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Jacek Raciborski, Wojciech Rafałowski

State identity in Europe today: Some determinants

Abstract

Objectives: The article is aimed at studying the differentiation of the strength of state identity in selected European countries and attempts to explain the observed tendencies.

Research Design & Methods: The empirical part is based upon three waves of the International Social Survey Programme entitled 'National Identity'.

Findings: The results show that state identities in Western European countries are well-developed. Central/Eastern European societies are characterised by lower levels of state identity than Western European ones. We attribute this phenomenon to legacies of the past, especially the to many centuries of economic underdevelopment of the region that was enhanced increased by communism and low levels of social capital in Eastern European societies.

Contribution: This study links the state identity of citizens of European countries with their living conditions and past legacies.

Article Classification: Research article

Keywords: state identity, national identity, social capital, communist legacy, post-communist countries

JEL classification: H1, H4, P3, P5

Introduction

There are group identities. Among them national identities are particularly strong and expansionary. National identity was born in Europe as an effect of industrial and national revolutions and has ever since been very strongly bound together with civic identity (Habermas, 1994). As a consequence citizenship has acquired a double status. It indicates the legal status of an

individual, its main feature being the assignment of the individual to a particular country (political status). It also signifies the state of appurtenance to a culturally-defined nation. This belonging results in a mental bond of the individual to the group that constitutes the nation-state. However, particular European societies may vary by the significance of the cultural and political dimensions in building their national identity. Gerard Delanty is willing to recognise the primacy of the cultural factor, 'the political identity of the individual is shaped less by his or her relation to the state, as an apparatus of power, than to the nation as a moral community' (Delanty, 1995, p. 161). This issue is an empirical one which we raise in a further part of this article. In particular European countries the state-building and nation-building processes proceeded differently, which may affect the strength of the civic and

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cultural dimensions in construction of this form of collective consciousness traditionally referred to as the national identity (Tilly, 1975; Gellner, 1983). Regardless of the big wave of the return of nationalism currently observed in Europe that attenuates the civic dimension as a source of national solidarity, there is rationale behind seeing the opposite process: the releasing of civic identity from under the weight of national consciousness (Delanty, 2000; Habermas, 1992). The question of the components or dimensions of national identity is subject to lively debate in literature (Kunovich, 2009; Jones & Smith, 2001; Hjerm, 1998). The opposition that is most commonly exposed is one between the ethnic and the civic conceptions of the nation and, accordingly, ethnic, and civic identities (Brubaker 1996; Shulman, 2002; Zubrzycki, 2001).

The main contribution of this article is a proposition of a novel concept of state identity as an individual-level phenomenon, theoretically linking the prevalence of attitudes related to the latter to both past legacies and contemporary living conditions of citizens and empirical demonstration of its diversity among the nations of Europe as well as that which people experience in their everyday life as having a crucial role in determining the intensity of state identity.

Defining state identity

Based on the given inspirations, in the conceptualisation of our research we propose a distinction between ethnic identity, based on individual relations to a culturally-understood ethnic community organised within a state (language, values, myths, common past), and state identity, whose foundation is the relationship of citizens with the state as a community of citizens. We treat these forms of identity as relatively autonomous dimensions of national identity that can be studied separately. In this article we want to focus on the state identity. This requires the indicating of the means of manifestation of state identity in the consciousness of individuals. Typical in-

dicators of the connection of an individual to the state are as follows: a) the awareness of belonging to a particular country and a sense of connection with that country; b) the awareness of one's rights and obligations, the belief that citizenship is 'the right to have rights' (Arendt, as cited in Somers, 2008, p. 5); c) the belief that the state, whose citizen one is, is better than other countries in some important respects; d) location in a geographical space defined by the borders of the state ('state is merely and essentially an arena, a place,'; Mann, 1984, p. 187); and e) a tendency to activity within the structures of a civil society (Turner, 1993; Shotter, 1993; Somers, 2008).

What we suggest here is a distributive understanding of state identity, as a form of group consciousness that manifests itself at the individual level as a set of beliefs about the state and the citizens composing the nation-state. We directly refer to the social identity theory of Henri Tajfel (1981): individuals perceive themselves as belonging to some social categories, they identify with other persons belonging to those categories or at least they refer to them, they share some beliefs and emotions with them and their 'I' includes a vital feature of 'we'. Therefore, individualistically understood state identity has a social characteristic in the sense that it is socially endowed and confirmed in the course of everyday interactions. It is derived from some normative patterns included in state-disseminated ideologies through, for example, the education system (Acuff, 2012).

The concept of 'state identity' is congenial to 'state identification'. We assume that the former refers to identity understood as 'I', 'Self' or to a certain self-knowledge of the agent consisting of relatively stable beliefs of an individual about themselves and their attitudes towards the state and fellow citizens. The concept of 'state identification' refers to the process of self-recognition and identifying oneself as a member of a particular civic community; the emphasis here is on the action, the process – phenomena limited in time and variable. Identification defined as such does not

have to be connected with an affective attitude towards the community.

Within the preliminary considerations, it is necessary to emphasise that the meaning we hereby assign to the concept of state identity is different from the sense of this term in the theory of international relations. There state identity will be a feature of a particular country that is considered, with reference to the legacy of Max Weber, as an organisational actor which is characterised by solid traits and interests which guide the actor's actions. Alexander Wendt (1999, pp. 193–245), one of the main proponents of this idea, emphasises that the process of anthropomorphising the state is entirely justified and is much more than just a metaphor. Thus understood, state identity is also subject, like individual identities, to the process of confirmation by significant others. These are the other countries that together form the international system.

In our understanding the state is also a collective actor, but it is all about how the citizens refer to it, not what the behaviour towards the state displayed by other collective entities (e.g. corporations or labour unions) is. For citizens the state is that which locates them in the social and political space; an object invoked by individuals in response to the standard identity question 'Who are you?'. So when we hear the answer 'I am Russian/Polish/French', we interpret it primarily as an indication of the membership of a country: citizenship.

Theoretical argument

The basic questions of our article are as follows: 'What is the differentiation of the strength of state identity in contemporary European societies?'; 'What would explain this diversification across countries?'; and 'Are these identities permanent or is their strength changing?'.

Our expectations are based on the assumption that the intensity of individual attitudes of state identity has its roots in both the past processes and contemporary living conditions in a country. The former matters simply because the formation of states and nations leading to the nation-state

phenomenon lasted for centuries. The latter is expected to play an important role, because the state constitutes the environment for every individual to live, develop, and prosper. In the following paragraphs we provide detailed hypotheses regarding these factors.

The point of departure for legacy-based expectations is a well-known distinction between two main paths leading to a modern nation-state. One, typical for countries such as France or England, commenced when an existing state (a medieval monarchy) developed its bureaucracy so it could effectively exercise authority over its territory. The clerks and formal institutions such as the state-managed education system were the factors building the bond with a larger entity resulting in the emergence of the nation-state.¹ Another path was typical for countries such as Germany or Italy and began with a cultural awakening of the national consciousness lead by artists, poets, and philosophers who preached the idea of an ethnic 'Volk'. This process created attributional grounds for a nation-state constituting the national habitat.

Both paths were elite-driven, although the former model relies on actions of elites with real political power and the latter involves intellectuals who possess no actual authority. These two models explain relatively well the formation of national and state identity in Western Europe. In the countries which followed either of these routes the junction of the national and the civic is not problematic (Linz & Stepan, 1996, pp. 28-9).

Eastern Europe had experienced a path that didn't follow either of the aforementioned models. The medieval monarchies succumbed to the reign of great foreign dynasties such as the Habsburgs, the Hohenzollerns, the Romanovs and the Ottomans. Their lieges were of diverse ethnic origin, speaking often dissimilar languages and professing various religions.

¹ A detailed discussion of the role of education in creating national identity can be found in Darden and Grzymala-Busse (2006, pp. 90–4) and Gellner (1983).

The ideology of nationalism may have penetrated the empires, but because of the multidimensional diversity of the societies it was not possible to follow the exemplar of France or England. Also, the cultural distance between the elite and the vast population of the empire was too broad to allow the creation of a national bond. The only state that peoples in Eastern Europe could have thought about as their own and relate to was the memory (or a myth) of a medieval entity. Thus the only possible reaction to the spread of the national ideology was the creation of a German-like conception of 'Volk' (Crawford & Lijphart, 1995, pp. 186-7). The postulate of creating an independent habitat – the nation-state – followed; although it could have been only achieved by releasing from the dominion of the empire. The notion of a nation resulted from this process was based on cultural features such as language, religion or customs. Nascent Eastern European national identities were not as strongly bound with the civic identity as in the West. Thus, based on the argument developed so far we expect the state identity in Eastern Europe nowadays to be significantly weaker than in Western Europe.

The nation-states in Eastern Europe blossomed after the end of World War I. The modernisation theory would postulate the model of nationhood to converge with the one observed in the West. However, the process was inhibited by World War II and the new division of the continent. Countries behind the Iron Curtain fell under the rule of the new Soviet empire. Can the differentiation of state identity in Europe be considered a legacy of the communist ideology based on Marxism? Marxism turns against the state, because it constitutes the main instrument of class exploitation. It promotes a vision of classless and stateless societies, and it is also suspicious of any national ideologies.

This set of beliefs was not disseminated in communist countries, with the exception of the first decade of communism in the USSR. The circulated ideology was that of national Bolshevism and its various local alterations that existed in particular countries of the empire. In practice, communism

was trying to build national pride on the one hand, which was aided by an intrusive propaganda of success and a specific historical policy, and, on the other hand, to strengthen the citizens' bond with the state. With time, communist nationalism became a better and better instrument of control over societies, as well as it supplanted internationalist contents, and constituted an important legislative resource for the authorities of individual countries (Anderson, 1991).

It is also worth noting that the rudimentary sources of political authority in communist countries were not local. With some notable exceptions, such as Bulgaria, the communist parties were either perceived as agents of foreign control or governing against the interest of the nation. The peoples of Eastern Europe once again stood against states that weren't theirs. Consequent changes of political borders in the region in the 20th century also affected the formal civic status of many people. If one holds three different citizenship in a lifetime, that is supposed to make his/hers state identity weaker (Linz & Stepan, 1996, p. 29).

Another legacy-based hypothesis that is well-grounded in theory, and one that can be applied to explain the differences in state identities, refers to Max Weber's famous thesis about the impact of Protestant ethics on people's social practices in the economic sphere. Although the process of secularisation is advanced in Europe, not only are current religious practices significant for a range of values of particular societies, but what is also important is the religious tradition dominant in a given society (Norris & Inglehart, 2004; Rusciano, 2003, pp. 365–6). In our analysis we accept a simple division of European countries into those with Protestant and non-Protestant (i.e. Catholic or Orthodox) traditions, respectively. We expect the countries with dominant Protestant traditions to maintain stronger state identity.

However, a question remains: 'What is the mechanism that translates the Protestant tradition into a greater satisfaction with the citizenship of and pride in the achievements of a country?' Many sociological beliefs in special virtues of the

Protestant societies have been negatively verified in the course of empirical research. Analysing the data collected within the World Values Study, Pippa Norris and Ronald Inglehart (2004) state that people living in Protestant societies today do not stand out as those with a greater commitment to economic values characteristic of the free market, or a greater commitment to the liberal vision of the state. There is also no empirical basis to conclude that Protestant societies today have higher ethical standards that could foster good governance or trust in business. But the fact that Protestant societies nowadays do not have features that aid the development of capitalism does not imply that such relatedness was absent in the past. Norris and Inglehart's findings suggest a hypothesis that religious tradition could have affected the level of state identities through the factors which are involved in the formation of social capital of individual societies. We share the understanding of Robert Putnam (2000, pp. 15–28) of social capital as a certain condition of social ties and the level of mutual trust between individuals. State identity is particularly aided by one of the components of social capital, namely a generalised and distributed trust.

Both of the arguments regarding differing European legacies rely on the assumption that not just the past but even distant history influences the attitudes of contemporary persons. The post-communist countries are expected to share several important traits. This assumption posits our research within the comparatively oriented area studies of the social and political realms of Eastern Europe existing in the field of sociology and political and cultural studies (Bernhard & Jasiewicz, 2015). The adopted perspective implies the use of the concept of legacy for describing the effects of the past exerted on the contemporary world. It can be defined as the current state of affairs of interest resulting from past conditions or the outcome presupposed to result from the antecedent. The outcome qualifies as a legacy only if that explanatory factor ceased to directly operate at some point before the outcome is observed (Wittenberg, 2015, p. 369). The Eastern European post-communist countries are

now free from foreign rule and there is no reason for national identity to be separated from state identity anymore.

Legacies also defy 'the initial constellation of actors and the distribution of their resources at the beginning of a regime change' (Gel'man, 2008, p. 159). They 'impose structural constraints on the political actors' actions and provides them with a set of resources available for mobilisation during the process of regime change' (Gel'man, 2008, p. 159). A similar approach is represented by Kitschelt (1986), Elster *et al.* (1998, pp. 60–2, 293), and Crawford and Lijphart (1995, p. 172). This exhibits the significance of a legacy. The separateness of the attitudes regarding the nation as the people sharing common customs and towards the state may be exploited by political entrepreneurs as it provides grounds for effective anti-establishment appeal leading to electoral successes of right-wing populism.

The study in this article follows the perspective emphasising the distinctiveness of Leninist socio-economic and political legacies (Pop-Eleches, 2015, p. 392). We argue that the post-communist countries possess a complex of distinctive features that affect the intensity of state identity. The factors determining the phenomenon explored are not exclusively connected with a communist past. They might lie in the times of early modernity or even some path-dependency tracked from the Middle Ages. We engage the category of post-communist countries to signify both what remains of the past of national development under dynastic rule of empires and the consequences of communist rule (Wittenberg, 2015, p. 371).

The second group of hypotheses regarding the strength of the state identity expect it to be related to the living conditions in a country. People perceive and demand the state to be responsible for the condition of the economy, everyday security and public services (Raciborski, 2011). Ensuring the delivery of these goods is performed by the government apparatus by implementing countless public policies every day. The created emotional state identity is a reciprocal of the goods

provided by the state. In our analysis the material living conditions are represented by the level of economic development (expressed as GDP per capita). Also, social capital may be treated as a variable representing the contemporary living conditions in a country rather than a representation of past legacies (Putnam, 2000; Dekker & Uslaner, 2001). Both of those arguments are consistent with the expected effects of the communist legacy. Post-communist countries are significantly less economically developed than the ones in Western Europe and have a lower level of social capital.

Table A1 in the Appendix shows the results of the measurement of social capital in the form of average values of an index introduced later in this article for the data from the 2002 and 2012 ESS waves. Unsurprisingly, the top countries, the societies of which are characterised by the highest level of social capital, include well-developed countries that never experienced communism, such as Denmark, Norway and Finland. There is also no surprise at the bottom of the ranking: Bulgaria, Poland and Slovakia.

The hypotheses developed so far may be treated as competitive explanations for the differentiation of state identity. Is it a communist past or economic development that matters? Is it a Protestant legacy or social capital which explains the different intensity of state identity?

The above-cited legacy definitions also suggest another way these past-reliant arguments may help us to understand social phenomena. Past legacies exert their influence not directly, but instead as factors moderating the relationship between other variables. They do so by creating context. Therefore we expect that not only does the diversity of legacies matter for the *strength* of state identity, but also it may modify the effects of other variables, for example the impact of economic development and social capital may differ depending on past legacies. Here we abstain from formulating any precise expectations in regard to these possible moderating effects, but we test the significance of such interactions in the empirical part of this article.

The final question we explore in this paper regards the permanency of state identity. It has been argued so far that the explored complex of attitudes was generated in a *longue-durées* process and therefore the intensity of state identity should not alter rapidly. The postulated relationship between the condition of the economy and the state identity suggests that in a country experiencing a relatively undisturbed growth one may expect a similarly stable level of state identity. We think that some growth may also occur if the economic conditions are propitious. We presume we observe one of these tendencies in Western-European countries.

Should a similar trend be anticipated with regard to the countries burdened with decades of communist rule? The transition to democracy in this region at the turn of the 1980s and 1990s was caused by several factors, one of which was the glaring deterioration of living conditions, i.e. the inability of the state to provide citizens even with essential consumer goods. The legacy of the transition to the market economy adds another explanation to the presumably lower level of state identity at the starting point of the new order, but it does not really help with providing a clear expectation regarding the dynamics of the phenomenon.

There are two concurrent hypotheses to be formulated regarding the latter. The modernisation approach anticipates that new democracies will converge in virtually every aspect to the western models as their economies grow and European integration advances. Past legacies are considered to be obstacles to overcome on the way (for further discussion, see Blokker, 2005, pp. 505–8). Following this approach would make us expect a gradual convergence of the intensity of state identity with the pattern observed in the Western Europe, i.e. augmenting of the level of the measured variable in all of the countries studied.

Does the fate of post-communist countries entail such a smooth development? Much has been said about the rapid economic growth of Eastern European countries, especially the ones that joined the European Union and have become beneficiaries

of the generous funding from the community. On the other hand, the low income inequality from communist times increased (Ivanova, 2007; Loveless & Whitefield, 2011), corruption scandals shook the political scenes (Karklins, 2005; Sajó, 2003; Seligson, 2002) and numerous cases of state capture were revealed and exposed by the media, resulting in a deterioration of trust towards the elites (Sapsford & Abbott, 2006). The years after the fall of communism brought prosperity to some, but many others became embittered by the results of the transformation. These troubles may undermine state identity.

Operationalising state identity and the data used in the analyses

In order to verify our expectations empirically a choice of indicators of state identity had to be made and a way to measure it had to be developed. This had already been the path of many researchers, but the subject of their interest was in general national identity (Rusciano 2003, pp. 361–6; Kunovich, 2006). Although this construct is similar, it still differs from ours. Frank Rusciano (2003) and Robert Kunovich (2009), who also used the data from ‘International Social Survey Programme (ISSP): National Identity,’ distinguish between the two attributes of ‘national identity.’ One of those, most often referred to as the civic form of national identity, we are now trying to upgrade to a distinct theoretical construct.

In order to measure the strength of state identity, we first constructed an index based on five questions coming from the extensive survey research within the ISSP: National Identity I 1995, National Identity II 2003, National Identity III 2013 (ISSP Research Group 1998, 2012 and 2015, respectively). Although this is not an entirely satisfactory empirical operationalisation of our concept of state identity, a certain lack is usually the case when using data once collected for other theoretical purposes. The index applied is different from the indexes constructed by other researchers who used the data from consecutive modules

of the National Identity research, although its content shows some similarity to the construct that Kunovich (2009) called ‘civic forms of national identity’.²

The first component of our index assumes that state identity is built on a general sense of a strong bond with the country. The question was, ‘How close do you feel to [Respondent’s country]?’ The following answers were available: Very close / Close / Not very close / Not close at all. In our view this measures people’s generalised attitude to their country of residence satisfactorily. The question does not force the respondent to differentiate between their attitudes towards the state, the nation, and its traditions, or the state’s achievements. Instead it refers to the approach that is most commonly called patriotism. In the figures presented later in this paper this approach is represented as the ‘closeness’ variable.

The second component of our index assumes that state identity is built on the satisfaction with being a citizen of a particular state. The question was, ‘How much do you agree or disagree with the following statement: I would rather be a citizen of [Respondent’s country] than of any other country in the world?’ The answers available were: from ‘Agree strongly’ and ‘Agree’, through ‘Neither agree nor disagree’ and ‘Disagree’, finishing with ‘Disagree strongly’. What is significant in this question is the emphasis on citizenship rather than

² In his work Kunovich (2009, pp. 579–80) uses the following question, ‘Some people say that the following things are important for being truly [e.g. American]. Others say they are not important. How important do you think each of the following is?’ as well as these items: 1. To have been born in [America]; 2. To have [American] citizenship; 3. To have lived in [America] for most of one’s life; 4. To be able to speak [English]; 5. To be a [Christian]; 6. To respect [America’s] political institutions and laws; 7. To feel [American]; 8. To have [American] ancestry. Scale: Not important at all / not very important / fairly important / very important. Based on the results of a factor analysis, the author incorporated items 1, 2, 3, 5, and 8 to the ethnic dimension, and items 4, 6, and 7 to the civic dimension.

the nation, religion, or culture. In the figures below this will be represented as the ‘citizen’ variable.

Finally, the third component of the index stems from the belief that pride in the achievements of one’s country is an essential element of state identity. Here, we used three items (out of ten) from the question, ‘How proud are you of [Respondent’s country] in each of the following?’

- (1) the way democracy works (later referred to as the ‘democracy’ variable);
- (2) its political influence on the world (the ‘influence’ variable);
- (3) economic achievements (the ‘economy’ variable).

The applied variables came from three different questions with separate scales. The scales were re-coded and normalised to equal length comprised within the range of 0 to 4, where 0 is the weakest intensity of a given attitude, and 4 is its maximum intensity. (Questions for which answers were assigned to points on a four-point scale (from 1 to 5), have been reversed and the questions with a scale from 1 to 4 were further subjected to the linear change, which resulted in the extension of distances between points on the scale so that they can be contained in the specified range from 0 to 4.)

The above-mentioned variables were added up and in such way the state identity index was created, one that we use in further analyses (the ‘identity’

variable). Table A2 in the Appendix summarises the individual-level correlations for the combined samples from the three applied waves of the ISSP study. In table 1 we present a factor analysis of the components of the index. Unsurprisingly it shows two dimensions included in the index: the first one includes variables regarding closeness and citizenship, while the second one relates to the pride in democracy, the state’s influence, and economy. They might be referred to as ‘patriotism’ and ‘pride’ respectively.

A reliability test was performed for the created index using Cronbach’s alpha, which resulted in a value of 0.676. This posits this arbitrary index at the border of acceptability (conventionally considered the crossing of the threshold of 0.7).

Although the primary source dataset we use enables one to perform a wider comparative study, we have limited our analysis to the European countries. Our theoretical argument is embedded in the European context and does not allow one to formulate any hypotheses regarding other countries.

Further analyses also include the level of GDP per capita as an independent variable (representing the level of economic development in the preceding year). The values are derived from the database of the World Bank (World Bank, 2016). The data on the level of social capital is taken from the European Social Survey (ESS Round 1 and Round 6, i.e. 2002 and 2012.) We use a synthetic index varying from 0 to 30 in our further analysis.³ Since the index values came from a different database than the source of information on state

Table 1. Factor loadings (pattern matrix) and variances uniqueness of the components of the state identity index

Variable	Factor 1	Factor 2	Uniqueness
Citizen	0.2939	0.4072	0.7478
Closeness	0.2946	0.4012	0.7523
Democracy	0.6918	-0.1348	0.5032
Influence	0.7144	-0.0740	0.4841
Economy	0.6705	-0.1368	0.5318

Source: Own calculations based on the combined samples of 1995, 2003 and 2013 ISSP for European countries.

