the tax structure in accordance with the OECD classification. They conclude that the tax structure in the EU has become closer in four main groups – northern, southern, central European and non-European.

De Brandt and Mongelli [16] monitors the convergence of tax burden in the EU on the basis of set economic, financial, monetary and institutional factors using correlations and cointegration analysis between 1970–1998. Their conclusions suggest that in the euro-area countries fiscal dispersion constantly decreases.

Drawing on the  $\beta$ -convergence and  $\sigma$ -convergence methodology, [17], [18], and [19] infers that tax burden converges between 1967 and 1995 during an annual data analysis of 15 EU countries; with the only exception in the period from 1974 to 1984. The same methodology including unit root tests is used by [20], [21] and [22], whose key contribution is attached to the evidence that tax convergence in the EU occurs during the whole 1965–2005 period.

In their works, Bušovská [23], Bušovská [24] and Bušovská and Petrovická [25] address tax burden convergence by means of  $\beta$ -convergence and  $\sigma$ -convergence from several points of view. They analyse statutory tax rates but also implicit tax rates, which give a true picture of the real tax burden of different economic activities, but especially compound tax quotas and their tax structures. According to her analyses, the effective tax burden itself converges in the



EU between 1965 and 2011. These conclusions are used for subsequent research included in this work as well as the definition of tax competition taken from the work by Szarowská [13].

## 1 Aim

The article will try to answer:

- a) To what degree tax burden components influence the convergence of tax systems in the EU countries.
- b) To what degree tax competition influences the convergence of tax systems in the EU countries.

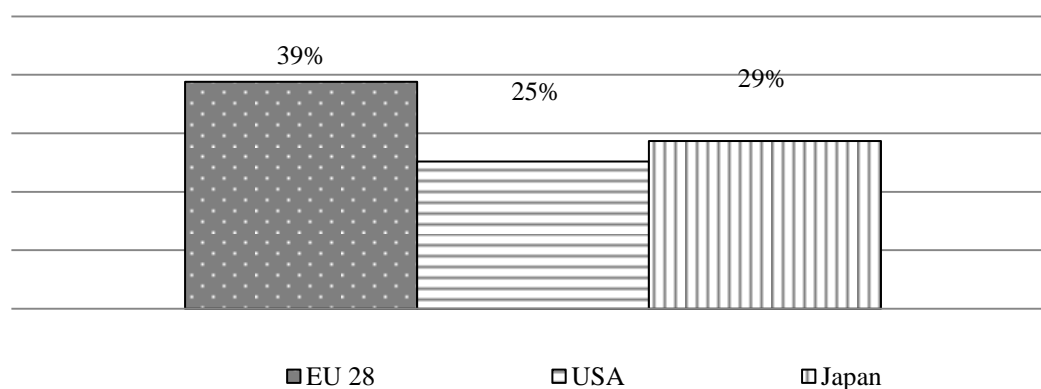
## 2 Methodology

The work uses methods of comparison, classification methods and deductive methods with the analogy method. The analysis method is important, supplemented by the synthesis method for the creation of a coherent objective opinion in the conclusion of the work.

Firstly, it is necessary to identify individual terms and define their meaning.

The easiest way to determine the tax burden is the use of *statutory rates* of taxes [24]. However, Blechová [26] emphasises in her research that statutory tax rates do not fully play the role of an objective indicator for the international comparison, which is why the so called implicit tax rates are used within the scope of tax rates. They measure the average effective tax burden of various kinds of economic incomes and activities. In other words, implicit rates inform about the percentage from the given economic activity that is paid to the state through taxes, including social allowances concerning labour [26]. This methodology is used, e.g., by European Commission [27], Říhová [28], Petrářová [29] and Bušovská [24].

The tax quota can also be applied for the international comparison of tax burden by Kubátová [7] and Szarowská [13]. It represents a macroeconomic indicator which is set as the ratio of tax and customs revenues to the GDP in going prices. Thus the *tax quota* (also called *tax burden*) represents a certain proportion of the GDP which is redistributed by means of public budgets. This indicator uses information on the tax incomes actually collected for the GDP by means of which it can inform about the value of the overall effective taxation figure in a given country. Nonetheless, the tax quota is the simple tax quota which represents the revenue proportion of individual taxes (without social insurance contributions) of the GDP. On the other hand, the compound tax quota is more relevant because it expresses the share of all taxes (including social insurance contributions) in the GDP (also called *total tax burden* – shortcut *TTB*) [7]. The example of the total tax burden in the world is shown in Fig. 1.



Source: EC (2010), own processing

**Fig. 1:** Total tax burden in the world (%)

*Tax mix* represents the proportion of individual taxes of the total tax revenue (tax quota). This indicator informs whether a country prefers direct or indirect taxes [13].

**Tab. 1:** Example of the tax mix of the Czech Republic in 2011

Income taxes ( <i>IT</i> )	20.34%	Payroll tax 1 ( <i>Payroll</i> )	1.75%
Social security contribution ( <i>SC</i> )	44.06%	Tax on goods and services ( <i>Indir</i> )	33.84%
Other taxes ( <i>Other</i> )	0.01%	Tax on property ( <i>Property</i> )	<0.00%

Source: OECD (2012), own processing

For the above stated reasons, the compound tax quota and its individual components classified according to the OECD classification will be used to achieve the objective. In this work, *gross domestic product* (hereinafter referred to as “GDP”) is considered in common prices in the purchasing power parity. The reason for this decision dwells from the fact that this representation eliminates the differences in price levels among countries and allows us to compare even economies which markedly differ in the absolute magnitude. *Purchasing power parity* is an artificially created monetary unit used in international comparisons to express the volume of economic overall indicators.

The term “*European Union*” denotes a community of 28 EU member states. The panel regression analysis is based on the annual data of the EU countries since 1965 and the end of the individual time series is stipulated by 2011, which represents the most up-to-date period of time at the time of the analysis of the given issues. The data source comprises secondary information provided by OECD [30]. Tax shares are classified in accordance with OECD classes [31] and the missing data are not considered.

According to Novák [32], *convergence* means reducing the difference in time between two quantities. If  $y_{1,t}$  and  $y_{2,t}$  are relevant economic quantities of two countries within time  $t$ , then convergence in the period between  $t$  and  $t+s$  means:

$$|y_{1,t} - y_{2,t}| > |y_{1,t+s} - y_{2,t+s}| \quad (1)$$

The aforesaid claim holds true for the exploration of convergence between two countries. The standard deviation or  $\sigma$ -convergence used by Szarowská [13] in her work represents a parallel for a group of countries. For the formation of individual models of the panel regression analysis, this work draws on the conclusions of works by Foltysová [14], Kubátová [15], Sosvilla and Tamarit [18], Sosvilla et al. [19], Delgado and Presno [20], Delgado and Presno [21], Rivero and Casquero [22], Bušovská [24], and Bušovská [25], which proved the taxation of European states converge by  $\beta$ -convergence a  $\sigma$ -convergence. The econometric analysis and the related calculations are made in programmes Gretl 1.9. and Eviews 7.2. For individual residues, the work uses the following abbreviations presented by the Table 2.

In view of the fact that it is a time series analysis between 1965 and 2011, it is always necessary to check whether time series are stationary when working with them. The works by contemporary authors suggest unit roots tests of panel data which have a greater power than unit roots tests used for checking the stationarity of one-dimensional time series [33]. We can mention tests by these authors: Levin et al. [34] – test LLC, Im et al. [35] – test IPS, Maddala [36], [37] – Fisher-ADF test and Fisher-PP test.

These tests are used in the presented work as well. Their explanatory power according to the null hypothesis ( $H_0: \rho = 1$ ) confirms that the monitored time series includes the unit root (it is not stationary). Thus if this is possible, we can reject the null hypothesis. The time series is stationary and it is possible to work with it for panel regression purposes.

**Tab. 2:** Abbreviations used in the paper

Shortcut	Name	Shortcut	Name
TTB	Total tax burden	SC	Social contribution (tax revenues)
dTTB	1st difference of time period of total tax burden	Payroll	Taxes on wages and salaries (tax revenues)
IT	Income taxes (tax revenues)	Indir	Indirect taxes (tax revenues)
PIT	Personal income taxes (tax revenues)	Property	Taxes on property (tax revenues)
dPIT	1st difference of time period of personal income taxes (tax revenues)	dProperty	1st difference of time period of taxes on property (tax revenues)
CIT	Corporate income taxes (tax revenues)	Other	Other taxes (tax revenues)
dCIT	1st difference of time period of corporate income taxes (tax revenues)	dOther	1st difference of time period of other taxes (tax revenues)

Source: own processing

Consequently, the work uses the panel regression analysis or panel data analysis which concerns the analysis of relations and the connection of the data in a two-dimensional space. The first dimension is made by time quantity, the second dimension is represented by the cross-section data of individual monitored objects. A panel stands for a set of units which are similar or related by some characteristic qualities and which are continuously monitored [33]. A necessary precondition for the possibility of defining a panel and subsequent panel data analysis is that the set of units does not change in time and the missing units are not replaced by new ones. A general estimating equation is as follows:

$$y_{it} = \alpha + \beta' x_{it} + \delta_i + \varepsilon_{it} \quad (2)$$

where

$y_{it}$  is the explained variable,

$x_{it}$  is  $k$ -vector of explanatory variables,

$\varepsilon_{it}$  is residual component of the model,

$i = 1 \dots N$  cross-section units,

$t = 1 \dots T$  time (data flow in time),

$\alpha$  is overall constant of the model,

$\beta'$  are parameters (coefficients) representing the slope of variables,

$\delta_i$  is cross-section effects and

$\gamma_t$  time (periodic) effect.

When using the regression analysis, there are always at least two possibilities: the application of the regression analysis with random effects or fixed effects. Nevertheless, according to Dougherty [38], we cannot suppose that in the case of the panel of the EU countries these countries are a random sample of all sovereign states in the world. Thus it is necessary to make use of the regression analysis with fixed effects. To confirm this hypothesis, the outcomes of the Durbin–Wu–Hausman test was also used and the identified value confirmed

that it is really more adequate to use a panel regression model with fixed effects [39]. A properly constructed model also should not show autocorrelation, which is why the Durbin–Watson test [40] is used in the work.

The paper does not handle the issue of tax construction or the choice of optimal tax system; it also does not deal with the question of tax justice or processes and instruments of the EU tax policy. Model results from papers of Foltýsová [14], Kubátová [15], Delgado and Presno [20], Delgado and Presno [21], Rivero et al. [22], and Bušovská [24].

For the foundation of the whole work the methodology of new Keynesian economics was adopted. It states that the econometric model can only help reveal the relations among variables, but its conclusions do not confirm nor disprove the validity of the economic theory. For this reason, it is impossible to draw recommendations for the economic policy from the outcomes of the model.

### 3 Results and Discussion

#### 3.1 Panel tests of data

Panel unit root tests have shown that most time series are already stationary at a 1% significance level, which makes it possible to use the data for the purpose of the panel regression analysis. The exceptions comprise the compound tax quota (TTB), tax revenues from income tax (IT), personal income taxes (PIT), corporate income taxes (CIT), property taxes (Property) and payroll taxes (Payroll), where it was necessary to use the first definition so that time series could show stationarity. For further information see the Table 3.

*Tab. 3: Panel unit root tests*

Unit Root Test	TTB	Prob	Obs	TTB 1.difer	Prob	Obs	SC	Prob	Obs	Indir	Prob	Obs
LLC	-0.827	0.204	769	-11.796	0.000	748	-3.641	0.000	772	-2.538	0.005	772
IPS	-1.067	0.143	769	-14.571	0.000	748	-3.137	0.000	772	-3.442	0.000	772
Fisher ADF	49.493	0.199	769	303.091	0.000	748	76.998	0.000	772	82.600	0.000	772
Fisher PP	51.398	0.152	790	489.211	0.000	769	62.733	0.021	793	87.779	0.000	793
	CIT	Pro.	Obs	CIT 1.difer	Prob	Obs	PIT	Prob	Obs	PIT 1.difer	Prob	Obs
LLC	-0.069	0.474	747	-10.467	0.000	726	0.083	0.533	945	-7.751	0.000	924
IPS	-4.389	0.000	747	-15.766	0.000	726	0.504	0.693	945	-12.838	0.000	924
Fisher ADF	88.540	0.000	747	328.133	0.000	726	38.223	0.633	945	256.156	0.000	924
Fisher PP	182.859	0.021	768	615.734	0.021	747	39.343	0.588	966	534.493	0.000	925
	Property	Prob	Obs	Property 1.difer	Prob	Obs	Payroll	Prob	Obs	Payroll 1.difer	Prob	Obs
LLC	-1.506	0.066	771	-12.077	0.000	750	2.769	0.997	772	-4.054	0.000	751
IPS	-0.156	0.437	771	-16.793	0.000	750	-4.156	0.000	772	-14.899	0.000	751
Fisher ADF	43.746	0.397	771	345.523	0.000	750	84.243	0.000	772	315.904	0.000	751
Fisher PP	73.125	0.002	792	562.009	0.000	771	372.130	0.000	793	798.852	0.000	772
	Other	Prob	Obs									
LLC	-3.389	0.000	772									
IPS	-3.721	0.000	772									
Fisher ADF	83.006	0.000	772									
Fisher PP	66.267	0.009	793									

Source: OECD (2012). own processing

#### 3.2 Panel regression model 1

This model aims at answering the question to what extent the individual tax burden components influence the tax systems convergence in the EU countries.

In accordance with Slavík [32], the convergence of the EU tax systems, the left side of the equation is represented in the model as the difference between the compound tax quota ( $y_{ttb}$ )

of an individual member state  $s$  ( $s = 1 \dots 28$ ) in different years  $t$  ( $t = 1 \dots 46$ ) and average values in the EU countries ( $y_{ttbav}$ ) in the given year  $t$  ( $t = 1 \dots 46$ ).

The right side of the equation represents the impact of the convergence of individual tax mix components on the compound tax quota convergence as a whole (once again, the constants are specific for country  $s$  and time  $t$ ),  $\delta_i$  represents fixed effects in the  $s$ -th observation ( $s$ -th country),  $\varepsilon_{it}$  represents a residual component in time  $t$  and country  $s$ .

For the detailed appreciation of the topic are income taxes (*IT*) divided into personal income taxes (*PIT*) and corporate income taxes (*CIT*). This will bring a closer ascertainment of tax competition influence, which will also allow it to be reflected from the position of investors' taxation and the one of the work owner, land and capital owner.

The influence of the individual components is calculated for:

1. Personal income taxes  $PIT_{l,t}$  as the difference  $(y_{pit.s,t} - y_{pitav.t})$ .
2. Corporate taxes  $CIT_{l,t}$  as the difference  $(y_{cit.s,t} - y_{citav.t})$ .
3. Social allowances  $SC_{s,t}$  as the difference  $(y_{sc.s,t} - y_{scav.t})$ .
4. Indirect taxes  $Indir_{s,t}$  as the difference  $(y_{indir.s,t} - y_{indirav.t})$ .
5. Property taxes  $Property_{s,t}$  as the difference  $(y_{property.s,t} - y_{propertyav.t})$ .
6. Payroll taxes  $Payrol_{s,t}$  as the difference  $(y_{payroll.s,t} - y_{payrollav.t})$ .
7. Other taxes  $Other_{s,t}$  as the difference  $(y_{other.s,t} - y_{otherav.t})$ .

In which the first value in brackets represents the difference of the value of a given part of the tax mix within an individual member state  $s$  ( $s = 1 \dots 28$ ) in different years  $t$  ( $t = 1 \dots 46$ ) and the average value of the given part of the tax mix in the EU countries in the given year  $t$  ( $t = 1 \dots 46$ ). The estimating equation is as follows:

$$(y_{ttb.s,t} - y_{ttbav.t}) = \alpha + \beta * dPIT_{s,t} + \beta * dCIT_{s,t} + \beta * sc_{s,t} + \beta * Indir_{s,t} + \beta * dProperty_{s,t} + \beta * dPayroll_{s,t} + \beta * Other_{s,t} + \delta_i + \varepsilon_{it} \quad (3)$$

Table 4 presents the outcomes of the impact of individual components of the convergence of member states' tax mixes on the total tax burden convergence in the EU. To gain the results, 719 observations were used and residues of other taxes (*Other*) were excluded because they did not show any significant dependence in the model specified.

The calculated values show a positive dependence among variables. The increase of, e.g., personal income taxes by 1 percentage point in number states increases the tax burden convergence in the EU by 0.97% in the same year.

The given relations are statistically important already at a 1% significance level. The Durbin–Watson test confirms that residues do not suffer from autocorrelation. As for the panel regression, it is more appropriate to use an adjusted determination coefficient  $R^2$  [41] which specifies that the given model clarifies about a 58 % convergence value of the total tax quota in the EU.

The harmonization of indirect taxes is on a high level in the EU, both in the field of selective indirect taxes imposed on selected commodities (called *consumption taxes* or *excise duty*) and the general indirect tax which takes the form of the value added tax. The importance of this type of taxes should grow in the coming years. as stated by European Commission name [27],

and there is an apparent trend to increase indirect taxes in many European Union countries, especially in the recent years after the outbreak of the financial crisis.

**Tab. 4:** *Model estimation*

Variable	Coefficient	Standard deviation	t-test	P-value	
Constant $\alpha$	-0.0777575	0.0297032	-2.6178	0.00904	***
dCIT	0.9847770	0.0706347	13.9418	<0.00001	***
dPIT	0.9728140	0.0461551	21.0771	<0.00001	***
SC	0.0606861	0.0233824	2.5954	0.00965	***
Indir	0.1269010	0.0285767	4.4407	0.00001	***
dPayroll	0.5516330	0.1394320	3.9563	0.00008	***
dProperty	1.0251000	0.0751446	13.6417	<0.00001	***

$R^2$	0.5935070
Adjusted $R^2$	0.5788430
Durbin-Watson test	1.9324260
Number of observations	719

\*, \*\*, \*\*\* represent significant coefficient of 1% significance level

Source: OECD (2012). own processing

To a certain extent, this measure, very popular with member state governments, is induced by the fact that the increase of indirect taxes does not have to have such a negative impact on the domestic economy as the increase of direct taxes [13]; indirect taxes also represent a relatively stable and well-predictable source of income, they are hidden in the prices of goods and services, their increase can normally be implemented more easily than with the income tax, they are potentially neutral and when fulfilling certain criteria, they cannot be avoided by a change of behaviour or. e.g., by the change of residence; they also lead to a one-off price increase and a higher inflation in the short run.

The harmonization of common Europe-wide rules goes hand in hand with the increase of indirect tax shares on the total tax burden. Here, the harmonization is at a higher level than with other taxes and. practically, it has been in progress since the beginnings of the European economic integration. Thus the relatively low level of the impact of the indirect tax convergence (*Indir* with the value of 0.127) on the tax burden convergence of the EU countries is not surprising. This happens because a similar. if not the same, legislative adjustment in the field of indirect taxes does not offer the member states a greater choice as for manoeuvres and thus not even the possibility to reach the average values of the EU countries to a larger extent.

Unlike indirect taxes, the direct taxation field (i.e. especially the corporation taxes or payroll taxes) is affected by the European harmonisation trend only marginally. The cooperation of member states comes through especially when providing information on taxes, avoiding double taxation, taxation of interest or licence fees or when fighting tax havens. At the European level, there have been fruitless discussions for several years concerning the adoption of the directive adjustment of the common consolidated tax base of corporations (the rate would remain in the discretion of member states), which was strongly rejected by a number of states. Member States perceive the field of income taxation as a part of their national sovereignty which has been developing for centuries on political, geographical, social as well as humanitarian bases, and this is why the efforts in this field are in most cases accepted with a negative initial attitude in the member states.

Yet, the high rates in the model ( $dCIT$  with the value of 0.985,  $dPIT$  with 0.973 and  $dPayroll$  with the value of 0.551) suggest that they have a greater influence on the tax burden convergence than harmonised indirect taxes. Their share in the total tax burden in the EU ranges on average around 30% and it does not differ much from the indirect taxes shares. To justify the degree of this impact, it is also necessary to look at the other side and point out that in the field of income taxes, there is still tax competition in the EU. The tax competition formulation is dealt with by Szarowská [13] who understands it in the same way as the author of the current paper does, or as: “*A process of lowering effective tax burden to make investors and factors of production owners allocate their tax bases in a given country, provided that identical conditions are respected for all subjects.*”

It is also noteworthy in this area that it is the tax competition, which is supported especially by the efforts of the less developed or new member states to do well on the European market. For that reason, it is possible to observe relatively low rates concerning income taxes in accession countries (e.g., Bulgaria in 2004, Czech Republic, Lithuania, etc.) in comparison with the EU average. They result in the outflow of tax bases from their original residual homelands, which forces the original residual states to establish countermeasures not to allow the outflow of tax bases, or to beguile these tax bases back.

As follows from the  $\sigma$ -convergence graph of personal income taxes in the works by Bušovská [24] and Plojhar [42], there is a clearly visible decrease of the tax level of income taxes in the EU countries, especially in the 1980s up to 2011. The decrease in rates occurs during the whole period, starting in the very half of 1980s new new economic approach of supply side. They were trying to reduce the economic policy by the support of factors of production owners who create economic wealth, or more precisely people who produce goods and services. The fundamental idea of supply side economics is the hypothesis that the offer of factors of production is much more flexible than it was assumed by Keynesian economics, which either ignored it completely or considered it negligible. The change of tax rates will arouse various changes the behaviour of an individual.

The first change is the retirement effect reflecting the fact that to maintain their living standards, an individual increases their working efforts when tax rates increase and vice versa. The second change is the substitution effect that expresses the willingness to reconcile with lower wages accompanied by more free time. The key point is the statement that the changes of marginal tax rates cause changes in prorated labour costs and savings, and thus they also cause changes in their offering.

The degree of influence of income and labour force taxes confirms the conclusion of Kubátová [10] that it is not necessary to harmonize taxes artificially since tax competition can lead to the so called spontaneous harmonization effect, and, theoretically, also to a greater effectiveness of tax systems when the competition of taxation systems brings the increase of economic stimuli of individual taxes as well as to saving of the public budgets. In this case, the assumption that tax competition really has an impact on the tax burden convergence in the European area was confirmed.

The degree of influence of social security contributions ( $SC$ ) on convergence is positively dependant (0.0607) at a lower than 1% importance level. Nevertheless, no great harmonisation pressure occurs in the field of insurance in the EU. There is only coordination or rather the same application of several basic rules. e.g., equal treatment, the only insurance in the EU area, the addition of insurance periods, the payment of benefits, the assimilation of facts and good administrative cooperation. Obviously, it is not the same application of rules, but only a certain general frame of the international operation of social insurance in the EU. Thus there is no application of harmonisation rules in this field since every country uses its

own procedures which are based on historical, sociological as well as on political roots. That is why even the degree of the influence on the tax burden convergence is not noticeable.

The last analysed variable which showed a positive influence on the effective tax burden convergence in the EU is represented by the property tax revenues (*dProperty* with the value of 1.025). Bušovská [24] points out to the tax mix convergence in the EU between 1965 and 2011 and mentions that in the tax zone of property taxes, the convergence was confirmed by  $\beta$ -convergence, but  $\sigma$ -convergence in the graph is faint. Nonetheless, it is impossible to say that the divergence occurs because – according to Slavík [32] – if  $\beta$ -convergence is confirmed,  $\sigma$ -convergence only depicts its picture.

The number of property taxes and rates of these taxes have always differed most in Europe. In some countries, they were very high, in others there were almost none. The attitude of domestic governments to individual taxes was and has been different. Although in some countries an opinion prevailed that there should be almost no property taxes because double income taxation occurs, other states praised their indisputable influence and the function of solidarity in society. Despite these great differences, the development took place in the field of property taxes from 1965 to 2011 and although property taxes differ within the EU and there are still lots of them, we can currently observe that several main types of property taxes have been generated which are embraced by the legislatures of most European countries. Thus the most frequent property taxes in the EU include land tax, building tax, inheritance tax, gift tax, property transfer tax and wealth tax.

## Conclusion

The aim of the work was to find out to what degree the components of the effective tax burden (compound tax quotas) influence the tax system convergence and to what degree the tax system convergence is influenced by tax competition in the EU. The individual parts of the compound tax quota were divided in accordance with the OECD classification into income taxes (*IT*), payroll taxes (*Payroll*), social contributions (*SC*), indirect taxes (*Indir*), property taxes (*Property*) and other taxes (*Other*). The subject of research was a panel of 28 countries between 1965 and 2011 and the missing data were not considered.

To meet the objectives, an analysis of available literature was completed allowing the definition of tax competition. Secondary data from the OECD database for 1965–2011 were used and subsequently applied to a panel regression analysis with fixed effects. Two models were designed, both of which showed significant dependence on significance level lower than 1%. Moreover, according to the Durbin–Watson test, the model does not suffer from residual autocorrelation and work with stationary time series.

The model provides a proof of positive dependence of fixed residues when 719 observations were made. The outcomes confirm that all parts of a tax mix and their changes affect tax burden convergence in the EU. Surprisingly, the greatest influences are shown by property taxes where, in the period under consideration, six main groups were generated from the originally enormous number of taxes and these are currently used in all member states. Indirect taxes convergence does not have as great an impact over effective tax burden convergence as one would expect, which is a consequence especially of high harmonization measures applied since the very establishment and implementation of indirect taxes in the legislation of European states.

When understanding tax competition in accordance with Szarowská [13] high values of the dependence of income and payroll taxes (*dCIT*, *dPIT* and *Payroll*) in the model indicate that tax competition has a greater influence on the tax burden convergence than tax harmonisation



or coordination which are direct taxes at a relatively low level because of the sovereignty restriction of the member states.

The degree of the influence of corporate income taxes, personal income taxes and labour taxes confirms the conclusion of Kubátová [10] that taxes do not need to be harmonised artificially as tax competition can lead to the so called spontaneous harmonisation effect and, theoretically, also to the greater effectiveness of tax systems when the competition of taxation systems leads to the increase of economic stimuli of individual taxes and saves public budgets, which was also proved in the work by Szarowská [13]. In this case, the presumption was confirmed that tax competition has a truly great impact on the growth of the gross domestic product in Europe.

The conclusions above justify that the tax burden convergence is influenced by all applied taxes; yet, the greatest share of the tax burden convergence was borne by tax competition and property taxes between 1965 and 2011 and although one would think that the impact of indirect harmonized taxes should be the greatest, it is not the case.

Although tax burden convergence is actually influenced by many more factors than only by its structure, the values of the adjusted determination coefficient of the estimated model ranged from 58 %. The model also satisfies diagnostic tests and thus it is so robust from, the econometrical point of view. Hence the estimated results can be considered relevant with a satisfactory explanatory power.

The model results from works of authors stated above which do not absolutely reflect the impact of other variables that have an effect on the tax convergence in the EU that will be part of further research (e.g. other macroeconomic indicators, adoptions of European laws, the acceptance of new members, etc.). The basis of the whole work is the methodology of new Keynesian economics according to which the econometric model used can only help reveal the relations among variables, but its conclusions do not confirm nor disprove the validity of the economic theory. That is why recommendations for the economic policy cannot be drawn from the outcomes of the model. The work does not deal with fairness or equality in the field of taxes, nor does it aim at suggesting an appropriate tax policy for the member states of the EU. The work provides a basis for further possible research in the same direction when it is possible to include additional variables in the model, e.g., the mobility of labour or the influence of the harmonisation legislative on the tax policy within the European Union.

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## JAKÝ VLIV MAJÍ JEDNOTLIVÉ DANĚ NA KONVERGENCI DANÍ V EU?

Z původní čistě ekonomicky orientované spolupráce se zrodila komunita s názvem Evropská unie, která nyní spolupracuje v celé řadě oblastí a ani daňová politika není výjimkou. Tento článek vychází z prací, které poukazují na daňovou konvergenci v EU. Cílem je kvantifikovat vliv daňového mixu a daňové konkurence na sbližování daňových systémů v EU. Empirická část práce využívá panelové regrese s fixními efekty pro 28 zemí EU v letech 1965 – 2011. Dva sestrojené modely vykazují statisticky významný pozitivní vliv všech determinantů na konvergenci efektivního daňového zatížení. Nejdůležitějšími faktory daňové konvergence jsou dle výsledných hodnot daňová konkurence a majetkové daně. Všechny modely splňují diagnostické testy a jsou ekonometricky robustní. Výsledky mohou být považovány za relevantní s dostatečnou vypovídací schopností.

## WIE EINZELNE STEUERN DIE KONVERGENZ DER BESTEUERUNG IN DER EUROPÄISCHEN UNION BEEINFLUSSEN

Die ursprüngliche rein wirtschaftlich orientierte Zusammenarbeit gab Geburt einer Gemeinschaft mit dem Namen der Europäischen Union, die nun in einer ganzen Reihe von Bereichen zusammenarbeitet und die Steuerpolitik ist dabei nicht ausgeschlossen. Dieser Beitrag ergibt sich aus Arbeiten, die auf eine Steuerkonvergenz in der EU hinweisen. Das Ziel dieser Arbeit ist es, die Auswirkungen des Steuer-Mix und des Steuerwettbewerbs auf die Konvergenz der Steuersysteme in der EU zu quantifizieren. Der empirische Teil des Artikels nutzt Panelregressionen mit festen Effekten für die 28 Länder der EU in den Jahren 1965 – 2011. Zwei Modelle weisen einen statistisch signifikanten positiven Einfluss aller Komponenten auf die effektive Steuerbelastung aus. Die wichtigsten Determinanten der steuerlichen Konvergenz sind nach den resultierenden Werten der Steuerwettbewerb und die Grundsteuern. Alle Modelle erfüllen die diagnostischen Tests und sind ökonometrisch robust. Die Ergebnisse können, da sie über ausreichende aussagekräftige Fähigkeiten verfügen, als relevant betrachtet werden.