³ The index was created by summing respondents’ answers to following three questions asked in all editions of the European Social Survey (ESS 2002; 2012): (1) ‘Using this card, generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people?’ (2) ‘do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?’, and (3) ‘Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?’. Each question used a scale from 0 to 10, where the higher the value of an answer code given by the respondent the greater the declared trust, perceived fairness, and helpfulness.

identity, it was not possible to carry out an analysis on the individual level. Therefore average values of the index of social capital were set for individual countries from the 2002 and 2012 ESS waves, representing the years prior to the applied ISSP data. Due to the lack of any earlier data, values of the index of social capital from the 2002 ESS research (the earliest ESS survey available) were assigned to the 1995 ISSP records.

The action of assigning the countries according to the division into post-communist countries, on the one hand, and Western Europe, on the other, as well as according to the religious legacy (Protestant, Catholic, and Orthodox), has been carried out by the authors of this paper.

The strength of state identity in European countries, its diversification across countries, and variability over time

In the first stage of the analysis we are going to describe the diversification of the strength of state identity which is visible to the naked eye; we will subsequently consider the question of the variation of this phenomenon over time, and we will then statistically verify the hypotheses formulated earlier, along with some additional possible explanations. We use the results of all three waves of the ISSP National Identity research, although this entails some methodological difficulties, since a considerable variability of countries throughout the respective waves has been observed. In total the study included 26 different countries, although it is important to note that due to the sample structure the results for Germany have been measured separately for the former East Germany and West Germany.

The study was conducted three times only in eight countries (the Czech Republic, Hungary, Ireland, Latvia, Norway, Russia, Slovenia and Great Britain);⁴ twice in 12 countries (Austria,

Bulgaria, Denmark, Finland, Germany, France, the Netherlands, Poland, Slovakia, Spain, Sweden and Switzerland), and only once in six countries (Croatia, Estonia, Iceland, Italy, Lithuania and Portugal.) It is necessary to remember that the countries were not drawn for particular waves; it was the organisational aspect that mattered. However, the samples for individual countries **were** random, which enables us to use statistical procedures on the individual **intra**-national level, and also we can compare the average values of the variables between countries. The vast majority of differences in the index values between countries (Figures 1–3)⁵ **are** statistically significant ($p < 0.001$). The primary limitation resulting from the nature of the sample is its lack of representativeness for the ‘European society’. Nonetheless, this loss is not great, because there is no European society; in fact, there is not even a European Union society.

The index values of state identity displayed at the top of each of the figure columns consisting of the index components show that those who identify with their countries the most strongly are small and wealthy societies which have always belonged to the West politically, have never experienced communism and have a well-developed welfare state infrastructure. This group of countries will therefore include Norway, Ireland, Switzerland, Austria, Denmark and Finland. On the other hand, the lower places in the ranking throughout all of the waves are taken by post-communist societies (the pattern was disrupted by Italy in the 1995 wave). The societies with a particularly low level of state identity are those of Slovakia, Latvia, Hungary and Russia. (In Russia, however, an increase has been seen in 2013.)

The considerable arbitrariness of the applied scales constituting the index of state identity makes it difficult to attach much significance to the absolute values of the index. However,

Therefore in the article we refer to Great Britain and not the United Kingdom.

⁵ The same data in may be found in the Appendix: tables A3–A5.

⁴ The ISSP sample includes respondents from England, Wales, and Scotland, but not from Northern Ireland.

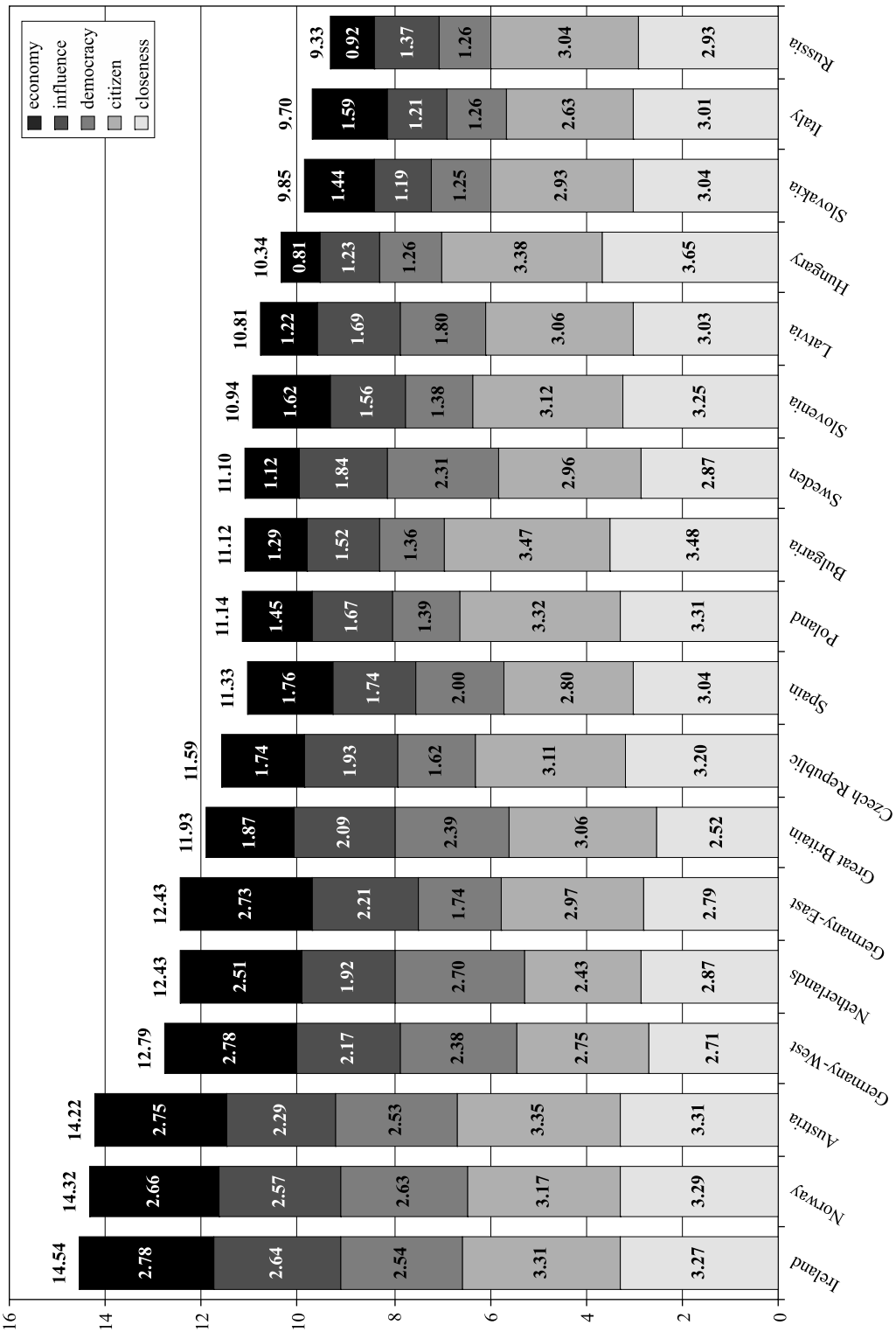


Figure 1. Values of the index of state identity and its constituents in selected European countries in 1995

Source: Own calculations based on the 1995 ISSP sample of European countries.

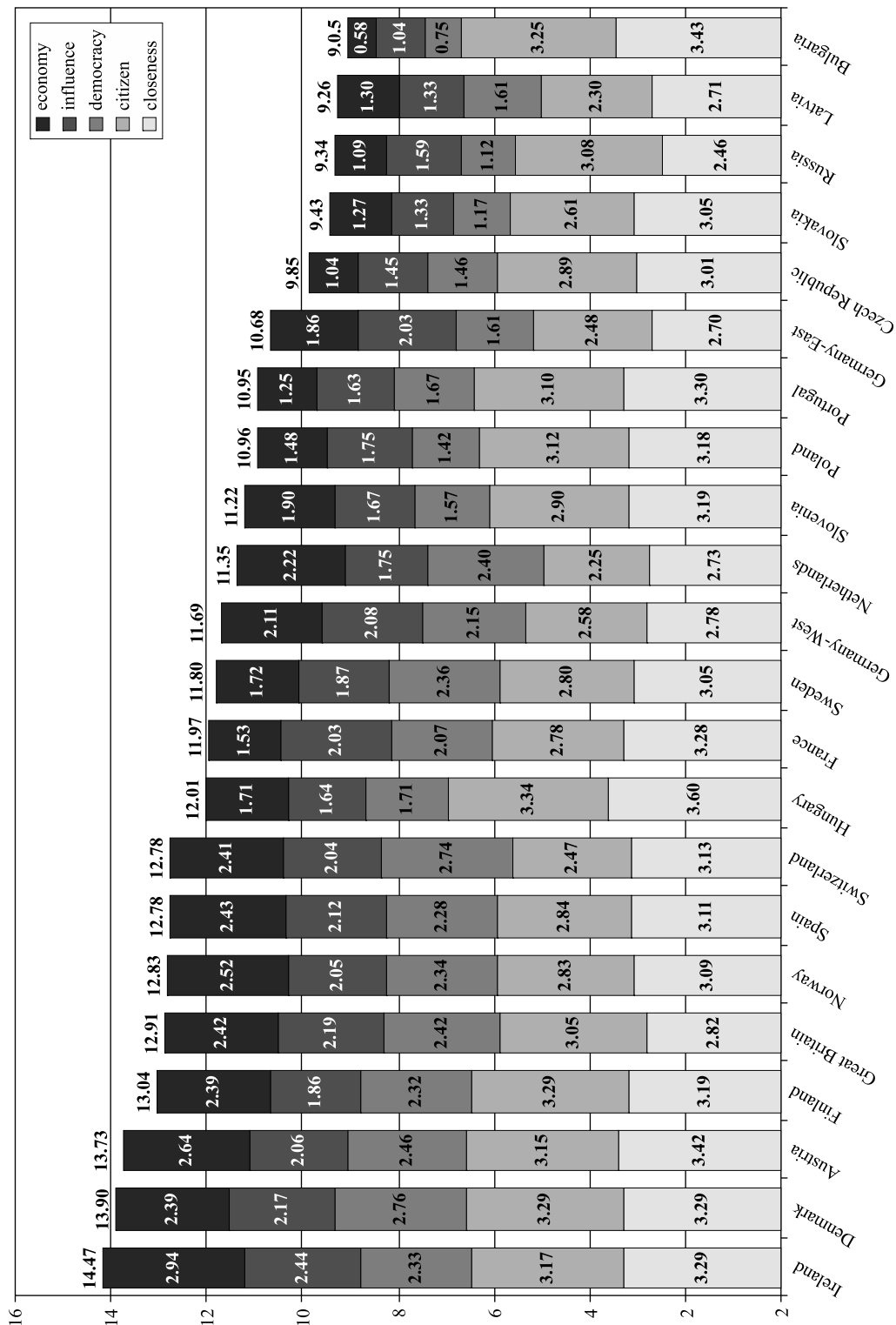


Figure 2. Values of the index of state identity and its constituents in selected European countries in 2003

Source: Own calculations based on the 2003 ISSP sample of European countries.

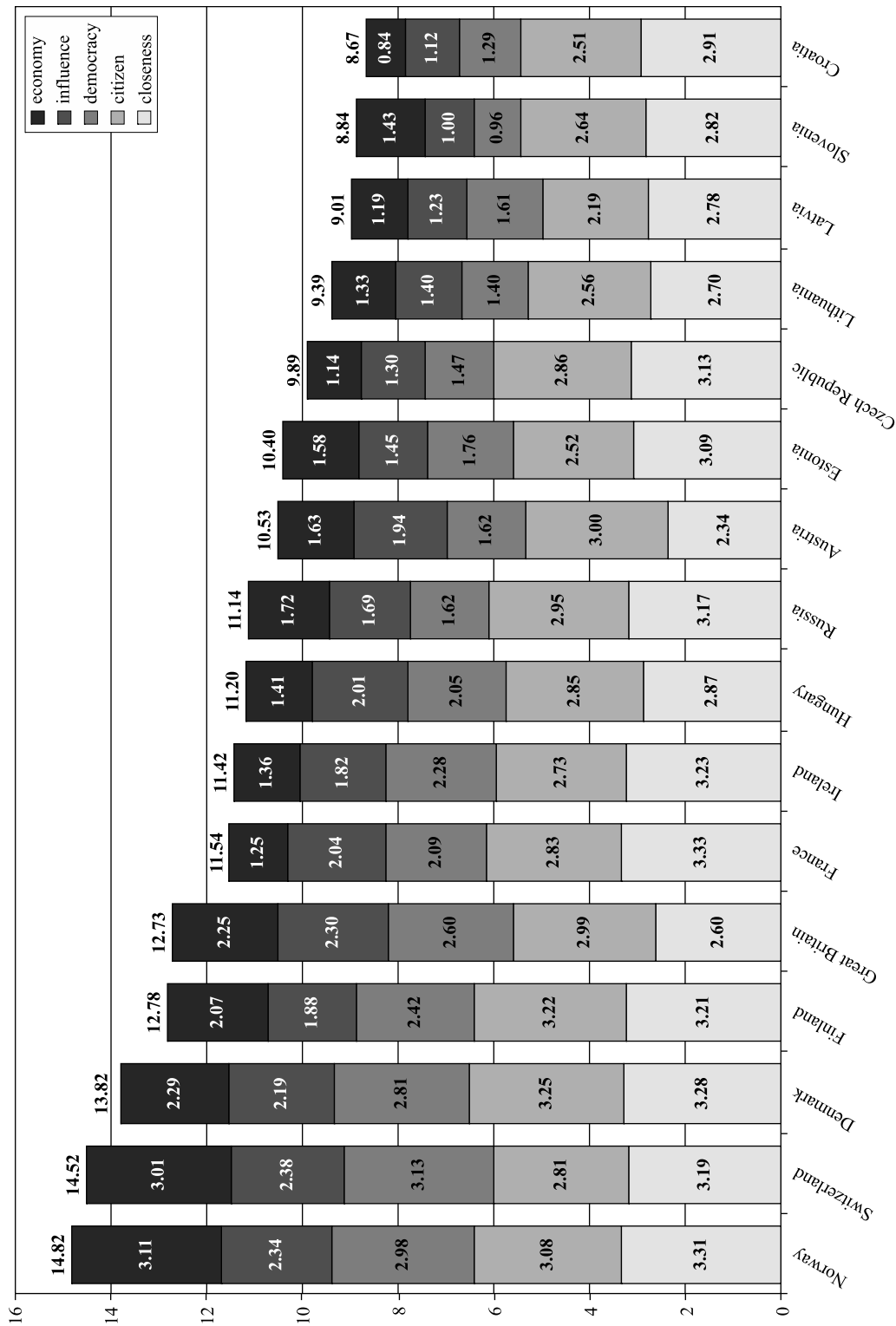


Figure 3. Values of the index of state identity and its constituents in selected European countries in 2013

Source: Own calculations based on the 2013 ISSP sample of European countries.

in no European country did it exceed 15 points, which is 75% of the theoretical maximum, and this is a moderate threshold to recognise that the intensity of a given phenomenon is high. In several countries the mean value was less than 10 points. This kind of bad civil mood has been reported in the 2013 research in the Baltic States and the Balkan countries. The average values of the index are far from the maximum in almost all European countries. This shows that citizens can be critical of their countries and their identification with the state is rarely total. The components of our index reveal that the intense bond with the state is a fact only when we are asking about the general attitude towards one's own country (or about a sense of connectedness and satisfaction with nationality.) However, when we are looking at specific reasons to be proud of one's own country, the declarations are very restrained and coincide quite closely with the expert evaluation of individual countries regarding these particular dimensions.

A fact worth noting is that a very strong bond with one's own country and satisfaction with nationality is declared by Bulgarians, Hungarians, and Poles, but at the same time these societies are very critical when it comes to evaluating the political and economic significance of their countries, and the functioning of democracy therein. The countries with a low level of citizens' statements regarding the sense of connectedness include countries that would otherwise seem to be happy habitats, such as Great Britain (1995 and 2013), Germany, the Netherlands, and Switzerland. Why? An answer cannot be found through statistical analyses, because very few cases are under investigation, but what is probably of importance is the existence of competitive national identities in all of those societies (particularly all over Great Britain: English, Scottish and Welsh). It is not surprising, then, that the position of Lithuania, Latvia and Estonia regarding the same aspects is low, too. This seems to be a simple consequence of the fact that the Russian-speaking population is a considerable (and politically relevant) group of those countries'

inhabitants. The ethnic fractionalisation index values in the three Baltic countries are among the highest among the countries in this study: 0.32, 0.59, and 0.51 respectively (Alesina et al., 2003).

When we look at the ranking of countries representing the overall satisfaction of their inhabitants with the citizenship held (the 'citizen' variable), we can see that the new states that emerged in Europe after 1989 as a result of the dissolution of the USSR, Yugoslavia, and Czechoslovakia are characterised by a rather low intensity of civilities. The progress of nationalism is not spectacular in these countries, although new countries always provide a very intense civic education and try to promote patriotism in every possible way. The low rates prove that quick and lasting results are not easily achievable.

An individual's pride in his/her country manifests itself in many ways. We assumed that its best indicators would include high evaluation of the functioning of democracy, a belief in the significant position of one's country in the world, and faith in the economic successes of one's country. These three scales proved to be highly correlated with one another, and together they form a very important dimension of individuals' state identity (see Table A1 in the Appendix). But then again, the overview of the particular scales of this dimension is quite informative. It turns out that the citizens of European countries do not take pride in the way democracy works in their societies. The marks are high and stable over time only in Switzerland, Norway and Denmark. Very low marks are recorded for the post-communist countries, of which Bulgaria broke the record in 2003. The convergence of the location of particular European countries in the expert rankings of the functioning of democracy on the one hand and the marks collected within the ISSP study on the other is amazingly high.⁶

⁶ The Spearman Rho coefficient of the ranking resulting from the 2013 ISSP data regarding pride in democracy used here and the ranking of the evaluation of democracy according to *The Economist* is 0.774.

The results obtained justify the dyadic hypothesis that the citizens of European countries have high expectations about standards of democracy (hence the restraint in granting the highest marks) and that they are able to evaluate whether these expectations are actually met (hence the coincidence with the expert evaluation).

When it comes to a sense of pride in the importance of one's own country in the world, we can see a paradox. The citizens of the largest and economically strongest EU countries (e.g. Germany, France, Great Britain and Spain) are nowhere near the forefront of the ranking. Again, those most satisfied are the citizens of small Western European countries, i.e. Ireland, Switzerland and Norway.

Citizens' pride in the economic achievements of their countries is to an astonishingly large extent a consequence of the actual efficiency of these countries' economies. The richest nations of Western Europe are the most satisfied, while the nations of Central and Eastern Europe are the most dissatisfied. The realism of citizens formulating such evaluations is proved by the fact that the marks were increasing in times of prosperity and decreasing in times of crisis, e.g. the rapid deterioration of the ratings in Ireland between the years 2003 and 2013, or the large rise in Russian citizens' pride in the economy between the years 1995 and 2013.

A preliminary overview of the components of our index enables one to draw the conclusion that an integral state identity is a fairly rare phenomenon. The low correlation of the indicators of ties with a country and of overall satisfaction with citizenship, on the one hand, and indicators of pride in the achievements of the state, on the other, accurately reflects the actual attitudes. There is no contradiction here. People continue to be patriots even though they do not consider their country to be an Eldorado.

State identities are a permanent phenomena, but some changes in European countries turned out to be statistically significant in between the consecutive waves. A decline in state identity

was recorded between the ISSP waves in eight European countries; that fall was particularly high in Ireland between 1995 and 2013 (by more than three points), Bulgaria between 1995 and 2003, and Slovenia between 1995 and 2013 (by more than two points). A significant increase occurred in six countries, with a particularly large rise in Switzerland (by almost two points between 2003 and 2013). This suggests that the nations of Western Europe maintain high and stable state identities. Between 1995 and 2013 the average value of the index measured on the individual level increased slightly in the Western European countries included in the sample: from 12.475 to 12.898 points. In the studied post-communist countries from Central Europe the intensity of these identities, already so much lower than at the beginning of their market and democratic transformations, declined even more over the last dozen or so years: from 10.685 points in 1995 to 9.756 in 2013. Both indicated differences are statistically significant⁷ and their interpretation can lead to somewhat depressing conclusions. On the other hand, a similar test using only the country samples that participated in all of the ISSP waves used in this study (the Czech Republic, Hungary, Ireland, Latvia, Norway, Russia, Slovenia and Great Britain) suggests there was a statistically significant ($p < 0.001$) drop in state identity among both Western European (from 13.657 in 1995 to 12.92 in 2013) and post-communist countries (from 10.508 to 9.92, respectively). However, one might argue that the number of countries which participated in both the first and the last waves of the research is too small to provide a basis for a viable comparison of the average values that could be generalised as a tendency for the European countries in general (especially with the distinction between post-communist countries and Western Europe).

⁷ It is necessary to note here that these average values have been set for the 1995 and 2013 ISSP samples, which included countries the list of which overlapped only partially.

The results so far are that at least some of the wealthy nations of Europe continue with their commitment to the state and are increasingly proud of their states, while the poorer nations are losing faith in the state and the strength of their state identity is declining. Therefore, the old convergence theories that came to life after the collapse of communism, saying that the rapprochement between societies would come in all dimensions, cannot be decisively confirmed nor rejected.

Testing some of the determinants of state identity

We begin testing the main hypotheses of this article by comparing the means of state identity index across countries of different legacies. Then

we proceed to check whether these results are maintained when controlling for GDP per capita and social capital.

When it comes to the notion of state identity, the division into post-communist countries and countries with no such legacy is statistically significant. Despite a considerable variability of the countries covered in the ISSP research in consecutive waves, this division is noticeable in all the waves, and analysis of variance produces unequivocal results. The results are summarised in Table 2. In each case, the hypothesis about the difference between the average values is confirmed at the $p < 0.001$ significance level.

An analysis of variance was also conducted to test our expectations regarding the legacy of the dominant tradition: Protestant versus remaining countries in the studied sample (either

Table 2. A comparison of the average level of state identity in Western European countries versus post-communist countries

ISSP Wave		Western Europe	Post-communist countries	Difference
1995	Mean (Std. Err.)	12.475 (.037)	10.685 (.040)	1.790 (.054)
	Number of observations	9475	7969	
2003	Mean (Std. Err.)	12.514 (.029)	10.087 (.036)	2.427 (.047)
	Number of observations	13401	8565	
2013	Mean (Std. Err.)	12.898 (.037)	9.756 (.040)	3.142 (.055)
	Number of observations	8676	8209	

Source: Own calculations based on the 1995, 2003 and 2013 ISSP data.