## JAKI JEST WPŁYW POSZCZEGÓLNYCH PODATKÓW NA KONWERCENCJĘ PODATKOWĄ W UE?

Współpraca zorientowana początkowo tylko na aspekty gospodarcze przekształciła się we wspólnotę o nazwie Unia Europejska, w ramach której współpraca podejmowana jest w wielu dziedzinach, w tym w zakresie polityki podatkowej. Niniejszy artykuł oparty jest na opracowaniach poświęconych konwergencji podatkowej w UE. Celem opracowania jest kwantyfikacja wpływu mixu podatkowego i konkurencji podatkowej na zbliżanie systemów podatkowych w Unii. W empirycznej części pracy zastosowano regresje panelowe z efektami stałymi dla 28 państw UE w latach 1965 – 2011. Dwa opracowane modele wskazują na statystycznie istotny pozytywny wpływ wszystkich determinant na konwergencję efektywnego obciążenia podatkowego. Na podstawie analizy uzyskanych wartości można stwierdzić, że do najważniejszych czynników wpływających na konwergencję podatkową należy konkurencja podatkowa i podatki majątkowe. Wszystkie modele spełniają testy diagnostyczne i są ekonometrycznie wiarygodne. Wyniki można uznać za odpowiednie o wystarczającej wiarygodności.

## PERSONNEL MARKETING IN CZECH BUSINESSES

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### Abstract

The aim of the paper is to introduce a theme of personnel marketing (HR marketing) both in theoretical and empirical perspectives. Personnel marketing can be considered as a relatively new tool in the field of human resources management, concentrating on increasing the satisfaction of employees, improved career development and, consequently, on the improved quality of human working life.

As the term itself it is quite new, the paper in its first section deals with the theoretical basis of personnel marketing. The second and more extensive section explains the preparatory and implementation stages of the primary quantitative research, whose main objective was to evaluate the level of utilisation of personnel marketing in companies which can be classified as the largest employers in the Liberec Region. The interpretation of the research results strives namely to provide an answer to the question whether human resources experts in the businesses located in the Liberec Region use personnel marketing in practice, to what extent and which specific tools.

### Introduction

The paper deals with an aspect of using personnel marketing in companies. One can see personnel marketing as a new approach in the field of human resources management, combined with the elements of “classical” marketing, using general marketing principles. It is based on the fundamental assumption that businesses want to have the best employees - loyal, motivated in the right way, satisfied and equipped with sufficiently developed competences, knowledge and skills. With these requirements companies are ever more competing to attract, win and, last but not least, keep the best people.

In its first part the paper brings comments on theoretical grounds of personnel marketing, both from internal and external perspectives. It also points out a critical view of some research findings [10]. The following research projects covered in both Czech and foreign professional literature and in scientific databases, the authors describe the time and rationale of the personnel marketing creation. Further in the paper there is pointed out an importance of HR marketing tools to recruit and retain key employees.

The second, pivotal section of the paper provides an interpretation of one part of the research investigation that took place in May 2015 at the Faculty of Economics of the Technical University of Liberec (EF TUL). The main objective was to identify the level of utilisation, tools and means of personnel marketing by the largest employers in the Liberec Region. The contribution deals first of all with the question if the largest employers in the region know the term personnel marketing, whether they use it in everyday life, and how they perceive the meaning of the term. Further the material analyses and compares personnel marketing tools. The primary research investigation was completed by the EF TUL project team, and its results were compared with the findings of BrandBakers Company’s research conducted among HR officers in the CR in 2015.

## 1 Theoretical Grounds of Personnel Marketing

The term *personnel marketing* first occurred in the work of German personnel management experts [5]. As soon as in the 1960s the term was associated with taking care of workforce acquisition and more specifically with the lack of university graduates. [1]

Due to the lack of required workforce the company managers at that time started to realize the issue of qualified manpower, and the related competitive (dis)advantage. Consequently, personnel marketing was secluded from the domain of human resources management. Personnel marketing was viewed from the perspective of the traditional marketing, based on the marketing mix (4Ps: product, place, price, promotion), where workplace was defined as a product, and an employee was seen as a customer offered a job. The goal of personnel marketing was to create a comprehensive system of recruitment and stabilization of employees, which resulted in the reduction of staff turnover. Step by step personnel marketing was developed in practice. Businesses started to perceive their employees as partners. [2]

At the turn of the millennium personnel marketing is already seen as a tool to satisfy the needs and values of the current employees, and simultaneously as a tool to build up a brand of the company as a good employer. So the point is to ensure the employees are satisfied with the current HR policy of the company, and to analyse their feedback in order to improve the marketing strategy usable for their stabilization and attraction of new, top-quality workforce. [3]

The goal of current personnel marketing according to Wimmers [4] is on the one hand *“creating positive influence on all the people actually or potentially interested in the organization, and mainly building up attractiveness of the organization for ambitious and motivated future employees who are the key to maintain the organization’s sustainability”*. It is clear from the definition that the terms personnel marketing and employer branding are combined here, and communication is becoming the main personnel marketing tool.

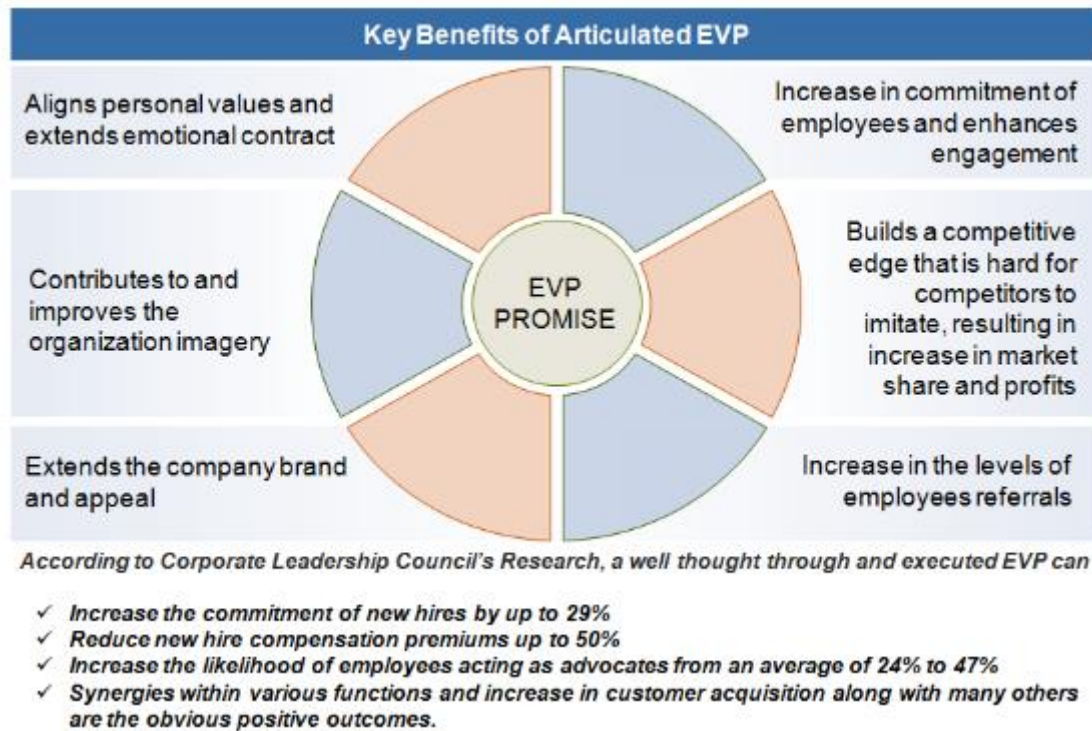
In the Czech environment personnel marketing was initially seen mostly as an instrument of obtaining workforce. Dvořáková [5] later expanded this concept of personnel marketing with the activities aimed at stabilization of the existing workforce (employee care, personal development, remuneration system and benefits). She added that personnel marketing can be seen from two points of view: wider and narrower. In the narrower sense personnel marketing can be understood as a long-term process of hiring human resources from the external labour market, and creation of a positive image of the employer: the so-called external personnel marketing. In the wider sense personnel marketing means measures aimed at stabilization of the current workforce, i.e., the solution of motivation problems, personnel management, leadership, personal development, remuneration and employee care: the so-called internal personnel marketing. Dvořáková has also defined personnel marketing as one of the functions of HR management from the viewpoint of marketing objectives, or possibly as a concept of human resources which includes all the personnel issues.

The term of personnel marketing and its use has also its critics. Hales (1994) brings in his paper an open discussion if marketing as a universal tool can be used also as a technique to develop conditions for employees and potential job candidates. [10] Although other studies point out the usefulness of internal marketing which is recognized by academics and practitioners, some critics claim that the term is just a new synonym for good human resources management, but IM is not a label. However, Sanchez and Grayson confirmed in their study that it is possible to connect HR activities together with marketing techniques which can help managers to discover and take profit from the social and environmental potential of employees also in connection with corporate responsibility. [11]



## 1.1 Employer Value Proposition

To become an attractive employer in the current labour market, employers should use marketing tools to create complex perspectives of a high-quality employer who is able to attract and keep the most talented employees. Employer Value Proposition (EVP) represents a unique set of values offered to current employees as well as potential candidates. It is a holistic framework that addresses all the aspirations of the 'high performing' workforce. For a detailed description see Fig. 1.



Source: [6]

**Fig. 1:** Key Benefits of Articulated EVP

These aspirations of the 'high performing' workforce can be clustered in 3 pillars, which in turn address 12 sub-factors, which are the decision drivers for an employment choice, and at the same time they help organizations achieve larger business objectives. EVP must be unique, relevant and compelling, if it is to act as a key driver of talent attraction, performance and retention. [6]

## 2 The Concept Framework and Objective of the Research

The concept framework was the research of the personnel marketing topic and its use by the largest employers in the Liberec Region, identification of major variables related to personnel marketing and its practical utilisation.

The reason was the fact that this is a very current, fast developing and important field of expertise, with a considerable impact on the competitive edge of businesses, where attraction and stabilization of high-quality workforce play the key role.

The quantitative research was preceded by a thorough research of professional and scientific sources, while the main objective of the qualitative research was to create a base for the quantitative research – to establish whether HR experts are aware of personnel marketing, whether they use it when recruiting new hires and for the creation of good conditions for their employees.



A basic sample of respondents was specified in the preparatory stage, following the secondary research, whose target was to find out which companies in the Liberec Region were the largest employers. To select this sample the authors used strategic business documents of the Statutory City of Liberec (“A strategic analysis for a development area of the economy, business environment and labour market) and Labour Office documents (“The biggest employers of the Liberec region”) to elaborate the basic sample.

The preparatory stage also included the identification of the suitable data collection method to be used, as well as data collection tools, and, last but not least, the organization of this exercise was specified. Questionnaire testing followed with respect to the target segment of interviewees.

## **2.1 The Objective of the Research**

The research concentrated on the identification of key factors influencing the successful use of personnel marketing in a business, and on the definition of attributes that create some value for the enterprise from the viewpoint of both the employer and the job applicant (employee).

The objective was to *evaluate the level of utilisation of personnel marketing in the companies that are the largest employers in the Liberec Region.*

The main objective was subdivided into specific sub-objectives.

- O1: What do experts in practice think personnel marketing means?
- O2: Which personnel marketing tools are used in business practice?
- O3: How effective are these tools?
- O4: What means of personnel marketing are used to stabilize employees in corporate practice?
- O5: How and to what extent are social networks used in connection with personnel marketing in corporate practice?

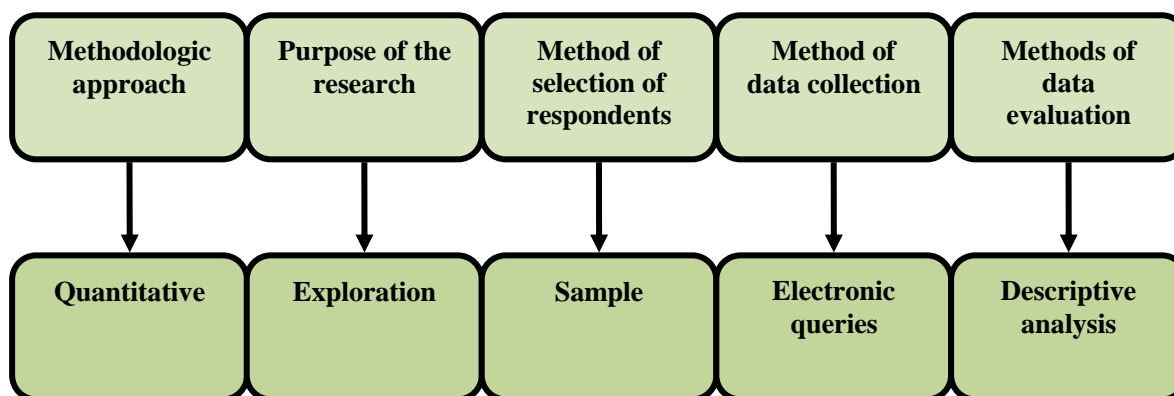
## **2.2 Research Methodology**

Quantitative research was selected to achieve the objective, due to its basic property: ability to collect measurable data. Online electronic query, so-called CAWI (Computer Assisted Web Interviewing) was used as the data collection method, because it is targeted and not too time and money consuming. CAWI is a method of data collection using an on-line questionnaire. An advantage of this method is based on low costs, a fast completion and a comfort for respondents. On the other hand a disadvantage lies on a low rate of return. In the case of our survey this negative aspect was eliminated by a personal approach and additional phone calls to remind respondents to fill this questionnaire.

A structured questionnaire with 19 questions divided in 5 parts was used as the primary data collection tool. The respondents provided their specific details in the first section. In the next section they were answering questions related to the use of personnel marketing in the corporate practice. The third part focused on recruitment as a major component of personnel marketing. The fourth section dealt with the issue of employees' satisfaction, employer branding and support of personnel marketing provided by the company's management. The last part asked questions related to social media. To motivate the respondents and increase the return rate, they were offered a choice to obtain the results of the survey.

The basic sample consisted of top management members involved in personnel matters (HR managers) in the companies – the largest employers in the Liberec Region (see Chapter 2). Total of 84 companies were contacted.

The research methodology is illustrated in Figure 2.



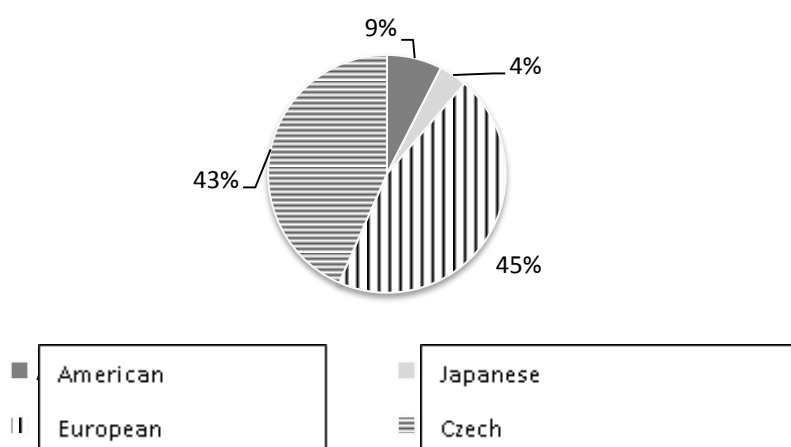
Source: Own

**Fig. 2:** Research Methodology

### 3 The Use of Personnel Marketing in the Companies of the Liberec Region

According to the data collected from 54 medium and large businesses active mostly in processing and automotive industry in the Liberec Region, personnel marketing as a tool of sophisticated and effective work with both job applicants and current employers gains considerable importance. Not only the company size, but also its ownership influences the intensity of utilisation of personnel marketing. Therefore Figure 3 below illustrates the structure of the respondents in the Liberec Region by the country of origin of the owner. It is evident that the highest share among the interviewees was represented by Czech entities, followed by European companies. Only 8% were owned by American and 4% by Japanese capital.

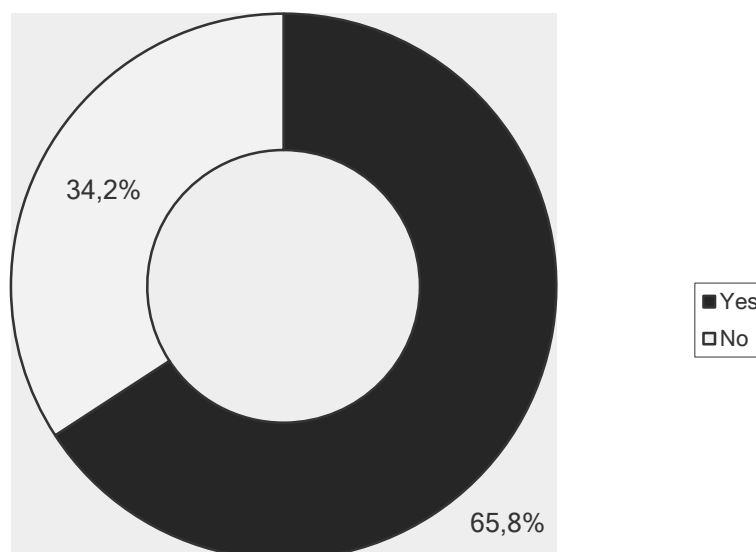
The results confirmed that personnel marketing is becoming more important for all types of businesses. Regardless of whether they work with the term personnel marketing or not, in practice they use a number of internal and external instruments in order to solicit and keep good and happy employees.



Source: Own

**Fig. 3:** The Structure of the Respondents by the Owner's Country of Origin

The interviewed companies agree that personnel marketing (HR) is related to all of the key areas of human resources management, i.e., recruitment and hiring of employees, especially in the crucial positions, the process of their induction and adaptation, and also stabilization of the current staff and building up the image of the employer.



Source: Own

**Fig. 4:** Awareness of Personnel Marketing in Czech Businesses

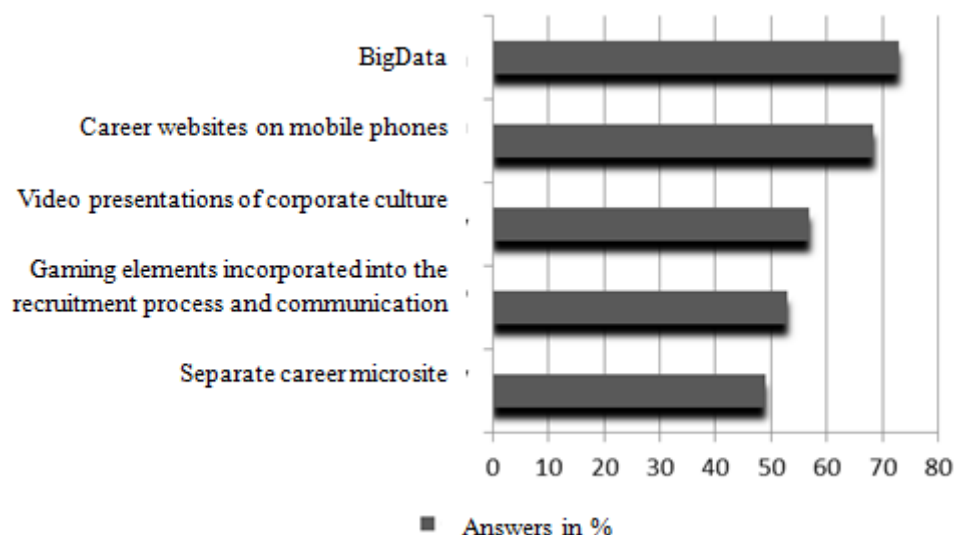
The term personnel marketing in everyday practice of human resources management in Czech companies is still a relatively new concept. As we can see in Figure 4, even though the respondents work with the tools of personnel marketing in the concerned areas of HR management, just 66% of them use explicitly the term *personnel marketing* in their corporate practice. The remaining 34% do not use the term *personnel marketing* in their environment at all.

#### 4 Personnel Marketing Tools used in Corporate Practice

The effective use of personnel marketing is based on the assumption that businesses work with a wide range of tools with regards to both external and internal environments. The data below are based on the comparison of personnel marketing tools in private companies in the Czech Republic and in the Liberec Region. The selected secondary data from the research completed by BrandBakers among HR experts in the CR in 2015 were used for an analysis, compared to the primary data collected during the research among HR managers in the companies – the largest employers in the Liberec Region, performed in May 2015.

The research focused on the most frequently used personnel marketing tools. According to the data the unknown or unused tools of personnel marketing in both Czech and Liberec businesses are the so-called BigData and some other technological instruments. The BigData represent currently a very popular marketing tool. However, the importance of the data is not just in the collection and storage; their interpretation and possibilities of use in personnel marketing, and namely in communication are critically important.

As shown in Figure 5, BigData as a personnel marketing tool is not used by 73% of the businesses in the Liberec Region.



Source: Own

**Fig. 5:** *Used Personnel Marketing Tools*

In the Czech Republic it represents in results 28% less (in total 45% of companies do not work with BigData), however, the results still tell us that this area can be rather considered as a future opportunity for HR experts [7].

The companies in the Liberec Region find targeted recruitment campaigns for specific positions to be the most effective tool, together with the methods promoting satisfaction of employees and corporate culture plans.

#### 4.1 Employer Value Proposition from the Viewpoint of Czech Companies

The findings commented on in Chapter 1.1 on the importance of EVP provide the evidence that this is the key to win talented employees and keep the good ones existing. Another interesting finding is also the fact that 41% Czech companies are not interested in what the job applicants think about them [7]. In the Liberec Region 44% of the interviewees replied they did not try to analyse the perception of the company by job applicants (during the recruitment process). Further: 44% of Czech businesses confirmed they did not work on a brand building strategy of the employer. In the Liberec Region 27% of the companies provided this answer, and another 36% confirmed they had such a strategy, while 33% were working on its development.

A significant element of EVP monitoring is also represented by the level of employee satisfaction and engagement. According to international surveys carried out for example by Gallup, the level of engagement is surprisingly low (only 13%); the companies in the Czech Republic had mere 8% of engaged employees [8]. Therefore the research also focused on whether the businesses followed the issue of engagement in their employee satisfaction surveys. Just 31% of Czech companies perform such a survey once a year at minimum. On the contrary in the Liberec Region the share was quite high: 64%.

The partial results of the research performed among the largest employers of the Liberec Region, as well as the nationwide data presented in the field of personnel marketing in 2015 among the Czech companies confirm the ever-growing importance of personnel marketing in corporate practice, in particular due to the differentiation of employers in the labour market, competing to win and keep the key personnel. On the other hand, the results reveal there are

considerable gaps concerning the usage of personnel marketing tools, especially in connection with the modern technological trends.

## Conclusion

HR marketing (Personnel marketing) has become a topical issue not only between scientists and HR specials, but there has also risen an importance of the practical application of marketing tools in internal and external company's environments. For companies it is a crucial question to attract new talented employees in the recruitment process as well as to retain and engage their employees.

To analyse the importance of personnel marketing the authors undertook an empirical survey among key employers in the Liberec Region in 2015 and compared the data with the results published topically in the Czech business environment. In the process of quantitative research they contacted total 84 entities, which can be characterized as the largest employers in the Liberec Region. On the basis of the processed and analysed data it is possible to conclude that the personnel marketing as an instrument of the high-quality and effective work with both new hires and employees in corporate practice is gaining importance, and the utilisation of personnel marketing tools is influenced not just by the company's size, but also by the ownership.

According to the research done in the Czech Republic and in the Liberec Region, the HR experts think that personnel marketing in corporate practice includes all of the key areas of human resources management: recruitment, selection, induction and integration of new employees, especially the key ones, stabilization of the existing staff, and, last but not least, "Employer Branding". More than two thirds of the interviewed experts commonly use the term *personnel marketing* in their corporate practice.

The research has also proved that the unknown or the least-used tools of personnel marketing in the companies both nationwide and in the Liberec Region include the so-called BigData and some other technological tools, such as career websites on mobile phones, video presentations of corporate culture, or game elements incorporated into the recruitment process and communication. On the other hand, the companies in the Liberec Region consider targeted recruitment campaigns for specific positions to be the most effective tool, together with the methods promoting satisfaction of employees and corporate culture plans.

## Acknowledgements

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## PERSONÁLNÍ MARKETING V PODMÍNKÁCH ČESKÝCH SPOLEČNOSTÍ

Příspěvek pojednává o personálním marketingu, který je možno považovat za poměrně nový nástroj v oblasti řízení lidských zdrojů a který se soustřeďuje na zvyšování spokojenosti pracovníků, zlepšování rozvoje pracovníků, tedy celkově na zlepšování kvality lidského pracovního života.

S ohledem na to, že je tento pojem poměrně nový, příspěvek se ve své úvodní části zabývá teoretickými východisky personálního marketingu. Ve druhé, rozsáhlejší části pojednává o přípravné a realizační fázi primárního, kvantitativního výzkumu, jehož hlavním cílem bylo zhodnotit míru využití personálního marketingu u firem, které lze nazvat největšími zaměstnavateli v Libereckém kraji. Předmětem interpretace výzkumu v příspěvku je především odpověď na otázku, zda odborníci na lidské zdroje v podnicích v Libereckém kraji s personálním marketingem pracují, v jaké míře a které konkrétní nástroje jsou v praxi využívány.

## PERSONALMARKETING UNTER DEN BEDINGUNGEN TSCHECHISCHER UNTERNEHMEN

Der Beitrag behandelt das Personalmarketing, das als verhältnismäßig neues Instrument im Bereich des Personalwesens, des sog. Human Resource Managements, erachtet werden kann, und welches sich auf die Erhöhung der Zufriedenheit der Mitarbeiter, die Verbesserung der Entwicklung der Mitarbeiter, somit insgesamt auf die Verbesserung der Qualität des menschlichen Arbeitslebens konzentriert.

Im Hinblick darauf, dass dieser Begriffe relativ neu ist, befasst sich der Beitrag in seinem einleitenden Teil mit den theoretischen Ausgangspunkten des Personalmarketings. Im zweiten, umfangreicheren Teil widmet er sich der Vorbereitungs- und Realisierungsphase der primären, quantitativen Forschung, deren Hauptziel die Bewertung des Maßes der Inanspruchnahme des Personalmarketings bei jenen Firmen war, die zu den größten Arbeitgebern in der Region Liberec gehören. Gegenstand der Interpretation der Forschungsarbeiten im Beitrag ist vor allem die Beantwortung der Frage, ob und inwieweit die Spezialisten für das Personalwesen (Human Resources) in den Unternehmen der Region Liberec im Personalmarketing arbeiten, und welche konkreten Instrumente in der Praxis zur Anwendung gelangen.

## MARKETING PERSONALNY W WARUNKACH CZESKICH SPÓŁEK

Artykuł dotyczy marketingu personalnego, który można uważać za stosunkowo nowe narzędzie w dziedzinie zarządzania zasobami ludzkimi i który skupia się na podnoszeniu poziomu zadowolenia pracowników, udoskonalaniu ich rozwoju, czyli na ogólnym podnoszeniu jakości tej części życia ludzkiego, która związana jest z pracą.

W związku z tym, że chodzi o stosunkowo nowe pojęcie, we wprowadzeniu do artykułu opisano założenia teoretyczne marketingu personalnego. Jego druga, obszerniejsza część, poświęcona jest etapowi przygotowania i realizacji podstawowych badań ilościowych, których głównym celem była ocena stopnia wykorzystania marketingu personalnego w spółkach, które można nazwać największymi pracodawcami w kraju libereckim. Przedmiotem interpretacji badań podjętej w ramach artykułu jest przede wszystkim poszukiwanie odpowiedzi na pytanie, czy specjaliści ds. zasobów ludzkich w kraju libereckim wykorzystują marketing personalny, w jakim stopniu oraz jakie konkretne narzędzia stosowane są w praktyce.

## ETHICAL CODE AS A TOOL FOR DEVELOPING RESPECT FOR MORAL VALUES

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### Abstract

This paper discusses the ethical code development at the Faculty of Economics of the Technical University of Liberec and presents the ethical code designed by students as a tool for developing respect for moral values. The objective of the paper is to show the process of the ethical code development focusing not only on its content but also demonstrating the participation of the students in its design so that the code reflects their own moral values and rules. The paper concludes that while students contributed to the development of the ethical code, the initiation of the development process, implementation and revisions of the ethical code is a primary responsibility of the faculty management. It is also a responsibility of the faculty management and the academic staff to encourage students to use the ethical code as a tool for developing respect for moral values and engender a more positive ethical climate at the faculty.

### Introduction

There is no doubt that the main objective of companies is to make profit efficiently. However, without following ethical values this would be just short-term success. Unethical behaviour would eventually lead to the loss of trust and respect of stakeholders. To define responsibilities of companies to stakeholders, companies state their major ethical values and principles in their ethical codes. Although ethical codes, also called codes of conduct, business principles, codes of ethics and corporate ethics statements were used by some companies in the USA in the 1920's, the use of ethical codes increased dramatically in the 1980's and 1990's following the savings and loan scandals [1, p. 35]. Paradoxically, the scandals lead to a higher interest in ethics in both private and public sectors as well as in academic and business research [3]. Consequences of unethical behaviour and unfavourable perceptions about organizational performances push companies towards more devoted and increased attention to ethical issues [2]. In recent years, ethical codes have become more common globally and are one of the tools used to build and maintain ethical competencies. A study conducted eleven years ago indicated that 53 percent of the largest companies in the world had an ethical code [6]. Other study showed that 100 percent of American Fortune Global 200 firms, and 80 percent of European firms had a code [7].

Ethical codes appeared in the Czech Republic after the Velvet revolution in 1990's mainly as a result of the entry of foreign companies. The need for ethical codes was given by ethical problems that appeared in the transformation period from a centrally planned to a market economy [4]. To improve business environment, business or professional ethics had to become a vital part of not only companies and organisations but also education [10]. Business ethics has been incorporated into study programmes in schools and universities. What is more, ethical codes are widespread among institutions in private and public sectors. Some universities have developed their ethical codes as well.



This paper discusses the ethical code development at the Faculty of Economics of the Technical University of Liberec (FE TUL) and presents the ethical code designed by students as a tool for developing respect for moral values. The objective of the paper is to show the process of the ethical code development focusing not only on its content but also demonstrating the participation of the students in its design so that the code reflects their own moral values and rules.

## **1 Ethical Code**

Ethical code is a document that states major philosophical principles and ethical values, describes conduct expected of employees and sets the ethical parameters. It is a key strategic document that guides employee behaviour and managerial decisions by articulating the company's values [11]. According to Erwin, a formal ethical code is "a common tool of corporate social responsibility employed by companies to establish and communicate responsible business practices and an ethical organizational culture" [5, p. 535]. Ethical code establishes standards by which behaviour is judged appropriate to the company. Of course, ethical code alone does not guarantee ethical behaviour and ethical problem solutions. Instead, once established it can help to focus and maintain high levels of professionalism and personal conduct [2].