Table 3. A comparison of the average level of state identity in Protestant versus remaining (Catholic or Orthodox) countries

ISSP Wave		Protestant countries	Remaining countries	Difference
1995	Mean (Std. Err.)	12.415 (.041)	11.158 (.037)	1.257 (.056)
	Number of observations	6923	8524	
2003	Mean (Std. Err.)	12.142 (.036)	11.149 (.032)	.993 (.048)
	Number of observations	9263	12703	
2013	Mean (Std. Err.)	12.735 (.043)	10.231 (.037)	2.504 (.057)
	Number of observations	7680	9205	

Source: Own calculations based on the 1995, 2003 and 2013 ISSP data.

Catholic or Orthodox). It reveals that in all the waves countries with a Protestant tradition are characterised by higher average values of the index of state identity. The differences are also statistically significant, at a high $p < 0.001$ level. Table 3 provides a summary of these results.⁸

It should be pointed out that the studied difference turned out particularly big in 2013 (the average value for the Protestant countries is higher than 2 points). This relatedness seems to confirm the following belief of Ernest Gellner (1983, p. 142), as described in his now classic work, 'But, whatever the truth about this complex and crucial issue, the emergence of the industrial world was somehow intimately linked to a Protestantism which happened to possess some of the important traits that were to characterise the newly emerging world, and which also engender nationalism'. These features usually include: an emphasis on individualism, making everyone responsible for themselves and their salvation; a work ethic; egalitarianism; and also an emphasis on literacy.

In order to verify the cumulative impact of all of the variables previously taken into account a fixed-effects linear two-level regression model has been set. The data from three ISSP waves (1995, 2003, and 2013) was pooled into one dataset. The level-1 observations are respondents and country-year clusters serve as level-2 units. Following the conventional modelling strategy we begin with estimating the baseline model with no predictors, then we proceed with adding factors and interactions.

The baseline model shows the estimated residual intra-class correlation equals 0.2, which means the majority of the variance of the explained phenomenon is at the individual level. A significant portion of the standard deviation still remains at the inter-class level (1.649), which leaves room for

a macro-level analysis related to the formulated hypotheses.

The results of the analysis are presented in table 4. Model 1 includes all of the variables introduced in the theoretical part: the legacy-driven factor variables (post-communist and non-protestant dummies)⁹ and living condition indicators (GDP per capita and the social capital index). Model 2 tests the moderating effect of the post-communist context on the effects of living condition factors and model 3 performs a similar check with regard to religious tradition. Each of the models includes a set of dummy variables indicating a wave of the ISSP survey, from which a given record is derived, which can be treated both as a dynamic indicator and a control for the fact that the data has in fact a three-level structure (persons embedded in waves embedded in countries). Unfortunately it was not possible to include such a complicated structure in the analysed model, due to the insufficient number of level-2 units.

Model 1 shows that social capital has a positive influence on the level of state identities controlling for the direct effects of the division into post-communist countries ($p < 0.01$) and the dominant religious tradition. The impact of legacy-based factors turns out to be statistically insignificant. National wealth, represented by the GDP per capita indicator, also has a significant influence on the dependent variable ($p < 0.01$). It can only be surprising that the strength of the relatedness of the national income to the value of the index of state identity, conveyed through the Pearson correlation coefficient ($r = 0.565$), did not prove to be even higher. Though the coefficient B in the regression equation does not seem to be high, its values are statistically significant, at the $p < 0.01$ level. A gain in GDP per capita by \$10,000 results in an increase in the value of the index of state identity by 0.719 points.

⁸ We have also tested the significance of the difference between means for Protestant and Catholic countries and results we consistent with hypothesis. Countries with a dominant Orthodox tradition (Bulgaria and Russia) were excluded from this additional analysis.

⁹ Post-communist and non-protestant countries are denoted by '1'. '0' represents Western European and Protestant countries. The coding reflects the directionality of the hypotheses: lower state identity is expected for the legacies coded as '1'.

Table 4. The impact of the studied variables on state identity

Independent variables	Model 1	Model 2	Model 3
GDP per capita	7.19e-05*** (2.39e-05)	6.66e-05*** (2.30e-05)	8.47e-05*** (1.90e-05)
Social capital	0.300** (0.126)	0.344*** (0.121)	0.187 (0.130)
Post-communist countries	-0.239 (0.385)	3.061 (2.499)	-0.587 (0.444)
Non-Protestant	0.596 (0.422)	0.509 (0.448)	-2.857 (2.748)
GDP per capita*post-communist countries		-5.99e-05 (5.46e-05)	
Social capital*post-communist countries		-0.152 (0,229)	
GDP per capita*non-Protestant			-0.000117*** (3.553-05)
Social capital*non-Protestant			0.411 (0.207)
2003 wave	-0.720* (0.383)	-0.560 (0.419)	-0.315 (0.422)
2013 wave	-2.121*** (0.476)	-1.686*** (0.539)	-1.447*** (0.559)
Constant	5.981*** (1.941)	5.234*** (1.842)	7.238*** (1.939)
Log pseudo likelihood	-117970.09	-117967.94	-117965.45
Number of observations	45,315	45,315	45,315
Number of groups	45	45	45

Robust standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

We can fully appreciate its significance if we realise that the GDP per capita in Norway is approximately \$90,000, while in Bulgaria it amounts to approximately \$10,000.

The results from model 1 might seem to provide evidence that the legacy-based argument developed in the theoretical section of the article does not sustain after controlling for other factors. This corollary is only partially true. While the legacies do not directly determine the intensity of state identity,

their importance is only revealed after a careful scrutiny of the marginal effects basing on model 2 and 3 estimates (Brambor et al., 2006). The results are presented in table 5 (insignificant coefficients have been omitted for the sake of clarity).

The conditional regression slopes obtained for GDP per capita show that the influence of the variable is significant ($p < 0.01$) only in either Western European or Protestant countries. The differences between marginal effects in both

Table 5. Marginal effect of GDP per capita and social capital on state identity depending on past legacies

Legacy	Marginal effect of	
Model 2	GDP per capita	social capital
Post-communist		
Western-European	6.66e-05*** (2.30e-05)	0.344*** (0.121)
Difference		
Model 3		
Protestant	8.47e-05 (1.90e-05)	
Catholic or Orthodox		.598*** (0.167)
Difference	-0.000117*** (3.55e-05)	0.411** (0.207)

Robust standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Insignificant coefficients omitted.

categories are not significant when it comes to the Western Europe vs post-communist dimension, but the claim that the interaction exists is supported by the fact a statistically significant relatedness between GDP per capita and state identity is seen only in Western European countries.

In a similar fashion post-communist legacy matters with regard to the effects of social capital on state identity. The factor is only significant in Western European countries. The coefficients obtained with model 3 incorporating religious legacy leads to the conclusion that social capital influences state identity only in Catholic or Orthodox countries. This result might be partially explained by the fact that the mean value of the social capital index in Protestant countries (17.977) is high enough to disable the effect of this variable. The social capital index mean is significantly lower in Catholic and Orthodox countries (14.215).

These results do not enable one to reject well-grounded theses about the importance of religious traditions and communist legacy for the formation of the current strong diversification in the level of identification in relation to these variables.

Religious tradition and communist legacy had an effect in the past, be it through influence on social capital or influence on the development of capitalism conveyed through the GDP level. It is difficult to deny the fact that communism came into existence in economically underdeveloped countries with the Catholic or Orthodox tradition. Even if communism did not enhance this underdevelopment, it also did not shorten the distance to the developed countries of Western and Northern Europe.

The presented results enable one to say that what matters for state identity in European countries are the factors representing the present-day living conditions in a country, such as GDP per capita and social capital. However, the intensity of these statistical relationships is moderated by legacy-based factors. GDP per capita does explain the differentiation of state identity among Western European countries and those with a dominant protestant tradition; the effect of wealth is positive. Social capital works as an explanatory variable in Western European countries, and Catholic, and Orthodox countries.

A brief comment is needed about the results concerning the dynamic aspect of state identity. All of the models in table 4 show a statistically significant ($p < 0.01$) drop of state identity between the 1995 and 2013 waves, but they do not control for the composition of the countries in each wave. However, these results are sustained after re-estimating model 1 for the sample including only the countries that participated in all three ISSP waves used in this study (i.e. the Czech Republic, Hungary, Ireland, Latvia, Norway, Russia, Slovenia and Great Britain). The other two models could not be re-estimated in a similar manner due to the strong collinearity of interaction terms in the restricted sample.

Conclusion

State identities in European countries are well crystallised and diversified. In most societies people's high overall satisfaction with citizenship

can be seen, although citizens can be critical of their states' achievements, and their state identity is rarely total. The societies of Eastern Europe are characterised by a much lower level of state identities, but this difference should be attributed primarily to levels of economic development and social capital, not to legacy-based arguments related to factors such as political culture and national conscience. Legacies do matter when it comes to explaining the differentiation within the legacy-based groups of countries. National wealth and social capital are significant factors in Western Europe, but they do not matter for state identity differentiation in post-communist countries. Legacies have the power to deactivate certain factors observable at the European level.

Why do we actually regret the fact that state identities throughout European post-communist countries are less intense than in Western Europe or in the USA? Is the general weakening of state identities in Europe something that we should worry about? After all, strong identities can easily be transformed into aggressive nationalism.

In our article we have clearly distinguished between the ethnic-orientated and the state-oriented. Strong state identities do not produce such threats in the way that ethnic identities do, which is primarily due to the fact that state identities can be based on democratic citizenship, and democratic citizenship is equal and inclusive.

In the eyes of certain people the state is a great value. To quote Michael Walzer (1992, pp. 105),

But the state can never be what it appears to be in liberal theory, a mere framework for civil society. It is also the instrument of the struggle, used to give a particular shape to the common life. Hence citizenship has a certain practical pre-eminence among all our actual and possible memberships.

The state is an essential device for a happy life for people. Its collapse, currently seen in many places around the world, will always mean war and mass misery.

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Appendix

Table A1. Average values of the index of social capital in the studied European countries¹⁰

Country	Mean value	Country	Mean value
Denmark	20.45	Lithuania	15.52
Norway	19.65	Spain	14.75
Finland	19.10	France	14.61
Sweden	18.68	Russia	14.12
Netherlands	17.42	Czech Republic	13.66
Switzerland	17.37	Slovenia	13.51
Ireland	17.21	Hungary	13.47
Kingdom	16.32	Italy	13.37
Estonia	16.24	Portugal	12.92
Austria	15.93	Slovakia	12.14
Germany-East	15.55	Poland	11.89
Germany-West	15.55	Bulgaria	10.76

Source: Own calculations based on the 2002 and 2012 ESS data.

¹⁰ Due to the fact that the average values presented here are based on the national average values in a maximum of two waves of the ESS research (2002 and 2012), the size of standard errors and confidence intervals conventionally included in such tables have now been omitted.

Table A2. Pearson correlations of the ‘state identity’ index components, and the very index

	Citizen	Closeness	Democracy	Influence	Economy	Identity
Citizen	1.000					
Closeness	0.355	1.000				
Democracy	0.134	0.157	1.000			
Influence	0.200	0.177	0.562	1.000		
Economy	0.136	0.140	0.532	0.538	1.000	
Identity	0.534	0.521	0.743	0.759	0.735	1.000

Source: Own calculations based on the combined samples of 1995, 2003 and 2013 ISSP for European countries.

Table A3. Values of the index of state identity and its constituents in selected European countries in 1995

Country	Closeness	Citizen	Democracy	Influence	Economy	State identity
Ireland	3.27	3.31	2.54	2.64	2.78	14.54
Norway	3.29	3.17	2.63	2.57	2.66	14.32
Austria	3.31	3.35	2.53	2.29	2.75	14.22
Germany, West	2.71	2.75	2.38	2.17	2.78	12.79
Netherlands	2.87	2.43	2.70	1.92	2.51	12.43
Germany-East	2.79	2.97	1.74	2.21	2.73	12.43
Great Britain	2.52	3.06	2.39	2.09	1.87	11.93
Czech Republic	3.20	3.11	1.62	1.93	1.74	11.59
Spain	3.04	2.80	2.00	1.74	1.76	11.33
Poland	3.31	3.32	1.39	1.67	1.45	11.14
Bulgaria	3.48	3.47	1.36	1.52	1.29	11.12
Sweden	2.87	2.96	2.31	1.84	1.12	11.10
Slovenia	3.25	3.12	1.38	1.56	1.62	10.94
Latvia	3.03	3.06	1.80	1.69	1.22	10.81
Hungary	3.65	3.38	1.26	1.23	0.81	10.34
Slovakia	3.04	2.93	1.25	1.19	1.44	9.85
Italy	3.01	2.63	1.26	1.21	1.59	9.70
Russia	2.93	3.04	1.07	1.37	0.92	9.33

Source: Own calculations based on the ISSP 1995 data.

Table A4. Values of the index of state identity and its constituents in selected European countries in 2003

Country	Closeness	Citizen	Democracy	Influence	Economy	State identity
Ireland	3.29	3.17	2.33	2.44	2.94	14.17
Denmark	3.29	3.29	2.76	2.17	2.39	13.90
Austria	3.42	3.15	2.46	2.06	2.64	13.73
Finland	3.19	3.29	2.32	1.86	2.39	13.04
Great Britain	2.82	3.05	2.42	2.19	2.42	12.91
Norway	3.09	2.83	2.34	2.05	2.52	12.83
Spain	3.11	2.84	2.28	2.12	2.43	12.78
Switzerland	3.13	2.47	2.74	2.04	2.41	12.78
Hungary	3.60	3.34	1.71	1.64	1.71	12.01
France	3.28	2.78	2.07	2.30	1.53	11.97
Sweden	3.05	2.80	2.36	1.87	1.72	11.80
Germany, West	2.78	2.58	2.15	2.08	2.11	11.69
Netherlands	2.73	2.25	2.40	1.75	2.22	11.35
Slovenia	3.19	2.90	1.57	1.67	1.90	11.22
Poland	3.18	3.12	1.42	1.75	1.48	10.96
Portugal	3.30	3.10	1.67	1.63	1.25	10.95
Germany-East	2.70	2.48	1.61	2.03	1.86	10.68
Czech Republic	3.01	2.89	1.46	1.45	1.04	9.85
Slovakia	3.05	2.61	1.17	1.33	1.27	9.43
Russia	2.46	3.08	1.12	1.59	1.09	9.34
Latvia	2.71	2.30	1.61	1.33	1.30	9.26
Bulgaria	3.43	3.25	0.75	1.04	0.58	9.05

Source: Own calculations based on the ISSP 2003 data.

Table A5. Values of the index of state identity and its constituents in selected European countries in 2013

Country	Closeness	Citizen	Democracy	Influence	Economy	State identity
Norway	3.31	3.08	2.98	2.34	3.11	14.82
Switzerland	3.19	2.81	3.13	2.38	3.01	14.52
Denmark	3.28	3.25	2.81	2.19	2.29	13.82
Finland	3.21	3.22	2.42	1.88	2.07	12.78
Great Britain	2.60	2.99	2.60	2.30	2.25	12.73
France	3.33	2.83	2.09	2.04	1.25	11.54
Iceland	3.23	2.73	2.28	1.82	1.36	11.42
Ireland	2.87	2.85	2.05	2.01	1.41	11.20
Hungary	3.17	2.95	1.62	1.69	1.72	11.14
Russia	2.34	3.00	1.62	1.94	1.63	10.53
Estonia	3.09	2.52	1.76	1.45	1.58	10.40
Czech Republic	3.13	2.86	1.47	1.30	1.14	9.89
Lithuania	2.70	2.56	1.40	1.40	1.33	9.39
Latvia	2.78	2.19	1.61	1.23	1.19	9.01
Slovenia	2.82	2.64	0.96	1.00	1.43	8.84
Croatia	2.91	2.51	1.29	1.12	0.84	8.67

Source: Own calculations based on the ISSP 2013 data.

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Selected moral values and their influence on financial decision making within the public sector: A case study of Poland

Abstract

Objectives: The general aim of this article is to propose a theoretical model for the determinants of the optimal (required) operating of the public sector, including financial decision making in the scope of the creation of law and its application. At the same time, authors assert that universal moral values affect and should affect the legal system (including the creation and application of law governing public finances).

Research Design & Methods: Precisely in the context of the values mentioned below, authors have decided to verify to what extent the mentioned model works in practice (an initial practical test). For this purpose two pilot studies have been conducted by use of the diagnostic poll method.

Findings: Although in common (i.e. public) conviction decision making by public authorities (including decisions on public spending) should be based on moral values culturally accepted by society (which are often reflected in binding law), the results of the afore-mentioned studies were less than conclusive.

Recommendations: The results underlined the need for in-depth interdisciplinary research (both legal and sociological), mainly into the moral aspects of legislating with regard to public finances, both at the state and local levels.

Contribution: Research into the issue of the role of morality in financial decision making in Poland has not been undertaken yet. The authors created (and proposed) a theoretical model for the optimal operating of the public sector and decided to test the validity of the assumptions of the basic elements thereof by way of pilot studies.

Article Classification: Research article

Keywords: financial decisions, legislation, public finance, moral values, politics, civil society

JEL classification: A13, E62, H50, K40

1. Introduction

In scientific literature, including work produced in Poland (Szyszkowska & Kozłowski, 2001; Modzelewski, 2006; Sutor, 1994), the problem of the relationship between morality and politics

(including political ethics) is subject to constant analysis, regardless of the frequently expressed idea of the contemporary immorality of politics. It is still a domain of political scientists and philosophers, while lawyers, or, more precisely, theoreticians of law, in their research focus on the relationship between morality and law (Fuller,

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2004). It is undisputed that, although the categories of law and morality can be analysed separately, from the perspective of the rules of law-making and law application they are not entirely separable. Hence, from the axiological point of view, they should not be separated.

In a given context or, in general, in the morality of politics one should scrutinise the process of financial decision making in the public sector and its social impact. Moreover, the attention is both on law-making decisions (first of all) and their implementation. As is widely known, in particular the former are created by politicians (however, by applying the law on public finance by, for instance, spending public money, politicians are also engaged in that, often holding ministerial or presidential posts). In addition, considering the fact that the financial decisions of public entities have a significant social impact, both nationwide and locally, it seems reasonable to conduct research into the issue of the role of morality in financial decision making. It needs to be emphasised that in Poland research into this area has not been undertaken yet.

Our major assertion was that morality, perceived as a recognised (and applied) system of values, universal in nature, is an indispensable element of not only the decision-making process in the public sector but also of forming civil attitudes. The theoretical model for this issue is presented next.

2. Literature review: General determinants of the optimal operating of the public sector, including the role of morality

The model below sequentially shows the factors that determine the possibility of the optimal (required) operating of the public sector. It also concerns the operation of state and local government finances, including the optimisation of budget creation and implementation. The work on this model included current various social and economic theories (below), supplemented with aspects of legal conditions. However, it should be emphasised that

the ‘original’ basis here was the theory of scarcity, which is widely known in economics, resulting from two contrasting phenomena: the unlimited nature of human needs and the limitedness of resources to satisfy them (Eklund & Hebert, 2007; Murherjee, 2005; Perelman, 1987). What is important, in the field of public finance, is that the theory of scarcity has a stronger impact there than in the private sector. The authors have also taken into consideration the moral aspects of the issues discussed, which are rather under-considered in Poland, while in developed countries they seem to be a perennially important issue, especially in the process of motivating politicians or managing public administrations (Boston, Bradstock & Eng, 2010; Huberts, 2014; Lewis & Gilman, 2012).

For various reasons, politicians and public officials are not entirely or sufficiently motivated to make decisions which would rationalise the financial management of the state (Buchanan & Tollison, 1972). Therefore it was completely justified to start with the principal–agent model for the public sector (Moe, 1984; Weingast, 1984), where the citizens are the principals and the politicians are the agents. We have assumed that in order to make the principal (i.e. society) feel responsible for public matters and – something which is related to that – to be able to motivate politicians to make decisions effectively, there must be a civil society. The basic prerequisite for that to exist in democratic states is appropriate education about public matters, including public finances. This condition is correlated with material transparency, as without real transparency of the activities of the authorities and information about public finances, civic education cannot exist. Material (i.e. real) transparency is meant here as presenting information and data in an understandable and accessible way. Although formal transparency (presenting data and information in any form, lay-out, etc) ensures the transfer of information and data, it is all too often highly specialised or actually merely apparent.

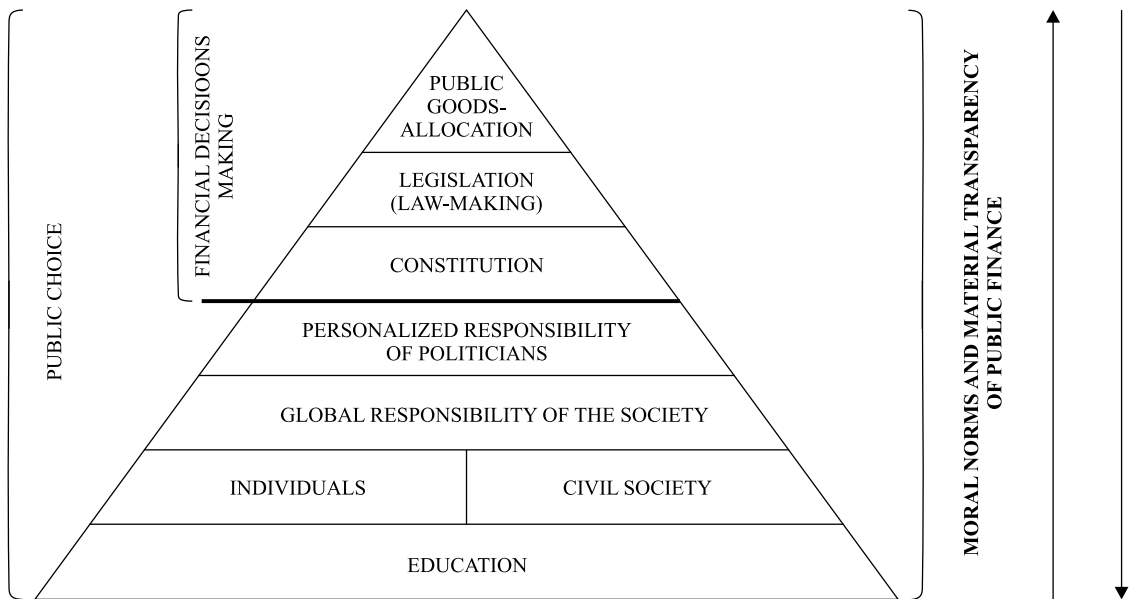


Figure 1. The determinants of the optimal operating of the public sector

Source: own study.

On the other hand, continual education gradually widens the scope of information which can be understood by citizens (material transparency). The existence of real, not only apparent or residual, and developed forms of civil society creates a state/feeling of responsibility and influences citizens with regard to matters including public finances (the global responsibility of society). That constitutes the basics for building the responsibility of each and every politician (i.e. personalised responsibility of politicians). However, the concern is not only, or first and foremost, legal responsibility. Politicians should be accountable to their principals (i.e. society) when making (financial) decisions. Certainly, one should bear in mind that the motivational incentives of representatives (i.e. politicians) will never be based on entirely the same interests of the principals (i.e. society). Despite that, it is necessary to control the actions of politicians, and additionally that causes, so to speak, a redistribution of some elements

of power (Fukuyama, 2005), since the above-mentioned relationships between the elements of the presented model move in the opposite direction (top-down). Political decisions, including the passing various legislative acts, influence the responsibility of politicians, the development of civil responsibility (including individuals) and the strengthening of the institutions of civil society.

One should also not forget that the operating of the public sector, of which crucial components include financial decisions taken by public authorities, in fact affects the theory of public (fiscal) choice, which is concerned with the issues related to the choice of allocation of goods and redistribution of profits. In other words, it concerns the type, quantity and quality of public goods and the ways of paying for them (Buchanan, 1987; Buchanan & Musgrave, 2001; Kiefer, 1997; Lee, 2013; Musgrave & Musgrave, 1989; Stiglitz, 2000). This is to be decided upon by citizens by means of a democratic election, which reduces the arbitrariness and decisional freedom of public authorities. This way

of expressing one's election preferences is part of the theory of agency described above.

In the presented model moral aspects shown in the figure play a crucial role. Here we see feedback in operation. On the one hand, moral convictions/attitudes determine the attitudes and expectations of society (e.g. the requirement for honesty, reliability, acting in the public interest) with regard to politicians, who should take optimal decisions. On the other hand, the decisions made (e.g. with regard to laws) influence the forming/changing of moral attitudes. In the case of the 'young democracies', historical background can be of some significance (from the previous communist times).

3. Material and methods: Examples of the implementation of moral values¹ concerning public spending (goals, hypothesis and research methods)

3.1. Morality and financial decision making

As mentioned previously, this part of the article discusses in detail the aspect of morality (i.e. moral values) in the presented model for optimal public sector functioning and its special significance in the process of motivating politicians who make financial decisions, which is one of the topics of this publication. Moreover, when referring to financial decisions, we basically mean the ones which deal with public finances (i.e. public money). In addition, they need to be broadly understood, i.e. the point is not the decisions themselves in the strict sense, i.e. individual decisions which exemplify the application of law, but first of all other forms of expressing will in the field of financial policy in the form of, inter alia, financial plans (strategies) and normative acts (laws and regulations). Optimisation, in turn, is interpreted by the authors from the point of view of effective achievement of the assumed goals and implementation of public

tasks while maintaining cost effectiveness, taking into consideration the scarcity of resources.

We have hypothesised that morality, perceived as a group of values, besides material transparency, occurs (should occur) at each stage of the optimal operation of the public sector. Moreover, we have also asserted that its impact on the sector is bidirectional (what is referred to as the feedback effect). In view of this, we can point to two detailed and expanded hypotheses, the affirmation of which will define the meaning of the moral values in the model proposed.

Firstly, moral values are a kind of a reference (background) for laying the foundations of the model, i.e. the method and quality of educating society and transferring information to it, which concurrently fulfils the premise of real (not apparent or formal) transparency concerning, inter alia, public finance. In this situation interactions are observable between not only morality and education but also between morality and material transparency.

In addition, moral values are an indispensable determinant of a real, not only formal, formation of civil society, their responsibility for the condition of the state and the responsibility of politicians. A 'formal' civil society will mean that social organisations pursue specific activities, but their impact on the functioning of the state and political authorities will be significantly reduced or very limited. The functioning of the civil society exemplified by Poland has been discussed in point 2 of this article. The case of the formal responsibility of politicians is similar: although it may be provided for by law, it is either not enforced or legal regulations are merely apparent (e.g. diffused responsibility), and in fact politicians bear practically no consequences.

Proceeding to the next (higher) segment of the operating of the sector, i.e. formal decision making, morality should be one of the determinants of law-making, expressed within the framework of the constitution or statutes. It will ultimately affect the optimal allocation of public goods from the point of view of the economic policy adopted by the state.

¹ The notion of 'a moral value' is used interchangeably with 'a moral principle'.

Secondly, when analysing the entire model of the operation of the public sector through the prism of morality, the occurrence of a specific feedback effect should be emphasized, which is the impact of moral values on each determinant (segment) of the sector not only bottom-up but also top-down. This effect is analysed further in this article.

In the context of the presented model of the optimal functioning of the public sector, it needs to be noted that, depending on each determinant, the impact of the moral values on them will be diverse. In other words, with reference to the determinant placed at the base of the model, i.e. education, it needs to be transmitted in such a way that it covers specific moral values. Therefore, it is not only about transmitting factual knowledge, for instance about public spending, on different levels of education. This knowledge should convey specific moral values. In the field of public finance the latter include care for public good, justice, solidarity, subsidiarity, cost efficiency, honesty and reliability, although undoubtedly they also have their universal meanings. These elements will subsequently influence the publicising of information in an appropriate way, e.g. honest and reliable information about public finance, since it serves to increase social awareness and strengthen civic attitudes, the results of which will increase the sense of responsibility for the condition of the state and the responsibility of politicians for the decisions taken, including in the field of finance.

However, the impact of morality on the process of politicians making decisions, e.g. while making laws, will follow a slightly different course. Considering the specific nature of the language of law, one can claim with a high degree of probability that it will be ineffective to literally name moral values in the text of specific laws, e.g. passing a law which states 'public money should be spent in a way characterised by honesty, reliability and for the public good'. In the context of legal jargon, these notions are so imprecise that they could be interpreted in many ways – especially in favour of those who dispose of such

finance. Consequently, formal regulations would be in operation, but in practice they would be defunct or would be applied incorrectly, i.e. without achieving the stated aim. Therefore the point is to construct laws in such a way that the legislator takes into consideration moral values translated into the language of law – the language of legal texts.

Within the established goal of this article the authors conducted the pilot studies presented below so as to point out the mechanism of exerting the impact of morality on legal systems in accordance with the proposed model. However, in legally doubtful or vague situations, especially when the rule of law allows for a high degree of decision-making freedom, or when what are known as general clauses occur, politicians and officials making decisions about public spending should be guided by moral values (in particular those commonly named in constitutions of democratic countries, such as public good, justice, solidarity and subsidiarity), since, according to our model, they feel the pressure of responsibility (individual responsibility) and are aware of the social control inherent in civil society, which in its operations follows moral principles acquired in the process of education (including religious education) as a crucial determinant of the model of the optimal operation of the public sector.

The mechanism of transposing moral values into the language of law is also determined by the feedback effect, which includes the impact of these values on specific determinants of the top-down sector. Specifically, the laws passed and enforced with respect to moral values strengthen both the sense of individual responsibility of politicians and of society as a whole and contribute to increasing its civic virtues. Active operations of social organisations within the framework of current legislation (which already respects these principles) will make moral values a desirable element of the widely-perceived process of education, which will be aimed at transferring knowledge in an understandable way, by which a requirement of substantive disclosure will be satisfied. In the area of public finances it means

the transfer of knowledge, information and data, at different education levels and advancement, e.g. about state and local government finances, taxes and the influence (possibilities, effects) of citizens on the way public money is spent by social control based on civil society. Thus the next determinants of the sector emerge, going from bottom to top. In fact it will be a feedback effect with repeated cycles.

3.2. General characteristics of the conducted pilot studies and research methods

For the purpose of initial verification of the presented model of the optimal operating of the public sector the authors decided to test the validity of the assumptions of its basic elements (those which belong with the principal-agent relationship). In order to verify the model in detail, two complementary pilot studies were conducted.

The first one, which was quantitative in character, was conducted with the help of the diagnostic poll method: a survey which used an anonymous internet questionnaire.² It contained nine questions: five closed-ended questions (with the cafeteria-style checklist) and four open-ended questions (where respondents wrote their own opinions). Two hundred and twenty questionnaires were received, with respondents answering from the perspective of taxpayers, voters and public administration staff. The group surveyed included: 54% students,³ 20% government office workers,⁴ 24% workers employed in offices other than government offices and 2% unemployed.⁵ With regard to gender, 31% of those who completed the questionnaire were male and 69% female.

The questions with the response options provided (closed-ended questions) covered the opinions of the respondents about the following issues:

- the transparency of information on public spending;
- the degree of satisfaction with the ways public money is spent;
- the desired/expected level of influence of citizens on decisions concerning public spending;
- the usefulness of politicians possessing knowledge regarding public spending;
- the desired or preferred institutions/entities which should control public spending by politicians.

The respondents formulated their own opinions (i.e. answered open-ended questions) on the following issues:

- the causes for the lack of interest on the part of citizens as to how public money is spent;
- the reasons for politicians not revealing information about public spending which is easily understandable to the average person;
- the factors motivating politicians to reveal understandable information about public spending;
- which moral values should guide politicians when spending public money.

The next pilot study was conducted among 211 students of universities in Białystok and Łomża⁶ in December 2016, which means the respondents were answering from the perspective taxpayers and voters. Again the diagnostic poll method (i.e. a survey) was used, with the tool again being an anonymous internet questionnaire. The questionnaire included 16 closed questions the aim of which was to discover the opinions of the respondents about the following values and the influence thereof on the making of financial decisions: public good; justice; solidarity; and subsidiarity in public spending. All the questions were constructed in the same way: an example was given of a specific situation depicting the practical implementation of the above-mentioned principles. The respondents

² via: <https://www.interankiety.pl/>

³ A perspective of taxpayers and voters.

⁴ A perspective of taxpayers, voters and public administration staff.

⁵ A perspective of taxpayers and voters.

⁶ The University of Białystok (the participants were students of law & administration) and Łomża State University of Applied Sciences (the participants were the students of administration).

assessed the legitimacy of each of them by choosing one of the following responses: definitely agree, partially agree, partially disagree, definitely disagree. The majority of the respondents were women (73%) with 27% men. Most of the respondents studied in Białystok (72%), with the remaining 28% studying in Łomża. With regard to the level of education, 40% were one-cycle programme students, 37% were first-cycle programme students and 23% were second-cycle programme students.

4. Results and discussion – analysis of the results of the pilot studies

When conducting analysis of results of the diagnostic polls, with regard to first one the authors in this article – taking into consideration its limited extent and issues raised – focused on the question about the significance of moral values in public spending. Given its voluntary character, the respondents could leave it unanswered or could provide an ambiguous (extended) response. That is why only 178 of the 220 respondents answered this question. The analysis of the responses allowed for 46 types of responses to be distinguished, although some of them despite being named differently were actually identical (the phrases were synonyms). As a result, for the purpose of transparency and generalisation of the results, the responses were categorised into eight groups: honesty, reliability, (social) solidarity, care for public good, cost efficiency, religious principles, politics and morality (opposed to each other), reason, and others.

The following diagram presents the results in percentages. It quite unambiguously shows that in the opinion of the respondents the most significant moral values with regard to public spending are the following: honesty (66.29%), care for public good (42.13%), cost efficiency (24.72%) and reliability (22.47%).

However, for methodological reasons the following issues need to be explained.

First, the last group, i.e. 'other', includes various responses (e.g. modesty, humbleness, respect,

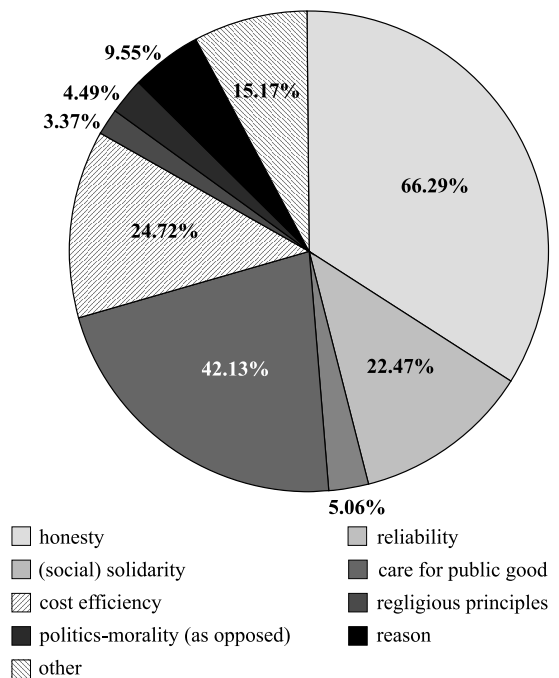


Figure 2. Moral values and public spending

Source: own work based on a survey conducted.

conscience, empathy, safety, cooperation, dignity, honour, and personal culture) which were not covered by the previous categories or were not an actual answer to the question (i.e. were irrelevant to the question). This group also included quite unique responses such as: 'Politicians should take their hands off our money, we should decide ourselves how to spend it' and 'Politicians should do more and speak less'.

Secondly, it is worth noting that in the respondents' opinions (the seventh from the top in the list in Figure 2, accounting for 4.6%) politics and moral values are mutually exclusive. In other words, speaking about morality in the case of politics does not make sense.

Thirdly, the 'Religious principles' group could be encompassed in other groups such as, for example, honesty, reliability, solidarity. However, due to its broad meaning and the fact that the respondents literally gave such an answer, the authors decided to single it out.

The above-mentioned survey results showed that the respondents not only stated how important it is for them to consider moral values with regard to the spending of public money but also pointed to those values that are particularly important for them. For the purpose of verifying the extent to which the belief in the necessity of applying moral values to public spending is reflected in practice, as well as the aforementioned principle of transparency of Polish law, in the second of the empirical studies specific actions were given as examples of the implementation of moral principles in decisions concerning public spending. Those will also be used in an attempt to answer the following important questions: Does the principal (i.e. the citizen) really feel responsible for public spending? Does he/she feel responsible only for spending the money which affects or may affect him/her directly? Is the principal likely to give priority to the benefits that society may gain at the expense of his/her own interests?

In this study the examples were used to show practical application of the following moral principles: public good, justice, solidarity, and subsidiarity. The choice of these principles is justified by the fact that each of them is mentioned in the 1997 Constitution of the Republic of Poland as principles on which the Polish legal system is based. Articles 1 and 2 of the Constitution point to the idea of public good (Art. 1: 'The Republic of Poland shall be the common good of all its citizens.') and justice (Art. 2: 'The Republic of Poland shall be a democratic state ruled by law and implementing the principles of social justice.'). Another one is mentioned in the Introduction and expounded on in the further part of the Constitution, which is one of the basic pillars of legal order: the principle of subsidiarity. Moreover, Art. 20 of the Constitution states clearly that the social market economy based on the freedom of economic activity, private ownership and solidarity, as well as dialogue and cooperation between social partners, is the foundation of the economic system of the Republic of Poland.

According to the model presented in this article, education is an element creating foundations for developing morality and material transparency. Referring concurrently to the cultural and religious reality which plays a significant role in forming the social reality of contemporary Poland (including in the scope of public spending) – as an example of a Catholic country (it is not insignificant that a vast majority of Poles state they not only believe but also practise)⁷ – it can be concluded that the young generation, by its participation in religious education containing the elements of Catholic social teaching,⁸ learnt about basic moral values, which are of great significance for creating a civil society.

It needs to be mentioned that the principle of respect for public good fosters the building of not only the moral order but also the legal order, which ensures every person enjoys basic rights and freedoms. As a result, the questions concerning the principle of public good were asked first. Also, the respondents were asked to consider the questions of using public roads, protection and renovation of monuments, environmental protection, and the method of financing enclosed areas for smokers.

A vast majority of the respondents declared that the right to use public roads should be

⁷ The surveys of the Public Opinion Research Centre (CBOS, 2015), gradually carried out since the late '90s, show that constantly more than 90% of Poles consider themselves to be believers, while the percentage of non-believers is relatively low, within the range of 4% and 8%.

⁸ The assumptions of subsidiarity were discussed as early as by Aristotle, but the actual term 'subsidiarity' was coined by Gustav Gundlach, a representative of Catholic social teaching, and it was described by Pope Pius XI (1931) in his encyclical *Quadragesimo anno* and Pope John XXIII (1961) in his encyclical *Mater et magistra*. The principle of solidarity was described by, inter alia, by Pope John Paul II (1987) in his encyclical *Sollicitudo rei socialis*. Justice was discussed by Pope Leo XII (1891) in his encyclical *Rerum novarum* and Pope Pius XI (1931) in his encyclical *Quadragesimo anno*. The issue of public good was touched on by Pope John Paul II in the encyclicals *Laborem exercens* (1981), *Sollicitudo rei socialis* (1987), *Centesimus annus* (1991).

made available to every citizen free of charge (58.0% definitely agreed, while 30.0% partially agreed). The respondents were also positive towards the question of environmental protection. However, the percentages of responses were slightly different with regard to whether the financing of protection and renovation of monuments should be covered by the state budget in the opinion of 77.0% students (with 29.0% definitely agreeing, and 48.0% partially agreeing); the remaining (23.0%) expressed the opposite view. As for financing environmental protection from the state budget, a positive response was given by 83.0% of the respondents (36.0% definitely agreed, while 47.0% partially agreed) and a negative response was given by 17.0% of students. It is significant that the majority of the respondents disagreed with the statement that installing and maintaining enclosed areas for smokers in public utility places should be financed from the state budget. That was definitely opposed by 37.0% and partially opposed by 33.0% of the students, while 21.0% partially agreed with the statement, and only 8.0% definitely agreed.

The distribution of responses to the above-mentioned questions shows that the respondents are definitely positive about the implementation of the public good principle which affects them directly. Everybody using roads and the natural environment perceives the need for public spending on those. Considering the fact that the continuity of the nation as a social group is ensured by, *inter alia*, tradition and culture, the respondents considered it purposeful to protect and renovate monuments (one of the examples of the realisation of culture). On the other hand, although enclosed areas for smokers help to protect the environment and other people (from the effect of passive smoking), a prevailing conviction is that it is not a problem that concerns everybody, which is why the question arises of why the budget should be burdened with additional costs incurred by those who voluntarily and consciously decide to poison not only themselves but also the natural environment.

Another moral value for public spending included in this study was justice. Two questions were discussed, access to free part-time education and additional benefits from social welfare, which were analysed with reference to income levels. Also analysed were the respondents' opinions on applying the principle of justice to estimate the amount of remuneration for employees of social welfare institutions and the availability of family benefit (granted in connection with having children) within the '500+' government programme discussed below.

The respondents stated that in families where the income *per capita* is PLN 674 (in Poland the amount of the income criterion is applied in granting a family benefit) or below, that income should be a sufficient criterion for free part-time education. Such was the opinion of 66.0% of the respondents (36.0% definitely agreed, while 31.0% partially agreed), with 34.0% negative responses. The above-mentioned income criterion should be sufficient for awarding additional social benefits for only slightly more than half of the respondents (56.0%, while 20.0% definitely agreed and 36.0% partially agreed).

Even more controversial is the question of access to the '500+' government programme irrespective of income and social circumstances. Only slightly over a quarter of the respondents (27%) said that every family with at least two children should have access to this benefit, while nearly half of the students (46.0%) definitely disagreed. These examples prove that the respondents feel a strong need to regulate access to selected goods and benefits, with the income level playing a significant but not key role (e.g. access to additional social benefits). It needs to be added that not every case requires the implementation and realisation of the social justice principle, since, as Pope Pius XI (1931) wrote, 'By this law of social justice, one class is forbidden from excluding the other from sharing in the benefits. [...] To each, therefore, must be given his own share of goods [...]' (57). According to the words of the Pope, limiting the accessibility of the '500+' benefit will be identical to infringing

on the principle of social justice. A perfect example of the application of the moral value involved is the respondents' conviction that irrespective of the place of work (voivodeship, city) each employee of social welfare institutions should enjoy equal remuneration (i.e. those holding equivalent positions should earn as much, irrespective of the voivodeship of their employment); this is the opinion of 75.0% of the respondents.

The solidarity principle, understood as '[...] a firm and persevering determination to commit oneself to the common good; that is to say to the good of all and of each individual [...]' (John Paul II, 1987, 38), may constitute a foundation of community life. Thus, this principle should be one of the premises for creating laws, including those governing public finance. The respondents' opinions on the implementation of the principle of justice are diverse, depending on the thematic area and, similarly to the public good, the feeling of how much does the issue in question concern me personally, since a majority of the respondents (63.0%) think that the legislator should make possible taking early retirement with a guaranteed old-age pension in its full amount, but the policy of the state involving increased spending for social purposes at the expense of raising taxes or increasing state debt is accepted only by 15.0% of the respondents. We observe here a *sui generis* 'paradox of unawareness': on the one hand the respondents expect more social rights, on the other hand they do not accept excessive (in their view) fiscalism in the form of increased tax burden for the purpose of financing those benefits. Such an attitude is by no means surprising, as it is rooted in individual and egoistic attitudes. However, based on these results, we propose a thesis of the incomprehension of the meaning and practical implementation of the principles of justice and public good.

Not all of the respondents feel the need for an equal distribution of public money with a view to creating a level playing field for children, adolescents and the elderly. Despite the majority of responses supporting equal distribution of public

funds (64.0%), quite a large group (36.0%) held the opposite view. It is unfeasible to conduct a relevant in-depth analysis, as the respondents did not indicate to which social group the funds should be allocated. This way of thinking is difficult to comprehend, since the two stages (childhood and adolescence as well as the old age) are mutually dependent and concern us all. The preference of one group over the other may result in the social exclusion of one of them.

A positive phenomenon (from the point of view of social solidarity) is the respondents' conviction of the priority of public spending for activating citizens over social spending. This regularity was accepted by 80.0% of the respondents. The opinion on the way public money is spent seems logical, because by activating society not only do we contribute to decreased spending on social welfare but also counteract social exclusion.

The last moral value subject to analysis, which is an indispensable element for formation of civil society and making decisions of public spending, is subsidiarity. In this case, the respondents' opinions are also diverse. The vast majority (69.0%) disagree with the idea of raising taxes by a few percent in order to gain extra funds for creating special educational programmes and programmes professionally engaging those socially excluded as a way to counteract that exclusion. At the same time, 57.0% of the students (with 17.0% definitely agreeing) are willing to support a politician who states in his/her election platform that, due to an increasing state debt, extensive budget savings need to be made (such as limited social spending), which may concern each citizen. These two views of the respondents display an inconsistency.

The majority of those surveyed (78.0%) are in favour of delegating more tasks and public funds to local governments. This can be attributed to the fact that local governments, as the authorities located closer to 'average' citizens, will thanks to increased funds be able to cater more for the needs of local society. The opinions concerning the decentralisation of selected public tasks are almost evenly distributed: 55.0% of the respondents were

in favour of centralisation (15.0% definitely agree, while 40.0% partially agree with the purposefulness of this solution), and 45.0% of the respondents were against it (with 11.0% definitely disagreeing).

Conclusions

The conducted pilot studies allow authors to draw several general conclusions:

- firstly, the principals show interest and responsibility for public spending – however, not in every case should the decisions relating to the allocation of these funds be made (in the respondents' opinion) in accordance with moral values (the example of subsidiarity and solidarity);
- secondly, the principals display a particular interest in the way of spending public funds which may concern them directly;
- thirdly, the principals are not particularly likely to give priority to the benefits that society may gain at the expense of their own interests;
- fourthly, the principals stated religiosity in Polish conditions and their adherence to moral values as well as the consent (desire) for those values to be considered when spending public money is not reflected in the practical application of these principles.