Reasons for having an ethical code vary. Some companies write their ethical codes in order to reflect their important ethical values and culture in their organizational decisions and behaviour. However, some companies use ethical codes rather as formal documents to boost their ethical appearance and public images. Ethical codes differ in length and mission statements. Codes can range from one paragraph to over fifty pages [11, p. 35], from abstract (philosophical-ethical position) to specific (detailed ethical practices) [8, p. 259]. Mission statements articulate the objectives of a company and express what ethical standards and values should be pursued. It has been observed that ethical codes differ across countries and continents. Kaptein identified differences among North American, European and Asian ethical codes [6]. European codes were found to concentrate more on environment and less frequently on government and customer relations than American codes. The concept of honesty appeared more frequently in American codes whereas fairness was found more often in European and Asian codes. Studies in the 1990s revealed that ethical codes focused mainly on illegal activities and employee misconduct and paid little attention to the environment, product quality and safety. Codes were used to protect and defend companies against unethical behaviour by employees and did not provide ethical guidance and vision [11].

Attention has been also devoted to the relationship between ethical codes and ethical behaviour. Findings from empirical studies are mixed. Studies show that codes can be effective under certain conditions. Codes are effective when they are readable, relevant and written in a positive tone. According to Stevens and Buechler, ethical codes must be supported by the management and authentically integrated into the organizational culture [11]. However, communicating the code, involving employees in the code development and instructing them on its content are critical to the effectiveness and success of the code [1], [9], [12]. Effectiveness of an ethical code depends also on channels of communication. It was proved that communicating an ethical code downward from management to employees often leads to the code being ignored or rejected by employees. That means that ethical codes can fail and be ineffective when they are poorly communicated, they are not aligned by ethical behaviour and actions of managers or if they are rejected by the culture of an organization. For these reason, special attention and care should be devoted not only to the content but also to the process of ethical code development. The contribution of each employee in the creation of the code of ethics is very important because during this phase individuals identify

themselves with the future code of ethics. Only then the code of ethics can successfully determine the standards of ethical behaviour, since in this case employees do not perceive it as a dictation "from above". By being involved in its creation, the code of ethics reflects rules that are their own. Because the life of the company is continuously defined by numerous changes, it is advisable to revise the code of ethics once a year and verify whether and how it helps employees to go through all the organizational changes.

## **2 Methodology of Ethical Code Development**

Any corporate Code of Ethics should build upon the values professed by all members of the organization. Due to this prerequisite, the whole development of the Code of Ethics becomes a challenging organizational issue. The team entrusted with the task of assembling the Code needs to find a way to involve as many members of the organization as possible. The usual procedure consists of combining different methods and techniques of creative teamwork.

The core of every Code of Ethics is fundamentally created by moral values that are shared by the majority of members of the given institution. Therefore, as a first step, the responsible team should prepare a questionnaire in order to determine the most significant moral values. In general, the questionnaire contains twenty predefined moral values along with a scale allowing the respondent to specify the significance of the individual values for him, or even add additional values.

The questionnaire with a specified deadline of submission should be then distributed in such a manner that it reaches every individual in the organization. Processing of the questionnaire will reveal five values the members of the organization believe in the most. It is recommended that in the next step using the so-called focus group techniques the employees are asked to make interpretations of the determined values, usually in the form of brainwriting. Every employee of the selected group describes what each of the chosen values means specifically to him. At this stage, values collected across the entire organization are again reconnected with individuals on a subjective level. Based on the brainwriting and a group discussion, a mind map capturing the interpretations of the fundamental values is made.

The responsible team will then, from all the mind maps, create a comprehensive one including also the interpretations of fundamental values that will subsequently be presented at an organizational meeting providing the employees space to comment on the presented values. Only after the discussion and review procedure, the Code of Ethics in the form of a mind map with its interpretation may be printed and delivered to each employee. When hiring new employees it is important that part of the admission interview also includes questions concerning the company ethics with the aim to determine whether the job seeker is able to fulfill its principles. In processing the applicant's admission, signing the current Code of Ethics should be part of the initial hiring agenda. The final step of the creation of a Code of Ethics lies in its presentation to the public, especially to customers.

## **3 Student's Code of Ethics**

The Student's Code of Ethics of the Faculty of Economics of the Technical University of Liberec was created by students in the third year of a bachelor's program during the classes of Business Ethics and Business Ethics in the European context. During the process of making the Student's Code of Ethics the same methodology as described above was applied, except that the core values were obtained only by brainwriting without using mind maps. The attributes of moral values generated by students' brainwriting and their frequencies are shown in Table 1.

**Tab. 1:** *Student's Attributes of Moral Values*

Attributes of moral values	Frequency	Attributes of moral values	Frequency
Self-realization/self-discipline	29	Benevolence	2
Responsibility	24	Being go-ahead	2
Reliability	23	Being helpful	2
Integrity	22	Being resolute	2
Truthfulness	19	Ability to act	2
Creativity	17	Conscientiousness	2
Punctuality	14	Deference	2
Constructiveness	13	Assertiveness	1
Honesty	11	Being yourself	1
Justness	9	Maintain order	1
Respect	8	Empathy	1
Decisiveness	8	Communicability	1
Decency	8	With an interest	1
Being pro-active	5	Enthusiasm	1
Intelligence	5	Willingness to learn	1
Independence	5	Thoroughness	1
Intellectuality	4	Being friendly	1
Diligence	4	Ability to express oneself	1
Autonomy	4	Teachable	1
Tolerance	4	Success	1
Determination	3	Own ideas	1
Appropriateness	3	Helpfulness	1
Self-assertiveness	3	Perseverance	1
Introspection	3	Curiosity	1
General overview	3	Truth	1

Source: Own

The above listed students' moral values were further analyzed and aggregated according to their content, significance and character into five categories representing student's core moral values. Summary of the identified fundamental values and the frequency of the attributes that fall within the appropriate category are displayed in Table 2.

The students were asked to interpret via brainwirting the above described values with regard to the individual attributes and explain what they mean to them, how they understand them and how the values fulfill the essence of ethical behaviour. Each group prepared a document containing their interpretation processed as a textual summary of the core values respecting the moral conduct and behaviour of students with one another and with the academic staff. These Codes of Ethics were subsequently presented and discussed by the students in group meetings. Findings and remarks that emerged from the discussions were taken into account when assembling the final Student's Code of Ethics of the Faculty of Economics of the Technical University of Liberec. In the introduction to the Code of Ethics, there is a preamble comprising students' commitment to the ethical behaviour and a value consensus:

„Education represents a basic human value as well as a means of exploring the world itself and acquiring universal moral principles. Technical University of Liberec provides education to students regardless of their race, nationality, origin, gender, age, family, sexual orientation, physical and cultural differences or religion. This Code of Ethics formulates the basic ethical principles of conduct and behaviour of students of FE TUL. It is based on the free expression of opinion and on the freedom of individual communication. We, the students, are committed

to compliance with this Code, which is based on an investigation of our values. Our shared values include Trust, Relationships, Personal Development, Freedom and Creativity.”

**Tab. 2:** *Moral Values as Defined by Students*

Moral values	Frequency of moral value attributes	Moral values	Frequency of moral value attributes
Trustworthiness:	61	Freedom:	27
Responsibility	24	Respect	8
Reliability	23	Decency	8
Punctuality	14	Tolerance	4
Relationships:	53	Appropriateness	3
Integrity	22	Deference	1
Truthfulness	20	Empathy	1
Honesty	11	Friendliness	1
Personal development:	51	Helpfulness	1
Self-realization	29	Creativity:	19
Independence	5	Creativity	17
Pro-activeness	5	Own ideas	1
Diligence	4	Curiosity	1
Determination	3		
Enthusiasm	2		
Willingness to learn	2		
Perseverance	1		

Source: Own

The characteristic of the core values representing standard moral principles of student conduct and behaviour is stated below:

### 3.1 Trust

By fulfillment of promises, reliability, punctuality, respect and dignity for ourselves and each other, we develop our credibility and thus contribute to building trustworthy relationships with our colleagues, teachers and other members of the academic community. We realise that the ability to create, nurture, provide and restore trust with all interested partners is a key competency to achieve social changes.

### 3.2 Relationships

Mutual trust gives us a sense of security and reliability for an open communication, without which it is not possible to have teamwork in harmony and achieve effective synergies. Only in an environment of mutual trust and tolerance can we develop our potential. We prove our loyalty to the University by refusing any kind of dishonest conduct in the learning process and beyond, and by safeguarding its reputation with responsible attitude to study with excellent results. In the premises of the University and in public we behave considerately and use sophisticated language, thereby we contribute to the development of social culture, as expected from an intelligent person.

### 3.3 Personal development

The academic environment provides a unique opportunity for the development of the personality of each one of us. It is up to our free choice, how we seize it. We were given the chance to develop purely professional knowledge and also the capability to use our freedom, take responsibility for the consequences and subject professed values to higher moral

principles and conscience. By harmonizing all types of intelligence we achieve integrity of our personality. Committed learning attitude and dedicated effort to achieve integrity results in the recognition that none of us is determined by the circumstances but that we determine ourselves. When we reach this level of thinking and realizing ourselves, we can be proud of ourselves and the University that led us, students, to this goal.

### **3.4 Freedom**

The academic ground offers us, students, a plethora of stimuli for freedom of choice and decision-making. We learn to reconcile the consequences of our own free choice with moral principles that are universal, i.e. culturally and geographically unlimited, while timeless and unchanging. These behavioural principles are honesty, fairness, kindness, respect, integrity, favour and contribution. The recognized values that are unwritten social rules govern our behaviour; however the consequences we judge by moral principles. As students we learn to subject the values to principles in accordance with our conscience and take the responsibility for our actions and behaviour.

We do not make any emotional or other pressure on academic staff in order to gain advantage, we do not approve any plagiarism or cheating, we do not appropriate the results of intellectual or manual work, which was created by someone else – we respect the copyrights.

### **3.5 Creativity**

Trusted relationships between students enable a relaxed atmosphere and encourage free generating of ideas and their sharing. We apply our own ideas and opinions in solving various assignments and situations, and we are able to defend them. We are curious and we seek opportunities to develop our creativity. Through perseverance we develop our ability to highly concentrate, which is the essence of creative thinking and originality.

## **Conclusion**

Once the Faculty of Economics has decided to have an ethical code, there were two possibilities: to take an appropriate ethical code that already existed or to develop a new one that would reflect the moral values and rules of its students. The advantages and disadvantages of both approaches are clear. The development of a student ethical code was a very important task requiring time and careful thought of all involved in order to fulfill its purpose. The code was developed in an open, participative environment involving as many students as possible. Participation of the students in the process of the ethical code creation was very important simply because during this phase students could define their values and identify themselves with the future code of ethics. After being involved in the code's creation, students do not perceive the code as a dictation "from above" but as the code that reflects their own rules. Along with other formal and informal ways of communication and ethics education, it is likely to yield greater awareness among the students about the ethical code and its importance, and their greater commitment to the values of the ethical code.

It should be noted that while students contributed to the development of the ethical code, the initiation of the development process, implementation and revisions of the ethical code is a primary responsibility of the faculty management. It is a responsibility of the faculty management and the academic staff to encourage students to use the ethical code as a tool for developing respect for moral values and engender a more positive ethical climate at the faculty. It should also be stressed that ethical behaviour involves more than the use of the ethical code. It includes an ethical tolerance determined primarily by personal values and the

climate where the moral values support ethical behaviour. This way the ethical code can be perceived as a holistic concept rather than as a set of prescribed ethical obligations.

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## ETICKÝ KODEX JAKO NÁSTROJ PRO VYTVOŘENÍ RESPEKTU VŮČI MORÁLNÍM HODNOTÁM

Článek se zabývá procesem tvorby etického kodexu na Ekonomické fakultě Technické univerzity v Liberci. Prezentuje etický kodex, který byl vytvořen studenty jako nástroj pro respektování jejich morálních hodnot. Cílem článku je ukázat proces tvorby etického kodexu, který neklade důraz pouze na obsah kodexu, ale také demonstuje zapojení studentů do jeho tvorby tak, aby kodex reflektoval jejich vlastní morální hodnoty a pravidla. Článek poukazuje na to, že zatímco tvorba etického kodexu byla iniciativou studentů, jeho zavedení do praxe a průběžná revize je primární záležitostí vedení fakulty. Je úlohou vedení fakulty a akademických pracovníků, aby podněcovali studenty k užívání etického kodexu jako nástroje pro vytvoření respektu vůči morálním hodnotám a vytvoření pozitivnější etické atmosféry na fakultě.

## DER ETHISCHE KODEX ALS EINES INSTRUMENTES FÜR DIE SCHAFFUNG DES RESPEKTS FÜR MORALISCHE WERTE

Der Artikel befasst sich mit dem Prozess der Bildung des ethischen Kodex an der Wirtschaftsfakultät der Technischen Universität in Liberec. Der ethische Kodex wird vorgestellt, der durch Studierende als ein Instrument erstellt wurde, der ihre moralischen Werte respektiert. Das Ziel des Beitrags ist den Prozess der Schaffung eines ethischen Kodex vorzustellen, den nicht nur den Inhalt des Kodex betont, sondern auch die Beteiligung der Studierenden in ihre Schaffung so vorstellt, dass der Kodex ihre eigenen moralischen Werte und Regeln widerspiegelt. Der Artikel weist darauf hin, dass Studierenden bei der Schaffung des ethischen Kodex beteiligt waren; jedoch die Initiative einen ethischen Kodex zu schaffen, dessen Umsetzung und die kontinuierliche Anpassung ist die Hauptaufgabe der Fakultätsleitung. Es ist die Aufgabe der Fakultätsleitung und wissenschaftlichen Mitarbeiter, die Studierende zur Anwendung des ethischen Kodex als eines Instrumentes für die Schaffung des Respekts für moralische Werte und für die Schaffung einer positiveren ethischen Atmosphäre an der Fakultät anzuregen.

## KODEKS ETYCZNY JAKO NARZĘDZIE BUDOWANIA SZACUNKU DLA WARTOŚCI MORALNYCH

W artykule omówiono proces tworzenia kodeksu etycznego na Wydziale Ekonomii Uniwersytetu Technicznego w Libercu. Przedstawiono kodeks etyczny opracowany przez studentów będący narzędziem mającym zapewnić poszanowanie ich wartości moralnych. Celem artykułu jest pokazanie procesu tworzenia kodeksu etycznego, który skupia się nie tylko na jego treści, ale wskazuje również na udział studentów w jego tworzeniu, co miało na celu, aby kodeks odzwierciedlał ich własne wartości i zasady moralne. W artykule wskazano, iż w tworzeniu kodeksu etycznego uczestniczyli wprawdzie studenci, jednak inicjatywa stworzenia kodeksu etycznego, jego wdrożenia do praktyki i regularnej weryfikacji wyszła ze strony władz wydziału. Zadaniem władz wydziału i pracowników akademickich jest zachęcanie studentów do stosowania kodeksu etycznego będącego narzędziem do stworzenia szacunku wobec wartości moralnych oraz kształtowania bardziej pozytywnej atmosfery etycznej na wydziale.

## **AUTOMOTIVE INDUSTRY IN THE EUROPEAN UNION AND ITS COMPETITIVENESS IN THE WORLD**

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### **Abstract**

Over the last decade, the automotive industry has been one of the fastest growing branches of manufacturing. It became one of the most crucial industries in the European Union, but it also suffered significant structural and territorial transfers. Therefore, it seems crucial to test the competitiveness of the national automotive industries, analyse the long-term trends in Europe, put them into a global perspective, draft probable changes in the near future, and warn against the looming threats. The article uses methods of statistical analysis of long-term development of revealed symmetric comparative advantage index to search for continuous trends shaping the EU automobile production. It indicates the transfers of competitiveness from most of the traditional West European car producers in favour of the new EU member states, but also from the USA and Canada in favour of the new fast-growing developing countries and emerging markets. In the conclusion, authors provide a brief outline of the European Commission's response to these changes in form of the CARS 2020 Action Plan.

### **Introduction**

The automotive industry has been one of the fastest growing branches of manufacturing industry over the last decade, but it also suffered significant territorial transfers during this period. Its importance for national economies of individual countries has been often crucial, as it goes beyond a single discipline through its extent, its number of jobs, its demands for metals and other materials, as well as through its links to other industries. It also features an extraordinary capital, production, and trading concentration. In the recent years, the processes of production have become more and more fragmentized and there has been a growing tendency to locate new production facilities outside the traditional production areas, to regions with more favorable production environment and large unsaturated markets. Recently, however, the automotive industry has been facing many serious issues. The car manufacturing in the European Union is not an exception. This sector of European industry was severely hit by the economic crisis in the years 2008 and 2009 and the following period has not brought the vital recovery to this region yet.

### **1 Definition and Current Situation**

Automotive engineering is a part of the mechanical engineering and is also one of the most important branches of the engineering in general. According to the classification of economic activities, NACE (*Nomenclature statistique des activités économiques dans la Communauté Européenne*) Rev. 2 (2008) reported by Eurostat, the automotive industry is included in the section C – manufacturing, division 29 – manufacture of motor vehicles, trailers and semi-trailers. This division is further broken down into the following groups: 29.1 Manufacture of motor vehicles, 29.2 Manufacture of bodies (coachwork) for motor vehicles, manufacture of trailers and semi-trailers, and 29.3 Manufacture of parts and accessories for motor vehicles



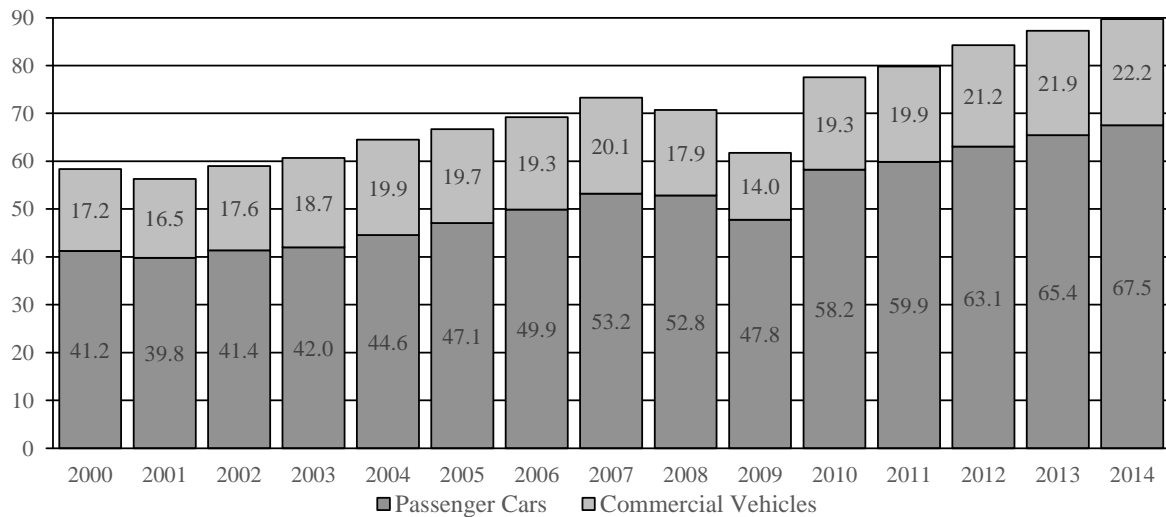
[9]. This classification is in concordance with the Standard International Trade Classification (Rev. 3), where the section 7 (Machinery and transport equipment), division 78 (Road vehicles), group 781, 782, and 783 together correspond to NACE 29.1, group 784 corresponds to NACE 29.3, and group 786 corresponds to NACE 29.2 [8].

According to the Eurostat data, the EU automotive industry (NACE 29) consists of a total of 20,500 enterprises. The major share of the added value was generated by manufacture of motor vehicles (64%), followed by the production of parts and accessories (33%). Also the largest turnover in the automotive industry – over 71% – was generated by the segment of motor vehicles (526 billion euro). The remaining two segments are substantially weaker: The production of parts and accessories has a turnover of only 188 billion euro (25%), the production of bodies, trailers, and semi-trailers only 3.4%. Given the very broad and tight linkages of the automotive industry to other industries, the influence of the industry on job creation represents a major characteristics: The largest employer is the segment of manufacturing parts and accessories with a 46.5% share of total employment in the automotive industry, which proves the indispensable role of this particular segment in the entire industry. The production of automobiles accounts for 46.2% of jobs, while production of bodies, trailers, and semi-trailers has only a marginal importance when it comes to employment (7.3%) [9]. According to some estimates, increase in sales by 1 million euro leads to the creation of approximately 10 new jobs in the automotive industry. The car production activity has an employment multiplier in the value of five (other industry activities in the value of three) [12].

### **1.1 Current Situation in the World and in the European Union**

The European centre as a traditional car producer belongs still among the most important regions of automotive industry in the world. Nevertheless, its position has been gradually replaced by emerging, fast-growing markets, esp. those of eastern Asia, and Europe also falls short compared to the North American centre. The European share in the global car production is diminishing. In 2014, 17 million motor vehicles of all types were produced in Europe, which represents a 19% share in the global production of nearly 90 million units [20].

The EU automotive industry employed a total of more than 13 million people in 2014. It is also necessary to mention the significant linkage between the automotive industry and non-manufacturing sector. It is estimated that there are up to 10 million jobs in shops cars, spare parts, fuel, repair shops, rentals, and transportation. The largest employer in the automotive industry in the EU is by far Germany. Their automotive industry employs 749,000 workers in 43 factories. Germany is also the largest EU producer of cars (5.9 million motor vehicles in 2014), it generates the highest turnover and creates the largest added value among all the EU countries. The second largest EU producer of cars is Spain (2.4 million motor vehicles in 2014). The second largest employer in the EU is France with just 225,000 employees and with the third highest production (1.8 million motor vehicles in 2014). The third largest European employer is Italy with 171,000 workers, but the volume of car production ranks the country as low as the seventh position in the EU. The Czech Republic surpassed Italy in car production in 2009 and Slovakia in 2012. Given this recent development, a reduction in Italian employment in automotive industry can be expected in the near future. Other major EU countries, where the number of employees in the automotive industry exceeds 100,000 people, are: Poland, the United Kingdom, and Romania [16], [1].

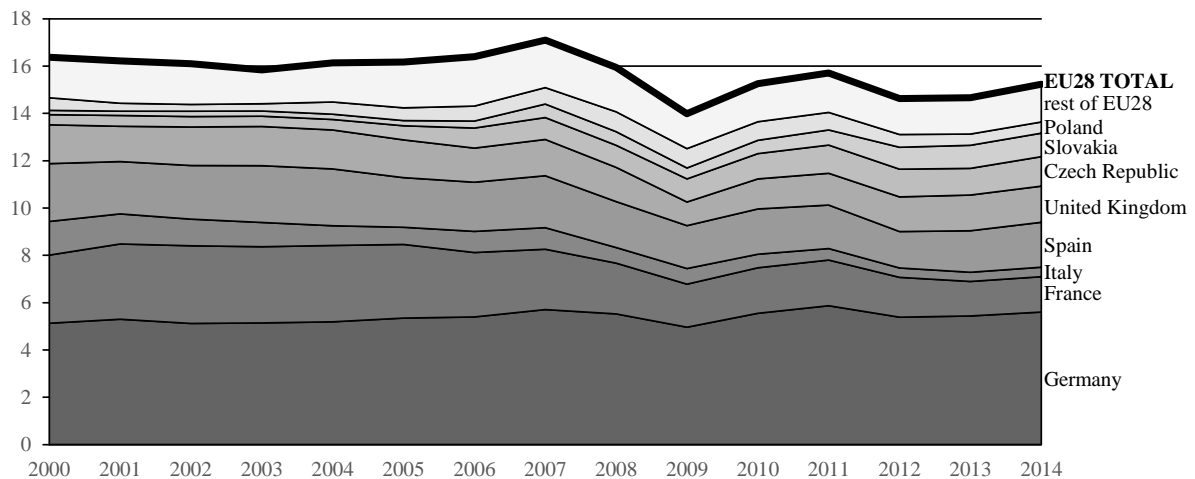


Source: based on data from [20]

**Fig. 1:** Worldwide automobile production from 2000 to 2014 (in million vehicles)

### 1.1.1 Passenger Cars

The global production of passenger cars has been recording an almost continuous growing trend (see Fig. 1). The slight decline in 2001 occurred due to the economic downturn in the USA, rising oil prices, and the restrictive policy of the European Central Bank. In subsequent years, production grew until 2007 to 53.2 million cars per year. During the crisis years of 2008 and 2009, the output of automotive industry declined to 47.8 million units. In 2010, however, there was a lively recovery and the boom has continued since then. In 2014, the annual pace of growth dropped to 3.2% and the world's production of passenger cars reached 67.5 million units [20].



Note: All 28 current EU members are taken into account from 2000 to 2014.

Source: based on data from [16]

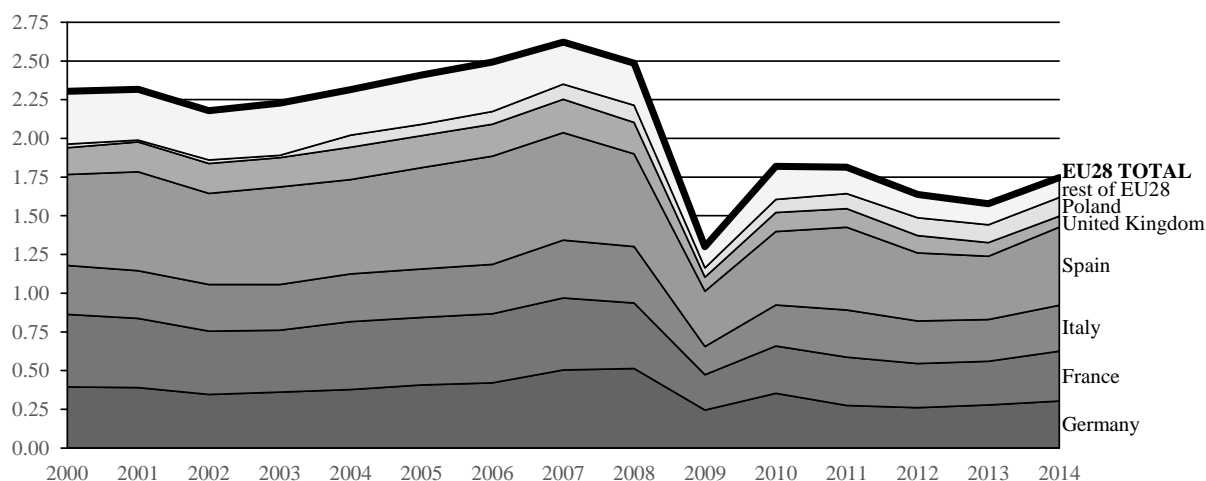
**Fig. 2:** Production of passenger cars in the EU28 from 2000 to 2014 (in million units)

In comparison with the world, the production of passenger cars in the European Union recorded a rather downward trend (see Fig. 2). In 2007, the EU produced over 17 million cars, but it has failed to even up this production so far. Despite generous stimulus measures (“scrapping bonuses”), the economic recession caused a big drop in production, down to 14 million in 2009. After a dynamic growth in 2010 and 2011 and a slight hang in 2012 and 2013, the production reached 15.2 million units in 2014. For illustration, the production of

China in 2014 ran up by 10% to 19.9 million, Japan recorded 8.3 million, and the USA 4.2 million passenger cars [2]. Fig. 2 reveals long-term shifts in the passenger car production even within the EU. Especially the position of France and Italy was weakened in favour of the new member states, mainly the Czech Republic and Slovakia. Spain and the United Kingdom are more-or-less holding their positions, while Germany's passenger car production has been showing a mildly growing trend.

### 1.1.2 Commercial Vehicles

The world's production in the segment of commercial vehicles (i.e. light commercial vehicles, heavy trucks, and heavy buses) has not been growing at such a pace during the last 15 years (see Fig. 1). Similarly to passenger cars, also performance of commercial vehicle producers decreased in 2001. After a short recovery, the next decline took place already in 2005 and 2006 followed by a deep slump in 2008 and 2009, when the volume of production plummeted from the previous peak of 20.1 million to 14 million units. Unfavourable economic development and problems with sales affected the behaviour of corporations. They postponed investment which undercut the sales of commercial vehicles and together with the slowdown in demand for passenger cars resulted in vast staff reductions. Since 2010 the segment has been experiencing a period of growth globally, in 2012 the production exceeded the peak from 2007 and in 2014, they recorded the output of 22.2 million vehicles. The dynamics of the growth has been, however, slowing down from 6.3% in 2012 to 1.6% in 2014. [16]



Note: All the 28 current EU members are taken into account from 2000 to 2014.

Source: based on data from [16]

**Fig. 3:** Production of commercial vehicles in the EU28 from 2000 to 2014 (in million units)

We can trace a very similar development in the EU in the period 2000 – 2009 (see Fig. 3). The production of commercial vehicles culminated in 2007, when 2.6 million commercial vehicles were produced in the EU, while already the next year witnessed a decrease and in 2009 the number dropped to less than half of the 2007 output. Some recovery occurred in 2010, when the production of commercial vehicles reached 1.8 million units followed by another slowdown in 2012 and 2013. The more optimistic economic perspectives drew the production of this segment in the last year up to 1.75 units signaling a recovery of the sector.

Fig. 3 also illustrates a slowly growing share of commercial vehicles produced in Poland, probably taking the market positions of United Kingdom, and to some extent of France, and perhaps even Germany.

## 2 Objective and Topicality of the Research

The automotive industry is one of the key industries in the European Union. More than 200 manufacturing and assembly plants in 2014 produced nearly 17 million vehicles [16]. The importance of the automotive industry can be also documented by its 7% share on the total GDP of the EU, 5.8% share on the EU employment, and by a significant presence in exports (more than 6.5 million cars a year, Germany exports 77% of cars they produce) [12].

The different proportions in numbers of plants, shares of employment, volumes of production, and numbers of sales in different European countries, however, indicate, the competitiveness of individual EU member states is not at the same level and the automotive producers are exposed to tough competition not only on the world market, but also within the European Union. Therefore, it seems crucial to test the competitiveness of the national automotive industries, analyse the long-term trends in Europe and in the world, draft probable changes in the near future, and warn against the consequences and threats looming in the near future.

## 3 Research Methods

The concept of competitiveness has recently been widely discussed (for an overview see e.g. [13]) as a multi-criteria indicator of the conditions of a national economy [17]. On the level of the industry, however, the original, narrow, neoclassical concept of competitiveness seems more useful. Siggel [19] shows the distinction between competitiveness and comparative advantage, but even he admits the two theoretical concepts have in fact many features in common. Therefore, we follow the conception of competitiveness presented by Hindls et al. [11], who call a particular economic subject competitive if it is successful in penetrating the new markets and gaining a comparative advantage in international trade.

The research method of this paper is based on the methodology of revealed comparative advantage (*RCA*) developed by Balassa [2]. It measures a country's export of a particular commodity in relation to its total exports and to the corresponding export performance of a set of countries. In other words, the *RCA* is able to identify the sectors or commodities, with which the exporters of a particular country are more successful than the exporters from other countries.

$$RCA_{i,t}^C = \frac{\frac{X_{i,t}^C}{\sum X_t^C}}{\frac{X_{i,t}^G}{\sum X_t^G}}, \quad (1)$$

where

$C$  is a country,

$G$  is a group of countries,

$i$  is a particular group or class of commodities (here a group 29.1 according to NACE Rev. 2),

$t$  is a period of time.

The advantage of Balassa *RCA* is the fact that it is not biased by changes in prices or exchange rates over time. In fact, it is a volume index. A problem with the Balassa *RCA* is the asymmetry of its value: it varies from one to infinity for products in which the country has a revealed comparative advantage, but only from zero to one for commodities with a revealed comparative disadvantage. Resulting from Grupp [10], Dalum et al. [6] proposed a revealed

symmetric comparative advantage index (*RSCA*) to alleviate the skewness problem as follows:

$$RSCA_{i,t}^C = \frac{RCA_{i,t}^C - 1}{RCA_{i,t}^C + 1}. \quad (2)$$

The closer to  $\{+1\}$  the results of *RSCA* get, the more significant are the comparative advantages they indicate, while the more they are converging to  $\{-1\}$ , the more substantial are the comparative disadvantages.

There has been an intensive debate on the explanatory power and unbiasedness of the *RCA* and *RSCA*. Berkowitz et al. [4], Chor [5] as well as Barattieri [3] search for the sources of comparative advantages and demonstrate how transport cost, transaction cost or trade cost bias the results of the comparative advantage analyses. Moenius [14] proves *RSCA* is an adequate measure of comparative advantage, although it does not have a significant predictive power. Pingyao and Jingyun [18] perform the *RSCA* analysis to identify the growth potential of merchandise trade among the BRICS (Brazil, Russia, India, China, South Africa) countries and build further analytical instruments on the platform of *RSCA*. Wanling and Xiaohui [22] use the *RSCA* to detect the problems in bilateral relations between BRICS countries.

### 3.1 Data and Countries

The main source for the data on the exports of automotive products is the United Nations Conference on Trade and Development (UNCTAD) Statistical Division. The group of countries mentioned in equation (1) consists of 39 car producers listed by the International Organization of Motor Vehicle Manufacturers (*Organisation Internationale des Constructeurs d'Automobiles*, OICA), representing 99.24 % of world car production (see Tab. 1) [16].

**Tab. 1:** OICA countries in order of total car production in 2014

Country	CODE	Total	Country	CODE	Total	Country	CODE	Total
China	CHN	23,722,890	United King.	GBR	1,598,879	Taiwan	TWN	379,223
USA	USA	11,660,699	Indonesia	IDN	1,298,523	Uzbekistan	UZB	245,660
Japan	JPN	9,774,558	Czech Rep.	CZE	1,251,220	Hungary	HUN	227,030
Germany	DEU	5,907,548	Turkey	TUR	1,170,445	Australia	AUS	180,311
South Korea	KOR	4,524,932	Iran	IRN	1,090,846	Portugal	PRT	161,509
India	IND	3,840,160	Slovakia	SVK	993,000	Austria	AUT	154,340
Mexico	MEX	3,365,306	Italy	ITA	697,864	Sweden	SWE	154,173
Brazil	BRA	3,146,118	Argentina	ARG	617,329	Slovenia	SVN	118,591
Spain	ESP	2,402,978	Malaysia	MYS	596,600	Finland	FIN	45,035
Canada	CAN	2,393,890	Poland	POL	593,904	Netherlands	NLD	29,807
Russian Fed.	RUS	1,886,646	South Africa	ZAF	566,083	Ukraine	UKR	28,751
Thailand	THA	1,880,007	Belgium	BEL	516,832	Egypt	EGY	27,020
France	FRA	1,817,000	Romania	ROM	391,422	Serbia	SRB	10,675

Source: [16]

### 3.2 Analysis

For the analysis, the individual *RSCA* for each of the listed 39 countries has been calculated in each year (1995 – 2014) for the NACE 29.1 group. The period was selected regarding the data availability and the statistical requirements. The export position (see Tab. 2) of each of

these subjects was compared to the average of the group of 39 car producing countries. The positive result (see Fig. 4, vertical axis) therefore shows a global comparative advantage, while the negative result indicates a global comparative disadvantage of a particular country in comparison with basically all other possible global competitors.

**Tab. 2:** *OICA countries in order of total car exports in 2014 (thousands of USD)*

Country	CODE	Total	Country	CODE	Total	Country	CODE	Total
Germany	DEU	182,371,363	Slovakia	SVK	15,317,740	Portugal	PRT	3,426,622
Japan	JPN	102,701,630	China	CHN	14,297,893	Russian Fed.	RUS	2,933,062
United States	USA	81,391,472	Netherlands	NLD	13,011,570	Slovenia	SVN	2,782,170
Mexico	MEX	61,334,642	Turkey	TUR	12,733,080	Indonesia	IDN	2,430,006
South Korea	KOR	51,793,407	Hungary	HUN	11,240,532	Finland	FIN	2,174,514
Canada	CAN	47,024,493	Poland	POL	10,490,796	Australia	AUS	1,825,216
United King.	GBR	44,699,256	Sweden	SWE	8,690,617	Serbia	SRB	1,811,869
Spain	ESP	39,863,528	Argentina	ARG	7,173,463	Taiwan	TWN	1,326,951
Belgium	BEL	36,344,165	Austria	AUT	6,916,470	Uzbekistan	UZB	658,228
France	FRA	27,127,546	India	IND	6,792,223	Malaysia	MYS	350,004
Czech Rep.	CZE	18,865,432	South Africa	ZAF	6,424,298	Iran	IRN	230,558
Italy	ITA	17,654,788	Brazil	BRA	5,591,816	Ukraine	UKR	115,761
Thailand	THA	16,950,477	Romania	ROM	4,091,231	Egypt	EGY	88,999

Source: [21]

In the next step, the mean annual pace of change over the 20-year-long (1995 – 2014) period has been estimated using ordinary least square correlation analysis (3). Since equation (3) estimates the slope of linear trend line over the period 1995 – 2014, the auto-correlation is not an issue here.

$$\beta_{li}^C = \frac{n \sum_{t=1}^n RSCA_{i,t}^C t - \sum_{t=1}^n RSCA_{i,t}^C \sum_{t=1}^n t}{n \sum_{t=1}^n t^2 - \left( \sum_{t=1}^n t \right)^2}, \quad (3)$$

where

$C$  is a country,

$i$  is a NACE 29.1 group,

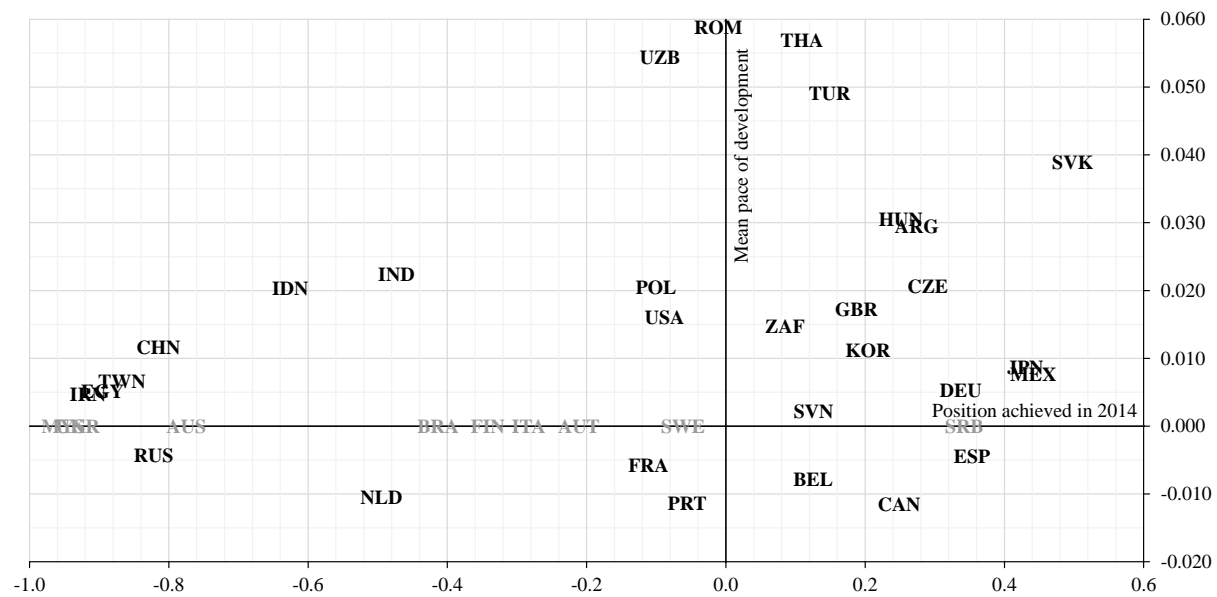
$t$  is a period of time, and

$n$  is a number of years (i.e. 20).

The values of  $\beta_1$  were tested for statistical significance using T-test against 95% confidence level. Only the statistically significant values of  $\beta_1$  were accepted for the following outcomes of the analysis. For a better and faster understanding, the most recent values of  $RSCA$  from the year 2014 were applied to the horizontal axis, while the estimated mean annual pace of change (the values of  $\beta_1$ ) were brought to the vertical axis in the Fig. 4.

#### 4 Results and Discussion

Only the group NACE 29.1 will be further discussed here, as it represents a predominant share of revenues and nearly a half of the automotive employment. The other two NACE 29 groups are a subject of further research.



Note: Countries with statistically insignificant trend of development are depicted in gray on the horizontal axis. For country codes see the Tab. 1.

Source: own, based on data from [21]

**Fig. 4:** Shifts in comparative advantages in manufacturing of motor vehicles

The Fig. 4 indicates several interesting facts:

- 1) From the traditional, West European automobile producers only Germany and the United Kingdom experienced a positive development in the competitiveness of their car industries in the last two decades. This has translated to a shrinking share of West European countries on the global car production (from 67% in 2000 to 61% in 2014). The Netherlands, France, Portugal, Belgium, and Spain faced significant deterioration of their comparative advantages in car production. In France and Belgium, the car production in 2014 was lesser by almost a half compared to the output in 2000, in Italy even more, by nearly 60%.
- 2) Within the European Union the new member countries, especially Slovakia, the Czech Republic, Hungary, Romania, and Poland experienced a significant improvement of their car production competitiveness. In fact, Slovakia proved to be the most competitive global automobile producer. Romania was the fastest catching-up country and the Czech Republic is nowadays producing 7% of all EU motor vehicles.
- 3) Also the developing countries are slowly but continuously improving their comparative advantages in car production. While changes in Iran, Egypt, Taiwan, and China are rather slow and the export potential of their car producers is still rather low, India, Indonesia, and especially Uzbekistan are quickly trying to catch up with the group of successful emerging markets consisting of Turkey, Argentina, the South Africa, and Mexico.
- 4) The position of the United States and Canada has been weakened by Japanese and South Korean competitors and complicated by the progressive emerging markets. While the USA still fight, although the competitiveness of their car industry is not in a very good shape, the Canadian automobile producers are working hard to set off the losses caused by the 2007 – 2008 crisis.

The general trend is the gradual transfer of the production to more favourable conditions and to cheaper production locations. While in the 1980's Europe, the USA, and Japan produced more than 90 % of the world's vehicles, today their share shrank well below 45%. Within the EU, the production has been transferred from countries in Western and Southern Europe to

geographically convenient new EU members. This process is obviously associated with reductions in production in the traditional countries of western and southern EU, including reduction of jobs and employment capacities. The remaining question is the future development in the distribution of production, given the potential increase in production costs in the eastern EU countries. It seems obvious, that the car producers would like to move their production plants to even cheaper, but still reliable and predictable economies [12].

## Conclusion

Significant increase in car production in developing countries and emerging markets provides an opportunity for the EU automotive industry, but also creates a strong pressure to improve its sustainability and to withstand the growing global competition. In the EU, the automotive industry provides 13 million jobs and as such has a crucial importance for the economic growth and employment. As a remarkable innovator, the automotive industry is also a giant investor in research and development. In 2011, the EU car producers only invested 32 million euro, which exceeds both the pharmaceutical industry and even the biotechnology sectors [1]. The automotive industry is propelled by innovation: innovation in production (better fuel efficiency, aluminum bodies of cars, computer technologies and safety systems built in cars, etc.), innovation in financing and sales (e.g. offering operational leasing instead of purchase), innovation in advertising (the auto industry spend globally about 100 billion euro on advertising in 2014).

The aim of the EU is to maintain a world-class automotive industry producing the most energy-efficient and safe vehicles and guarantee millions of highly skilled jobs. In order to achieve these objectives, the European Commission has created CARS 2020 Action Plan aimed at strengthening the competitiveness and sustainability of this sector by 2020 [7]. The European Commission proposes massive innovative stimulus through streamlining research and development within the framework of the “European Green Cars Initiative”. The proposed measures deal with exhaust emissions, alternative fuels, funding for research and development, improving the road safety, and the development of intelligent transport systems. At the same time, the Commission addresses the problems associated with low demand for cars and focuses on excessive and unused factory capacity in the EU (e.g. Fiat capacity utilization was around 55 % in 2013, Peugeot operated at 66% of their capacity) [12]. The second pillar consists of the initiatives and aims to improve market conditions. The main objective is to strengthen the competitiveness of the automotive industry within the EU and to ensure appropriate, reliable, and predictable conditions for undertaking through regulatory policies [15]. The third pillar aims at strengthening the competitiveness of the EU on the world markets through effective trade policy and international harmonization of vehicle regulations. Because of sluggish demand for cars in the EU, it seems crucial to find and penetrate new markets, especially in fast-growing developing countries [7]. The fourth pillar is focused on anticipating the needs of adaptation through investment in human capital and skills to mitigate the social impact of restructuring. Within this pillar, the Commission set the goal to propose the measures needed to solve the problems with unused production capacities and to stimulate demand without violating the principles of the internal market and competition [15].

The efficiency and fruitfulness of the CARS 2020 Action Plan as well as a deeper analysis of changes and shifts in the sector of manufacturing of bodies for motor vehicles, trailers, and semi-trailers, and manufacturing of parts and accessories for motor vehicles and complex assessment of their results remain subjects of our future research.



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## AUTOMOBILOVÝ PRŮMYSL V EVROPSKÉ UNII A JEHO KONKURENCESCHOPNOST VE SVĚTĚ

V poslední dekádě byl automobilový průmysl jedním z nejrychleji rostoucích průmyslových oborů. Stal se rovněž jedním z nejvýznamnějších odvětví hospodářství Evropské unie, prodělal ovšem také řadu strukturálních a teritoriálních přesunů. Právě z těchto důvodů je na místě prověřit konkurenceschopnost automobilového průmyslu na národní úrovni, analyzovat dlouhodobé vývojové trendy v EU, dát je do globálního kontextu, načrtnout pravděpodobné změny v nejbližší budoucnosti a upozornit na potenciální hrozby. Článek využívá metod statistické analýzy vývoje symetrických indexů projevených komparativních výhod k hledání trendů určujících podobu automobilového průmyslu v EU. Autoři poukazují na přesuny konkurenceschopnosti od tradičních západoevropských producentů automobilů ve prospěch nových členských států EU, ale také od USA a Kanady ve prospěch nových, rychle rostoucích rozvojových zemí. Stručný nástin reakce Evropské komise na uvedené proměny automobilového průmyslu v podobě Akčního plánu CARS 2020 nabízí závěrečná část článku.

## DIE AUTOMOBILINDUSTRIE IN DER EUROPÄISCHEN UNION UND DEREN KONKURRENZFÄHIGKEIT IN DER WELT

In der letzten Dekade war die Automobilindustrie eine der am schnellsten wachsenden Industriebranchen. Sie wurde gleichfalls zu einer der bedeutendsten Wirtschaftsbranchen der Europäischen Union. Sie hat indes auch eine Reihe struktureller und territorialer Verschiebungen durchgemacht. Eben aus diesen Gründen ist es angebracht, die Konkurrenzfähigkeit der Automobilindustrie auf nationalem Niveau zu überprüfen, langfristige Entwicklungstrends in der EU zu analysieren, diese in einen globalen Kontext einzubetten, wahrscheinliche Veränderungen in der nächsten Zukunft zu skizzieren und auf potenzielle Bedrohungen aufmerksam zu machen. Dieser Artikel nutzt die Methoden der statistischen Analyse der Entwicklung der symmetrischen Indexe der erwiesenen komparativen Vorteile zur Trendsuche, welche die Form der Automobilindustrie in der EU bestimmen. Die Autoren weisen auf Verschiebungen der Konkurrenzfähigkeit von den traditionellen westeuropäischen automobilproduzenten zu Gunsten der neuen Mitgliedsstaaten der EU sowie von den USA und Kanada zu Gunsten der neuen, sich schnell wachsenden Entwicklungsländer hin. Der letzte Teil des Artikels bringt einen kurzen Abriss der Reaktion der Europäischen Kommission auf die angeführten Veränderungen der Automobilindustrie in Form des Aktionsplans CARS 2020.

## PRZEMYSŁ MOTORYZACYJNY W UNII EUROPEJSKIEJ I JEGO KONKURENCYJNOŚĆ W SKALI ŚWIATOWEJ

Celem artykułu jest zidentyfikowania trendów określających kształt przemysłu motoryzacyjnego w UE, w opracowaniu wykorzystano metody statystycznej analizy rozwoju wskaźników symetrii ujawnionych korzyści komparatywnych. Autorzy wskazują na przesunięcia konkurencyjności od tradycyjnych zachodnioeuropejskich producentów samochodów na korzyść nowych państw członkowskich UE, jak również od USA i Kanady w stronę nowych, szybko wzrastających państw rozwijających się. W zakończeniu artykułu przedstawiono krótki opis reakcji Komisji Europejskiej na wymienione przekształcenia przemysłu motoryzacyjnego w postaci Planu Działania CARS 2020.

## IDENTIFICATION OF THE DEGREE OF POLARIZATION OF DISTRICTS NUTS4 IN THE LOWER SILESIAN PROVINCE WITH THE USE OF MEASURE OF DEVELOPMENT

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### Abstract

Identification and study of regional development disparities are of great importance from the point of view of the effectiveness of actions undertaken within the framework of regional policy. The purpose of this article is to determine the degree of polarization of districts in the Lower Silesia and the division into groups based on the levels of development in the years 2003, 2008, 2013. The first chapter gives an overview of the theory of polarization and a review of existing studies. The next chapter describes in detail the objectives and research areas. The third chapter is dedicated to the research methodology with a particular emphasis on the synthetic measure of economic development. The final section presents the results of the tests.

### Introduction

The problem of polarization of development is very significant from the point of view of setting targets and the effectiveness of actions undertaken within the framework of regional policy. An expression of this in the Polish regional policy is represented by the final recommendations of the Report Poland 2030, which pointed out the requirement to implement a polarization and diffusion model. The report envisages the initiation of boosting the development of the biggest Polish agglomerations and the gradual elimination of barriers to participation in this process for a larger group of regions [1]. The issue has become the subject of many research papers, the review of which is presented in the following chapter. This study is intended to fill the research gap at the lower levels of regional decentralization. The research problem is an attempt to answer the question: how big is the extent of polarization between the districts of the province of Lower Silesia and whether it changes over time?

### 1 The outline of the theory of polarization and a review of research

The problem of disparities in regional development is the root of all regional development theory in economics. It has begun with A. Smith and his most influential work: *An Inquiry into the Nature and Causes of the Wealth of Nations* [2]. In the context of inter-regional disparities, the mostly used issue in the literature is the dichotomy between theories of sustainable development and unsustainable development. In the first case, the disparities are considered as interference. The natural state of economy is an equilibrium and striving to achieve it. Unsustainable development theories emphasize the existence of imbalances as the driving force of development. Disparities are a natural and unavoidable result of the natural characteristics of socio-economic development [3]. The general theory of polarization should include an explanation of the mechanism of formation of the dynamic growth areas and the

extent of the impact on the surrounding areas [4]. F. Perroux and A. O. Hirschman have been considered the forerunners of the growth poles and trickle down paradigm, which had been the basis for the development of the growth center approach. It is based on the assertion that “development can start only in a relatively few dynamic sectors and geographic locations from where it is expected to spread to the remaining sectors and geographical areas of a country.” [5] In the design of the concept of F. Perroux, the impact of growth poles has been associated with economic space (sectoral polarization). This approach was quickly transposed to the geographical space in the works of G. Myrdal, A. O. Hirschman, and J. Friedman (spatial polarization). The appearance of these approaches has significantly shaped regional development thinking. This was particularly relevant for the reorientation of the regional policy. Inequalities began to be seen as an opportunity, rather than as a threat. Changing the approach has forced a more in-depth identification of the level of socio-economic development of the regions in the context of the degree of their mutual polarization. There are many studies of regional development disparities at the national level based on the HDI (Human Development Index), socio-economic indicators, the weighted mathematical methods. The studies of disparities, including lower levels of administrative divisions (NUTS3, NUTS4) have been conducted in the world by inter alia, C. Riskin [6], L. Fedorov [7], J. Vanderpny-Orgle [8]. C. Riskin observed differences in the development between the provinces of China in 1950s, in terms of industrialization. L. Fedorov analyzed the impact of the transition period on regional disparities in Russia in the 1990s. J. Vanderpny-Orgle examined the growing trends in spatial inequalities and polarization in Ghana during the period of stabilization and structural adjustment programmes in the 1980s and 1990s. The results of these studies indicate that inequality increases during the first period of reforms, and in subsequent years, a gradual convergence begins. In Poland, studies on this subject were conducted by M. Musiał-Malago [9], K. Wawrzyniak, B. Batóg [10]. The subject of M. Musiał-Malago’s concern was the structural polarization research methods on the example of the Krakow Metropolitan Area. K. Wawrzyniak and B. Batóg analyzed the polarization of districts of the West Pomeranian divided into the areas of demographics, urbanization, structural and labour market. The study used the measure of Bray-Curtis to calculate the distance of each area from the center of growth (Stettin).

## **2 Objectives and areas of research**

The first objective of the study is to determine the degree of polarization of the districts of Lower Silesia in terms of most favourable standard of development. An ideal standard of development is an abstract entity, for which all variables take the best value in terms of view of criterion of the purpose. In this paper, the polarity is defined as the persistence of advantage of expansive centers [11]. The degree of polarization is understood as the difference between the values of development measure of growth centers and values of development measures in other regions.

The second aim of the study is the division of research objects into similar classes in terms of the level of socio-economic development. This will allow the identification of the most developed areas and the most backward ones.

The survey covered 29 districts of the province of Lower Silesia qualified in accordance with the Nomenclature of Territorial Units for Statistics at level 4. In order to ensure comparability of the data, Wałbrzych was not included in the study because there was a change of qualifications in NUTS4 in the analyzed period. The study was conducted on the basis of 13 variables divided into 4 areas of polarization. The areas of polarization and indicators have been selected in accordance with the guidelines contained in the work of A. Malina [12]. The main limitation of the selection of variables for this study was the availability of the data at

the level of NUTS4. Selection of variables by dimensions of polarization is presented in Table 1.

The data for this study consist of observations from the Local Data Bank of Polish Central Statistical Office (GUS). Due to the data availability the study covered the years 2003, 2008 and 2013.

**Tab. 1:** Variables and dimensions of polarization

Dimensions of polarization	Variables	Source
<b>Social dimension</b>	$x_1$ - average usable floor space for 1 person	Local Data Bank of Polish Central Statistical Office
	$x_2$ - registered unemployment rate	
	$x_3$ - average monthly salary in relation to the national average.	
<b>Economic dimension</b>	$x_4$ - investment outlays in enterprises per capita	
	$x_5$ - gross value of fixed assets in enterprises per capita	
	$x_6$ - entities per 1,000 population in the working age	
	$x_7$ - newly registered entities per 10 thousand working-age population	
	$x_8$ - flats put into use per 10 thousand inhabitants	
<b>Urbanization and infrastructural dimension</b>	$x_9$ - population per 1 km <sup>2</sup>	
	$x_{10}$ - municipal and county paved roads per 100 km <sup>2</sup>	
	$x_{11}$ - flats per 1,000 inhabitants	
<b>Demographic dimension</b>	$x_{12}$ - population in retirement age as a percentage of the total population	
	$x_{13}$ - birth rate per 1,000 population	

Source: Own

### 3 Methodology

The survey was conducted using a multidimensional comparative analysis, which enables comparisons of objects defined by many diverse features. The aim of the methods of linear ordering is to arrange the objects from the best to the worst according to the accepted criterion. The methods of linear ordering include the development pattern methods [13]. The idea is based on the concept that the selected most favorable alternative should have the shortest distance from the development pattern and the farthest distance from the development anti-pattern in a geometrical sense. The development pattern is an abstract object with the best values of the adopted variables. A separate development pattern has been created for each of the years, and it contains the best values of variables for the given year.

The first stage of the study was to determine the character of the variables. The variables can be divided into stimulants (higher values of variables are more desirable), destimulants (lower values of variables are more desirable), and nominants (defined values of variables are desirable) [13]. Among the variables taken into consideration were the following destimulants:  $x_2$  – registered unemployment rate,  $x_{12}$  – population in retirement age as a percentage of the total population. Conversion to stimulants was performed using formula (1)

$$S_{ij} = b[D_{ij}]^{-1}, \quad (1)$$

where

$S_{ij}$  is the value of the  $j$ -th variable after being changed to a stimulant in the  $i$ -th object,

$D_{ij}$  is the value of the  $j$ -th variable in the  $i$ -th object,

$b$  is the minimum value of  $D_{ij}$

In the next step, the variables were standardized in accordance with formula (2)

$$z_{ij} = \frac{x_{ij} - \overline{x_j}}{S_j}, \quad (2)$$

where

$z_{ij}$  is the standardized value of the  $j$ -th variable in the  $i$ -th object,

$\overline{x_j}$  is the arithmetic mean of the  $j$ -th variable,

$S_j$  is the standard deviation of the  $j$ -th variable.

In the next step, the similarity of objects to the ideal object was examined by calculation of the distance of each object from the development pattern. As a measure of distance was used measure of the Euclidean. The lower distance from the development pattern defines a higher level of the complex phenomenon [13].

The next stage of research was the determination of the development measure for each object, using formula (3) from [13]:

$$m_i = 1 - \frac{d_{i0}}{d_0}, \quad i = 1, 2, \dots, n, \quad (3)$$

where

$m_i$  is the development measure for the  $i$ -th object,

$d_{i0}$  distance of the  $i$ -th object from the pattern,

$d_0$  is the distance between the pattern and the anti-pattern.

The values of development measure are within the interval (0; 1). The higher value of the measure is interpreted as a higher level of complexity of the phenomenon and assessed as favourable in terms of view of the criterion of the purpose.

Grading into classes was carried out using the average and standard deviation.

#### 4 Research results

For the purpose of efficient description of the research results, the values of synthetic indicators determined for each of the 29 examined districts of Lower Silesia in 2003-2013 were calculated, and the districts were ordered linearly according to those values. It can be mentioned that cities with district status are all characterized by the highest synthetic indicator values in comparison with the land districts.

**Tab. 2:** Development measures of the Lower Silesia districts in 2003-2013

No.	2003		2008		2013	
	District/research object	Dev. Measure	District/research object	Dev. Measure	District/research object	Dev. Measure
1	city of Wrocław	0.4623	city of Wrocław	0.4954	city of Wrocław	0.4976
2	Zgorzelecki	0.3409	city of Legnica	0.3394	city of Legnica	0.2736
3	city of Legnica	0.3368	city of Jelenia Góra	0.3135	Wrocławski	0.2490
4	city of Jelenia Góra	0.3011	Wrocławski	0.3032	Jeleniogórski	0.2434
5	Wrocławski	0.2048	Jeleniogórski	0.2185	city of Jelenia Góra	0.2233
6	Wałbrzyski*	0.1932	Lubiński	0.1632	Polkowicki	0.1861
7	Jeleniogórski	0.1831	Wałbrzyski*	0.1587	Lubiński	0.1713
8	Kłodzki	0.1595	Zgorzelecki	0.1528	Oławski	0.1160
9	Lubiński	0.1416	Polkowicki	0.1451	Kłodzki	0.0908
10	Kamiennogórski	0.1367	Kłodzki	0.1307	Zgorzelecki	0.0887
11	Dzierżoniowski	0.1320	Dzierżoniowski	0.1206	Świdnicki	0.0850
12	Świdnicki	0.1281	Świdnicki	0.1160	Głogowski	0.0763
13	Polkowicki	0.1186	Ząbkowicki	0.0925	Wałbrzyski*	0.0728
14	Bolesławiecki	0.1013	Lubański	0.0850	Średzki	0.0712
15	Trzebnicki	0.1008	Głogowski	0.0808	Wołowski	0.0649
16	Lwówecki	0.0976	Wołowski	0.0785	Ząbkowicki	0.0554
17	Ząbkowicki	0.0830	Trzebnicki	0.0779	Dzierżoniowski	0.0531
18	Strzeliński	0.0809	Bolesławiecki	0.0715	Trzebnicki	0.0456
19	Lubański	0.0772	Oławski	0.0681	Złotoryjski	0.0365
20	Oławski	0.0703	Lwówecki	0.0596	Lubański	0.0360
21	Legnicki	0.0623	Kamiennogórski	0.0526	Bolesławiecki	0.0331
22	Średzki	0.0521	Jaworski	0.0457	Strzeliński	0.0301
23	Głogowski	0.0476	Legnicki	0.0409	Legnicki	0.0273
24	Jaworski	0.0463	Średzki	0.0334	Oleśnicki	0.0258
25	Wołowski	0.0407	Złotoryjski	0.0323	Lwówecki	0.0238
26	Złotoryjski	0.0353	Górowski	0.0320	Jaworski	0.0211
27	Milicki	0.0321	Strzeliński	0.0267	Kamiennogórski	0.0131
28	Oleśnicki	0.0311	Oleśnicki	0.0225	Milicki	0.0107
29	Górowski	0.0000	Milicki	0.0000	Górowski	0.0000

Source: Own

During the analysis of the values of the synthetic measure of development in individual districts, it can be remarked that since 2003, the city of Wrocław district had been classified by the highest synthetic indicator values. Furthermore, its synthetic indicator had been incessantly growing, which can be an evidence of continuous development in the researched dimensions and variables. The district which had similarly been at the top of the classification each year was the city of Legnica district. From the third position in 2003, it went up to the second in 2008 and it did not change its position in the last period of research. Zgorzelecki district, which had been classified on the second position in 2003, fell to the 8<sup>th</sup> in 2008 and 10<sup>th</sup> in 2013. One of the many reasons can be the flood in 2010 and its social and economic after-effects. It should be marked that in the case of this district, in comparison with the base year, the synthetic indicator value had extremely decreased. The fall of the indicator value in the Zgorzelecki district is the highest from all the researched districts. The city of Jelenia Góra district, also on the top of the list in 2003, had been declining in the ranking. In 2008 this district had increased the indicator value, but in the following researched period- 2013, it finally ended at the 5<sup>th</sup> place. However, it stayed in the group of districts characterized by the highest synthetic indicator values among all the researched objects.