Due to the limited scope and character of the conducted pilot studies, which were aimed at initial testing of the proposed theoretical model concerning public sector functioning, the authors become conscious that above conclusions cannot be recognised as clearly definitive. Nevertheless, the results do allow us to state that in-depth research into the assumption concerning the dependence on morality (moral values) and the financial decision making in the public sector is worthwhile. It is both a scientific and a practical undertaking. It meets the requirements of the analysis of legal institutions (their creation and application) not only in the systemic context but also (and first of all) in the social one. Moreover, the law is the form/instrument of organising social life. Considering also a specific impact of public finance law on

social life and the potential social effects on the financial law created (the feedback effect), it is our conviction that research in this scope conducted by lawyers and sociologists is desirable.

Moreover, it seems that the presented model of operating of the public sector must be subjected to further in-depth theoretical analysis, and not only in the context of the impact of moral values on it. The other elements (determinants) of this model are extremely important and worthy of scientific attention, what concurrently opens the way for further research.

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The territorial capital of urban functional areas as a challenge for regional development policy: An outline of the concept

Abstract

Objective: In this article Urban Functional Areas (UFAs) and their essence of matter and leading qualities are considered through the prism of theoretical concepts such as transaction costs, the concept of territorial capital and the space of flows with connection to the network economy.

Research Design & Methods: Each theoretical concept prompts its own group of intervention instruments in the processes of territorial development. On this basis the authors focus on explanation of the possibility of public intervention in the functioning and development of urban functional areas.

Contribution / Value Added: This article has a theoretical character but formulates general basis for elaboration of integrated development policy on the level of local self-government co-operation”.

Finding and recommendations: The authors show that the territorial authorities and enterprises in Urban Functional Areas should integrate their development policies around the “new quality resource” in the form of territorial capital. The territorial capital in UFAs of modern economies becomes the most important source of building long-lasting competitive advantages for businesses.

Keywords: urban areas, territorial capital, economy of flows, economic development, planning and policy

JEL classification: R1, R5, O2

1. Purpose and scope of deliberations

Searching for an answer to the following question is the key issue of this study: what actions taken as part of an implemented development policy

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can contribute to an increase in the competitiveness of urban functional areas (UFAs) and, in particular, to an improvement in the competitive position of business organisations operating in those areas. A major reason for interest in UFAs is finding ways to form durable competitive advantages for a state's economy. The new concept of building the sustainable competitive advantages of UFAs can be based on the idea of territorial capital. However, we must underline that the quantitative limits of this article have forced the authors to focus on the general concept and not specific actions recommended for development policy in functional areas. That is not only unable to be included in a relatively short study, but it also does not fit into the theoretical concept addressed

by the authors. Answers to the question will be sought in the existing theoretical concepts acquiring, directly or indirectly, an assumption of the necessary intervention of public entities into development processes. In other words, a review of several theoretical concepts, known as theories of regional development, will be made, with a focus on the resulting indications for the policy of increasing the value of the territorial capital¹ of functional areas. One can assume quite evidently that a lack of efficient development policies for functional areas, and UFAs in particular, results in a part of the growth potential of our country, considered in territorial systems, is not used, due to flawed market mechanisms. There is an opportunity to increase the value of territorial capital hidden in the reference functional areas, which makes up the key hypothesis of this study. One should stress here that in order to gain a competitive advantage even minor changes (modifications) in the implemented development policy are sometimes sufficient, which results from the essence of building a competitive advantage. The better one wins, which does not necessarily mean that the winner is much better.

Before discussing the main points of this study, some key terms need to be explained, including urban functional areas and causes for territorialisation of development policy.

2. Functional areas and territorialisation of development policy – basic explanations

Functional area

Urban functional areas are specific territorial systems, with two distinctive characteristics, according to the simplest interpretation: a central city, which is a place with relatively highly concentrated social and economic phenomena and processes; and an area of spatial expansion of some of the presented phenomena and processes beyond

the administrative borders, i.e. into the surroundings of the central city. Both these characteristics are objective in such a sense that they occur regardless of whether development policy entities are aware of them. One can then claim that the existence and even functioning and development of UFAs is an objective reality. In such a sense both functioning and development are mainly based on the market game, i.e. based on exceedingly vigorous mechanisms that do not always lead to the best results, and, first and foremost, they do not use all of the potential possibilities of UFAs, as specific territorial systems. This means that development policy is able to improve the functioning of UFAs, and hence to improve current living conditions of their inhabitants and conditions to stimulate economic and social processes. Looking from a different perspective, it should be noted that there are opportunities to improve a location's attractiveness, and to better use the existing internal capital and to improve its attractiveness as a place to live.

There are two more key issues related to the essence (features) of UFAs. Firstly, UFAs constitute compact territories when it comes to physical characteristics; however, their borders are blurred and the delimitation criteria from the functional point of view² are also ambiguous. The impact of the central city is the most commonly mentioned criterion, which is evident but at a very general level of explanation. For operational purposes (i.e. to identify the borders of a UFA), it is, however, necessary to define specific manifestations (measures) of impact. Significant differences in the results of the analyses performed may be noted here. The issue of UFA delimitation is a separate concern, which is not the key topic of this study. It has been raised to emphasise that spatial coverage of a UFA varies over time, according to changes in the gravitational impact of the central city

¹ This term is explained further in this study.

² It should be emphasised that the modern economy, which is highly mobile and information-based, demonstrates gradually increasing discrepancies between the features of physical environment and invisible information processes and goods-flow processes.

(a gradual increase in the impact thereof is observed in Polish conditions); depending on the point in time, the perception of the spatial coverage may vary, depending on the acquired detailed criteria of delimitation. In this way, or another, a precise border of a UFA as the 'subject' of intervention is identified arbitrarily on a case-by-case basis. Nevertheless, this does not contradict the above-mentioned interpretation which treats functional areas as objective entities and thus independent of the degree of their recognition and the approach towards them of the public authorities operating within them. Only the criteria (methodology) of their identification are arbitrary and lead to a more or less precise representation of something that exists objectively (Kudłacz & Markowski, 2017). Another issue which should be mentioned in the introduction to this study applies to the size of entities operating within a UFA, each having specific expectations for its environment but united by common interests focusing around the need for co-operation.³ This applies in particular to local government units. As a result of co-operation revealed by different agreements new values emerge, which have a significant impact on the development potential of an individual, including the generated external effects⁴ the internalisation of which may bring benefits to all entities in the given UFA.

According to the authors of these deliberations, one should take a flexible approach to the borders of functional areas and note the differences between an area identified for statistical monitoring of development processes according to territorial criteria and the area which will be identified in a process of a 'planning' intervention. The latter concerns the anticipated system of spatial

social and economic relationships. The two delimitations do not have to overlap. In the latter case the delimitation criteria need to relate to the acquired criteria of interventions and probable development scenarios. It is sufficient to analyse the facts and the attempts of the ministry in charge of regional development when identifying functional areas and areas of strategic intervention within official documents of regional and spatial policy (e.g. arrangements implemented in the KSRR, and the KPZK⁵). An urban functional area is a potential structure within which it is easier to provide gradual balancing of the circulation of resources and conditions for an endogenic and sustainable development. We can empirically confirm the validity of the concept of resources as a function of knowledge (Dembowski, 1989). In UFAs one can easily observe shifting over time of the barrier of material limitation of resources towards a function of 'unlimited nature of resources' related to unlimited human knowledge and implemented innovations.

Territorialisation of development policy

Territorialisation of development policy is another term which needs to be explained. Generally, it is a policy addressed to a specific territory, one not necessarily limited by the borders of an administrative unit, using individualised impact instruments. It varies from a regional/local policy by not being allocated to systems of administrative units, and, furthermore, its impact exceeds standardised (i.e. the same for all) intervention instruments. The latter issues need to be discussed in detail. A territory-oriented policy assumes that each delimited area demonstrates a specific development potential but a part of that potential has its specific features, which rarely occur in other territorial systems, and this is the part which is or should be the subject

³ However, it should be noted that people are not always aware of it or, if they are aware of it, their eagerness for compromise is not sufficient.

⁴ External effects cover material and non-material products which the given entity (i.e. the recipient) obtains from its environment, without compensating for the costs of their making, assuming that the recipient is not able to control and/or affect the operating volume of the units making the environment.

⁵ Both documents are strategies made at the national level: the KSRR is the national strategy for regional development, while the KPZK is the concept for the spatial development of the country.

of special interest from the entities responsible for implementation of the development policy. The implementation of the concept of development policy territorialisation consequently entails the implementation of a specific formula for a territorial contract, if we want to make it an efficient instrument, complying with the concept of development territorialisation. The observations precisely match the nature of urban functional areas. UFAs themselves are a specific development potential whose activation requires actions to be taken by relevant policy entities.⁶ In other words, besides the traditional components of general development potential there is the specific one that is the subject of our interest, the essence of which is based on the aforementioned commonality of interests and the utilisation of which requires agreements, co-operation and integrated and co-ordinated activities, considering the long-term perspective. Its results may include higher quality of life for the local population, better competitive position of companies and, first and foremost, increased development dynamics (Kudłacz & Markowski, 2017).

3. The territorial capital of functional areas

The concept of territorial capital can be linked to policy territorialisation. It is a new approach to development factors, taking into account interactive relationships between the system of functions and physical development of a territory as a kind of generator of a new type of resources that stimulate its development. The implementation of a policy

⁶ This study does not deal with the issue of the entity responsible for the implementation of development policies for urban functional areas. In the individual case of a specific UFA the entity should be a territorial government of a unit within which the given UFA is located. The regional (voivodeship) government should play the role of an entity which co-ordinates and stimulates the development of a network of mutual links of all urban functional areas of its unit and the metropolitan area in particular. By analogy, on the national scale it applies to the state authorities with reference to metropolitan areas.

is oriented towards the formation of a territorial capital, which gains special significance in the case of UFAs. The elements of the above-mentioned capital include phenomena (processes) which can be activated by efficient intervention policy. Taking the above into consideration, the concept of a territorial capital should be presented in more details.

Territorial capital represents a category which is frequently mentioned when discussing regional and local development. However, it is not conclusively interpreted. Usually it is referred to as all of the material and non-material advantages of a particular territorial unit, conditioning its development and competitive position (see Zaucha *et al.*, 2015, p. 123). A similar interpretation was presented by Capello, Caragliu and Nijkamp (2009, p. 8), although referring to an OECD publication (Territorial Outlook, 2001) they quote a definition that actually limits the concept to specific properties of a region, which determine its competitive advantage against other regions (Capello *et al.*, 2009, p. 7). For a better presentation of the essence of territorial capital, let us differentiate between three semantically similar terms referring to the development of a single territorial unit, i.e.: development potential; active development resources; and territorial capital.

The first term, **development potential**, refers to all of the endogenic material and non-material resources that a unit holds, both those already activated as well as those which can become a basis to initiate development processes. Each territorial unit has such a potential; however, that potential tends to be only partially used. One can enumerate three causes for a part of a development potential not being used in a specific period of time (Kudłacz, 2016, pp. 343–344):

- the unprofitability of its activation in the specific period,
- a lack of resources for its use/management,
- a lack of skills needed to use it.

Active development resources, as the name suggests, refers to a part of the owned capital used in a specific period.

Relating to the above-mentioned explanation, **territorial capital** covers everything which was assigned to active development resources (mentioned above) and additionally all internalised impacts of conditions generated by the environment. Briefly speaking, as the term suggests, it is ‘territorial’ because the elements existing in the territory and its environment determine the development dynamics.

There are some opinions about the territorial capital of a UFA which assert that it is the total of the capitals represented by units creating the given area. Such an approach completely misses the distinctive feature of this kind of area, i.e. that it is created by a group of dynamically linked units. The network of links gives the opportunity to bring added value to the territorial capital of the entire UFA, the beneficiaries of which may include individual co-creating units as well as business organisations in the corporate sector. The territorial capital of a UFA can be described in two ways. In a wider context it correlates with the above-mentioned definition acquired for a single territorial unit (which a UFA is) but considering a specific resource rooted in actions which co-ordinate, organise and strengthen the network of links and stimulate development. In a narrow sense one can limit the concept to the UFA-specific part of territorial capital. In other words, territorial capital represents specific external benefits which are generated and available as a result of a multifunctional interaction of users with regard to a separately identified territory. Therefore territorial capital has the nature of a generated ‘complex club good’ which is dynamic in time and space, and available for users (club members) operating within a given functional area (Markowski, 2011).

Territorial capital is intrinsically related to systems of urbanised areas, such as UFAs. It is the basis for making products which use human creativity and intelligence supported by intelligent IT solutions. This dramatic change in the management model is widely described in literature, including Azkuna (2012), Laundry (2000), Florida (2005), Howkins (2001), Komninos

(2008) and Mitchell (2007). In Poland the issue was investigated by authors such as Domański (2000), Domański and Marciniak (2003), Klasik (2012), Makięła and Szromnik (2012).

The conclusions related to the concept of territorial capital will thus be as follows: UFAs have an intrinsic potential ability to strengthening the given capital, and hence the dynamics of development processes, by using appropriately designed co-operation from local government unit(s) leading to rationalisation of individual activities. However, the processes need to take into consideration the specific nature of **functional area delimitation**, which has been mentioned in a different context. If cities are economic regions, the functional approach to an urban system must not be reduced to delimitation by its morphological features. Nowadays, the relationships between spatial and physical characteristics, i.e. management and functional relationships, have gradually become blurred. The reach of urban functions greatly exceeds the borders marked by bands of specific management. A new phenomenon of the flow economy and network products (including decreasing the costs of overcoming the space resistance) is the discontinuity of spatial structures between strongly linked urban centres. The spatial discontinuity of development processes is not an exception but instead a permanent feature. Therefore it can be concluded that development promoting public policy should cover various delimitations of areas, depending on the specific development purpose(s). For the purpose of urbanisation control it can be a different area than for business purposes. In the first case the delimitation criterion is marked, for example, by the reach of the built-up area, while in the latter case it is commuting and service markets. Incorrect identification of the given area limits possible interventions, or can even aggravate pathologies, impede development processes and generate high social costs.

New development paradigms require redefining of contemporary location factors and making reference in development policies to the potential role of complex resources (mega-resources) as special

products of evolving civilisation. If following Dembowski (1989) we assume that ‘resources’ are an economic category and a function of human knowledge, in the process of the progressive dematerialisation of a manufacturing area – typical for an information society – we need to note that the significance of material factors in a mega-resource decreases, while the role of intellectual factors, such as knowledge, skills and creativity, increases. Knowledge, skills and creativity related to a specific place then determine economic development and growth. If managed properly, the resources not only generate significant profits but also greatly contribute to a transfer of financial benefits to places where the mega-resource is generated, at the expense of countries and places based on simple resources.

In this context the essence of building a permanent competitive advantage for commercial activities performed in a functional area is building a complex ‘interactive resource’ which is a result of intensive relationships between (and activities by) people organised in different institutions (characterised by high levels of entrepreneurial skills, innovativeness and trust) who produce a special added value which enables the production sector to achieve high productivity levels. The special resources provide companies with a competitive advantage in ever more competitive global markets. Territorial capital can be generated by skilful linking and combination of natural resources with the quality of physical (spatial) management and intellectual resources of people. It is strictly related to the ability of local government units to co-operate within functional areas and high levels of social trust (Markowski, 2016).

4. The theory of transaction costs to explain the abilities of UFAs with regard to territorial capital development

The theory of transaction costs (TC) is among the basic categories of the new institutional economy (NIE), although the concept of this kind of costs is much older. It is attributed to Coase, who in an

article entitled ‘*The Nature of the Firm*’ attempted to find an answer to an apparently simple question: why do firms exist and why are they established? Coase performed various analyses and concluded that an important cause is the opportunity to reduce the general costs of concluding a transaction, which he called contract costs (Coase, 1937, p. 391). The term ‘transaction costs’ was introduced into literature some time later by Williamson, as a cost of organising, co-ordinating, supervising and securing a transaction (Williamson, 1998). The present-day interpretation of transaction costs is very extensive⁷ and goes far beyond the concept used in this study.⁸ Let us then focus on the ideas dominating in Williamson’s concept. The reference is important for the topic of the study for two reasons: firstly, with regard to an integral link in his concept between the TC and institutions among which a contract is binding; secondly, Williamson indicates determinants which prejudice the value of the TC (Williamson, 1998).

To make further deliberations clear, let us define the conceptual scope of the three categories mentioned above, which are closely related to the essence of the theory of transactional costs: transaction, institution and contract.

The explanation of **transaction** as a category of the costs under discussion is the easiest, because the concept is close to its common understanding but with a certain reservation. It means that a transaction is an act of exchange in its wide sense. As Williamson emphasised, the term ‘transaction’ does not only cover market exchanges, it also covers all acts of exchange within an organisation (observation by Kowalska, 2005, p. 52). Due to obvious reasons, a transaction is a basic unit of analysis in TC theory. The concluding of transactions entail certain costs

⁷ There is significant literature on the topic. A concise review of the term’s interpretation in Polish literature can be found in publications by Hardt (2005, 2006 and 2009).

⁸ It should be emphasised that entities are often not aware of transaction costs and treat them as non-specified conditions.

for the parties to the given exchange and often also for the environment in which they operate.

The costs of external exchanges tend to be neglected in analyses or treated as factors of little significance, which hampers the results of TC analysis. However, it needs to be highlighted that under conditions of contemporary economy (i.e. rapid losing of the internal competitive advantages – gained as a result of technical and organisational progress – that companies have over their competitors), maintaining durable competitive advantages of companies and territories is more and more determined by the quality of the environment and the regional external (local) effects which are accumulated therein. Here we can link the theory of transaction costs with the given territorial capital and the concept of relational production from the essence of a club good, which is a kind of counterbalance for transaction costs of market contracts.

The above-mentioned institution is another component of TC theory. In a general and simple approach **institutions** represent the rules of the game. Institutions can be defined as sets of operating rules which are used to identify who has the right to make decisions in a given area, what actions are acceptable or restricted, what general rules have to be observed, what procedures need to be followed, what information needs to be provided and what information does not need to be provided, and what benefits of specific proceedings are. All rules contain prohibition or permission standards or standards requiring certain actions or results (Ostrom, 1990, p. 51). North provides a different definition of institutions, asserting that institutions are acquired limitations which shape political, economic and social interactions. They cover both informal limitations (sanctions, taboo, habits and traditions) and formal limitations (constitutions, acts of law and ownership titles). In history institutions were invented by humans to create/introduce order and limit the uncertainty of exchanges (North, 1991, p. 97). A mention of the reduction of the uncertainty (of transactions) is very important for us and we will come back to it later in this study. Thanks to

a system of formal and informal institutions adapted to new relationships in the area of production and consumption, we can build systemic conditions for intervention in external effects, including conditions for their price and cost internalisation.

A **contract** is an agreement between parties (contractors). It varies according to the degree of mutual links between the contractors. In a general sense a contract can also be a non-formalised memorandum. Not only exchange agreements, but also memorandums/commitments of entities independent of one another to perform common and appropriately co-ordinated actions are the institutions of contracts. The main premise of a contract is to reduce transaction costs, for instance by the reduction of uncertainty.

How does the above-presented concept of transaction costs relate to the functioning of UFAs? Let us remember for the need of further deliberations that local government units are the entities (organisations, as meant by the concept of TCs) which form UFAs. Therefore specific interactions occur within and between the units. First and foremost one should pay attention to the fact that a higher intensity of different transactions results from the essence of UFAs – as compared to other randomly delimited territorial units – and it justifies the opportunity to gain knowledge from the TC concept to improve the rationality of a given area's functioning. One can present arguments supporting the existence of a positive relationship between the value of a central city's potential, and hence the power of its impact on the environment, and transaction intensity. Let us differentiate between two situations. The first one is the concept of an UFA as an objective 'creation' in the previously presented sense (i.e. deprived of the co-ordinating entity); the other case is an UFA subjected to an arranged and appropriately negotiated 'supervision' in which a specific class of contracts plays an important role. It should be highlighted that the reference transactions take place in both cases. Their feature in the first situation is that the majority of transactions are concluded based on market rules, which entails uncertainty and a short-term

nature of the agreements, and also the fact that there are a large number of individual transactions. The latter case at least partly contradicts all the enumerated features of the first one. The limited framework of this study prevents the authors from presenting a wider context with regard to this issue. We will therefore limit our deliberations to one aspect of the 'issue', i.e. pay attention to two transaction characteristics pointed out by Williamson which determine costs: frequency and uncertainty (Williamson, 1998, p. 66 and further). They are both related to contracts as deliberate agreements/memoranda that bring benefits to all parties entering into the given agreement. However, it should be noted that a contract also creates specific TCs related to its conscious preparation followed by implementation supervision. The more repeatable the transactions are, and the more frequently they occur over a longer period of time, the greater the chance of a reduction of their connected TCs. This is related to, for example, distribution of some of the costs onto the entire cycle of the agreement being concluded. This is where one can see the value of the concluded contracts. In interventional territorial contracts not only the total balance of benefits and costs in a time context but also – and perhaps primarily – their spatial and substantial distribution in an UFA become the essence of an efficient agreement. Underestimating the spatial dimension is a source of conflicts and different social traps, as well as subversive behaviour of regional governments making up parts of a functional area. Consequently, a 'spatially blind' support policy often reduces the social effectiveness of management over a long period of time.

When it comes to uncertainty, the greatest dimension thereof most often applies to market conditions and opportunistic behaviour.⁹ Reduction of uncertainty is among major premises behind executing a contract. Williamson differentiates

between *ex ante* and *ex post* TCs of a contract being concluded (Williamson, 1998, p. 65). The first ones are the costs of uncertainty reduction, related to, for example, the storing and processing of information extending the knowledge about the subject of the transaction, and the intentions and trustworthiness of the parties to the contract, as well as the costs of negotiating the contract terms. The *ex post* costs include the costs of disputes, settled amicably or in court, concerning a non-performed contract or partly non-performed contract and the costs of monitoring implementation progress. It can be easily noticed that a reversely proportional relationship occurs between the contract parties. 'Saving' on the *ex ante* costs increases the potential costs of uncertainty in the future, and thus generates the risk of an increase in the *ex post* costs. In a certain sense it can be stated that under specific institutional conditions the total of both cost groups of a fixed transaction is constant. Therefore the core of the issue lies in the questions of whether it is possible, under a fixed level of the *ex ante* costs, to reduce the *ex post* ones, or whether it is possible to reduce the first cost group for a set potential state of uncertainty (*ex post* costs)? The answers to such questions are positive. It depends on the deliberately formed institutional space fostering conditions for co-operation and building trust, as well as alleviating the asymmetry of information leading to a narrowing of the phenomenon of reduced rationality and securing the parties to the contract, and hence facing the fears of opportunistic behaviour.