Wrocławski district (land district) had improved its position, from the 5<sup>th</sup> in 2003 to the 3<sup>rd</sup> in 2013 (despite the slight fall in the value of the indicator regarding to 2008). Wałbrzyski district was at the 6<sup>th</sup> place at the first period of the research project. In 2008 and 2013, its position meaningfully worsened, putting this district finally to the 13<sup>th</sup> place. The situation of Jeleniogórski district was opposite; its synthetic indicator values had been increasing during all researched periods, which gave it finally the 4<sup>th</sup> place in ranking in 2013. Kłodzki district, because of the minor drop of indicator values, fell from the 8<sup>th</sup> place in 2003 to the 9<sup>th</sup> in 2013. Lubiński district, despite a small increase of the calculated indicator, moved from the 9<sup>th</sup> place, occupied in 2003, to the 7<sup>th</sup> place in 2013. In the case of Kamiennogórski district, due to changes in the value of the indicator, it shifted by eight places downwards in 2008 and by another six in 2013, which gave it the 27<sup>th</sup> place in the ranking of districts. The value of the synthetic indicator for this district was certainly also lower in 2013 in comparison with the base year.

Dzierżonowski district had been one of the few objects which remained on the same place in ranking in 2003 and 2008, despite of the small drop in the value of the synthetic indicator in those periods. Unfortunately, the continuing decrease shifted it from the 11<sup>th</sup> place to the 17<sup>th</sup> in 2013. On the other hand, Świdnicki district, which in 2003 and 2008 had been in the same situation as the Dzierżonowski district, shifted from the 12<sup>th</sup> place in the base year to the 11<sup>th</sup> in 2013, despite the fact that the value of the synthetic indicator in this object also diminished.

In the case of Polkowicki district (13<sup>th</sup> place in 2003), it was an object for which the highest increase of the indicator was apparent (evidently the indicator value had increased constantly). Since 2003 the Polkowicki district had become the sixth district in the ranking.

Bolesławiecki district occupied the 14<sup>th</sup> place in 2003, the 18<sup>th</sup> in 2008 and the 21<sup>st</sup> in 2013. Its position among the districts of Lower Silesia significantly declined. The value of synthetic indicator fell continuously during the researched period. Trzebnicki district was in a similar situation, in 2008, this district fell from the 15<sup>th</sup> to the 17<sup>th</sup> position because of the diminishing indicator value. In the following research period, 2013, the Trzebnicki district found itself at the 17<sup>th</sup> position, experiencing again a slight decline in the indicator value. Comparable changes had been shown in the Lwówecki district. Its indicator values and, at the same time, its position in the ranking had been worsening year by year as well. The Lwówecki district shifted from the 16<sup>th</sup> place in 2003 to the 25<sup>th</sup> in 2013.

The Ząbkowicki district in 2003 was at the 17<sup>th</sup> place among the districts of Lower Silesia. The highest indicator level for this district was observed in 2008 (which gave it the 13<sup>th</sup> place). However, after this year, a decline in the calculated indicator was apparent and in 2013 its value was lower than at the beginning of the study period. In the case of the Strzeliński district, the highest indicator level was witnessed in the base year, and it fell after that placing this district by nine places downwards at the 27<sup>th</sup> place in 2008. In 2013 its position quite significantly improved putting this district at the 22<sup>nd</sup> place in 2015. Nonetheless, its indicator value at the end of the research was lower than at the beginning.

In 2008 the Lubański district had the first increase in the indicator value, but in the following research period it decreased, and the Lubański district ended at the 20<sup>th</sup> place in the ranking. Despite the slight decline in the indicator value in 2008, the Ooławski district shifted one place upwards, and further, eleven places upwards in 2013. That shift (a positive change) in the third researched period in comparison to the second one, was the highest among all of the districts. Similar alterations were shown in the Głogowski, Wołowski, and Średzki districts. In spite of the fluctuations of indicator values in all of those districts their positions in ranking has improved significantly.

Although the value of the indicator in the Legnicki district had been declining during all the research period, its position shifted only in 2008. In 2013 it remained at the 20<sup>th</sup> position among all Lower Silesia districts. Despite the lower indicator value in 2008, the Jaworski district improved its position, from the 24<sup>th</sup> to the 22<sup>nd</sup>. Unfortunately, a further decrease of the value of the synthetic indicator caused a diminishing position of that district to the 26<sup>th</sup> in the ranking.

Albeit the increase in the indicator value in the Złotoryjski district had not been really significant, its position improved substantially giving it the 19<sup>th</sup> place in the ranking.

The Milicki district, one of the three districts with the lowest indicator value in the base year, achieved the lowest rate of the calculated indicator in 2008 and finally was placed at the 29<sup>th</sup> position in 2013. Despite the fact that the value of the indicator in the following years in the Oleśnicki district had been decreasing, it improved its position shifting from the 28<sup>th</sup> to the 24<sup>th</sup> place.

The Górowski district in 2003 was on the last position of the ranking. However, after that an increase in the value of the indicator had been noticed for this object. In 2008 it shifted its position to the 26<sup>th</sup> place, but unfortunately the value of this indicator dropped again and the Górowski district fell to the last place in 2013.

It must be emphasised that even the smallest change in the indicator value can lead to significant alterations in the ranking of the investigated objects.

All districts of the Lower Silesia in the research period could be divided into three groups. Firstly, a group of districts for which the synthetic indicator had declined in comparison with 2006. This group included: Zgorzelecki, Kamiennogórski, Wałbrzyski, Dzierżoniowski, the city of Jelenia Góra, Lwówecki, Kłodzki, Bolesławiecki, the city of Legnica, Trzebnicki, Strzełiński, Świdnicki, Lubański, Legnicki, Ząbkowicki, Jaworski and Milicki districts. The second group (the smallest one) involved the districts for which the synthetic indicator had not undergone any major changes. Those districts were: Oleśnicki, Górowski, and Złotoryjski. The last group consisted of the districts which had improved their positions in the ranking due to the growth of the indicator. This group of districts included: Średzki, Wołowski, Głogowski, Lubiński, the city of Wrocław, Wrocławski, Oławski, Jeleniogórski and Polkowicki.

In the next part of research, the resemblance of the Lower Silesia districts under examination was determined. In the analysis, 4 groups of districts, similar to each other in each of the research periods, with regard to the examined diagnostic feature – the value of the synthetic indicator, were distinguished. As mentioned before grading into classes was carried out using the average and standard deviation. The determined groups are shown in Tab. 3.

The first group, named for the research purposes “Districts class I”, initially consisted of the city of Wrocław, Zgorzelecki, the city of Legnica and the city of Jelenia Góra districts. Over the examination periods Wrocławski and Jeleniogórski districts had been included and Zgorzelecki district got excluded from this group.

The following group of objects similar to each other, with regard to the examined diagnostic feature – the value of the synthetic indicator, “Districts class II” were in the base year the Wrocławski, Wałbrzyski, Jeleniogórski, Kłodzki, Lubiński, Kamiennogórski, and Dzierżoniowski districts. As mentioned before, in the following periods under investigation, Wrocławski and Jeleniogórski districts shifted their positions to the better class. On the other hand, in 2008 Kamiennogórski and Dzierżoniowski districts worsened their places in the ranking and moved to the “Districts class III” group. In 2013 the last period of research,

Wałbrzyski and Zgorzelecki had been excluded from the second group and Oławski district had been included in it.

The third group included at first Świdnicki, Polkowicki, Bolesławiecki, Trzebnicki, Lwówecki, Ząbkowicki, Strzeliński, Lubański, Oławski, Legnicki, Średzki, Głogowski, Jaworski, Wołowski, and Złotoryjski districts. In the following research period – 2008 this group expanded by Górowski and Dzierżoniowski districts and diminished by Polkowicki district. In 2013 it was enlarged by Zgorzelecki, Wałbrzyski, Kłodzki and decreased by Oławski districts.

**Tab. 3:** Development measures of the Lower Silesia districts in 2003-2013 with their classification to particular groups

No.	2003		2008		2013	
	District/research object	Dev. Measure	District/research object	Dev. Measure	District/research object	Dev. Measure
1	city of Wrocław	0.4623	city of Wrocław	0.4954	city of Wrocław	0.4976
2	Zgorzelecki	0.3409	city of Legnica	0.3394	city of Legnica	0.2736
3	city of Legnica	0.3368	city of Jelenia Góra	0.3135	Wrocławski	0.2490
4	city of Jelenia Góra	0.3011	Wrocławski	0.3032	Jeleniogórski	0.2434
5	Wrocławski	0.2048	Jeleniogórski	0.2185	city of Jelenia Góra	0.2233
6	Wałbrzyski*	0.1932	Lubiński	0.1632	Polkowicki	0.1861
7	Jeleniogórski	0.1831	Wałbrzyski*	0.1587	Lubiński	0.1713
8	Kłodzki	0.1595	Zgorzelecki	0.1528	Oławski	0.1160
9	Lubiński	0.1416	Polkowicki	0.1451	Kłodzki	0.0908
10	Kamiennogórski	0.1367	Kłodzki	0.1307	Zgorzelecki	0.0887
11	Dzierżoniowski	0.1320	Dzierżoniowski	0.1206	Świdnicki	0.0850
12	Świdnicki	0.1281	Świdnicki	0.1160	Głogowski	0.0763
13	Polkowicki	0.1186	Ząbkowicki	0.0925	Wałbrzyski*	0.0728
14	Bolesławiecki	0.1013	Lubański	0.0850	Średzki	0.0712
15	Trzebnicki	0.1008	Głogowski	0.0808	Wołowski	0.0649
16	Lwówecki	0.0976	Wołowski	0.0785	Ząbkowicki	0.0554
17	Ząbkowicki	0.0830	Trzebnicki	0.0779	Dzierżoniowski	0.0531
18	Strzeliński	0.0809	Bolesławiecki	0.0715	Trzebnicki	0.0456
19	Lubański	0.0772	Oławski	0.0681	Złotoryjski	0.0365
20	Oławski	0.0703	Lwówecki	0.0596	Lubański	0.0360
21	Legnicki	0.0623	Kamiennogórski	0.0526	Bolesławiecki	0.0331
22	Średzki	0.0521	Jaworski	0.0457	Strzeliński	0.0301
23	Głogowski	0.0476	Legnicki	0.0409	Legnicki	0.0273
24	Jaworski	0.0463	Średzki	0.0334	Oleśnicki	0.0258
25	Wołowski	0.0407	Złotoryjski	0.0323	Lwówecki	0.0238
26	Złotoryjski	0.0353	Górowski	0.0320	Jaworski	0.0211
27	Milicki	0.0321	Strzeliński	0.0267	Kamiennogórski	0.0131
28	Oleśnicki	0.0311	Oleśnicki	0.0225	Milicki	0.0107
29	Górowski	0.0000	Milicki	0.0000	Górowski	0.0000

Legend:

Districts class I

Districts class II

Districts class III

Districts class IV

Source: Own

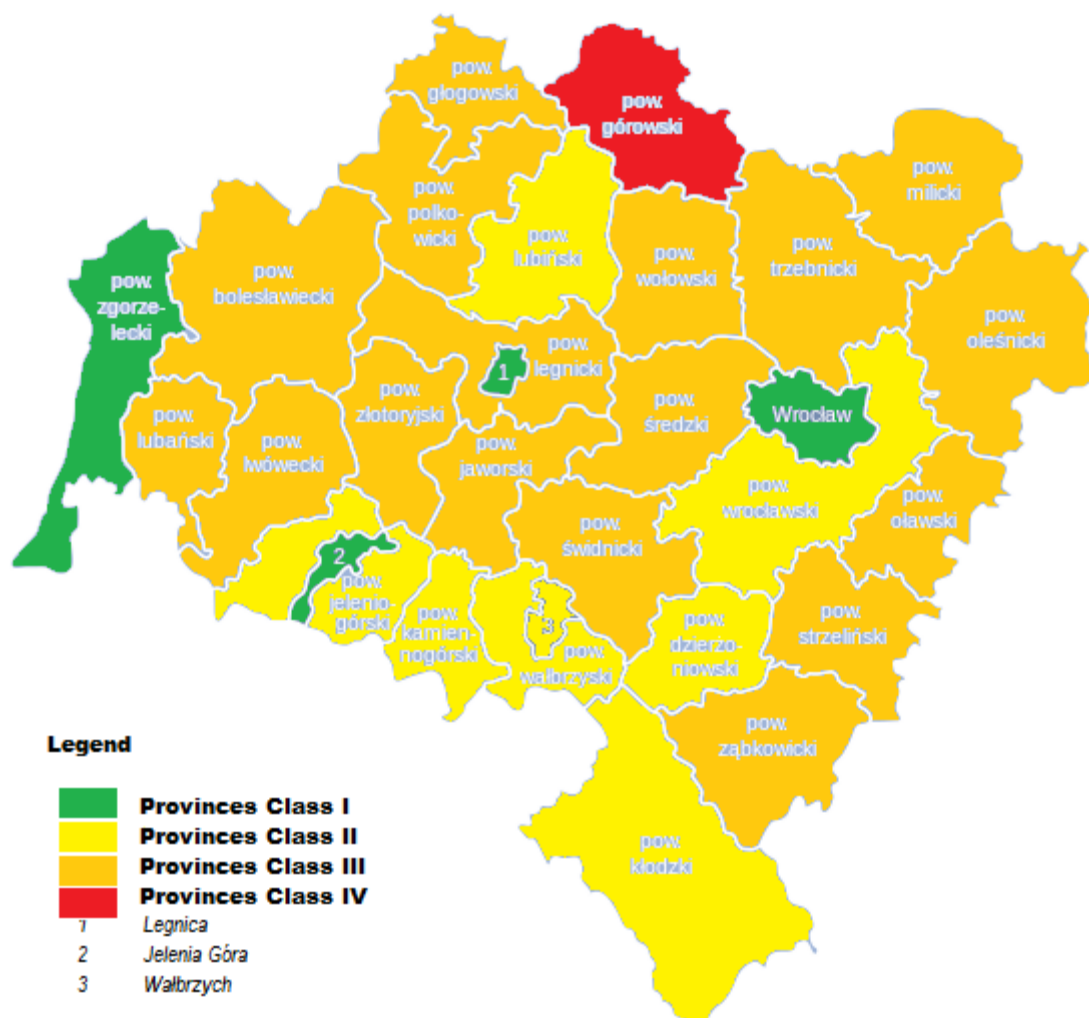


The last and the least numerous group of similar objects consisted of Górowski district in 2003 and 2013 and of Milicki dostrict in 2008.

At the same time it should be noted that over the research periods the numerical amount of the “Districts class I” and “Districts class III” had been increased, the “Districts class II” diminished, and the “Districts class IV” stayed at the same level. The places of individual districts in the ranking, even when they stayed in the same group, have also changed.

## Conclusions

The conducted analysis shows that there are significant trends in the development of individual districts of the province of Lower Silesia. The biggest degree of polarization has been observed between the “Districts class I” (including strong centers of growth and development, such as the cities of Jelenia Góra and Wrocław) and the “Districts class IV” and “Districts class III”. It can be also assumed that the development of the regions surrounding the mentioned strong centres of growth will proceed. The changes in the values of the synthetic indicator over the years under examination are shown in Fig. 1 and Fig. 2.

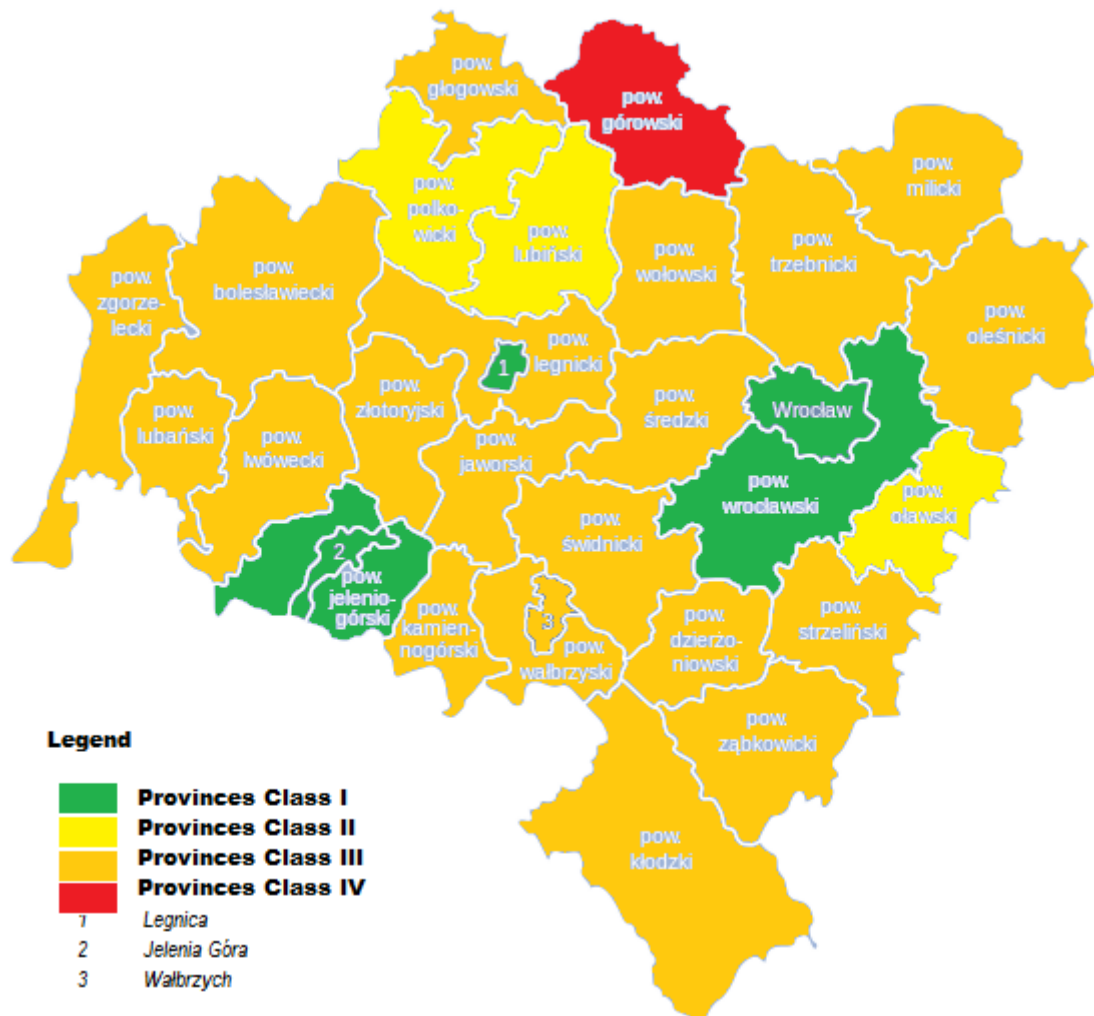


Source: Own

**Fig. 1:** Districts classes map in 2003

During the research period the polarization among the city of Wrocław and other centers of growth became stronger. The highest degrees of polarization were observed in 2003 and in 2013 between the city of Wrocław and Górowski district and in 2008 between the city of Wrocław and Milicki district. In the analyzed period the polarization extent between the city of Wrocław district and Jeleniogórski, Oławski, and Polkowicki districts decreased. In the remaining districts the degree of polarization in regard to the city of Wrocław increased, the

most in the case of Zgorzelecki district. A large polarization of the city of Wrocław also occurred in relation to Bolesławiecki, Dzierżonowski, Kamiennogórski, and Wałbrzyski districts.



Source: Own

**Fig. 2:** Districts classes map in 2013

The decreasing value of the synthetic indicator in Zgorzelecki district caused its diminishing from the strong center of growth in 2003 (the 2nd position in the ranking among all districts of Lower Silesia) to the “Districts class III” and the 10<sup>th</sup> position in 2013.

In the research period Polkowicki district experienced a significant increase in the value of the synthetic indicator, due to the development in the mining industry (KGHM Polska Miedź S.A.). Furthermore, it was one of the districts which had considerably increased their position in the ranking (an increase by 7 places, from the 13<sup>th</sup> position in 2003 in the “Districts class III” to the 6<sup>th</sup> position in 2013). It should be added that this was the largest increase among all districts.

Among the distinguished objects in the “Districts class I” the biggest degree of polarization had been noted between the city of Wrocław and the city of Jelenia Góra districts.

To sum up the performed analysis, it should be remarked that a decrease of development disproportions requires time, thus, in order to follow the process of changes, exploration in this area should be continued.

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## IDENTIFIKACE STUPNĚ POLARIZACE OKRESŮ NUTS4 v DOLNOSLEZSKÉM VOJVODSTVÍ S VYUŽITÍM UKAZATELE HOSPODÁŘSKÉHO RŮSTU

Identifikace a výzkum rozvojových disparit regionů má velký význam z hlediska efektivity činností prováděných v rámci regionální politiky. Cílem tohoto článku bylo popsat stupeň polarizace jednotlivých okresů v Dolnoslezském vojvodství a rozdělit tyto oblasti do skupin z hlediska úrovně rozvoje v letech 2003, 2008 a 2013. V první kapitole je prezentován přehled polarizační teorie a přehled dosavadního výzkumu. V následující kapitole jsou podrobně popsány cíle a oblasti výzkumu. Třetí kapitola je věnována metodologii výzkumu se zaměřením na syntetické ukazatele hospodářského růstu. V závěrečné části jsou prezentovány výsledky provedených výzkumů.

## DIE KENNUNG DER POLARISIERUNGSGRAD DER LANDKREISE NUTS4 IN NIEDERSCHLESIEIN MIT DER BENUTZUNG DES MAßES DER WIRTSCHAFTSENTWICKLUNG

Die Kennung und Forschung der Entwicklungs-Disproportionen ist von großer Bedeutung aus der Sicht der Effektivität des Handelns, die im Rahmen der Regionalpolitik unternommen sind. Der Zweck dieses Artikels war, den Grad der Polarisierung der Landkreise in Niederschlesien und die Einteilung in Gruppen von Entwicklungsniveau in den Jahren 2003, 2008 und 2013 zu bestimmen. Im ersten Kapitel werden der Abriss der Polarisierungstheorie und Überblick der bestehenden Studien geschildert. Das nächste Kapitel beschreibt detailliert die Ziele und Forschungsbereichen. Das dritte Kapitel ist der Methodologie der Forschung mit besonderem Schwerpunkt auf synthetische Maß der Wirtschaftsentwicklung gewidmet. Im letzten Abschnitt werden die Forschungsergebnisse dargestellt.

## IDENTYFIKACJA STOPNIA POLARYZACJI POWIATÓW NUTS4 W WOJEWÓDZTWIE DOLNOŚLĄSKIM Z WYKORZYSTANIEM MIARY ROZWOJU GOSPODARCZEGO

Identyfikacja i badanie dysproporcji rozwojowych regionów ma duże znaczenie z punktu widzenia efektywności działań podejmowanych w ramach polityki regionalnej. Celem niniejszego artykułu było określenie stopnia polaryzacji powiatów w województwie dolnośląskim i podział ich na grupy względem poziomu rozwoju w latach 2003, 2008 i 2013. W pierwszym rozdziale zaprezentowano zarys teorii polaryzacji i przegląd dotychczasowych badań. W kolejnym rozdziale szczegółowo opisano cele i obszary badawcze. Trzeci rozdział poświęcono metodologii badań ze szczególnym uwzględnieniem syntetycznej miary rozwoju gospodarczego. W ostatniej części zaprezentowano wyniki przeprowadzonych badań.

## Miscellanea



## IMPROVING THE QUALITY OF CUSTOMER SERVICE BY USING THE TECHNIQUE OF MYSTERY SHOPPING

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### Abstract

This paper deals with the quality of customer service, especially with the importance of customer-oriented communication in selected industries of the Czech Republic. For excellent customer service, organizations must consistently check needs and wishes of their customers and the process of purchasing and working with customers (customer-oriented communication). The purpose of this study was to investigate the level of customer-oriented communication in differently specialized industries in the Czech Republic. The research was conducted in six regions (in small and in large cities/towns), which were chosen to represent level of customer-oriented communication in Czech shops. Research proved that over the last years, there has been a number of positive changes in sales. It also confirmed that in certain areas the communication with customers is better in smaller shops than in larger ones. The results can be of immense significance for the training of future business managers, educating sales force in terms of corporate training and improving the quality of sales.

### Introduction

Mystery shopping is a specific technique suitable for evaluation of the shopping/buying process provided by trained shoppers who evaluate according to a scenario prepared in advance. Mystery shopping helps organizations to improve their customer service and to achieve their service standard. It can be used to measure customer's satisfaction on the one hand and as a starting point for training programmes and motivation of frontline employees on the other hand.

The purpose of this presented survey is to gain information about the level of customer-oriented communication in retail and service providers in the Czech Republic.

Many important social changes have occurred in the Czech Republic over the past twenty years. The development of market economy within the European Union (since 2004) has significantly changed the requirements for quality of both retail and service and communication with customers. Organizations had to implement quality service standards and retrain their staff in communication with customers.

Shop sales persons and shop assistants work in the area where dynamic changes have occurred mainly in communication with customers. In the beginning, this change led to a discrepancy between how salespeople perceived themselves and what customers expected from them. There was an urgent need to change the behaviour patterns in the shopping/buying process [cf. 19].

The constantly appearing changes have been considerable for culture in society and obviously need to be reflected in the area of trade and services. Customer service and communication with customers became more important than they had been before [2], [15].

This probably unrepeatable situation has not been adequately described so far. We can find only several studies that partly explain this phenomenon. For example, Engle [4] explains how it was difficult in Central and Eastern Europe to recruit and to retrain new sale representatives. Vadi and Suuroja [19] describe this issue only theoretically and present the Model of Customer-Oriented Communication. Djordjic [6] describes directly how it is possible to use mystery shopping and applies his methodological approach in financial services.

In the Czech Republic, Staňková and Vaculíková [18] construe the possibility of use of mystery shopping for improvement of trade and services only theoretically.

This research focuses on description of the customer service, especially on the importance of customer-oriented communication [2] in the Czech Republic, i.e. it is not just a partial study for a single company. The research is a part of the “customer-led business” approach [17] that is focused on understanding the expressed desires of customers in their served markets. Findings of this survey help to understand changes in communication with customers in the field of trade and services. Moreover, the results can indicate weaknesses and show opportunities for staff development. The findings might be interesting for all who are involved in the trade and services in Central and Eastern Europe.

## **1 Frontline employee and communication with customers**

Delivering quality customer service is essential to sustain any kind of business. Some studies show that up to 70 % organizations are losing customers due to poor customer service and just less than 15 % due to poor quality of the product (e.g. Michelson [14]).

Good relations with customers depend on two-way communication and excellent customer service, which can gain loyal customers who are willing to refer service to other people, possible future customers [1], [13], [15]. On the contrary, conflicts with customers can bring problems for business. Customer – employee interaction is a very important part of the service standards that organizations need to create, develop, maintain and evaluate.

What we need to consider when organization wants to improve a pattern of excellent customer service?

- **To provide good customer service.** The employees need to know what they are selling. Do they know how the product or service works? Are they able to answer common questions of the customers about a particular product or service? And how do they articulate the answer?
- **To be friendly.** Customer service starts with a smile and greeting. Especially in face-to-face situations eye contact and a warm greeting is the first thing that customers see and hear. Do they greet customers?
- **To listen to the wishes of customers.** Listening and asking questions are key skills for interaction with customers. Listening is very important (not only verbal but also non-verbal). Are employees able to discover the needs and the wishes of customers?
- **To be courteous and respectful.** Customer service very often involves emotions. Are employees able to follow the rule: “Never let your own emotions overtake your desire.”
- **To thank the customers.** Do they say thank you after every transaction? It is a very important habit in a good customer service.
- **To learn from feedback.** During the interview with the customers the employees receive a lot of information about a customer’s needs. Do they know what customers think about

their business, products and services? Are they able to collect the important information and to shift feedbacks to the management?

- **To develop negotiation with customers.** Good negotiations contribute to business success and support growing of the sales. Strong negotiators are excellent at interpersonal communication skills and create confidence. Are employees able to establish long-term relationships with customers?
- **To improve staff training and staff support.** Does the organization provide employees' training that helps them to carry out good customer service through the customer experience?

The important points mentioned above underline the fact that organizations need to do something with feedback from customers if they want to improve their business and customer-oriented communication as a part of customer service. They need to identify areas for improvement and afterwards be able to make specific changes. Mystery shopping is a suitable technique for this task. For excellent customer service, organizations must consistently check their customers' needs and wishes and the process of purchasing and working with customers (customer-oriented communication).