The reasoning presented above leads to a very important conclusion: by creating relevant institutional instruments, including deliberate forms of contracts, it is possible to reduce the transactional costs of UFAs functioning and developing, as a territorial whole. It also makes possible the improvement of the competitive position of all entities developing within such an area. Public authorities can play an intervening role in reducing the level of any subversive game of the functional area's users (to eliminate social traps such as free riding, affecting increases in social trust and fostering the creation of club goods in such way).

⁹ Besides limited rationality of behaviour, opportunism is an important premise in the concept on new institutional economy. See e.g. Williamson, 1998.

5. The concept of the network economy, the space of flows in relation to the formation of club goods

Cities able to generate a special new complex resource, i.e. the above-mentioned territorial capital, the essence of which can also be based on the concept of a club good, have become the drivers of the gradually polarising world.

The presently used term of 'flow economy' emphasises the surge in the dynamics and scale of flows affecting the functioning of the economy, including from the point of view of quality, especially within a system of storing and distributing resources, products and information. To use a certain paraphrase we can say that it is a new economic metabolism. That metabolism requires further and deeper identification. Its features include greater recirculation of products and waste and just-in-time operation. New generation logistics, and urban logistics in particular, are starting to play an increasingly important role in the 'economic metabolism'. At the same time we deal with growing discrepancies between flow streams and intrinsically inert spatial and social structures. Another phenomenon which has a positive impact on contemporary urbanised areas is a trend for the decreasing significance of the costs of overcoming spatial resistance using natural resources and semi-finished products. This process contributes to the fact that for many activities the spatial reach of an economic region based on demand end-costs actually gains a global nature. The literature describes such industries as territorially non-rooted. Paradoxically, globalisation of demand for products and services, unless a monopolistic situation occurs on such a market, means for companies an increasing significance of factors related to the place, but it occurs on the side of non-material resource supply. It is then worth noting that, alongside globalisation of supply for products and services, **the sources of competitive advantages of companies shift towards other, less mobile 'resource-based' location factors**, e.g. related to high quality

labour force, human capital, creative culture, etc. The quality of the resources is conditioned by complex cultural and social relationships and features of spatial management guaranteeing high quality of life, diversification of the production and service domain, and the ability of the territorial system to recreate territorial capital. This thesis is confirmed by new geography research indicating that development has a focused nature (chimney-like, pointed) in metropolises and urbanised regions (the spike development concept) and is not evenly distributed in space (Kudłacz & Markowski, 2017).

Under the conditions of the contemporary economy (i.e. companies rapidly losing the competitive advantages – acquired as a result of technical and organisational progress – that they have over their competitors), the maintaining of a constant competitive advantage of companies and territories is becoming more and more determined by the quality of the environment and the regional (i.e. local) external effects accumulated therein.

It should be emphasised that transactions in complex network relationships have become an increasingly important source of external effects generated as club goods (Cornes & Sandler, 1986). They determine the competitive advantage of territorial cluster relationships. Consequently, the territorial balance of external effects will identify whether ambient factors (of a given functional area) have a positive or negative impact on the volume of business operations of companies. They will then affect the localisation behaviour of companies searching for permanent external sources of competitive advantages (Kudłacz & Markowski, 2017).

Referring to Samuelson's (1954) concept of public goods, which defines such goods from the point of view of consumption and not the supplier, we assume that such goods are characterised by the following two features: the volume of their supply is an argument of each citizen's utility function; their consumption by one consumer does not limit the quantity of the goods available to other people. Such features are fulfilled by free goods

and goods produced as a result of human activity, and are characterised by non-competitiveness and non-excludability (they are known as fully public goods and mixed goods).

A **private good** is characterised by the fact that a unit of such a good can satisfy only one consumer, while a **public good** represents the polar inverse against the first type. A pure public good is a good whose units can satisfy more than one consumer, and an additional consumer does not reduce the quantity available for others.

The **club goods mentioned in this study** can be defined as **quasi-public goods** (Markowski, 1999). In the light of the above-mentioned definition, social capital is a public club good. Its development is partly determined by a territorial system of institutions and organisations. An important activity of public authorities is increasing the quality and level of social capital. In the long-term perspective, establishing high levels of social trust provides a basis to guarantee network durability. This is a horizontal action, which can be used by all members of a market game, including the currently developing production and service clusters.

The concept of club goods helps to better explain the essence of territorial capital as a new qualitative development factor. 'New generation club goods' produced in functional areas are then manifestations and measures of the territorial capital quality.

The globalisation of external effects and public goods

The process of globalisation of external effects with a public nature involves 'mixed nature effects', and different degrees of involvement of global and local producers and customers. This feature is important, as it determines the actual possibilities for interventions into flawed market relationships and the operation of agendas aimed at producing or eliminating external effects. The institutions which will be able to intervene in the effects at the global level can do that using specific

mechanisms of soft co-ordination: agreements, treaties and memoranda. The problem is particularly evident in the case of external environmental process problems. There are known cases of problems with the implementation of national commitments made during global summits, e.g. in relation to CO₂ emission reduction. Similar essential problems occur when attempts are made to co-ordinate actions with states functioning in more formalised international structures, such as the EU. Theoretically one can assume that public effects with a global nature can be defined, although in practice an example of a fully public good will not be found.¹⁰

In the process of globalisation of external effects one should note that some of them undergo a stage of internationalisation, which is their formation by specific international clubs. This applies to financial systems, or actually the guarantee of the stability thereof, international legal systems, health safety, Internet safety, etc. Institutional systems – both domestic and global ones – definitely are not able to catch up with the processes of the globalisation of public goods (*Public Goods* ..., 2008, UNIDO).

Performing a more detailed analysis of public goods and negative public products with a global nature, one should conclude that such an either/or classification is a simplified approach. In the process of globalisation of external effects with a public nature we actually deal with external effects combining the global and local dimension, i.e. with 'glocal' effects.

With regard to the fact that glocal effects intrinsically involve a certain degree of exclusion and competitiveness resulting from the private or public costs of their internationalisation (price and/

¹⁰ Mixed public goods, also called quasi-public goods, are meant as goods the consumption of which is related to the cost of their acquisition, i.e. related to covering some costs (price internalisation) or other costs related to utilisation (acquisition) which do not compensate the producer and supplier for the costs of producing the good (cost internalisation). The presence of internalisation costs of a good provides it with some features of a private good.

or cost),¹¹ acquisition costs are among the causes of a subversive game, or falling into social traps, such as free riding; this applies to both the using and supplying of public goods. Interventions of national states in the supply and consumption of public goods with a global nature also have a subversive nature. They turn towards creating alternative political external benefits for the generated public goods or the legal acceptance of negative external effects helping to gain competitive advantage at the expense of the environment.

External network effects

It is worth mentioning at this point a discussion held between economists, dating back to the 1980s and referring to external network effects. The concept is related to specific markets of suppliers and recipients of products and services linked by a defined relation-based system, which can be computer- or telephone-based, or even identified by agreements and contracts (a loyalty system). The development of this concept and its application can be significant for the new paradigm of development policy adapting to new features of contemporary economy, i.e. network-based nature and enhancement of flows. Economists assumed that if there are external effects, those must be a result of market failure for network products. However, Katz and Shapiro (1985) and Lebowitz and Margolis (1995) indicated that within networks there are many external pecuniary effects which fall into the category of market mechanism operation

and in a long-term perspective external effects with a pecuniary nature are subjected to spontaneous internalisation mechanisms under market influences, and hence they do not require public intervention. The situation is different when public authorities are the leading participant of a network. Then a contract-based intervention can be accepted (a public entity takes control of the network), in particular when the relationships are approached from the point of view of a public good essence. It results from that essence that external effects generated within the network, whether they are positive or negative, are subjected to **specific control of the club (i.e. network) members**.¹² Therefore the specific feature reveals that within the network there is a mechanism facilitating both price and cost internalisation of the emerging external effects on a contractual basis. Such cases require a specific approach to network structures. One should not consider interventions by means of the correcting of a relation-based market, but sensible improvement could accelerate the process of building the competitive advantages of such a system against competitors. This kind of intervention makes sense if we deal with a functional-territorial system, in which the majority of relation-based system participants recognise the relationship between the generated effects and location in the given functional area, and to each function of consumption and production utility we can allocate an external effect with a territorial address of the network participant.

We can note some issues resulting from this concept for the development of functional areas, including urbanised ones. The possibility of intervention in such a network will depend on the globalisation degree of producers and customers. The producer can be local and the customer global.

¹¹ Internalisation of external effects by a price system occurs when for products in the unit's environment there is a possibility of creating a market, which also means creating a price. Then, by means of obtaining payment for the obtained ambient products, a consumer-recipient compensates the sender-producer for the costs of their production. Internalisation through a cost system also occurs when consumers or producers use goods with a public nature, i.e. commonly available and localised optional goods. It is a well-known problem of reducing benefits from the consumption of the goods by the costs of overloading and costs of overcoming the space resistance to obtain a good (Markowski, 1999).

¹² One should note that the definitions of external effects assume that the volume of operation of an external effect sender is not controlled by recipients. If the recipient decides to perform control or if a different form of relationship, e.g. a contractual one, emerges between the sender and the recipient, we get to the definition of club effects (or quasi-external effects).

Geographical clusters of producers may occur or spatial concentrations of customers may exist within global markets, etc. There are many possible combinations and the dynamics of changes with regard to spatial reach are very high. Conducting a policy of development support requires good recognition of present and anticipated processes, a highly flexible operation and quick responses adapting to new situations. Unfortunately, when approaching the policy from the practical point of view, one can observe increasing contradictions between the features of contemporary development processes and an institutional-regulatory system. That decreases the effectiveness of policy. Sometimes an intervention does not match the actual needs and generates unintended secondary political effects, aggravating market dysfunction. Flawed public institutions which require new (efficient) action in a network system of globalised institutions have become an increasingly significant challenge of the present day.¹³ The system has now entered the stage of a deep 'crisis'.

6. Summary

Observing the history of regional policy in Europe as a policy correcting regional disproportions of development processes, one can observe that it has always been a contract-based policy following the rules of conditionality enforced more or less eagerly. In the first period of support for different regions by the European states, the policy had a solidarity nature, equalising the income of public authorities to implement social objectives. With deepening integration and increasing polarisation among regions, as well as abuse of European resources to implement populist goals and excessive wasting of such resources to invest in technical infrastructure, new criteria of conditionality were introduced and the criteria for expenditure control were described more precisely.

¹³ We are still searching for the right name to reflect the new type of economy, relation- and network-based, where human capital developed in an interactive spatial and social environment of high quality plays the main role.

In search of the competitive advantages of Europe, the territorial approach to development is very sound. In practice it was introduced into urban functional areas where administrative obstacles, the party-based nature of local governments, competing for income, etc. can be observed. The phenomena constitute serious barriers for building competitive advantages of development based on modern factors using human capital and territorial capital.

The territorial contract has a special role to play in supporting development in functional areas beyond the administrative borders of local government units, as it has a number of potential benefits: it fosters partnership, helps to build trust, and reduces uncertainty and risk for stakeholders participating in investments in development. If we assume that a functional area is a relation-based system able to develop quasi-public goods with a club nature, the identified entities which are members of the club system should become parties to the agreement (contract) with the public authority. They should, for example establish a territorial consortium as a system helping to control the generated club good, as a collective subject of the contract concluded, and also as a specific kind of public-private partnership, which needs to be defined in a process of partner preparation of the UFA's strategy for development, supported by a complex bill of benefits and costs. The specific agreement must not be based on the principles of an open tender for anybody willing to participate, as its purpose is to generate club goods with a public and not purely commercial nature.

The possibilities for increasing the value of the territorial capital of urban functional areas presented in this study could lead to a consolidated effect on the national scale. Among all UFAs metropolitan areas, particularly the ones with clear functions of regional and superregional impact, have a decisive role in generating growth effects. Nevertheless, functional areas with smaller scale centres should also attract the attention of development policy entities.

In Poland we have 39 cities with populations in excess of 100,000 people and 87 large towns with more than 50,000 inhabitants (together they constitute over 36% of the demographic potential of the country). Together with the surrounding areas of weaker or stronger impact, they are home to the majority of the production potential of the country¹⁴. Any systemically established improvement in the functioning of UFAs can bring noticeable increases in development dynamics, both the economic and social components. According to the authors, there is still latent development potential in UFAs. As described above, UFAs are strategic nodes of the contemporary economy flow networks. The concepts of network development suggest that public policy must not be limited to individual UFAs but needs to take a holistic approach, i.e. systemically covering the network of mutual connections, taking into account the existing structural hierarchy of UFAs,¹⁵ which consequently may constitute an added value for the national level territorial capital.

Research on functional areas can apply up-to-date conditions regarding their situation and be approached considering predictable future conditioning. In the latter case, the currently observed megatrends can be worthy of attention. In our summary we will limit our deliberations to the three of them which seem to be significant for the future of UFAs:

1. Progressing globalisation, which can place large urban centres in a slightly different dimension (other functions),
2. Technological development and strengthening the role of cyberspace in the functioning of individual entities and their organised clusters,
3. Further blurring of city borders and urbanity.

¹⁴ According to estimates made by the authors, the functional areas of cities with populations in excess of 50,000 are home to more than two thirds of the development potential of Poland.

¹⁵ According to common understanding the concept of structural hierarchy applies to situations when 'the smaller is included in the bigger'.

Let us assume that by **globalisation process** one means the growth of the network of links between an increasing number of entities, which makes the situation of individual entities depend on megatrends rather than mezotrends. In the economic dimension, economic effectiveness in the general sense is the main indicator of globalisation, which provides a basis for market mechanism operation. To that end one can conclude that globalisation is of an objective nature as a result of independent vigorous processes in the economy. That is quite an important finding, as in combination with its essence it indicates that it is valid to talk only about adapting to creations and not affecting the globalisation processes (Hausner *et al.* 1998, p. 14 and further).

The above helps to identify potential consequences of the processes of progressing globalisation for the development of urban functional areas. Let us pay attention to only one of those. The aforementioned consequences are diversified according to the volume of the general potential of territorial unit development, with a clear preference for larger units. That is evidenced by strong networks of mutual connections between metropolitan cities, which by discounting the effects of co-operation, including the flow of innovation signals, develop much more quickly than smaller units. In Castells' (2000) terminology of society theory, on the one hand they are global (strategic) nodes of flow space but on the other hand they can perform the function of local nodes transferring the discounted effects onto nearer and farther environment (their contact functional area and network of nearby towns) by skilfully designed spatial management. Such effects can also be found in smaller urban areas; however, the effects are smaller, according to the size of the areas.

It can be almost taken for granted that continuously accelerating **technological development** will contribute to changes in the users' perception and experiencing of the value of functional areas spatial management. A high speed of changes limits the possibility of indicating specific and expected achievements of technological development. The

aspects which can be easily indicated apply to the importance of virtual mobility in all functioning areas of enterprises. Consequently, we will see a gradual reduction in the importance of some infrastructural management elements and increases in those of others, e.g. those which handle flows in cyberspace. We will also observe a growing significance of such forms of spatial management, which have to be more and more adapted to the properties of smart cities. The vision of urban functionality, as mentioned in this study, will be re-evaluated significantly, especially in the part concerning the accessibility of various spatial management elements.

Blurring of the borders between a city and its closest surroundings is a general feature of development, although it is more evident in less developed countries with a relatively high level of development dynamics. Poland is among such countries, therefore the aforementioned process has been evident for some time now and is expected to continue. The blurring of borders occurs in all dimensions of development: economic, social, cultural and spatial and is a result of more vigorous (market) processes rather than mechanisms of a regulatory intervention. As a result, the operating efficiency of policy entities is decreasing¹⁶ as they limit their activity to administrative borders of territorial units. The presented process on the one hand emphasises strengthening of UFAs as an objective category with previously outlined characteristics but, on the other hand, it is testimony to the importance of designing cohesive spatial management systems going beyond administrative borders of the central city, or even reinforcing the designing of such systems. It requires co-operation between a number of autonomic territorial units which together form appropriately organised functional areas.

¹⁶ In the sense of their efficiency and effectiveness.

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Krzysztof Wąsowicz

Assessment of the efficiency of municipal companies based on local collective transport

Abstract

The main objective of this article is to determine the effectiveness of enterprises providing municipal services and a model approach for processes related to the provision of local public transport services in Poland. In particular, the identification included methods of organisation and implementation of public utility tasks as well as organisational and legal forms and forms of ownership in the case of local collective transport. An attempt has been made to determine the effectiveness of enterprises providing urban transport services in cities in Poland, assessing their operational, financial, technical and social effectiveness.

The research design and methods used in this article are based on the assessment of the effectiveness of enterprises using taxonomic methods of grouping entities according to selected characteristics and efficiency measures. The use of the k-means method with the number of clusters determined on the basis of the hierarchical Ward method, in which the contribution of variables to the differentiation of clusters was determined on the basis of a one-way analysis of ANOVA variance, to obtain groups of companies with similar efficiency indicators.

The findings, based on the conducted research, present the relationship between the economic efficiency of public transport companies and their organisational and legal form as well as the type of ownership.

Recommendations from empirical studies indicate that public enterprises operating in the field of municipal services provide public utility services with a higher level of economic efficiency than other distinctive groups of carriers.

The added value is that the research methods presented in this work can be successfully applied to other sectors of the economy and other countries in order to verify the effectiveness of individual organizational, legal and ownership forms of enterprises.

Keywords: public utility services, municipal company, local collective transport, economic effectiveness, taxonomic methodology

JEL classification: L300

1. Introduction

In the set of entities that conduct business activities there is a group the proper operations

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of which are an essential condition for the proper functioning of both the national economy and individual households. They provide common services that share a constructive property, public authority entities ensure the appropriate quality and affordable prices of such services. Free access to public utility services, the volume of which undergoes constant transformations due to civilizational and economic development, is a basic condition for the appropriate existence

of an individual and for the conducting of business activity.

The theoretical aim of the article is to define the effectiveness of companies that provide utility services. The methodological process has been to elaborate on the methodology used for the research and an assessment concerning the effectiveness of companies, by distinguishing their operational, financial, and technical and social efficiency. To compare the efficiency of various structures of enterprises, taxonomic methods were proposed for group entities according to selected properties and measures of efficiency. The application character has a model consideration of the processes related to provision of services of local collective transport in Poland. In particular, identification included the methods of organisation and implementation of tasks of public utility and the organisational and legal forms and forms of ownership in the case of local collective transport. An attempt was made to determine the efficiency of enterprises that provide services of urban transportation in towns and cities in Poland. In order to compare all of the analysed enterprises in terms of efficiency, taxonomic methods were applied.

2. Local collective transport as an area of public utility

Public authorities often decide to interfere with those areas in which market mechanisms do not guarantee the appropriate (i.e. expected, from the point of view of public authority representing the citizens) allocation of common services. Public utility services should be identified through their peculiar goal, i.e. the ongoing and uninterrupted satisfaction of collective needs of the population via the provision of commonly available services characterised by the fact that public administrations are required to provide them based on the responsibility imposed by the legislative authority (Strzyczkowski, 2011, p. 333; Byjoch & Redel, 2000, p. 60; Bobińska, 2003, p. 27).

The basic, elementary feature of a public utility service is its continuity, i.e. its ongoing

and uninterrupted nature. The second feature is satisfaction of collective needs of the population. In this aspect public utility refers to common needs that are difficult to satisfy individually, at a specific level of economic development. Another feature is the common availability of provided services, which means both physical and economic availability. The specific nature of public utility services makes them hardly available or unavailable with regard to specific individual entities. To have a service qualified by public authorities as one of those the common availability of which is essential for the development of the country or to decrease the differences in the level of civilizational development of individual areas in a particular country and various social groups is of a discretionary nature. The described feature of public utility services would probably be impossible under market conditions within the range preferred by public authorities.

Local collective transport is an important type of public utility services. Human and economic activities relate to the necessity to transport people and cargo and to transfer information. Every day two million Poles move from one place to another in order to satisfy their basic needs related to going to work, school, a store, an office, a hospital or other facilities. For that purpose urbanised areas use local collective transport (the Act on Municipal Self-government, 1990), which is also referred to as urban transport. Our domestic legislature applies various names for this term, such as, *inter alia*, (Mazur, 2005, p. 38): municipal transportation, collective municipal transportation, municipal collective transport, urban transportation (the Act on Public Transport, 2010).

On the basis of the presented legal regulations and the understanding of local collective transport used in economic practice, the following synthetic definition can be proposed: local collective transport, as urban transport is public collective transport performed upon the order of the transport organiser (the competent body referred to in Regulation EC 1370/2007) only within the area of the municipality or neighbouring municipalities that has concluded an

appropriate agreement or established an association of municipalities.

The key is to define the entity responsible for the proper provision of public utility services. It is the public sector that is liable for and designates the area for the provision of public utility services, bearing in mind, on one hand, the significance of such services to society and the proper functioning of economy and, on the other hand, the economic balance. Depending on the organisational and legal form of the provision of public utility services designated on the basis of ownership of the economic infrastructure and the method for its management, the public sector designates an entity responsible for the provision of such services, having a simultaneous impact on associated revenues and costs.

In light of the conducted considerations, the term 'enterprise' appears, the immanent property of which is the provision of specific services defined as public utility services. Such a definition, although short and synthetic, is crucial, since in light of the development of social and economic life it rediscovers the meaning of the term of public utility enterprise. Current properties, various types of capital ownership, methods for the provision of services, and the (organisational, economic, legal, etc) environment define the modern term of enterprise that provides public utility services.

Bearing in mind the criterion of ownership, the following enterprises that provide public utility services (Strzyczkowski, 2011, p. 292) are distinguished: state enterprises, enterprises of self-government units, private enterprises, and mixed enterprises.

State enterprises include enterprises of the State Treasury, which operate under the act on state enterprises, and commercialised state enterprises transformed into single-shareholder companies of the State Treasury that base their activities on the provisions of the Commercial Companies Code (Sudoł, Godziszewski, Haffer & Staniekiwicz, 2011, p. 49).

A significant group of public utility enterprises is formed by those owned by local self-governments.

These are considered as *sensu largo* municipal companies. The use of the term 'municipal' can result in ambiguity, since in this case it refers to ownership. Meanwhile, according to the definition of municipal goods, municipal companies can also include entities that provide such goods, regardless their type of ownership. The situation becomes even more complicated when the analysis of that term is based on the grounds of applicable law. Pursuant to Art. 14 section 1 of the Act on Municipal Economies, municipal companies in relation to which the municipal council did not decide on the choice of the organisational and legal form thereof or the privatisation thereof by 30 June 1997 shall be transformed into single-shareholder municipal companies (the Act on Municipal Economies, 1996). The result of that provision was that the common term 'municipal companies' is used for single-person municipality companies. Meanwhile, the category of municipal companies, as such, consists of enterprises given to municipalities due to the fact that they were not transformed into single-person municipality companies under the provisions of the Act on Municipal Economies.

According to the presented classification of public utility enterprises pursuant to the ownership criterion, one more group should be listed: private undertakings. It is commonly believed that privatisation leads to lower costs of public utility services, as well as better quality and management thereof. Meanwhile, the opponents of privatisation claim that the acquired savings are of a short-term nature while private undertakings pursue particular goals, neglecting the social dimension of the provision of public utility services, based on a proper standard and development in the long run (Sadowy, 2010, p. 247). Although a solution to those issues is a point of interest later in this paper, it is undeniable that the performance of public utility task is in many cases reflected in private undertakings.

Private and public enterprises have defined organisational and legal forms. Apart from some state enterprises and municipal companies

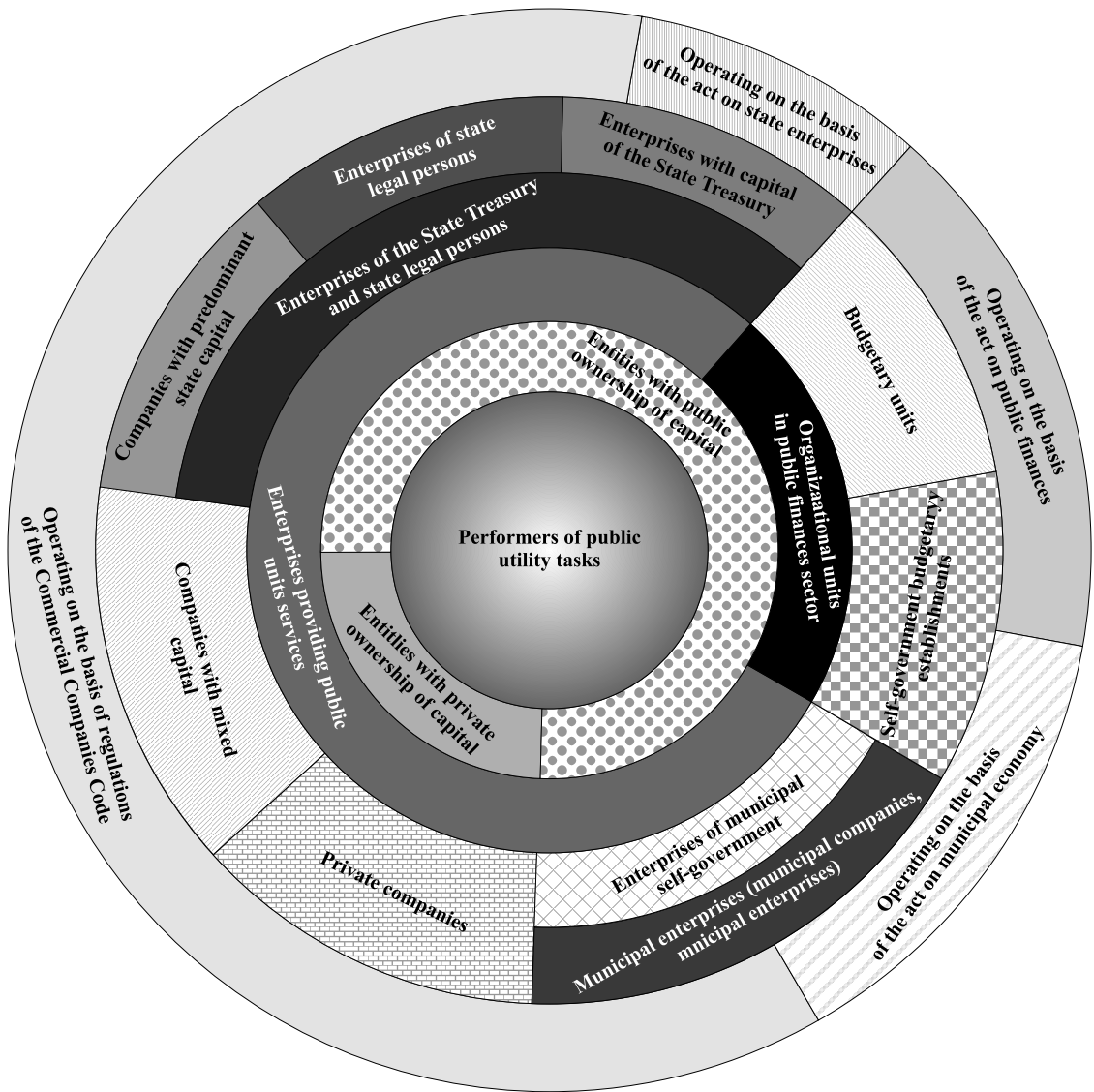


Figure 1. Enterprises in the model of the organisation of public utility services

Source: Own analysis based on: Sudoł *et al.*, 2011; Strzyczkowski, 2011; Grzymała, 2011; the Act dated 23 April 1964, the Civil Code, Polish Journal of Laws 1964, No. 16, item 93, as amended; the Act dated 25 September 1981 on State Enterprises, Polish Journal of Laws 2002, No. 112, item 981, as amended; the Act dated 8 March 1990 on Municipal Self-government, Polish Journal of Laws 2001, No. 142, item 1591, as amended; the Act dated 20 December 1996 on Municipal Economies, Polish Journal of Laws 1997, No. 9, item 43, as amended; the Act dated 15 September 2000, the Commercial Companies Code, Polish Journal of Laws 2000, No. 94, item 1307, as amended; the Act dated 27 August 2009 on Public Finances, Polish Journal of Laws 2009, No. 157, item 1240, as amended.

that operate under the Act on State Enterprises dated 1981, the activities of other entities that carry out the tasks of public utilities is regulated by commercial law. Commercial companies are divided into partnerships and share capital companies. Share capital companies in Poland include (according to the Commercial Companies Code dated 2000): limited liability companies and joint-stock companies. The form of single-shareholder limited liability companies (*sp. z o.o.*) and joint-stock companies (*SA*) are common parts of the organisation of municipal services by the public sector. The adopting of such solutions allows a peculiar commercialisation of business activity through the adopting of rules characteristic for organisations that operate according to market principles (Szewczuk, 2005, p. 487).

In the state economy there are entities similar to enterprises but, actually, are something different. Tasks with the nature of public utility in a local self-government unit can be carried out by such entities, self-government budgetary establishment that, however, do not meet the requirements necessary to be considered as enterprises.

Public utility services can be thus provided by various types of public and private enterprises as well as units of the financial sector that do have the properties of an enterprise. Consequently, a complex structure is formed, which is shown in Figure 1.

3. Methodological approach towards the efficiency of urban transport companies

An enterprise is driven by the principle of using owned resources in order to achieve possibly advantageous effects resulting from incurred expenses. The issue of efficiency is the basic field of research in many areas of economic activity. This issue also involves the aspect of the public utility of collective transport, where the provision of services is performed through entities functioning under various organisational, legal and ownership types.

The efficiency of enterprises is determined on the basis of the efficiency of their operations, which equates to the optimum utilisation of owned resources and efficiency of activities, understood as the ability to set and achieve specific goals (Frankowska & Jedliński, 2011, p. 69). It can be considered in terms of various aspects of the management process, i.e. technical, economic, social, environmental, etc. Conducted analyses concerning enterprises frequently apply the notion of enterprise effectiveness in general. That term can be understood as the actual capacity to improve market position and increase the financial results achieved. Unlike other enterprises, enterprises that provide public utility services are subject to additional liability with regard to a particular community. Therefore the notion of effectiveness of such entities involves the proficiency and efficiency of provision and selection of goals that also acknowledge the high quality of the services provided (see Figure 2).

Measures of effectiveness in the case of public utility enterprises of local collective transport are those that indicate the achievement of effects adequate to the incurred expenses, minimisation of costs, increasing productivity, and the provision of services with the expected quality, in the appropriate amount thereof. That is why this paper analysed operating, technical and social as well as financial effectiveness. Table 1 is used to synthetically present measures of the effectiveness of local collective transport enterprises functioning in city transport systems.

Operational effectiveness is explained through relationships between various forms of effects and expenses incurred to achieve them. Among the many measures of that effectiveness, productivity and labour intensity have been distinguished with the use of the measures:

That specify the amount of work performed in a local collective transport enterprise: the number of vehicle-kilometres. Exploitation work expressed in vehicle-kilometres makes an assessment of the work of a transport fleet; it shows the distance travelled by urban transportation vehicles and

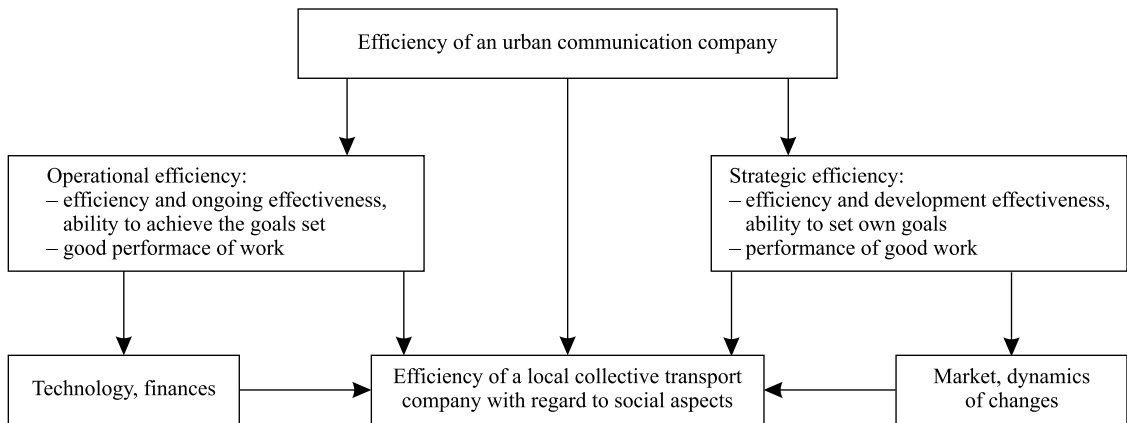


Figure 2. Efficiency in a local collective transport company

Source: Own analysis based on: Stoner, J.A.F. and Wankel, C., *Kierowanie*, PWE, Warsaw, 1992, p. 29; as cited in: Szewc-Rogalska, 2004, p. 53.

Table 1. Performance measures for a public utility enterprise in the sector of local collective transport

Performance measures for an urban transportation company		
Measures for financial performance	Measures for operational performance	Measures for technical and social performance
	– acknowledgment of the interests of the municipality as the entity responsible for provision of municipal services as public utility	– acknowledgment of the expectations of the inhabitants of the municipality as consumers of municipal services
– degree of utilisation of production capacity	– amount of exploitation work performed	– measure of time, spatial, demographic, and functional availability
– work efficiency ratios	– amount of transport work performed	marketing research concerning:
– productivity ratios	– amount of employment	– availability of the transportation network
– profitability (i.e. return on sales) ratios	– intensity ratios for fleet use	– frequency
– operational efficiency ratios	– transport efficiency ratios	– punctuality
– liquidity ratios	– labour intensity ratios	– safety
– debt ratios		– certainty of completion of planned travel (i.e. reliability)
– size of inflows on sales of public utility services		– direct character of the travel
– level of costs for operations of the enterprise		– speed
– technical and financial industry-related ratios		– cost
		– convenience
		– information

Source: Own analysis.

can also be presented as its mileage in all runs of a transportation line. Exploitation work for any transportation line can be designated as the total length of runs made by all vehicles in all runs (Bryniarski & Starowicz, 2011, p. 109):

$$P_{wzkm i}^q = \sum_{j=1}^{m_i^q} dk_{ij}^q, \quad (1)$$

where:

$P_{wzkm i}^q$ – exploitation work of transport line i on day of the week q (vehicle-km); dk_{ij}^q – distance j of that run of transport line i on day of the week q (km); m_i^q – number of runs of transport line i on day of the week q ; q – day type (i.e. typical working day, Saturday or Sunday).

- Comparison of exploitation work expressed in vehicle-kilometres and vehicle-hours that allows the obtaining of the efficiency measures of operations conducted by an urban transportation company:

$$\begin{aligned} \text{Intensity of fleet exploitation} = \\ = \frac{\text{Number of vehicle-kilometres}}{\text{Number of vehicle-hours}}. \end{aligned} \quad (2)$$

- Efficiency within a particular area, presented as the ratio of the number of passengers transported by all transportation lines launched within the same area in terms of exploitation work, in vehicle-kilometres:

$$\begin{aligned} \text{Transport efficiency} = \\ = \frac{\text{Number of passengers}}{\text{Number of vehicle-kilometers}}. \end{aligned} \quad (3)$$

- Labour intensity, i.e. the amount of performed transport work per employee, calculated as the quotient of the number of performed vehicle-kilometres and the average employment:

$$\begin{aligned} \text{Labour intensity} = \\ = \frac{\text{Number of vehicle-kilometres}}{\text{Number of employees}}. \end{aligned} \quad (4)$$

The assessment of technical and social effectiveness of enterprises that function in various organisational, legal and ownership forms was made through the application of the demographic density ratio of the given public transport network, where such ratio determines the saturation of the area with the transport network attributable to the area per 10,000 inhabitants:

$$G_{Kd} = \frac{K}{b}, \quad (5)$$

where:

G_{Kd} – demographic density of the network of public transport (km/inhabitants); K – length of the network of public transport (km); b – number of inhabitants of a particular area.

With regard to enterprises analysed by the author on the basis of particular measures of passenger satisfaction, assessments of ten postulates from table 1 were compared in a five-level scale, where five was the highest mark. For each of the quality features, the basic measurement tool was an original questionnaire addressed to passengers of local collective transport enterprises, who assessed each of the measures of social and technical effectiveness. The assessment also applied the five-level Likert scale (Gamst, 2008, p. 10): one = very bad; two = bad; three = average; four = good; five = very good.

Availability of a transportation network is the quality determinant correlated not only with activities of the carrier but also with the activities of the organiser of local collective transport in a particular city. The postulate was assigned, apart from the average satisfaction of customers who use the given urban transport, with the assessment arising from the value of the demographic density ratio of the public transport network (5). In order to do that, five groups of those ratios were created and given marks from one to five. The lowest level of those ratios relates to enterprises for which the quotient of the distance of travelled routes per 10,000 inhabitants is lower than 1. Those with a demographic density ratio from 1 to 3 were given a mark of two, from 3 to 5 were given a mark of three, for 5 to 8 the mark was four, while a ratio higher than 8 was give the highest mark (i.e. five).

In order to determine the financial effectiveness of various types of local collective transportation companies, an analysis was made with regard to revenues, costs, financial results, equity and capital structure, as well as financial matters such as profitability, proficiency of operations, liquidity, capacity to handle debts, and the level of revenues and costs of conducted activities.

In order to compare enterprises in terms of effectiveness, taxonomic methods were applied. The method of k -means was applied to a number of clusters determined on the basis of the hierarchical Ward method in order to obtain groups of enterprises with similar effectiveness ratios.

The Ward method is one of the more important hierarchical agglomeration methods. It applies an approach based on variance analysis, the goal of which is to minimise the total of squares of two clusters that can be formed in individual stages of the analysis. Thanks to that, it is possible to calculate the effect of homogeneity inside clusters and homogeneity between clusters. The efficiency of this method has been confirmed in many analyses (Grabiński, Sokołowski, 1984, p. 63)

Among non-hierarchical methods of analysing clusters, the most well-known is the k -means method. The k -means method is an iterative procedure and it applies the division of a set of n objects into k sub-groups, whereby the number of divisions C is determined in an arbitrary or random way. The idea of the method is to minimise the total of intra-group distances calculated from centres of individual clusters Z ($i = 1, 2, \dots, k$), which can be, for instance, centroids that belong to individual groups or arithmetic means calculated from the value of features describing the objects in the sub-groups. The function of the k -means method can be presented in the following way (Bock, 2008, p. 4):

$$g_n(C, Z) = \sum_{i=1}^k \sum_{l \in C_i} \|x_l - z_i\|^2 \rightarrow \min_{C, Z} \quad (6)$$

In the first stage of iteration, the objects are moved to groups other than those, in which they are included at the time, in order to minimise

the general intra-group variance. If further shifts of the object do not improve the criterion of k -means, further objects (points) are tested in an analogous way. After the initial division, further iterations involve changes in other centres of clusters so that the value of the function of k -means method can be decreased. The criterion of the lowest total of squares can be presented as one-parameter optimisation of the matter (Bock, 2008, p. 10):

$$g_n(C) = \sum_{i=1}^k \sum_{l \in C_i} \|x_l - \bar{x}_{C_i}\|^2 \rightarrow \min_C \quad (7)$$

Application of the presented taxonomic methods enables the identification of groups of public utility companies of local collective transport with similar effectiveness ratios. Thanks to that it is possible to check whether public and private enterprises, having various organisational and legal forms, differ from each other in terms of effectiveness.

4. Taxonomic assessment of the efficiency of local collective communication

The analysis covered 77 entities of local collective transport with various organisational, legal, and ownership forms (table 2). In order to do that a selection was made in terms of carriers providing urban transportation services in 2015 in the largest cities in Poland and regarding carriers representing rare organisational and legal forms or entities that use uncommon solutions concerning the organisation and functioning of operating activities.

The group of entities presented consists of carriers who perform their transport work by using one means of transport (66 entities) and two means of transport (11 enterprises). Among carriers that use only one means of transport, 44 entities (one subway, one using trolleybuses, three railways, four using trams and using buses) were under public ownership. The remaining 22 enterprises have private owners and use only diesel vehicles for transportation. The selected self-government budgetary establishments own only bus fleets. The final entity, using more than

one means of transport, that functioned in the form of a budgetary establishment in 2011 was, however, subsequently transformed into a limited liability company. All of the enterprises presented that use more than one type of means of transport are owned by public founders. Except for one carrier (that uses buses and trolleybuses for transportation), the other 10 entities provides services of urban transportation through the use of buses and trams.

Urban transportation companies have been subjected to an analysis of clusters individually, with regard to their operational, technical and social, and financial effectiveness. Its goal is to make a distinction in terms of the listed types of effectiveness of clusters that consist of possibly the most similar carriers that provide such types of services.

In the case of grouping of the analysed enterprises in terms of similarities regarding the area of operational effectiveness, the following features/ratios were taken into consideration: the number of vehicle-kilometres; the intensity of rolling-stock exploitation; transport efficiency; and labour intensity. The applied target method for the grouping of objects was the *k*-means method. The method requires a previous specification of the number of clusters within which the most similar objects will be grouped. The number of clusters was determined on the basis of grouping of those elements with the hierarchical method Ward. The optimum number of clusters can be determined here

by applying the criterion of the first clear increase of agglomeration distance in the dendrogram. On the basis of that criterion, the dendrogram can be cut at the height of merge 5, which would result in 10 clearly separable clusters consisting of local collective transport enterprises that are similar in terms of operational effectiveness.

The basic descriptive characteristic – the average – was applied to characterise the clusters obtained. The results of that descriptive characteristic are presented in table 3.

On the basis of conducted analyses, one can see that:

- Cluster 2 had the highest transport efficiency, was second in terms of number of vehicle-kilometres, and third in terms of intensity of fleet exploitation; all enterprises in that group have a public owner and operate in form of limited liability companies.
- Cluster 3 had the highest labour intensity and the highest intensity of fleet exploitation; four of the five limited liability companies in that group are public entities.
- Cluster 5 had the second highest intensity of fleet exploitation; this group consists of twelve public entities (ten limited liability companies and two self-government budgetary establishments).
- Cluster 6 had the lowest transport efficiency; this cluster includes five limited liability companies (three of which are private) and two joint-stock companies, which are under public ownership.

Table 2. Number of analysed entities of local collective transport by organisational and legal and ownership form

Organizational and legal form	Form of ownership	Public	Private	TOTAL
Limited liability companies		47	20	67
Joint-stock companies		4	2	6
Self-government budgetary establishments		4	–	4
TOTAL		55	22	77

Source: Own analysis.

- Cluster 7 had the highest number of vehicle-kilometres, it was second in terms of value and labour intensity and it was also second in terms of value and transport efficiency; this group only includes public enterprises that operate as capital companies.
- Cluster 8 was ninth in terms of value, labour intensity, transport efficiency, and intensity of fleet exploitation; this group includes four private carriers (two joint stock companies and two limited liability companies) and a company with a private minority shareholder.
- Cluster 9 had the lowest number of vehicle-kilometres; most of the companies in this group are private limited liability companies.
- Cluster 10 had the lowest number of vehicle-kilometres and the lowest labour intensity; in this cluster there are six limited liability companies (four public and two private).

The analysis concerning the operational effectiveness indicates a predominance of public

carriers. With regard to clusters that are characterised by high values of individual features of operational effectiveness the dominant role is played by public enterprises. Limited liability companies dominated groups of clusters that feature the highest values of individual properties. However, due to the number of limited liability companies in the analysed group, they can be found, along with companies of other forms, in groups with low intra-group average values.

When grouping enterprises that provide urban collective transport services in terms of similarity regarding technical and social effectiveness, the following features, values of which were obtained on the basis of the questionnaire conducted among passengers, were taken into consideration: availability of the transportation network; frequency of routes; travel safety; direct nature of travel; certainty of completion of planned travel; speed; cost; convenience; and information. The *k*-means method was applied, while the number of clusters

Table 3. Intra-group average values for clusters formed as a result of grouping by operational effectiveness of urban transportation companies in 2015

Cluster no.	Features			
	Labour intensity	Transport efficiency	Intensity of fleet exploitation	No. of vehicle-kilometres [in thousands of vehicle-kilometres]
Cluster 1	16.31	4.07	15.31	18261.67
Cluster 2	15.84	5.63	17.71	35115.80
Cluster 3	23.47	3.39	18.44	12959.80
Cluster 4	18.75	3.93	15.88	7405.08
Cluster 5	16.52	3.79	18.22	4590.83
Cluster 6	17.06	3.23	16.14	3012.43
Cluster 7	20.12	4.50	14.91	63337.00
Cluster 8	14.24	3.32	15.92	1592.33
Cluster 9	15.46	3.33	16.22	996.20
Cluster 10	11.10	3.33	17.58	546.17

Source: Own analysis.

was determined on the basis of the hierarchical method Ward. Based on the criterion of the first clear increase of agglomeration distance, the dendrogram was cut at the height of merge 8, which enabled the distinguishing of seven clusters of urban carriers consisting of enterprises that provide services of urban transportation that are similar to each other in terms of technical and social effectiveness. The results of the characteristics analysis for selected clusters are presented in table 4.

On the basis of conducted analyses it can be seen that the following clusters are distinguished from the rest due to, according to passengers of urban transportation, the following.