## 2 Mystery shopping

Mystery shopping is a technique that is used by trade organizations to measure service experience. "Mystery shopping is a process for measuring service quality, with feedback, that is understandable to the frontline people in retailing." [16, p. 54] This technique is very useful to map and to evaluate communication between shop sales persons or shop assistants and the customers. ESOMAR [5] states: "The purpose of mystery shopping studies is to help focus on the attention of business management on customer service improvement by providing information on the operation and the quality of service that is provided."

Mystery shopping is an effective technique for assessing employee friendliness and helpfulness. From the customer's point of view, this technique is also very useful and objective as for evaluating cleanliness of the facility, waiting time, commercial signage, adherence to the organization standard and communication with them.

Mystery shopping results lead to improvement of the service process and mostly it is an initial point for the learning process and new staff training programme. Ford, Latham, and Lennox [7] underline that mystery shopping provides third-party data for managers who can use results of mystery shopping when coaching their employees. If used appropriately, mystery shopping results can be also part of the motivation process and can improve the level of service standard via subsequent goals settings in relation to communication with customers and the level of service standard.

In the trade it is not easy and not as common to measure quality as in manufacturing firms. Services need evaluation of their customers' expectations. Mystery shopping is a technique that simulates and checks sale process and communication with customers.

Mystery shoppers must follow specific guidelines. Skilled mystery shoppers can make a relatively objective assessment of all observed aspects of the service experience. He or she goes "incognito" to a shopping point (specific shop) to examine the service process and the way shop assistants/salespeople communicate with customers. He or she acts as a typical customer and evaluates predetermined service standards that are an important part of the service quality. The task is usually to buy a product or a service and to meet employees (e.g. shop assistants, shop sales persons) delivering the service. In our case special attention is paid to mapping communication with the customer by means of a mystery shopper.

The control sheet or the comment card is designed to measure various aspects of the processes that usually have a relation to specific service standards.

Because trained and skilled mystery shoppers use the same measures for every shop/organization, the results of mystery shopping can be used to compare effectiveness of customer service across sales units.

Mystery shoppers' programmes are typical for organizations where communication with customers is very important. The management needs to control standards or quality of the service process. Analyses of the results of mystery shopping over time enables managers to discover whether the service quality delivery is improving or not. Some authors recommend using the data only for assessing the performance on organizational level and not for individual units or specific employees [7], [9]. We advocate the opposite opinion. If an organization uses mystery shopping on a regular basis, there is a possibility to evaluate units regularly and use the results of mystery shopping as feedback of the employees' work. For management, the following questions are important: Do employees meet service standards? How do they offer our products? Are the customers satisfied with the communication?

Mystery shopping is also a research method used to gather information about a shop's "frontline" [14], [16]. Our research deals with the description and evaluation of the communication with customers during the process of purchasing in selected industries in the Czech Republic.

### **3 Methodology**

The purpose of this research study is to investigate the level of customer-oriented communication in differently specialized industries in the Czech Republic. Customer-oriented communication is an important part of shop salespeople and shop assistants performance and helps organizations to improve their services.

The chosen approach in research is descriptive (initially mapping of the field) and explorative (clarifying differences in customer-oriented communication as a part of service standard in differently sized units and in differently specialized industries).

#### **3.1 Research questions**

The survey research provides answers to the central research question: "What is the level of customer-oriented communication in selected industries in the Czech Republic?"

In addition to the central research question based on the desk research results we formulated another research sub-questions:

- Do shop salespeople / shop assistants know how the product or service works?
- Are shop sales persons / shops assistants friendly to customers?
- Are they able to listen and ask questions during interview with customers?
- Are there any differences in dealing with customers and in the level of service provided across researched industries?

#### **3.2 Research method and tools**

For the planned research, a technique that is a combination of observation and interview was chosen [8], [12]. This special technique of data collection is called mystery shopping (mystery visit and mystery observation). The above mentioned technique splits into two basic data collection methods, covert observation and semi structured interview.

Mystery shoppers (students of a university study programme focused on trade and services) were first given instructions about the scenario they had to follow, i.e. these students were trained for managing customer service including the implementation of mystery shopping programme in different organizations.

The research was conducted in six regions (in small and in large cities/towns), which were selected to represent the level of customer-oriented communication in Czech shops.

The scenario was based on the topics in the theoretical part [5], [7], [16], [18], [20]. Its structure and the content were prepared according to the mentioned research and two similar control sheets that were used by two international companies to check communication of their employees with customers. The scenario contains 25+1 items divided into areas:

- Shop interior, staff appearance and product presentation
- Customer service and product offering

The research study was realized professionally and with appropriate data security. The gained data were anonymized and were used for research and training purposes only.

The research covers 3 different industries in the Czech Republic:

- Electronics and communication equipments (74)
- Clothing and shoes (95)
- Household goods and drugstore (43)

The total amount of all shops was 212. These shops were divided into two groups – small and large sized shops; based on the number of their business units (< 5 small sized, > 5 large sized). A group of small sized shops consists of 47 shops and a group of large sized POS (point of sale) consists of 165 shops.

## **4 Findings**

In every table in this article there is an absolute value followed by a relative value of every given item.

In tables 1, 2 and 3, the scale value “Not quite” was not taken for items 3 and 5.

Central tendency for items 2, 6, 8 and 10 is “Not quite”, for item 1 “Yes, not organized”, for item 7 “Mostly”, and for item 9 “To request – not immediately”.

Table 1 compares small sized shops with large sized shops in the manner of shop interior, staff appearance and product presentation.

**Tab. 1:** Shop interior, staff appearance and product presentation in small and large sized shops

Items	Small sized shops						Large sized shops					
	Yes	Not quite	No	Yes	Not quite	No	Yes	Not quite	No	Yes	Not quite	No
1 Were there flyers in the shop?	23	48.94%	1	2.12%	23	48.94%	103	62.42%	9	5.45%	53	32.13%
2 Was the floor free of dirt and did it appear clean?	44	93.62%	3	6.38%	0	0.00%	154	93.33%	11	6.67%	0	0.00%
3 Were the shelves well-organized?	44	93.62%			3	6.38%	163	98.79%			2	1.21%
4 Was the staff's appearance appropriate to the nature of the shop?	26	55.32%	21	44.68%	0	0.00%	118	71.52%	47	28.48%	0	0.00%
5 Were the staff members easily recognizable with a uniform or name tags?	8	17.02%			39	82.98%	110	66.67%			55	32.33%
6 Were the products displayed neatly?	31	65.96%	16	34.04%	0	0.00%	142	86.06%	22	13.33%	1	0.61%
7 Were the products labeled with prices?	35	74.46%	10	21.28%	2	4.26%	144	87.27%	20	12.12%	1	0.61%
8 Did you have enough personal space at the cash desk? (e.g. other people did not bump into you)	43	91.49%	4	8.51%	0	0.00%	159	96.36%	6	3.64%	0	0.00%
9 Did you receive a receipt and/or a warranty card?	44	93.62%	0	0.00%	3	6.38%	163	98.79%	2	1.21%	0	0.00%
10 Was the product well packed?	38	80.85%	3	6.38%	6	12.77%	150	90.91%	10	6.06%	5	3.03%

Source: Own

Partial conclusions are as follows.

- In almost half of the shops, the POS materials were not used right to attract the customers' attention and to ultimately influence his or her final purchasing decisions. This statistic applies to both small and large sized shops, as can be seen from Table 1 (item 1).
- It is a gratifying fact, that almost every shop was described as clean (item 2).
- Problems with the staff's appearance and their identification were found in small sized shops (items 4 and 5).
- There are opportunities for improvements in areas of price presentation and product packing. This applies to both small and large sized shops, particularly for small sized ones, which will be clarified later in the text.

To better understand the collected data, second sorting criterion was added. All shops were divided into 3 industries. For a more thorough analysis, industries of Electronics and communication equipment, Clothing and shoes and Household goods and drugstores were used.

The purpose of adding the second criteria was to find out if differences in mystery shopping outcomes between individual industries exist independently of size of the shop.

**Tab. 2:** Shop interior, staff appearance and product presentation in chosen industries, part 1

Items	Electronics and communication equipment						Clothing and shoes					
	Yes	Not quite	No	Yes	Not quite	No	Yes	Not quite	No	Yes	Not quite	No
1 Were there flyers in the shop?	61	82.43%	2	2.70%	11	14.86%	39	41.05%	5	5.26%	51	53.68%
2 Was the floor free of dirt and appeared clean?	66	89.19%	8	10.81%	0	0.00%	91	95.79%	4	4.21%	0	0.00%
3 Were the shelves well-organized?	72	97.30%			2	2.70%	93	97.89%			2	2.11%
4 Was the staff's appearance appropriate to the nature of the shop?	41	55.41%	33	44.59%	0	0.00%	76	80.00%	19	20.00%	0	0.00%
5 Were the staff members easily recognizable with uniform or name tags?	49	66.22%			25	33.78%	49	51.58%			46	48.42%
6 Were the products displayed neatly?	58	78.38%	16	21.62%	0	0.00%	84	88.42%	11	11.58%	0	0.00%
7 Were the products labelled with prices?	67	90.54%	4	5.41%	3	4.05%	86	90.53%	9	9.47%	0	0.00%
8 Did you have enough personal space at the cash desk? (e.g. other people did not bump into you)	70	94.59%	4	5.41%	0	0.00%	94	98.95%	1	1.05%	0	0.00%
9 Did you receive a receipt and/or a warranty card?	73	98.65%	0	0.00%	1	1.35%	94	98.95%	0	0.00%	1	1.05%
10 Was the product well packed?	63	85.14%	4	5.41%	7	9.46%	93	97.89%	2	2.11%	0	0.00%

Source: Own

**Tab. 3: Shop interior, staff appearance and product presentation in chosen industries, part 2**

Items	Household goods and drugstore					
	Yes		Not quite		No	
1 Were there flyers in the shop?	26	60.47%	3	6.98%	14	32.56%
2 Was the floor free of dirt and appeared clean?	41	95.35%	2	4.65%	0	0.00%
3 Were the shelves well-organized?	42	97.67%			1	2.33%
4 Was the staff's appearance appropriate to the nature of the shop?	27	62.79%	16	37.21%	0	0.00%
5 Were the staff members easily recognizable with uniform or name tags?	20	46.51%			23	53.49%
6 Were the products displayed neatly?	31	72.09%	11	25.58%	1	2.33%
7 Were the products labeled with prices?	26	60.47%	17	39.53%	0	0.00%
8 Did you have enough personal space at the cash desk? (e.g. other people did not bump into you)	38	88.37%	5	11.63%	0	0.00%
9 Did you receive a receipt and/or a warranty card?	40	93.02%	2	4.65%	1	2.33%
10 Was the product well packed?	32	74.42%	7	16.28%	4	9.30%

Source: Own

Partial conclusions are as follows.

- As can be seen from table 2, the worst situation regarding the POS materials occurred in the industry of Clothing and shoes (item 1).
- Opportunities for improvement as for appearance and identification of staff exist in all industries.
- In the Household goods and drugstore industry, the issue with price presentation is significant, as shown in Table 3 (item 7).
- No major problem was found in paying at the cash desk in all industries, the same applies to getting a receipt after making a purchase.
- Packing a product seems to be a problem in the Household goods and drugstore industry and Electronics and communication equipment.

Tables 4 and 5, which follow in the text below, show how members of staff were able to interact with customers. By means of a control sheet, mystery shoppers did not just evaluate staff's ability to communicate. Among other things, he or she were also finding out whether the staff was able to greet customers, ask well-aimed questions to get enough information about the customer's needs to recommend a suitable product, offer accessories and thank for the purchase. Results for small and large sized shops can be seen in table 4; table 5 shows more thorough analysis of selected industries. The selection of industries and purpose of this selection remains the same as it was explained earlier in the text.

In Tables 4 and 5 an absolute value followed by a relative value of every item is given again.

**Tab. 4: Interaction of salespeople with customers in small and large sized shops**

Items	Small sized shops				Large sized shops			
	Yes		No		Yes		No	
11 Did the shop assistant make eye contact when you entered the shop?	42	89.36%	5	10.64%	126	76.36%	39	23.64%
12 Did the shop assistant smile?	34	72.34%	13	27.66%	98	59.39%	67	40.61%
13 Were you approached by the shop assistant within 4 minutes?	36	76.60%	11	23.40%	109	66.06%	56	33.94%
14 Were you greeted?	45	95.74%	2	4.26%	153	92.73%	12	7.27%
15 Did the shop assistant ask you an open question in the beginning?	41	87.23%	6	12.77%	104	63.03%	61	36.97%
16 Was the eye contact maintained by the shop assistant during your conversation?	43	91.49%	4	8.51%	134	81.21%	31	18.79%
17 Did the shop assistant ask you questions to clarify your needs?	25	53.19%	22	46.81%	79	47.88%	86	52.12%
18 Were you asked additional questions to specify a product for you?	27	57.45%	20	42.55%	82	49.70%	83	50.30%
19 Were you asked about the price range?	16	34.04%	31	65.96%	45	27.27%	120	72.73%
20 Were the benefits of the product for the customer emphasized?	26	55.32%	21	44.68%	71	43.03%	94	56.97%
21 Did the assistant know answers to additional questions you asked?	46	97.87%	1	2.13%	148	89.70%	17	10.30%
22 Did the shop sales person thank you upon completion of your purchase?	33	70.21%	14	29.79%	123	74.55%	42	25.45%
23 Did the shop sales person ask you if they could do something else for you?	24	51.06%	23	48.94%	89	53.94%	76	46.06%
24 Were you offered accessories?	20	42.55%	27	57.45%	80	48.48%	85	51.52%
25 Was the staff in the shop patient?	42	89.36%	5	10.64%	149	90.30%	16	9.70%

Source: Own

Partial conclusions are as follows.

- Making contact, smiling and greeting customers is more common in small sized shops (items 11 – 14 and 16).
- Asking a suitable open question in the beginning is one of the basic business skills. As can be seen in Table 4, slightly better results were achieved by small sized shops (item 15).
- The research outcomes point out a serious issue of not asking questions about the customer's needs and wishes (item 17). In addition to that, almost 50% of staff members do not ask any further questions to specify a product for a customer (item 18). These facts apply both to small and large sized shops.
- Even worse results were achieved in a question about the price range (item 19). That could be caused by the nature of a product.
- Staff members were able to answer additional questions. On the other hand, a significant part of them was not able or willing to introduce the product's benefits. That is a serious issue.
- Thanking can be seen as an opportunity to improve (item 22) along with the offering of accessories and asking for an additional wish – only approximately 50% of shop salespeople asked if there was anything else they could do for a customer. We find this number inadequate.

**Tab. 5:** *Interaction of salespeople with customers in chosen industries*

Items		Electronics and communication equipment				Clothing and shoes				Household goods and drugstore			
		Yes		No		Yes		No		Yes		No	
11	Did the shop assistant make eye contact when you entered the shop?	57	77.03%	17	22.97%	75	78.95%	20	21.05%	36	83.72%	7	16.28%
12	Did the shop assistant smile?	42	56.76%	32	43.24%	66	69.47%	29	30.53%	24	55.81%	19	44.19%
13	Were you approached by the shop assistant within 4 minutes?	56	75.68%	18	24.32%	58	61.05%	37	38.95%	31	72.09%	12	27.91%
14	Were you greeted?	70	94.59%	4	5.41%	88	92.63%	7	7.37%	40	93.02%	3	6.98%
15	Did the shop assistant ask you an open question in the beginning?	60	81.08%	14	18.92%	57	60.00%	38	40.00%	28	65.12%	15	34.88%
16	Was the eye contact maintained by the shop assistant during your conversation?	66	89.19%	8	10.81%	77	81.05%	18	18.95%	34	79.07%	9	20.93%
17	Did the shop assistant ask you questions to clarify your needs?	36	48.65%	38	51.35%	42	44.21%	53	55.79%	26	60.47%	17	39.53%
18	Were you asked additional questions to specify a product for you?	36	48.65%	38	51.35%	46	48.42%	49	51.58%	27	62.79%	16	37.21%
19	Were you asked about the price range?	34	45.95%	40	54.05%	14	14.74%	81	85.26%	13	30.23%	30	69.77%
20	Were the benefits of the product for the customer emphasized?	39	52.70%	35	47.30%	32	33.68%	63	66.32%	26	60.47%	17	39.53%
21	Did the assistant know answers to additional questions you asked?	64	86.49%	10	13.51%	89	93.68%	6	6.32%	41	95.35%	2	4.65%
22	Did the shop sales person thank you upon completion of your purchase?	52	70.27%	22	29.73%	77	81.05%	18	18.95%	27	62.79%	16	37.21%
23	Did the shop sales person ask you if they could do something else for you?	35	47.30%	39	52.70%	61	64.21%	34	35.79%	17	39.53%	26	60.47%
24	Were you offered accessories?	22	29.73%	52	70.27%	60	63.16%	35	36.84%	18	41.86%	25	58.14%
25	Was the staff in the shop patient?	64	86.49%	10	13.51%	90	94.74%	5	5.26%	37	86.05%	6	13.95%

Source: own

Partial conclusions are as follows.



When comparing results of customer service and product offering in selected industries, following facts can be stated:

- Smiling upon a customer is not a common habit in the Czech Republic. With a proper training, employees can learn how to improve themselves in making contact.
- As already mentioned above, there is lack of questions about customers' needs and wishes. Staff members also don't ask questions to specify the price range.
- Best results in thanking and offering accessories were achieved in the Clothing and shoes industry.

The additional item (+1) not shown in Tables 4 and 5 was a question, whether a customer understood a shop assistant's language or not (e.g. use of slang, technical terms, ...). In 90% of cases, in both small and large sized shops the customers were able to understand, 9.5% of customers had minor difficulties to understand and only 0.5% of all customers had major difficulties to understand.

## Conclusion

The presented study goes far beyond the theoretical definition of the term 'mystery shopping' as a method for marketing research [16], [18] or the theoretical model of a salespeople training programme [19]. With total amount of 212 samples of Mystery Shoppings in six regions in selected industries in the Czech Republic, the research provides outputs that can be generalized to some extent in selected industries for the whole country.

The results of this coordinated action research are not just a partial study for a chosen organization. They represent a comprehensive view on the level of customer-oriented communication in retail in selected industries of in Czech Republic. That being said, the results can be of immense significance for a training of future business managers, educating sales force in terms of corporate training and improving a quality of sales.

Research proved that over the last years, there has been a number of positive changes in sales (shop cleanliness, customer's addressing, employee's clothing and identification in large sized shops, product labeling, etc.) Research also confirmed that in certain areas the communication with customers is better in smaller shops than in larger ones and that employees are closer to customers in terms of interaction in smaller shops rather than they are in larger shops. Here it is possible to discuss research results in the context of assessing the impact of marketing in multinational subsidiaries [11].

Comparison of selected industries showed that in practice it is advisable to pay attention to the industry where the shop operates. The differences between three industries were presented, since other industries could not be used due to a small number of records. If used, data comparison would not be relevant and results would be distorted. Especially focus on customer-oriented communication could be considered as another limitation of the research, since mystery shopping is used for a wide variety of purposes worldwide [7], [10], [14], [16].

Compared with a pilot study from the Czech Republic [3], the results of the research unfortunately showed persistent difficulties in communication with customers, particularly in initiating the first contact, questioning the needs and desires of customers and offering additional products and services. Benefits for organizations resulting from this research can be mentioned; outputs show that the opportunities to improve not just skills and motivation, but also other qualities of sales force exist. If we admit that the statement "Effective communication is an important part of business success" is true, then, with proper training,

sales, profit and customer's satisfaction can be increased, and, with appropriately chosen motivational tools, employee satisfaction can be increased, too.

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## ZLEPŠOVÁNÍ KVALITY SLUŽEB ZÁKAZNÍKŮM POUŽÍVÁNÍM TECHNIKY MYSTERY SHOPPING

Příspěvek je zaměřen na kvalitu služeb poskytovanou zákazníkům a speciálně na zákaznický orientovanou komunikaci při prodeji v České republice. Pro poskytování excelentních služeb musí organizace průběžně zjišťovat potřeby a přání zákazníků a kontrolovat prodejní proces včetně komunikace orientované na zákazníky. Účelem výzkumné studie bylo zjistit úroveň komunikace se zákazníky ve vybraných oblastech obchodu v České republice. Výzkum byl realizován v šesti regionech v malých i velkých městech v obchodech, které byly vybrány pro zjištění úrovně zákaznický orientované komunikace. Výstupy výzkumu ukazují, že za poslední roky došlo k pozitivním změnám v úrovni prodeje. Bylo také potvrzeno, že komunikace se zákazníky je lepší v malých obchodech proti velkým obchodům. Výsledky jsou významné pro management prodeje v zaměření na zlepšování prodeje. Využitelné jsou pro trénink prodejní síly a pro zlepšování kvality prodeje.

## VERBESSERUNG DER QUALITÄT VON DIENSTLEISTUNGEN MIT HILFE DER TECHNIK MYSTERY SHOPPING

Dieser Beitrag befasst sich mit der Qualität von Dienstleistungen, speziell mit der kundenorientierten Kommunikation beim Verkauf in der Tschechischen Republik. Für die Gewährleistung exzellenter Dienstleistungen müssen die Organisationen durchlaufend die Befriedigung der Bedürfnisse und Wünsche der Kunden sicherstellen und den Verkaufsprozess inklusive der kundenorientierten Kommunikation im Auge behalten. Der Zweck dieser Studie bestand in der Feststellung des Niveaus der Kommunikation mit den Kunden in ausgewählten Geschäftszweigen der Tschechischen Republik. Die Studie wurde in sechs Regionen sowohl in großen als auch kleinen Städten in Geschäften durchgeführt, welche für die Ermittlung des Niveaus der Kundenkommunikation ausgewählt worden waren. Die Ergebnisse der Studie zeigen, dass es während der letzten Jahre zu positiven Veränderungen des Verkaufsniveaus gekommen ist. Es wurde ebenfalls bestätigt, dass die Kundenkommunikation in kleineren Geschäften besser vonstatten geht als in großen. Die Ergebnisse sind wichtig für das Verkaufsmanagement, das Interesse an einer Verbesserung des Verkaufs hat. Sie sind hilfreich für die Ausbildung von Verkäufern und für die Steigerung der Verkaufsqualität.

## PODNOSZENIE JAKOŚCI USŁUG DLA KLIENTÓW POPRZEZ STOSOWANIE TECHNIKI MYSTERY SHOPPING

Artykuł poświęcony jest jakości usług oferowanych klientom a w szczególności komunikacji sprzedażowej zorientowanej na klienta w Republice Czeskiej. Aby świadczyć wysokiej jakości usługi organizacja musi na bieżąco badać potrzeby i życzenia klientów oraz dokonywać kontroli procesu sprzedaży, w tym komunikacji zorientowanej na klienta. Celem pracy badawczej było stwierdzenie, jaki poziom komunikacji z klientami występuje w wybranych dziedzinach handlu w Republice Czeskiej. Badania prowadzono w sześciu regionach w małych i dużych miastach w sklepach, które wybrano w celu zdiagnozowania poziomu komunikacji zorientowanej na klienta. Wyniki badań wskazują na pozytywne zmiany w zakresie poziomu sprzedaży, jakie nastąpiły w ostatnich latach. Ponadto potwierdzono, że komunikacja z klientami jest lepsza w małych punktach sprzedaży aniżeli w dużych sklepach. Wyniki badań mają znaczenie dla zarządzających sprzedażą pod kątem jej doskonalenia. Można je także wykorzystać w celu szkolenia sprzedawców oraz w celu podnoszenia jakości sprzedaży.

## METROPOLIS AS THE HIGHEST FORM OF SPACE ORGANISATION

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### Abstract

There has been a growing interest in metropolises due to their ability to, among other things, change the paradigm of economy. The aim of this article is to present the most essential aspects of the concept of a metropolis as a spatial and structural form. Special importance is given to the analysis of the process determining its establishment – the process of metropolitanization – with regard to the factors which trigger the process itself and to its environmental impact. The theoretical part of the study refers to the conceptual dissonance, which occurs in the source literature. Discussed will be mainly the concepts of the development of a metropolis, its definition frames, immanent features differentiating it from other cities, as well as the functions it serves in its environment.

### Introduction

Metropolises date back to the times of ancient Greece. City-states of those times founded city-colonies, for which they served as mother-cities, in other words – metropolises. A similar function for the inhabitants of lands conquered by the English was performed by England, London in particular. Currently, the notion of a metropolis carries different meaning – metropolises are places sending impulses for the development aimed at both the nearest communes and neighbouring metropolitan cities. Emerging metropolises are the evidence for the evolution of contemporary cities. Owing to their creative assets based on science, culture and technology, leading world and European metropolises generate economic increase and development, being hosts for the representatives of the so-called creative class. This capital makes them an attractive business location for international corporations, companies offering worldwide services or capital market centres [9]. Furthermore, it confirms the existence of supra-territorialization of economic, social and cultural links on a global scale [10].

The objective of this article is to present the most significant concepts concerning the establishment, development and functioning of metropolises. The cause-and-effect characterization of the metropolitanization process shall provide a starting point for a further discussion. The theoretical part explores the notion of the conceptual dissonance, which occurs in the source literature. Discussed will be mainly the concepts of the development of a metropolis, its definition frames, immanent features differentiating it from other cities, as well as functions it serves in its environment.

For the purposes of this article a desk research method in the form of a source literature analysis will be used.

## **1 The process of space metropolitanization**

There are several processes simultaneously affecting contemporary economy and determining its character. Apart from globalization, internationalization, liberalization and the process of despatialization, a growing attention has been recently paid to the process of metropolitanization [10]. It dominates current trends in reorganizing the existing settlement system in Europe [12]. Metropolises, which arise as a result of it, create innovation- and knowledge-friendly environment, which is indispensable in terms of achieving high levels of global socio-economic growth [6]. According to S. Korenik “Contemporary economy, based mainly on knowledge and creation of spatial economic networks, evokes significant but natural accumulation of any chosen socio-economic activities and phenomena. It results from an unparalleled concentration of the latest businesses and scientific and economic institutions in big metropolitan cities.” [5]

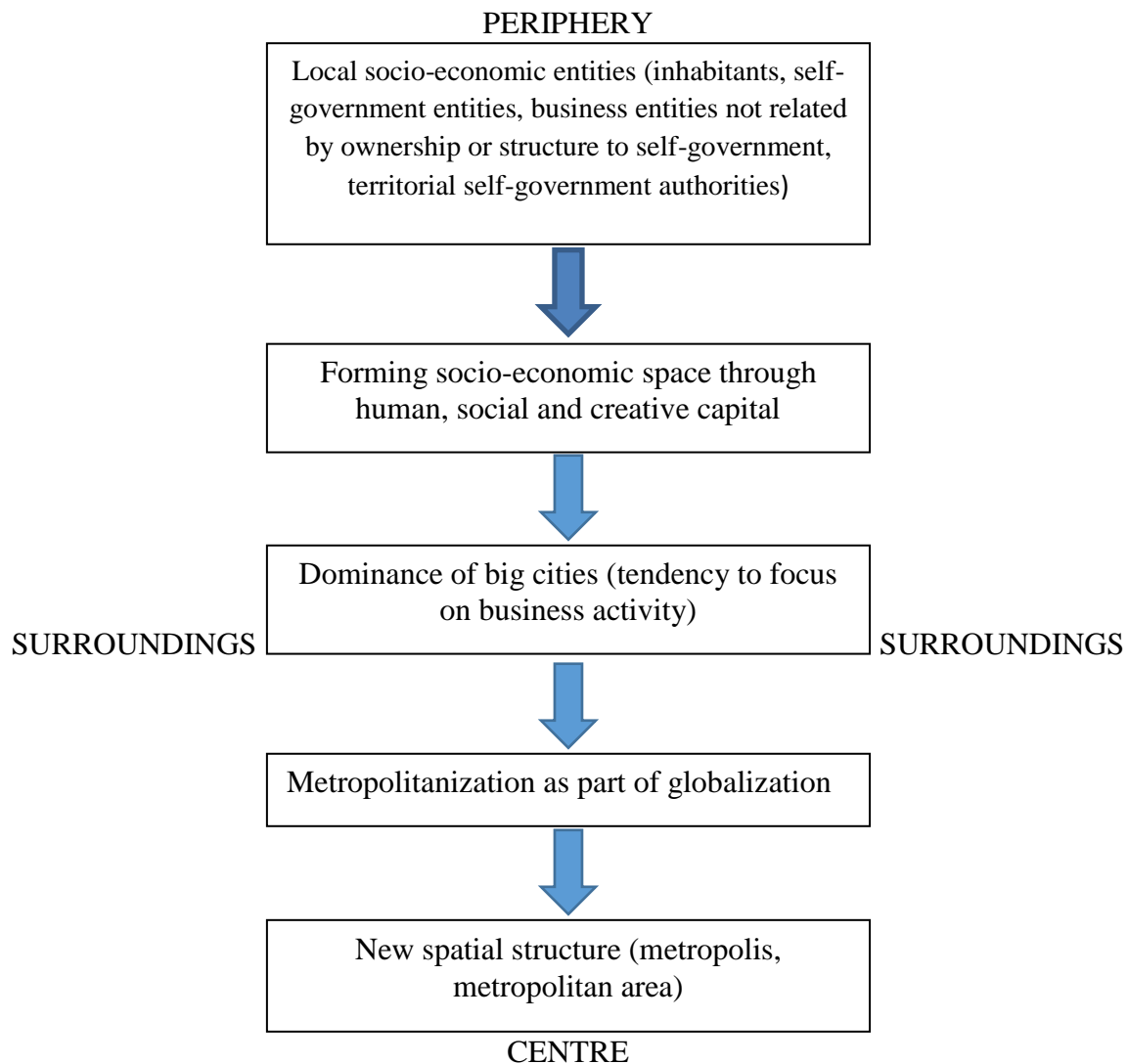
Preceded by urbanization, suburbanization, deurbanization and relative reurbanization, metropolitanization is the fifth and the last phase of a city development. It leads to the emergence of a new spatial structure and, consequently, change in the prevailing relation between the centre and the surroundings [5]. As a result, centres of local, continental and even global significance turn up, and some large cities take over executive functions in economy management. Metropolitanization is associated with internationalization of urban functions, indicated by the free trade of goods and services and international cooperation [3]. T. Markowski claims that metropolitanization is a functional – not morphological – notion, which implies the necessity to fulfill particular functions, as illustrated in Figure 1. It presents the metropolitanization process as a dynamic phenomenon, aiming at increasing the effectiveness of big cities and their surrounding areas [5].

It is important to emphasize that the metropolitanization process does not exclude urbanization seen as the process of cities emergence and the development of urban lifestyle connected with the economic growth. While urbanization is continuously in progress, it has been dominated by the metropolitanization process. It results in changes in the social and urban fabric not only within a metropolis, but also in the dependent regions. Hence, the problems with socio-economic space discontinuity lead to the polarization of the development and in consequence to the constant reinforcement of central places and diminution of the role of the regional base. The latter is limited solely to providing inhabitants of metropolises with residential and recreational facilities [9]. Therefore, the process of metropolitanization shall be considered twofold: as an emergence of mega-centre network of metropolitan cities serving global functions, and as freeing metropolises from the dependency on their regional base in order to establish contacts within the global mega-centre network of cities [12].

The causes underlying the metropolitanization phenomenon are as follows:

- changes in the nature of the social needs resulting from a higher standard of living;
- widespread use of individual car transportation;
- better efficiency of public communication;
- internationalization of service activities and strengthening links between metropolitan areas to contribute to the relations with regions;
- substantial social and ethnic differences;
- great mobility;
- changes in occupational structure of societies caused by servitization of economy;
- globalization;

- excellence of services, institutions and amenities;
- social fragmentation and polarization reflected by, for instance, the emergence of the so-called metropolitan class;
- technical, economic, social, political and cultural innovation capability;
- uniqueness of place;
- spread of urbanization to rural and suburban areas. [12]



Source: [4, p. 181]

**Fig. 1:** *Metropolitanization process of socio-economic space*

The process of urbanization is accompanied by transformations in the field of creating space, within a society and in the cultural sphere. These transformations involve the parallel occurrence of the following phenomena:

- accumulation of economic growth and workplaces in the network of international connections;
- despecialization of regional and urban economy determined by visible domination of the service sector;

- increased discrepancies between centres and periphery, and more frequent horizontal relations between metropolises;
- increased discrepancies between regions and cities, as well as within metropolitan areas, growing time and space differences between entities. [3]

## **2 The notion and characteristics of a metropolis**

Defining a metropolis is both an essential and difficult enterprise. The importance of such a definition is indicated by the growing significance of metropolises in, for instance, strategic documents of the European Union – the policy initiatives of the Lisbon Strategy have been mainly undertaken in metropolitan areas, with metropolises being at their core. However, the notion of a metropolis has been used arbitrarily. There is a tendency to associate metropolises with cities of relatively large populations, or to emphasize only selected metropolitan functions. From the review of definitions presented below it will become evident that both of these approaches are erroneous [8].

Not every big city deserves to be called a metropolis. The key qualitative indicators which have to be taken into consideration include the high quality technical infrastructure, a developed sector of high order services, innovation capability, and the uniqueness of the place. Big cities which do not comply with the above mentioned criteria are called “megacities”. This term, however, refers to the cities located in the developing countries.

The notion of a metropolis as presented in the source literature is frequently associated with the concept of a world city (proposed by J. Friedmann) and with the developed and modified concept of a global city (proposed by S. Sassen) [11]. Both concepts prove the predominant importance of cities in contemporary global economy as well as in economies of particular countries. According to them, the importance of cities is based less and less on their central functions towards the region, as it depends more and more on performing supra-regional managerial functions [9]. Other researchers, including B. Derudder, claim these to be two different concepts. The first accentuates the concentration of control functions in the city. On the other hand, S. Sassen emphasizes the key role of companies offering advanced information services in the economy of global cities [11]. Another view on a metropolis is presented by M. Castells. According to his theory, a metropolis of the 21<sup>st</sup> century is an information city characterized by the dominant space of flows in its industrial space. This space, described as the new industrial space, is highly innovative and constitutes an inherent part of modern economy [9].

Leaving aside the above discussion, it is possible to define a metropolis as the final stage of a city-agglomeration development. A metropolis is a mother-city in which new ideas emerge and crucial decisions of regional, national and international importance are made [7]. The minimum number of its inhabitants amounts to 500,000 [3]. Still being a city, it is characterized from the 21<sup>st</sup> century perspective, which values the growing diversity and interdependence of the urban cultural space and its links with local and global economy. By virtue of an impact on creating and spreading information and due to the circulation of international capital, the role of a metropolis is on the rise [9]. This, in turn, is reflected in the social structure, among others in a high level of permanent employment in the public sector and in large private enterprises [7].

One may look at a metropolis through the prism of its functions and in morphological terms.

European metropolises may be distinguished in respect of the flow of technologies, capital, knowledge, symbols, and concepts. They carry out the following functions:

- they take in foreign production factors, investments, labour force, goods and services;



- they host foreign companies, headquarters and subsidiaries of international enterprises, banks, non-government, academic and educational institutions, schools and universities attended by a vast number of foreign students, and also diplomatic posts;
- they export production factors, enterprises, banks, and other socio-economic, cultural and academic institutions;
- they have direct connections with the world through the network of transport and communication, the system of motorways, fast rail transport, international airports;
- having an expanded “infostructure”, they communicate intensively with foreign countries through postal and telecommunication services, and encounter with the flow of tourists;
- they offer a well-developed service sector aimed at foreign customers – convention and exhibition centres, luxurious hotels, international schools, high standard office space, international law firms, international academic institutions;
- they accommodate mass media with international coverage which operate within their borders;
- they regularly hold various international events – conventions, exhibitions, festivals, sport and artistic events presenting foreign theatrical groups;
- they host national and regional institutions of international recognition working on foreign relations, for instance, various associations and sports clubs;
- their branches in different cities abroad practise paradiplomacy via municipal and private institutions (for instance, membership in international organisations, such as city twins associations, metropolitan associations, etc.);

A synthesis of characteristic features of a metropolitan centre includes:

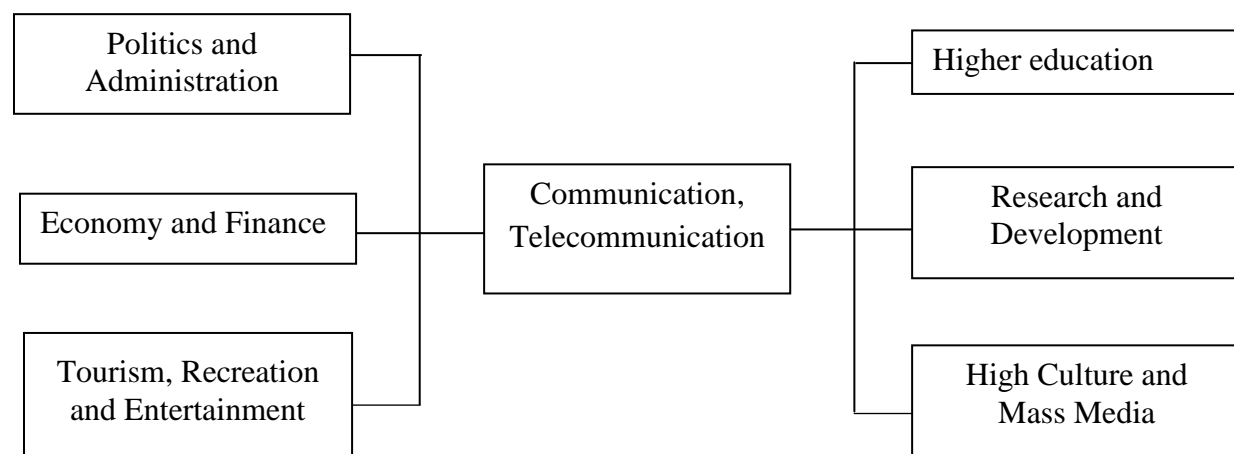
- carrying out particular service functions towards the national territory or, in large countries – a part of the territory, province or in macro-regional terms. Service functions concern specialized administration, finance and management of corporations, judicial system, education and culture. The influence on economy is not so unequivocally beneficial – some situations may trigger processes of “eluting”, draining regions, which occur with different intensity and consist of e. g. migration of young, educated staff and attracting majority of investments;
- inducing growth and qualitative changes in the immediate surroundings, in the neighbouring urban centres, and an emergence of new cities, international and global connections [13].

Apart from the functional aspect of a metropolis, national literature highlights also the quantitative criterion. According to the definition by B. Jałowiecki, a metropolis is “a large urban centre with a population of approximately 1 million people, distinguished by the excellence of services and infrastructure, innovation in all essential fields of its activity, and the character of a place” [2]. However, J. Słodczyk observes that “although urban centres as metropolises are distinguished by a considerable concentration of population, it is not entirely justifiable to determine the metropolitan character of a city by the number of people living in it. It is worth noticing, though, that the appropriate level of population is required to accumulate large-city functions”. He claims that when appointing a potential metropolis one should not regard the number of its inhabitants as a criterion, but as a prerequisite for identifying a metropolis. He also states that it is difficult to determine the level of population which would be necessary to consider an urban centre to be a metropolis [4]. A similar point

of view is presented by J. Pasek. According to him, the character of a city is determined not by its size, but by the developed metropolitan functions, which are ascribed solely to metropolises. Metropolitan or large-city functions are specialized ones. Their development is influenced by the resources either available in metropolises, or possible to be outsourced, which consist of mobile capital, including social capital (highly educated, specialized and experienced executive staff and workforce) [1]. These functions exist in the following fields:

- politics and administration – various administrative institutions located in a metropolis generate contacts between the region and its surroundings, and considerably increase its openness to the surroundings;
- economy and finance – metropolises constitute major economic and financial centres of regions, they arrange regional labour, services and property market;
- tourism, recreation and entertainment – metropolitan cultural space combined with the natural beauty of the region is crucial for the development of a tourism sector of national and international ranges;
- communication and telecommunication – metropolises are national and international communication and information centres; ICT (information and communications technology) accessibility of the region and its functioning in global information networks integrates regionality with globality;
- higher education, research and development – knowledge, innovations, scientific works and patents are all products of a metropolis; the majority of them are various intellectual products with the sphere of influence exceeding the region;
- high culture and mass media – metropolises act as multimedia centres and they enable social communication, establish a sense of regional identity and strengthen the contact between the region and the world [12].

Figure 2 illustrates the functions of metropolises and their mutual connections.



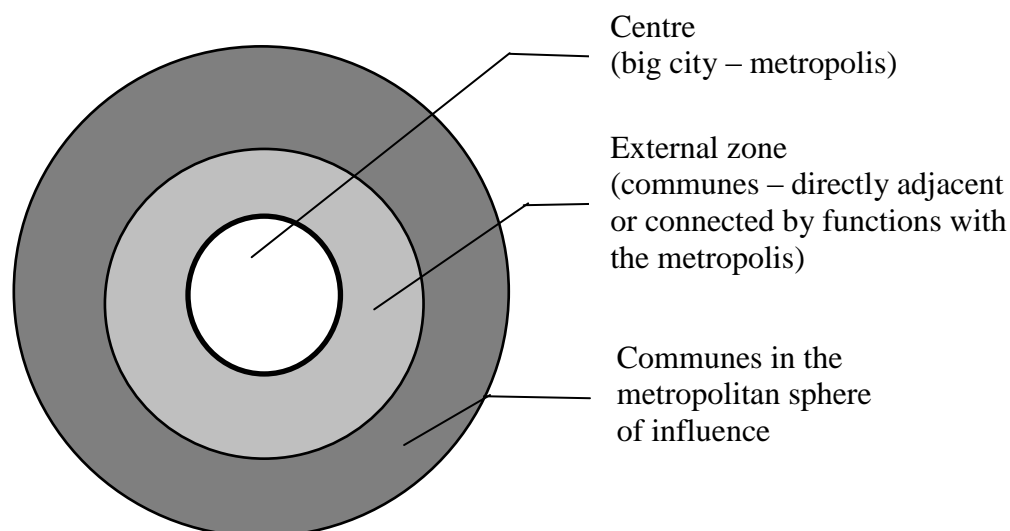
Source: [12, p. 48]

**Fig. 2:** Functions of metropolises and their mutual connections

Morphological approach, on the contrary, clearly distinguishes elements forming the structure of a metropolis:

- the central city, called also the central area – metropolis;
- external zone of entities - urbanized and integrated with the central area.

Figure 3 presents the structure of a metropolitan area with a metropolis in its centre.



Source: [6, p. 10]

**Fig. 3:** *Metropolitan area*

The central part (the core) of a metropolitan area is a city surrounded by a ring of suburbia, which is frequently associated with a sphere of daytime travel (mostly commuting). The area located outside the suburbia (periphery) serves recreational functions in relation to the metropolis. In addition to the centre and the external zone, there are also communes located within the metropolitan area. They also consist of communes gradually coming to the level of development represented by the communes from within this area. According to the morphological approach, a metropolis as a centre is a part of a spatially continuous urban settlement. It is functionally interrelated with this settlement through an urbanized area characterized by increased intensity of social, economic and spatial conflicts [1].

## Conclusions

Metropolitan cities are bound to attract much more attention in the future since they are one of the features of the contemporary economic landscape. In terms of Poland, where the issues of Metropolitan Act and metropolitan area management are raised with an increasing frequency. What triggers the city's evolution towards a metropolitan city is the process of space metropolitanization. Unquestionably, it brings about unique effects in the form of cities described by R. Florida as spikes of development. One should also acknowledge some negative phenomena accompanying this process, for instance the phenomenon of space discontinuity or belittling the role of the region adjacent to a metropolis. The process of metropolitanization calls forth transformations in the field of regional development. And as this fact is indisputable, questions arise in terms of defining metropolitan cities. Although there are convergent elements in the quoted definitions, a common approach concerning the quantitative criterion required for a metropolitan city has not been adopted yet. Indicating metropolitan functions seems a lot easier – in the sphere of politics, through tourism to mass media. They interweave, extending the influence of metropolitan cities to the surrounding area as well as to the remaining metropolitan centres.

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## METROPOLE JAKO NEJVYŠŠÍ FORMA PROSTOROVÉHO USPOŘÁDÁNÍ ÚZEMÍ

Stále více pozornosti je věnováno metropolím, což je mimo jiné způsobeno jejich vlivem na změnu paradigmatu ekonomického rozvoje. Cílem příspěvku je prezentovat nejvýznamnější otázky problematiky metropole jako územně-strukturálního celku. Východiskem je zde analýza procesu ovlivňujícího její vznik – procesu metropolizace uskutečněna z hlediska faktorů ovlivňujících jeho začátek a vliv procesu na okolí. Část věnovaná definicím řeší otázku rozdílných pojmů, se kterými se lze setkat v odborné literatuře. Jsou zde prezentovány koncepce rozvoje metropole, její definice, imanentní charakteristiky, které ji odlišují od jiných měst, a také funkce, které metropole plní ve svém okolí.

## DIE METROPOLE ALS DIE HÖCHSTE FORM DER ORGANISATION VON RAUM

Den Metropolen, die durch ihre Auswirkungen das Paradigma der wirtschaftlichen Entwicklung in beträchtlichem Maße zu beeinflussen im Stande sind, wird immer mehr Aufmerksamkeit gewidmet. Dieser Artikel präsentiert die wichtigsten Aspekte des Themas der Metropole als Form der räumlichen und strukturellen. Ausgangspunkt ist eine Analyse des Prozesses der Bestimmung eines Metropolisierungsprozesses durch das Prisma der Faktoren, die das Auftreten und die Auswirkung des Verfahrens auf die Umwelt bestimmen. Der dem definitorischen Aspekt gewidmete Teil befasst sich mit der Frage der unterschiedlichen Begriffe, denen man in der Fachliteratur begegnet. Es werden hier Entwicklungskonzepte für Metropolen, die Definition, die immanenten Eigenschaften, die sie von anderen Städten unterscheiden, sowie auch die Funktionen vorgestellt, welche die Metropole in ihrer Umgebung erfüllt.

## METROPOLIA JAKO NAJWYŻSZA FORMA ORGANIZACJI PRZESTRZENI

Metropoliom, za sprawą ich wpływu m.in. na zmianę paradygmatu rozwoju gospodarki, poświęca się coraz więcej uwagi. Artykuł ma celu prezentację najistotniejszych aspektów zagadnienia metropolii jako formy przestrzenno-strukturalnej. Jej punktem wyjścia jest analiza procesu determinującego jej powstanie – procesu metropolizacji przeprowadzona przez pryzmat czynników determinujących jego zajście oraz wpływu procesu na otoczenie. Część definicyjna porusza aspekt dysonansu pojęciowego, możliwy do zaobserwowania w literaturze przedmiotu. Przedstawione w niej zostaną koncepcje rozwoju metropolii, jej ujęcia definicyjne, immanentne cechy, które odróżniają je od innych miast, a także funkcje jakie pełni ona w otoczeniu.

## THE DIAGNOSIS AND IMPROVEMENT OF FINANCIAL LITERACY AMONG YOUNG PEOPLE

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### Abstract

Presenting financial knowledge and skills remains the condition for proper management of personal finance in a household and protects against financial exclusion. The purpose of this article is to diagnose the level of financial literacy among young people and to present the selected educational activities addressed to young Poles, which are supposed to improve their financial knowledge and skills. The review of the existing research and the results of the conducted survey confirm that financial literacy of young people in the Lower Silesia region is insufficient. Polish financial institutions perceive the need for implementing various mechanisms to upgrade the financial awareness among young people, however, the scale of carried out educational activities is far too small against the existing needs as well as characterized by randomness.

### Introduction

The problems of consumer awareness gained significance in the face of ongoing economic downturn, the increasing inequality and highly complicated financial products used in everyday life. In the opinion of Cate Lyons-Crew (Financial Inclusion Program Manager) "Financial literacy remains indispensable in order to function in a modern society and becomes increasingly important in a long-term perspective of an individual and the entire society decent existence." [15, p. 13]

In recent years the low level of financial literacy has become the subject matter of heated international debates, as well as recommendations and guidelines issued by the European Commission, OECD and the World Bank, and primarily has become the component of national development strategies in many countries all over the world. The last financial crisis, experienced at the turn of 2007/2008, revealed a very high level of financial illiteracy in most societies worldwide (OECD 2005 [22], 2009 [21]; The World Bank 2014 [33]; European Commission 2008 [25]). Furthermore, this crisis illustrated that the individuals presenting low level of financial literacy are very vulnerable to manipulation by both the official banking and shadow banking institutions, and also remain more often susceptible to bankruptcy and, in consequence, to poverty, therefore it seems founded to implement all sorts of mechanisms aimed at financial literacy improvement.

The purpose of this article is to diagnose the level of financial literacy among young people and to present the selected educational activities addressed to young Poles, which are supposed to improve their financial knowledge and skills. Financial education offers consumers the possibility for correct identification of opportunities and threats generated by the market of banking services. The method of subject literature analysis, including the reports issued by financial institutions, was used in order to meet the defined objective. Moreover, the selected results of the existing research in this area were presented, as well as the author's own survey addressed to a group of young people from the Lower Silesia region.

## 1 Financial literacy, financial capability and financial education – mutual relations

In order to meet the increasingly demanding market conditions and make both complex and difficult financial decisions, households have to present an adequate level of **financial literacy**. Foreign literature references discussing the problem offer several definitions of this concept. These definitions tend to emphasize the objective knowledge on specific topics related to money, economics, or financial matters, and also the subjective measures of self-reported confidence [27, p. 4]. In other words, financial literacy refers to the combination of skills and knowledge which facilitate undertaking well thought over and effective decisions by an individual and influencing his/her financial situation. The concept of financial literacy is frequently used as synonymous to **financial capability**, however, the latter has a broader meaning. Financial capability is an extensive concept, encompassing people's knowledge and skills necessary to understand their own financial circumstances, along with the motivation to take action. Financially capable consumers plan ahead, find and use information, know when to seek advice and can understand and act on this advice, leading to greater participation in the financial services market [13, p. 19]. By contrast, financial capability is generally understood to be a concept with three different components: financial knowledge and understanding, financial skills and competence, and financial responsibility [27, p. 4]:

1. **Financial knowledge and understanding:** The ability to make sense of and manipulate money in its different forms, uses, and functions, including the ability to deal with everyday financial matters and make the right choices for one's own needs.
2. **Financial skills and competence:** The ability to apply knowledge and understanding across a range of contexts including both predictable and unexpected situations and also including the ability to manage and resolve any financial problems or opportunities.
3. **Financial responsibility:** The ability to appreciate the wider impact of financial decisions on personal circumstances, the family, and the broader community, and to understand rights, responsibilities, and sources of advice or guidance.

Presenting adequate level of financial literacy constitutes an indispensable condition for proper management of personal and household finance, since it allows obtaining and maintaining financial stability. The results of conducted research confirm that the individuals with more extensive knowledge and better financial skills plan their future pension more efficiently, save larger financial means for this purpose, refrain from being tempted by self-control, and thus ultimately guarantee their future financial security (for more see: Hastings and Mitchell 2011 [12]; Lusardi and Tufano 2009 [18]; Lusardi and Mitchell 2006 [16], 2013 [17]; van Rooij et al. 2012 [34]). On the contrary, the households presenting low financial literacy are more vulnerable to excessive debt problems which, in a longer-term perspective, can result in financial exclusion. This term can be defined as personal or household inability to take advantage of the necessary financial services, along with ensuring that they remain appropriately tailored to the reported needs. Financial exclusion became the subject of analysis conducted by the European Commission, which published a report in March 2008 stating that financial exclusion refers to the situation of problems occurring in both access and opportunities to use adequate financial products and services, and in consequence a consumer is deprived of a chance to lead a normal life in a society [5, p. 9]. Low level of financial literacy is listed in the above-mentioned document as one of the reasons underlying financial exclusion.

Due to vital importance of financial literacy for households, for the general public and also for economy, this category was studied with greater detail and became the subject matter of numerous research and discussions. The attempts to measure financial knowledge and skills

of individuals were frequently undertaken, however, their results indicated clearly an insufficient level of financial literacy and confirmed the need for corrective measures in this area. For example, in 2005 the level of financial knowledge was diagnosed in an international scale by OECD. In accordance with its results, as many as 8 out of 10 people had an incorrect idea of interest rates or other credit costs, 5 out of 10 admitted they do not understand such financial products as mortgage, whereas 2 out of 10 were not able to provide correct answers to questions about inflation and interest rates on deposits [22, pp. 10–20]. The above-mentioned organization coordinates the Programme for International Student Assessment, which aims at obtaining comparable data about the skills presented by students over 15. It is supposed to result in an improved quality of teaching and education systems organization. The diagnosed knowledge and skills cover e.g. such areas as mathematics, nature, and starting from 2012 also finance [24, p. 13].

The results of research carried out by A. Atkinson, F. A. Messy in a group of 14 countries, including Poland, Czech Republic, Germany, Great Britain, Ireland or Hungary reveal the shortcomings in both financial knowledge and skills of Polish consumers, since their responses were in several aspects worse than in the majority of developed European countries. Low percentage of correct indications was predominant in comprehending the undertaken risk and risk-return relationship. Correct responses were given by only 48% of Polish respondents, while the respective number in other surveyed countries were as follows: Czech Republic – 81%, Germany – 79%, Great Britain 77%, Hungary – 86% [1].

Complex research on the level of financial literacy is also conducted in Poland, e.g. the report by Kronenberg Foundation at Citi Handlowy bank from 2009 [28]. Low level of financial knowledge in the group of poorest households [7, p. 9] was also confirmed by the research performed by the Microfinance Centre organization within the framework of “Financial Literacy for The Poor” project [20, pp. 36–37]. Moreover, Professor M. Iwanicz-Drozdowska and her team from Warsaw School of Economics were diagnosing financial literacy in the cross-section of occupational groups, e.g. among computer specialists, physicians, students and teenagers from upper-secondary schools [15, pp. 143–257]. Similar results were collected by B. Majewski, who was diagnosing financial literacy among students in primary and lower-secondary schools, and also observed an insufficient level of economic knowledge presented by this group [19, pp. 22–27].

In view of an unsatisfactory public level of financial literacy and having considered the continuously changing market of banking services, **financial education** should play an important role in any consumer’s everyday life. This type of education is responsible for our financial knowledge and skills, which allow moving from financial literacy to financial capability. The discussion of selected financial education definitions is presented in Tab. 1.

In general terms financial education increases financial awareness in several crucial areas. It facilitates proper income management, influences the development of saving cultures, determines investment habits, emphasizes the importance of financial planning and allows making comparisons of financial product offers in order to make most suitable choices tailored to individual needs.



**Tab. 1:** *The discussion of selected financial education definitions*

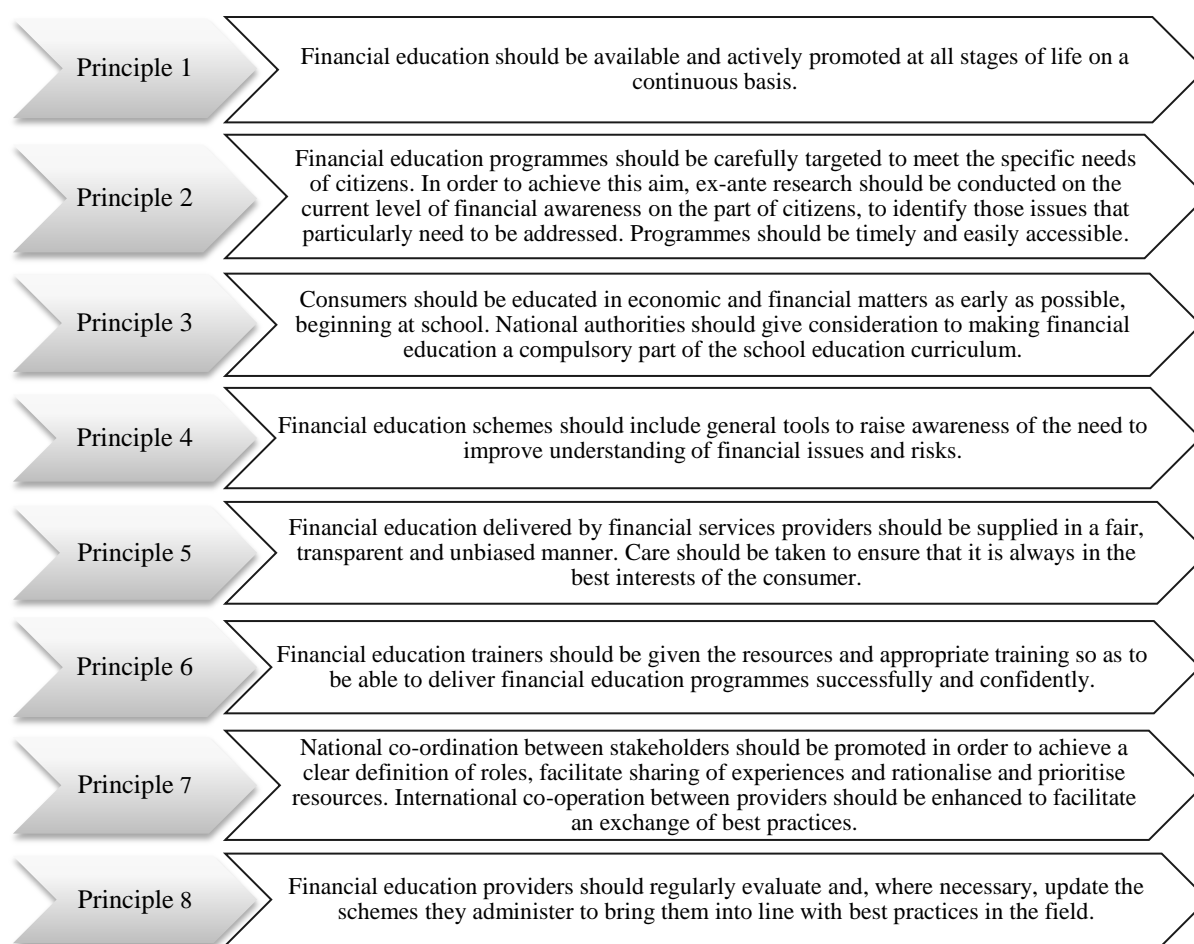
<b>Definition of financial education</b>	<b>Author (year)</b>
<i>Financial education is the process by which financial consumers/investors improve their understanding of financial products and concepts and, through information instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being</i>	Organisation for Economic Co-operation and Development (2005)
<i>the ability to make informed judgments and to take effective decisions regarding the use and management of money</i>	Australia and New Zealand Banking Group Limited (2008)
<i>A combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing</i>	OECD International Network on Financial Education (2011)
<i>“the capability of consumers and small business owners to understand retail financial products with a view to making informed financial decisions”</i>	Habschick M., Seidl B., Evers J. (2007)

Source: [2, p. 4], [11, p. 8], [14, p. 3], [22, p. 26]

Financial education should not be perceived as a substantive good, but rather as a public one, whereas financial awareness should become a universal resource of human capital rather than a dedicated one (terms used by: Wilkin 2010) [37, pp. 429–434]. In order to achieve that, adequate activities focused on financial education should be conducted not only by the State, within the framework of school classes, but also by financial institutions. In the latter case they come down to the implementation of the corporate social responsibility (CSR) concept. The European Commission published Green Paper on CRS in 2011 where corporate social responsibility is defined as the concept following which enterprises voluntarily implement strategies incorporating public interest, environment protection, as well as relations with stakeholders [4, p. 6]. Therefore, social responsibility is manifested in business not only by meeting formal requirements resulting from legal and economic rules, but also in undertaking socially expected and desirable activities. While observing market active financial entities it is noticeable that more and more of them incorporate the CRS strategy in their business strategies. Among the initiatives they undertake there are also these focused on financial literacy.

Both OECD [22] and the European Commission [3, pp. 7–9] recommended good practices, which should be used in the process of financial education. The Commission specified eight guidelines which can turn out helpful for the institutions involved in promoting financial education, in the course of developing and implementing financial education programmes (Figure 1).

Poland is regarded as one of the most active Eastern European countries in terms of initiatives aimed at upgrading public financial awareness. The selected programmes are discussed in Chapter 3.



Source: [3, pp. 7–9]

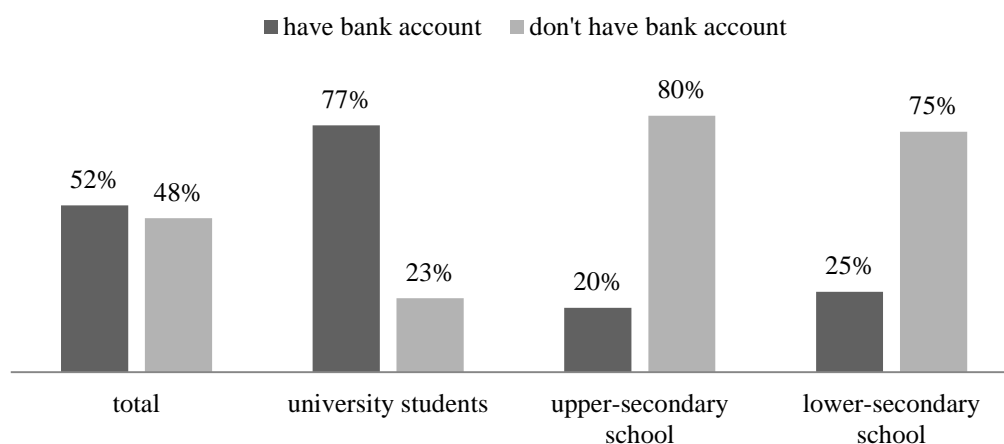
**Fig. 1:** Basic principles for the provision of high-quality financial education schemes

## 2 Financial literacy of young people in Lower Silesia in the light of the author's own research

A survey was conducted in order to analyse the level of financial literacy among young people. The respondents aged 13-24 attended schools and universities in Lower Silesia. The survey covered 110 respondents: 18% – lower-secondary school students, 27% – upper-secondary school students, and the remaining part of the surveyed group, i.e. 55% was made up of university students. Each person who took part in the survey had come across the basic financial terms taught during lessons at school in the course of particular education cycles.

The surveyed young people were asked to answer 13 questions related to financial issues, which allowed to define both subjective and objective level of the respondents' financial knowledge. Taking into account the respondents' structure by gender, the vast majority were females – 68%, the remaining 32% were men. The conducted survey indicates that 52% of the respondents have a personal bank account. It should be emphasized that the highest percentage of persons who had a bank account was true for university students – 77% of the surveyed students. Among lower and upper-secondary school students this percentage was much lower and amounted to, respectively, 25% and 20% (for more see Figure 2). The young people covered by the survey were also asked whether they receive any pocket money from

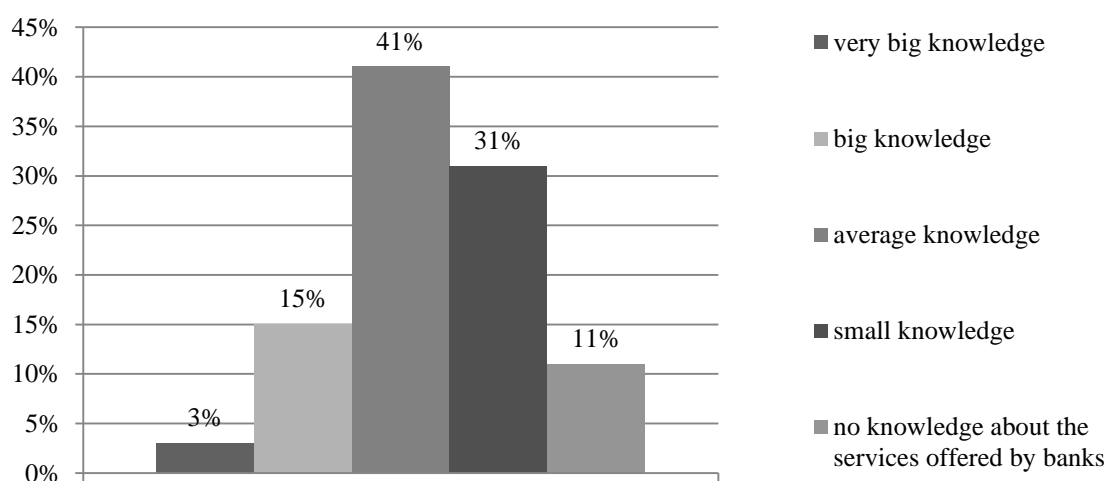
their parents on a regular basis, and if so, at what amount. The majority of respondents – 51% declined getting any pocket money from their parents. Among the remaining respondents young people receiving pocket money in the amount exceeding PLN 200 constituted the highest percentage.



Source: Own

**Fig. 2:** Having a bank account among young people

In order to analyse their subjective level of financial knowledge young people were asked to answer the following question: “How do you evaluate your knowledge about the services offered by banks (e.g. personal bank accounts, deposits)?” The response to this question is illustrated in Figure 3.



Source: Own

**Fig. 3:** Subjective level of financial literacy among the surveyed young people

The analysis of data presented in Figure 3 shows that the largest percentage of surveyed young people – 41% claim that their knowledge about services offered by banks is average, while 31% of respondents define their level of knowledge about financial services as low. As many as 11% of the surveyed revealed they do not present any knowledge at all about banking services.

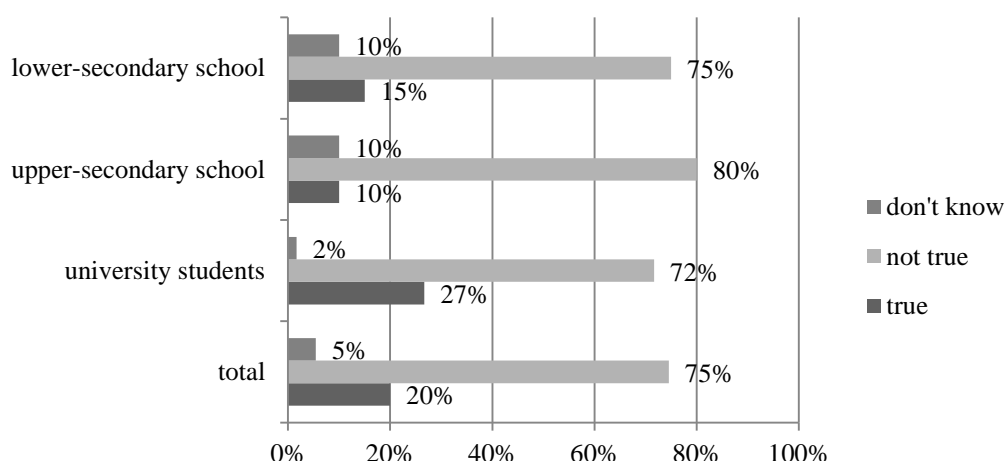
Determining an objective level of financial literacy among young people required them to express their standpoint about 12 statements related to the functioning of a financial system. These statements, including the provided responses, are presented in Table 2.

**Tab. 2:** *The results of financial literacy survey among young people*

Statement		Correct answer	Responses provided by young people		
			TRUE	NOT TRUE	DON'T KNOW
1	A person without permanent income cannot open a bank account	NOT TRUE	9%	85%	6%
2	Each bank charges a fee for running a bank account	NOT TRUE	37%	56%	7%
3	A person over 13 can open a bank account	TRUE	81%	7%	12%
4	A person who has access to online personal banking service can pay the bills (e.g. a phone bill) using a personal computer	TRUE	98%	0%	2%
5	A bank always charges a fee for cash withdrawal in an ATM	NOT TRUE	11%	74%	15%
6	Having a credit card is equivalent to being granted a credit limit by a bank	TRUE	52%	25%	24%
7	A credit can be taken only in a bank	TRUE	20%	75%	5%
8	Every adult holding all civic rights remains a creditworthy individual	NOT TRUE	29%	59%	12%
9	The level of interest rates on deposits and bank credits is influenced by interest rate changes announced by the central bank	TRUE	55%	10%	35%
10	Kowalski who set up a deposit of PLN 50 000 can lose the entire amount if his bank declares bankruptcy	NOT TRUE	49%	35%	16%
11	Investing in equity funds is riskier than a bank deposit	TRUE	58%	11%	31%
12	Out of two interest-bearing saving accounts at an annual interest rate of 4% a monthly rather than a quarterly capitalization of interest is a better option	TRUE	53%	14%	34%

Source: Own

Having analysed the data presented in Tab. 2 a conclusion can be drawn that the most problematic statement faced by young people was the one stating that: “A credit can be taken only in a bank”. As many as 75% of the respondents marked an incorrect answer, whereas only 20% provided a correct one. Unfortunately it is confirmed by the fact that the majority of Poles identify bank credits with loans granted by institutions representing the shadow banking sector. Therefore, they remain unaware that the law dedicated to borrowers’ rights protection, e.g. the Consumer Credit Act, does not refer to them. The results of responses given to the discussed statement, provided by particular groups of the surveyed young people, are presented in Figure 4.



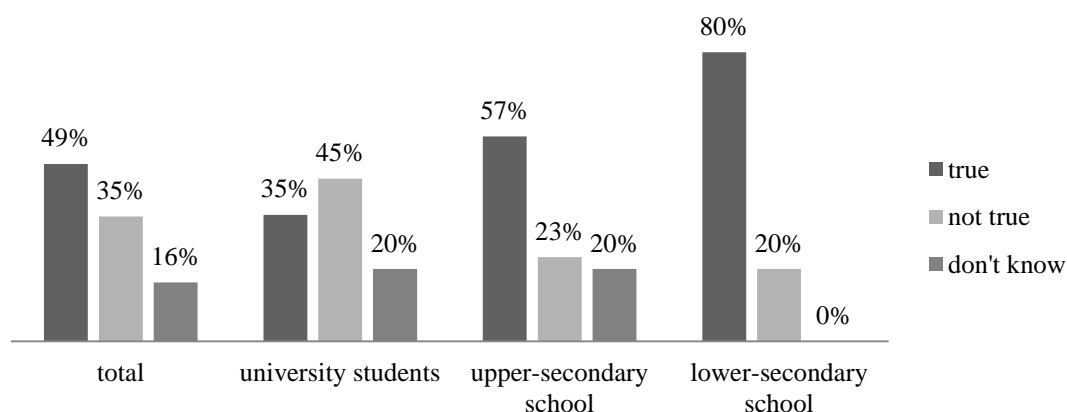
Source: Own

**Fig. 4:** The results of responses provided to the statement: “A credit can be taken only in a bank” in particular groups of young people

The analysis of Figure 4 confirms that among all analysed groups of young people the majority of correct responses to the statement that a credit can be taken only in a bank were provided by university students – 27%. The fewest correct answers were given by students of upper-secondary – only 10% of them were aware that it is a bank only which can grant a credit. Such low percentage of correct answers can result from the fact that the majority of juniors aged 16-18 are still living with their parents and do not have the need to apply for a credit, hence they do not have a thorough knowledge in this matter. The misconception that loans may grant other institutions than the bank can be also caused by the growing popularity of shadow banking offering products commonly called “Payday Loans”, although the lyrics are only loans, whose signing in shadow banking is much easier than in banks.

Attention is also an answer to the statement of youth: “Each bank charges a fee for keeping accounts”. Almost 40% of surveyed young people found that the fee that gets every bank. It follows from the fact that a large percentage of young people do not know that many banks by creating products “tailor made” needs of young people does not levy a charge account, thus giving the young people a chance to managed their savings. The lack of sufficient knowledge on this subject testifies to the fact that the financial competence of young people is not sufficient to make rational financial decisions.

Apart from checking the theoretical knowledge presented by young people it was also important to find out whether they can apply it in practice. It was tested by asking for their reaction to the statement: “Kowalski who set up a deposit of PLN 50 000 can lose the entire amount if his bank declares bankruptcy”. (Bank Guarantee Fund extends its guarantee over the deposits up to EUR 100.000 per one depositor, i.e. about PLN 400.000). The responses given by the surveyed, divided into particular age groups, are presented in Figure 5.

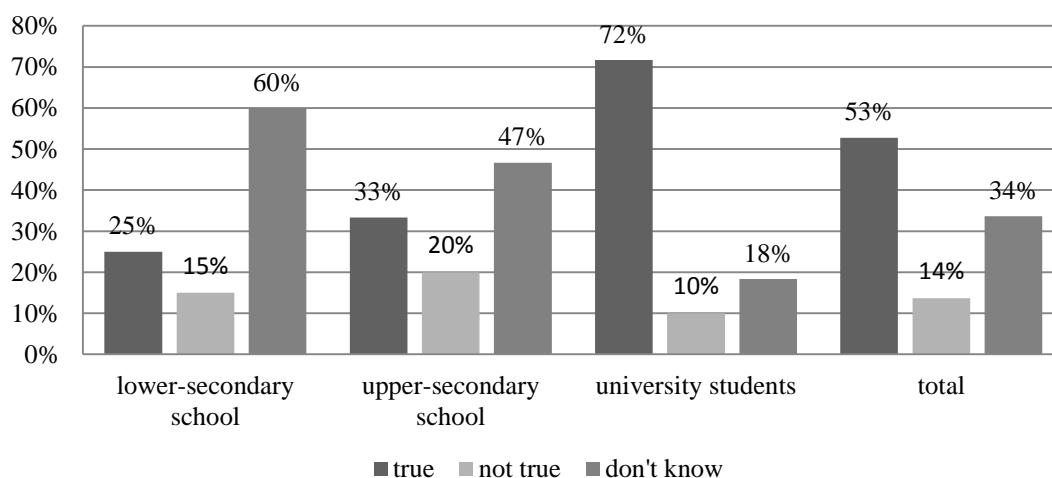


Source: Own

**Fig. 5:** The results of responses provided to the statement: “Kowalski who set up a deposit of PLN 50 000 can lose the entire amount if his bank declares bankruptcy” in particular groups of young people

The analysis of data presented in Figure 5 illustrates that the largest number of incorrect responses to this question was given by students of lower-secondary school – as few as 20% of them knew the right answer and as many as 80% marked the wrong one. The highest percentage of correct responses – 45% was given by university students. However, having taken into account that as many as 77% of university students have their own bank account, the percentage of them answering correctly is not impressive and proves that the vast majority of them do not present an adequate knowledge about depositing money at a bank account. An extensive proportion of the surveyed respondents (as many as 16%) did not know the answer to this question at all. It is clear from the answers given by young people, they do not know that the money that is collected on investments in domestic banks are protected by the Bank Guarantee Fund and if the Bank announce the bankruptcy, Fund will pay the money accumulated in the Bank within 20 days.

Practical financial literacy has been also tested by question 12: "Out of two interest-bearing saving accounts at an annual interest rate of 4% a monthly rather than a quarterly capitalization of interest is a better option." Answers given by young people are presented in Figure 6.

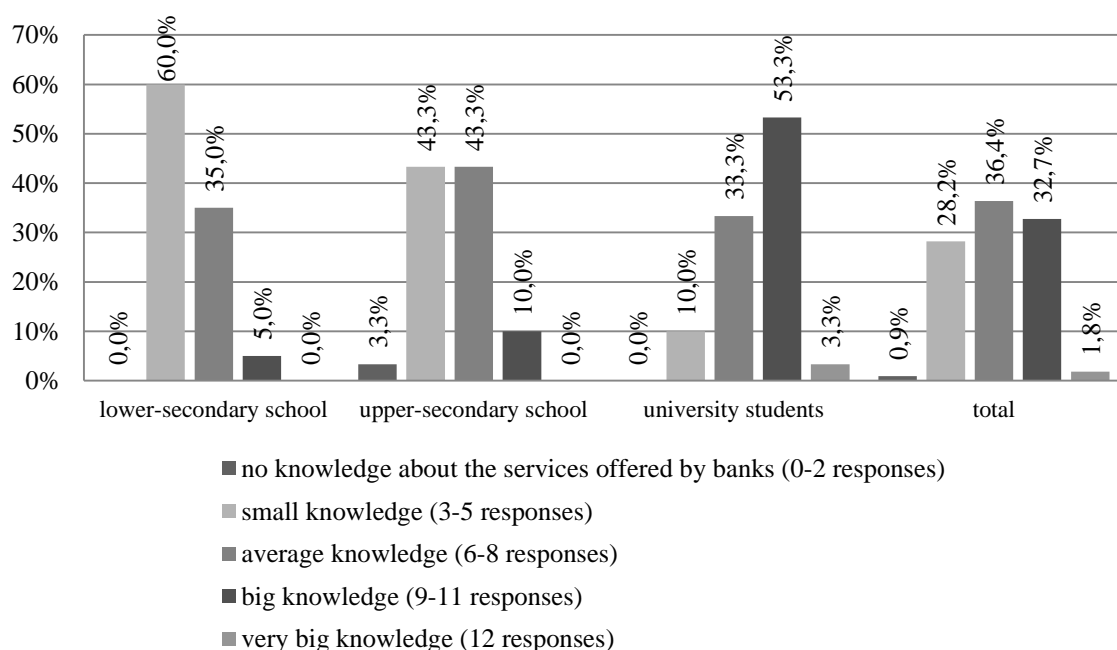


Source: Own

**Fig. 6:** The results of responses provided to the statement: “Out of two interest-bearing saving accounts at an annual interest rate of 4% a monthly rather than a quarterly capitalization of interest is a better option”

The analysis of data presented in Figure 6 shows that 53% of the surveyed young people knows the correct answer to this statement. However, it should be noted that as many as 34% of the respondents replied “don't know”. Among those respondents is up to 60% students from lower-secondary school, 47% students from upper-secondary school. Lack of knowledge on this topic may result from the fact that, for example, in the lower-secondary school among people who do not know the answer to this statement 50% of them do not have a bank account. There is also the possibility that surveyed young people who replied “don't know”, cannot indicate the differences between the quarterly and monthly capitalization of interest and therefore is not able to indicate which of the two savings accounts is a better option.

Subjective responses given by young people, in terms of their knowledge about financial issues from Figure 3, were compared against the answers provided by the surveyed respondents to the statements checking their objective level of financial competencies. The results of an objective level of such competencies are presented in Figure 7.



Source: Own

**Fig. 7:** An objective level of financial literacy determined based on the number of correct answers

The analysis of Figure 7 illustrates that only 1.8% of the surveyed young people present a very big knowledge about financial services. 32.7% have a big knowledge, whereas the largest percentage of the surveyed youth (36.7%) present an average knowledge regarding the discussed subject matter. Small knowledge in finance is characteristic for 28.2% of the respondents. Having compared the results illustrated by Figure 7 against the data presented in Figure 3, identifying the subjective level of financial knowledge, a conclusion can be drawn that they remain quite similar. Both objective and subjective knowledge presented by the majority of young people persists on an average level. This shows that the financial knowledge of young people is not sufficient to make rational financial decisions. Insufficient financial knowledge and a low percentage of young people having a bank account allows to believe that if this condition not change, young people will be exposed to financial exclusion in the future.

The results of the conducted financial literacy study show that an average level of financial knowledge represented by young people requires implementing numerous education

activities. They should be focused on extending both theoretical and practical knowledge of juniors explaining how the financial market functions.

### **3 Selected educational activities improving financial literacy among young people**

In 2003 OECD initiated an international programme for financial education which consists in organizing extensive activities aimed at popularizing knowledge and creating positive habits among citizens resulting in proper decisions related to their personal finance management, as well as their ability to take advantage of their financial means according to their current and future needs. One of the after-effects of this programme was the document, published in 2005, which presents principles and good practices in the field of financial education (for more see [23, pp. 1–7]). Three years later the *International Network on Finance Education* (INFE) was established, which promotes and facilitates cooperation in financial education worldwide. This organization was bringing together over 200 institutions from 90 countries in 2012. Its activities focused on raising literacy regarding the vital role of financial education in fighting financial exclusion resulted in developing, in many countries, national strategies for financial education, among others in Austria (introduced in 2011), Brazil (2010), The Czech Republic (2010), Ghana (2009), India (2006, 2010), Japan (2005), Great Britain (2003), USA (2006, 2011) [10, p. 12].

Unfortunately so far (August 2015) such document has not been developed in Poland and thus clear educational goals have not been defined as yet. Moreover, the specific subjects to teach within the framework of financial education curricula have not been identified either. Diverse institutions have been attempting to carry out this task, starting from the Central Bank, through banks, insurance institutions, colleges, various foundations, associations, NGOs, even including municipalities. However, all these initiatives are not coordinated in any way at the national level, the obtained results are not monitored and the absence of empirical data prevents performing an overall analysis and assessment of their implementation effectiveness.

The next part of the study discusses selected nationwide educational programs which will facilitate knowledge advancement and skills improvement of the youth. Among them the following programs can be listed:

- “Everyday economics” – the programme aimed at upgrading economic knowledge among lower-secondary school students. As a result of their participation in this programme young people prepare themselves for making rational economic decisions, they learn to comprehend processes occurring in economy and also to manage properly the resources at their disposal on a daily basis. This programme implementation allows developing entrepreneurial attitudes among young people. The programme is carried out by the Foundation of Junior Entrepreneurship in cooperation with the National Bank of Poland. In 2013/2014 school year 105 600 students and 2400 teachers from 1156 schools took part in it [9, p. 13].
- “My finance” – financial education programme carried out in upper-secondary schools dedicated to preparing teenagers for rational management of their financial means. Owing to its wide range of impact this programme offers a response to public demand for financial education. Due to this initiative it is possible to educate the society and prepare it for more effective management of the resources at its disposal. Students participating in this programme:
  - acquire knowledge about investing in bonds and investment funds,
  - learn about basic banking products, such as a credit or a deposit,



- gain skills allowing for proper analysis of the consequences resulting from their financial decisions.
- This programme is carried out during a school year in 6 thematic modules covering e.g. such issues as investing or saving. In 2013 a special online platform was developed to offer interactive educational information for 4 out of 6 implemented thematic modules. Kronenberg Foundation and the National Bank of Poland are responsible for this programme's financing, whereas its implementation at schools remains the task of the Foundation of Junior Entrepreneurship. In 2013, the number of students who took part in this programme amounted to 129 899 and the programme itself was executed by 1510 teachers at 956 schools all over Poland [8, p 19].
- “Task league” – the project carried out by the Foundation of Bank Zachodni WBK in cooperation with the Institute of Mathematics at the University of Warsaw addressed to students of primary, lower-secondary and upper-secondary schools. Every month during the entire school year students participating in this project attend a new series of mini lectures, which cover financial and economic issues, followed by solving problems online related to problems discussed during lectures. Their topics are adjusted to issues currently discussed both in Poland and in Europe. In 2013 such lectures covered, among others: tax reliefs, leasing, Euro currency, or setting up a business. In 2013 the foundation allocated the amount of over PLN 14 000 to this project implementation [31, p. 4].
- “BAKCYL – Bankers for Financial Education of Young People” – the project was implemented to commemorate the 20th anniversary of Warsaw Institute of Banking. It takes the form of a long-term partnership involving institutions representing the banking sector to upgrade the level of knowledge among young people in the field of finance. In 2014, this projects was distinguished in the Competition of the World Leaders in Banking in terms of business corporate responsibility. Its objective is to support schools in extending young people's knowledge in the domain of finance to raise their awareness about participation in the contemporary world of finance. The programme is supposed to introduce juniors into the area of finance and teach them skills in taking advantage of financial services tailored specifically for them. During BAKCYL lessons the following topics are discussed:
  - Your money – teaches juniors how to plan their budget, distinguish such terms as income and expenditure, as well as become aware of the advantages resulting from having savings,
  - Borrow smartly – teaches the skill of rational borrowing, only for the stuff which is really indispensable, to become aware of the real costs involved in taking a credit and the need to repay it in the future, to learn how to use banking products safely,
  - Finance for life – the theme allowing young people to comprehend the need for planning their financial resources at every stage of life, to identify the needs and benefits resulting from planning them.
  - Smart investing – shows students the difference between saving and investing, explains the meaning of risk in banking to be fully aware of its existence.
- In 2014 the following banks acted as partners in this programme: Bank BGŻ, Bank Pekao, Bank Millennium, Deutsche Bank Polska, ING Bank Śląski, mBank, Raiffeisen Polbank and more. In 2014 31 schools took part in the programme in Mazowieckie, Łódzkie and Lubelskie regions, 206 lessons were taught in 67 classes [35, pp. 1–4].

The Internet portals also participate in educational activities carried out to upgrade young people's financial competencies, e.g. the Portal of Economic Education NBPortal, the mission of which is to disseminate knowledge about economy, market mechanisms, the functioning of banks and financial markets. It was established in 2004 as an initiative of the National Bank of Poland and since then it was visited by over 10 million people. The educational offer prepared within the framework of this programme responded to the needs of lower-secondary and upper-secondary school students, university students, as well as teachers contributing to the development of these 3 groups of young people. The application of interactive and multimedia tools allows young people to extend their knowledge of economic problems, and also facilitates informed participation in the financial sector. Juniors visiting this portal have a chance to read numerous articles about the financial system's functioning, play interesting educational games, do quizzes offering interesting knowledge about finance in a simple way [26]. In 2013 this portal was visited by 630,753 users [32, p. 71].

Attention should also be paid to a nationwide campaign held in Poland and entitled "A week for saving". It is a media enhanced campaign promoting the idea of saving money and rational finance management among the Polish population. The project is carried out by the Kronenberg Foundation at Citi Handlowy bank in cooperation with the THINK Foundation. This venture remains one of the few nationwide educational activities promoting saving and rational management of personal financial means. Its purpose is to make people, including juniors, aware that skilful finance management allows both protecting and multiplying the financial resources at one's disposal. The campaign focuses on promoting practical financial skills related to opening a bank account or personal finance planning. In 2013 the campaign covered 4870 participants by its direct activities. Within the framework of taken up actions upper-secondary school students participated in various debates and competitions [8, pp. 20–21].

It should be emphasized that the activities discussed in the hereby article are not the only initiatives aimed at the improvement of financial competencies among Polish young people. Moreover, the analysis of diverse source documents confirms that each year more and more such educational programmes are being offered.

## **Conclusion**

The research conducted in a group of young people from Lower Silesia region proves that the level of financial literacy remains insufficient and similar to the subjective perceptions of the respondents. It confirms the thesis that both financial knowledge and skills should be taught since the earliest years. In relation to children it can take the form of economic socializing, whereas with reference to secondary school and university students economic education becomes vital, including the one executed by financial institutions. Economic socialization, in the opinion of Roland-Levy, refers to the so-called economics for unprofessional individuals, also referred to as naive economics [29, p. 277]. It allows learning about the value of money and the rules for one's own means management. It most frequently happens through observing adult behaviour and facilitates obtaining skills useful for independent life.

Economic socialization stands for constructing deep financial awareness, i.e. proper habits to be additionally developed in the process of education [6, p. 100]. The review of educational activities carried out in Poland and offered by financial institutions confirms that they perceive the need for upgrading financial literacy among young people. They are manifested by higher confidence in the financial system or the possibility to attract future clients originating from the educated group. Nevertheless, the scale of undertaken educational activities is far too small against the existing needs and characterized by randomness.

Fighting financial illiteracy results in numerous advantages, not just for households or financial institutions, but also for the State [36, p. 7]. It allows, among others, to alleviate the effect of imperfect consumer legal protection and subsequently reduces the need for including the State in the financial market regulation. Financial education remains directly related to financial inclusion constituting the background of responsible finance, for more see Solarz (2013) [30, pp. 156–166].

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## vyhodnocení a zdokonalování finanční gramotnosti mládeže

Finanční znalosti a dovednosti jsou podmínkou správného nakládání s finančními prostředky domácnosti, chrání před finanční exkluzí. Cílem tohoto příspěvku je vyhodnocení míry finanční gramotnosti mládeže a prezentace vybraných vzdělávacích aktivit zaměřených na mladé Poláky, které mají zdokonalit jejich finanční znalosti a dovednosti. Dosavadní průzkumy a výsledky uskutečněného dotazníkového šetření dokládají, že finanční gramotnost mládeže z Dolního Slezska je nepostačující. Polské finanční instituce vnímají potřebu vyvíjení různých mechanismů pro zvýšení finančního povědomí mladých lidí, nicméně rozsah uskutečňovaných vzdělávacích aktivit je příliš malý vzhledem k potřebám, a je také náhodný.

## BEWERTUNG UND AUSBILDUNG FINANZIELLER FÄHIGKEITEN DER JUGEND

Finanzielle Kenntnisse und Fertigkeiten bilden die Bedingung für eine ordnungsgemäße Verwaltung des persönlichen Haushaltsgeldes und schützen gegen finanzielle Ausgrenzung. Das Ziel des Beitrags ist es, das Niveau der finanziellen Kompetenz der Jugendlichen einzuschätzen und die – an junge Polen adressierten – ausgewählten Bildungsaktivitäten vorzustellen, die ihr finanzielles Wissen und Können vervollkommen sollen. Eine Überprüfung der bisherigen Forschung und die Ergebnisse der durchgeführten Umfrage haben bewiesen, dass die finanziellen Fähigkeiten der Jugend aus Niederschlesien nicht ausreichend sind. Die polnischen Finanzinstitute erkennen die Notwendigkeit, artverschiedene Mechanismen, die das finanzielle Bewusstsein junger Leute steigern, anzunehmen. Nichtsdestotrotz ist aber das Ausmaß der laufenden Bildungsaktivitäten in Bezug auf die Bedürfnisse zu klein und es zeichnet sich durch Zufälligkeit aus.

## DIAGNOZA ORAZ DOSKONALENIE KOMPETENCJI FINANSOWYCH MŁODZIEŻY

Posiadanie wiedzy i umiejętności finansowych stanowi warunek właściwego zarządzania finansami osobistymi gospodarstwa domowego, chroni przed wykluczeniem finansowym. Celem artykułu jest zdiagnozowanie poziomu wiedzy finansowej młodzieży i przedstawienie wybranych działań edukacyjnych skierowanych do młodych Polaków, które mają doskonalic ich wiedzę i umiejętności finansowe. Przegląd dotychczasowych badań oraz wyniki przeprowadzonej ankiety dowodzą, że wiedza finansowa młodzieży Dolnego Śląska jest niewystarczająca. Polskie instytucje finansowe dostrzegają potrzebę podejmowanie różnego rodzaju mechanizmów podnoszenia świadomości finansowej młodych ludzi, niemniej jednak skala realizowanych działań edukacyjnych jest zbyt mała do potrzeb i cechuje ją przypadkowość.

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