- Cluster 1 had the second lowest marks for the following factors of traveling by urban transportation companies: frequency of routes, safety and convenience of travel. This group includes eleven limited liability companies (six public and five private) and one private joint-stock company.
- Cluster 2 had the second highest (in terms of value) marks for the following factors: frequency of routes, direct nature of travel, speed, cost, and information. This group is formed by only ten public enterprises, all functioning in form of limited liability companies.
- Cluster 3 had the lowest availability of transportation and the second (in terms of value) marks for certainty of completion of planned travel, speed, and information. This cluster consists of twelve private enterprises (including one joint-stock company) and seven public companies (six of which are limited liability companies).
- Cluster 4 had the highest mark for frequency of routes and the second highest (in terms of value) marks for the following: punctuality of routes; travel safety; certainty of completion of planned travel; and convenience. This group consists of seven public entities (six

Table 4. Intra-group average values for clusters formed as a result of grouping by technical and social effectiveness of local collective transport enterprises

Feature	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7
Availability of the transportation network	2.819	3.781	2.009	2.644	2.376	4.172	4.306
Frequency of routes	3.254	3.646	3.398	3.846	3.558	3.199	3.532
Punctuality of routes	3.511	3.750	3.554	3.864	4.022	3.321	3.640
Travel safety	3.407	3.592	3.514	3.693	3.938	3.257	3.531
Direct nature of travel	3.531	3.633	3.494	3.660	3.428	3.294	3.814
Certainty of completion of planned travel	3.998	4.204	3.906	4.257	4.310	3.796	4.233
Speed	3.637	3.855	3.574	3.826	4.114	3.572	3.845
Cost	3.345	3.526	3.348	3.426	3.684	3.083	3.316
Convenience	3.377	3.608	3.406	3.617	3.732	3.315	3.553
Information	3.487	3.728	3.344	3.680	4.028	3.407	3.726

Source: Own analysis.

limited liability companies and one joint-stock company) and two private limited liability companies.

- Cluster 5 had the highest marks for: punctuality of routes; certainty of completion of planned travel; travel safety; speed; cost; convenience; and information. It also had the second lowest (in terms of value) mark for availability of transportation network. In this group there are five public enterprises (all limited liability companies).
- Cluster 6 had the second highest mark (in terms of value) for availability of transportation network. It also had the second lowest (in terms of value) mark for information and the lowest marks for all other factors. This group is made up of public entities (four self-government budgetary establishments, eight limited liability companies and one joint-stock company).
- Cluster 7 had the highest for the following: availability of transportation network and direct nature of travel. It also had the second lowest (in terms of value) mark for cost. This group mainly consists of public enterprises that operate in the form of commercial law companies.

The intra-group average values for clusters formed as a result of grouping by technical and social effectiveness indicate the advantage of public enterprises over private enterprises. In the case of clusters with the highest average values of qualitative features of local collective transport, public carriers play a significant role. In the case of grouping of the enterprises by similarity within that aspect, limited liability companies dominated groups of clusters with the highest but also the lowest marks for individual features. Other organisational and legal forms are in the group of clusters with low average values for individual qualitative features.

By combining enterprises providing urban collective transport services into groups similar in terms of financial efficiency, the focus was put on the following features: gross profitability of operations of the enterprises; profitability

of sales; profitability of assets; profitability of equity; profitability of employment; the cycle of collection of payments; the cycle of payment of liabilities; asset turnover; current financial liquidity; debt ratio; share of capital in financing of assets; amount of sales per passenger; and cost of performance of one vehicle-kilometre. As in the previous case, the *k*-means method was applied while the number of clusters was determined on the basis of the hierarchical Ward method. Based on the criterion of the first clear increase of agglomeration distance, the dendrogram was cut at the height of merge 9, which allowed the distinguishing of eight clusters of urban carriers consisting of enterprises that provide services of urban transportation that are similar to each other in terms of financial effectiveness. The values of the average for the formed clusters are presented in table 5.

It can be seen that the following clusters are distinguish from the rest due to the following:

- Cluster 1 had the second highest results in terms of gross profitability ratio of operations, profitability of assets, profitability of sales, profitability of equity, profitability of employment, as well as cycle for payment collection. This cluster includes seven limited liability companies (five public and two private enterprises).
- Cluster 2 had the second lowest results in terms of profitability ratios for assets and equity, and the lowest results for the gross profitability ratio regarding operations of enterprises, profitability of sales and employment, cycle for payment collection, ratio of asset turnover, current financial liquidity, amount of sales per passenger and cost of performance of one vehicle-kilometre. This is a one-element group: a private carrier that conducts business activities in form of a limited liability company.
- Cluster 3 had with the highest results in terms of gross profitability ratios regarding operations of enterprises, profitability of sales, assets, equity and employment, as well as the second highest results in terms of costs of performance

Table 5. Intra-group average values for clusters formed as a result of grouping by financial effectiveness of urban communication companies in 2015

Feature	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8
Gross profitability of enterprise operations [%]	5.231	-70.100	5.806	-2.520	-11.745	1.276	-1.385	1.689
Profitability of sales [%]	4.928	-73.380	4.950	-3.230	-19.760	1.079	-2.477	1.131
Profitability of assets [%]	2.354	-3.410	4.558	-0.810	-32.865	1.496	-0.320	1.850
Profitability of equity [%]	7.565	-18.600	15.082	-6.210	-347.210	4.810	0.672	3.550
Profitability of employment [%]	9.228	-24.950	11.555	-4.170	-7.140	1.980	8.720	2.545
Cycle for payment collection [in days]	56.248	8.410	43.194	62.330	21.960	23.146	80.345	18.913
Cycle for payment of liabilities [in days]	189.617	2210.700	106.997	634.530	173.335	66.093	64.527	39.570
Assets turnover	0.600	0.050	1.154	0.250	2.555	1.561	0.812	1.340
Current financial liquidity	1.132	0.010	0.999	0.250	0.555	1.170	2.145	2.492
Debt ratio [%]	72.717	81.670	69.844	86.890	90.465	66.742	32.135	27.710
Share of capital in financing of assets	0.272	0.180	0.315	0.130	0.095	0.332	0.680	0.706
Cost of performance of vehicle-kilometre	9.251	3.750	10.933	6.580	4.620	8.110	25.000	9.970
Size of sales per passenger	2.234	0.630	2.726	1.550	0.790	2.205	7.105	2.604

Source: Own analysis

of one vehicle-kilometre and the amount of sales per passenger. This group consists of nine public enterprises (seven limited liability companies and two joint-stock companies) and six private enterprises (five limited liability companies and one joint-stock company).

- Cluster 4 had the second highest results in terms of cycle of payment of liabilities and debt ratios, as well as had the second lowest results in terms of ratios of assets turnover, current financial liquidity, and ratio of capital share in financing of assets. This cluster includes

a limited liability company that is under public ownership.

- Cluster 5 had the highest results in terms of ratio of assets turnover and debt ratio, as well as the lowest results for ratio of assets profitability, ratio of equity profitability, share in capital for financing of assets, as well as with low (penultimate) gross profitability ratio of operations of enterprises, profitability ratio of sales, employment and the size of sales per passenger, and costs of performance of one vehicle-kilometre. The group is composed

of two limited liability companies: one from each analysed forms of ownership – although Chełmskie Linie Autobusowe, in addition to its public majority shareholder, has a private minority shareholder.

- Cluster 6 had the second highest results in terms of ratio of assets turnover. In this group there are ten public enterprises (one joint-stock company and nine limited liability companies) and three private enterprises (functioning as limited liability companies).
- Cluster 7 had the highest results in terms of: the cycle of payment collection, amount of sales per passenger and cost of performance of one vehicle-kilometre, and had the second highest ratios regarding the share of capital in financing of assets and current liquidity. It also had the second lowest results in terms of debt ratio and cycle of payment of liabilities. This cluster includes four limited liability companies (two private and two public).
- Cluster 8 had the highest ratios of current financial liquidity and share of capital in financing of assets, as well as the second lowest results in terms of cycle of payment collection, payment of liabilities, and debt ratio. This large group consists of twenty-one public carriers (four self-government budgetary establishments and seventeen limited liability companies) and two private limited liability companies.

As a result of grouping regarding the analysed enterprises according to financial effectiveness, it is difficult to indicate an advantage for any one group of entities. Limited liability companies belong to groups that feature high and low results for individual features.

5. Conclusion

In most cases, the distinguished measures of operational and technical and social efficiency indicate the advantage of public enterprises that operate in form of limited liability companies. In terms of financial efficiency it is difficult to pick

out one group of enterprises. It should also be noted that there is a large variation in efficiency between individual companies from the same groups (in terms of ownership and organisational and legal form). This may be explained by the organisational solutions inside a given enterprise, but also by the environment the functioning of which results from the organisation and handling of the market of local collective transport services. Many municipal enterprises in Poland use their leading position on the local market of passenger transport and the public nature of the origins of ownership capital. That can be connected with a set of behaviour that limits efficient operations in the aspect of own organisational and legal self-reliance. This has been confirmed by the fact that some of the applied efficiency ratios with regard to self-government budgetary establishment have higher results than in case of commercial code companies.

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Co-production as a tool for realisation of public services

Abstract

Objective: New public governance is one of the most popular paradigms in public administration management. The aim of this article is to examine the co-production of public services, which is gaining interest in many European countries, including Poland, and to find out how co-production is defined, what the reasons to pay attention to this tool are, how we can distinguish between different models of co-production and, last but not least, what the possibilities and drawbacks of introducing it into practice are.

Research Design & Methods: The article is a literature review based on the most important public management journals.

Findings: In conclusion, the author shows new ways of defining co-production and presents a proposal for further research strategies for the co-production of public services.

Implications / Recommendations: The meaning of co-production of public services has varied over the last few years due to the fact that various new elements have emerged. Therefore there is still a huge field, to cover such as conducting research about the use of social media in the co-production of public services.

Contribution / Value Added: The most recent literature review about co-production was conducted by Vooberg in 2014. As a result, this article refreshes the knowledge about it and proposes a new research agenda for the future.

Article Classification: Theoretical article: original literature review

Keywords: public management, public policy, co-production, public governance, social participation

JEL classification: R50

Introduction

Bocianowo is one of the oldest districts of Bydgoszcz. A few months ago, citizens from this part of the city decided that they would voluntarily spend their private money for a public purpose: building a new road. Why did they do that? What prompted them to engage and take part in the delivery of public services?

Over recent decades public administration has undergone dynamic changes regarding public

management. It has been influenced by such factors as the digital revolution, the crisis in the public finance sector, the new role of the citizen in relation to the public administration authorities, as well as the development of new forms of social participation. As a result of these phenomena, one can observe the crisis of traditional public management practices related to Weberian administration, the introduction of new public management tools, and then, within the aforementioned limits of management, the growing popularity of new public management and neo-Weberian bureaucracy (Pollitt & Bouckaert, 2011; Mazur, 2018; Sześciło, 2017). As a consequence, as J. Hausner observed, ‘the modern social order contains components of various orders, enabling different mechanisms

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of co-ordination to be activated (...) This broadens the repertoire of means of action and coordination mechanisms, which can be used by various types of subjects' (Hausner, 2015). But there are more and more of them. Therefore governing management becomes more difficult. New public governance proves inevitable (Mazur, 2015, pp. 17-18). At the same time, the paradigm of new public governance should not be treated as the ultimate answer to the problems and challenges of public administration management. Nevertheless, it does provide the basis for a contextual search for tools and methods of delivering public services which will ensure, on the one hand, the efficiency and effectiveness of their realisation, and, on the other hand, that using these tools will be effective by taking into consideration social needs and the accepted methods of their delivery. One such tool is the co-production of public services, which, despite being first noted in the 1970s (Ostrom & Ostrom, 1971), is now undergoing a renaissance in many European countries. When it comes to the Polish perspective we can pick out two different types of co-production of public services. The first one is the Solecki Fund, which is run according to the Solecki Fund Act. There are a few features that distinguish this tool: it is regulated by law and can be used only by rural entities; the Fund is a sum of money separated from the local budget and earmarked for activities which improve residents' living conditions; some of the amounts obtained from a Solecki Fund are reimbursed by the central budget. From data published by the Ministry of Public Administration and Interior Affairs we can see that the number of municipalities which decided to start a Solecki Fund has increased. Between 2013 and 2016 one can detect a noticeable difference when it comes to the popularity of this tool and nowadays almost 60% of eligible local governments make use of this co-production tool.

The main co-production tool in Poland are Local Initiatives, as referred to in Chapter 2a in the Act on Public Benefits and Voluntary Activities, which regulates relationships between the public administration (central and self-governments),

NGOs and local communities. We can define it as an initiative for preparing and appointing groups of people who propose to deliver public goods or services to local governments. When it comes to the implementation of Local Initiatives in major Polish cities covered by the Union of Polish Metropolis we can say that the number of local initiatives has increased and between 2014 and 2016 there were 280 local initiatives (Gawłowski, 2018).

Material and methods

The aim of this article is to present theoretical considerations regarding the co-production of public services and to distinguish between the most important categories in terms of co-production based on the most frequently cited articles. The most recent systematic review of co-production and co-creation was prepared in 2014 (Voorberg *et al.*, 2014) and was focused on articles and books which were published between 1987 and 2013. The author firmly believes that this kind of research is important, due to the fact that, despite the growing body of empirical research, co-production continues to be poorly formulated and has become one of a series of 'woolly-words' in public policy (Osborne *et al.*, 2016). In this article the author assesses whether any new elements have appeared in terms of the objectives of co-production, addresses the factors which influence the co-production process with citizens and, last but not least, looks at the outcomes of co-production process. This article consists of four parts. The first one presents the reasons for renewed interest in the co-production of public services. Were they economic or other reasons? This is the most important question that has been answered. The second part shows the way in which to define the phenomenon of co-production; this will allow us to identify the most important characteristics that, in the opinion of researchers, make up co-production. The third part presents the most important models: on what basis can one distinguish between the different types of co-production and

what are the differentiating factors? Finally, the last part looks at the factors that facilitate or inhibit the implementation of a particular tool of public management. In pursuit of that the following research questions can be asked:

RQ1: *What are the factors which influence the co-production of public services and have new one appeared over the last few years?*

RQ2: *How can co-production of public services be defined?*

RQ3: *What are the opportunities and threats for co-production and how have those changed over the last few years?*

The article has been based on an analysis of articles about the co-production of public services which were published between 2000 and 2018 in such journals as the *International Journal of Public Administration*, the *International Journal of Public Sector Management*, *Public Administration Review*, the *Journal of Social Policy* and *Public Management Review*, as well as monographs by experts on co-production such as J. Alford, J. Thomas, T. Bovaird and E. Loeffler. In total 30 publications were used.

Literature review and theory development

Co-production of public services: the reasons for renewed interest

The idea of co-production of public services, known also as co-creation, is nothing new in the debate about public management. Its origins date back to the 1970s, when research work was carried out at the Indiana University under the management of Elinor Ostrom on why crime statistics were systematically growing in the United States (despite the police being equipped with cars and other technical equipment), and why the police were defenceless during the riots in 1968. That research led to the conclusion that in order to ensure safety in local environments it had to be

co-created by the local residents and the institutions responsible for its provision. The above-mentioned study, however, was not widely recognised and was used in other areas of public management. That was probably due to the fact that the research results were presented in a period in which the only dominant paradigm of public management was what is referred to as the 'traditional understanding of public administration'. It was based on hierarchical subordination, the realisation of administrative procedures, control and bureaucracy (Weber, 2002). Co-production returned, for a moment, to public debate due to Brudney and England, who drew attention to the outcomes of traditional public services and the limitations thereof (Brudney & England, 1983). Interest in this concept has been renewed quite recently, with the economic crisis in the first decade of the 21st century and the criticism of new public management. As Sześciło observed, the uncritical view of the market, deregulation, privatisation and similar slogans of new public management have not become an antidote to the imperfections of the state, but have revealed its inabilities. A nail in the coffin of new public management as a universal concept for the functioning of the state was the global economic crisis of recent years, the sources of which are attributed to the pathologies of the market deprived of effective and smart regulations by the state (Sześciło, 2017).

The literature suggests various reasons for renewed interest in co-production of public services. One of them was the increasing fiscal pressure put on governments in many European countries (Ciasullo *et al.*, 2017; Meijer, 2016; Bovaird *et al.*, 2015), as well as growing social expectations regarding the quality of services and their adaptation to the local needs (Ciasullo *et al.*, 2017). Moreover, some researchers pointed out that the renaissance of the idea of co-creating public services was a natural consequence of the development of the paradigm of new public governance, with which social capital, public administration co-operation with local communities and volunteerism emerged (Bovaird, 2007; Podgórnjak-Krzykacz, 2015;

Meijer, 2016). The need to rebuild trust in the public sector, which after the period of the economic crisis had reached its lowest level for years, was not without significance. As noted by Fledderus, 'reforms introduced from the perspective of co-production were aimed at rebuilding trust in public institutions by changing the way public services were delivered. This was a completely different approach compared to reforms based on the principles of new public management, which were based on the premise of rational choice and the promotion of economic efficiency' (Fledderus, 2015, p. 551). The need to take action in this area was linked to declining trust in public institutions in almost all countries. Moreover, it was widely believed that public officials were cynical and cared only about their own interests (Stoker, 2006). Regardless of the scope of public sector reforms, a constant trend noticeable in all European countries was the move away from the relieving logic characteristics of top-down management towards the enabling logic presented as open to bottom-up impulses, of which co-production of public services was a part of (Bovaird, 2007; Witte & Geys, 2013). According to Meijer, the example of co-production of public services is the best example of how the social contract between citizens and politicians has changed over recent years. In the traditional sense of public management, citizens engaged only during the election period. The possibilities offered by modern technologies, including social media, have made public management an activity based on permanent co-operation between politicians and service recipients (Meijer, 2016). Therefore the return to the idea of co-production of public services is the result of a total change in the field of public management. It is manifested in the need to take into consideration the interests of a much greater number of social groups, communities and organisations than a few decades ago. Therefore, public service managers must understand the diversity of recipients, who can assume the role of a citizen, customer or partner in contact with

public administration, and skilfully manage those relationships (Thomas, 2012). This task becomes even more important as the public sector faces the challenges of climate change, the fight against social inequalities and the demand for electricity. The 'wicked problems' can be defined as a complex, intractable, open-ended and unpredictable issues and none of them will be solved single-handed – by the public sector alone – but only in co-operation with representatives of other sectors. As Alford pointed out, the body of concepts surrounding wicked and ill-structured problems has served to draw attention to complexity in social, natural and political processes, as well as to alert us to their indefinability, intractability and entanglements (Alford & Head, 2017). In this context the co-production of services seems to be an excellent tool to support such activities. The involvement of citizens, apart from the obvious financial benefits, is also seen as a potential element for innovation in public management, as it introduces new insights into the possibilities for the performance of public tasks. For this reason, co-production of services has been identified by some public administration researchers as an innovation tool (Fugini *et al.*, 2016; Voorberg, 2017).

The above-mentioned reasons for renewed interest in co-production of public services allow us to distinguish between two groups of arguments. The first is of a financial and organisational nature and concerns the growing fiscal pressure put on governments and the need to look for new ways of organising and delivering public services. Alongside them, a second group of reasons is important, which is based on changing the expectations of citizens and opportunities involving participation in public management. The best example of this is the technological revolution that has completely transformed the relationship between public administration and citizens by opening up new ways of communication, control and participation in the public decision-making process.

What is co-production of public services and what types of it are there?

The above-mentioned phenomena have become the basis for a search for new forms of realisation of public services in many European countries. Co-production was a perfect response to this demand because it meant, on the one hand, the alignment of public administration activities with the needs of the recipients thereof and, on the other hand, it solved the problem of financial pressure so important in the public sector. How was this tool of public services management attempted to be defined? According to Alford (Alford, 2009), it was important to draw attention to the conduct of non-public subjects undertaken jointly with public institutions on a voluntary basis and characterised by intentional action to produce public value. In turn, Ciasullo, Palumbo and Troisi emphasised the need for the public sector to inspire the activities taken by the citizens themselves to release the available resources in order to generate public wealth (Ciasullo *et al.*, 2017). When analysing the issues of definition, it is also worth noting the element of time invested: co-production is characterised as a long-term relationship in which each party engages its resources to improve or create a public service altogether. In this approach there is an element of a continuum rather than a mere incidental and often one-off engagement (Podógniak-Krzykacz, 2015). Thus the co-production of public services cannot be understood only as a process of participation which is based on the exchange of information and the submission of ideas (Loeffler & Bovaird, 2016a). Hence co-production is a tool of public management that fundamentally transforms and reorganises the relationship between citizens and public administration, which changes the way such concepts as responsibility for the tasks performed, transparency and quality of services are understood (Meijer, 2016). Going forward, it can be said that, in terms of co-production, public services do not only involve public administration activity selected by means of political choices, but

are an element of interaction, co-operation and co-creation of services organised by a network of subjects representing various sectors of activity (Virtanen & Stenvall, 2014). Consequently, a special type of agreement and co-operation for the creation of public services is needed, whereby the expected outcome of co-operation that goes beyond the standard realisation of public services is an element motivating to act (Fledderus, 2015). When analysing co-production, Sześciło drew attention to three pillars that constitute this way of provision of public services. It is the participation in which the co-decision process takes place, public and private resources are mixed, which blurs the rigid division into administration as service provider and citizen as recipient and customer of the public service system. There is also lack of focus on profit on the part of the participants, which distinguishes the non-commercial nature of co-production (Sześciło, 2015a). Therefore it is particularly important to motivate citizens to engage in the provision of public services. On the basis of research carried out in Belgian and Dutch local government units by Carol van Eijk, Trui Steen and Bram Verschuere, two main groups of factors taken into consideration by citizens can be identified. The first is related to normative motivations, i.e. the perception of one's own commitment in the perspective of necessity or even obligation regarding an activity resulting from the fact of being a citizen and a member of the local community. On the other hand, the second group of factors results from perceiving one's own benefit. This can be an outcome of current problems in the neighbourhood or area of domicile. In this case the co-operation is transactional and is seen as part of the 'investment' (Eijk *et al.*, 2017).

What is worth considering is that co-production has been mostly associated with public service organisations. This means that researchers have focused mainly on organisational and human resources. However, there is growing tendency to join co-production with value co-creation. As Osborne pointed out, when we go to the restaurant we are not only focused on the quality of the meal

itself but also the ambience of the restaurant. This insight is fundamental to understanding the process and importance of co-production for service delivery (Osborne *et al.*, 2016). However, practical aspects of the implementation of co-production may differ, due to the policy, political and economic context in which services are set. As Farr pointed out, these issues have important implications for service provision and the experiences and value that service users can derive from public services (Farr, 2016).

Based on the above, it can be said that co-production is a particular type of co-operation between the public sector and representatives of the private sector or non-governmental sector inspired by bottom-up action for the provision of public services, which is of a long-term nature and results in the creation of public goods beyond the standard activities of public administration. Therefore co-production does not involve the commissioning of public tasks in the form of outsourcing of public services or competitions for non-governmental organisations. It should also not be seen as a one-off co-decision process in which the exchange or submission of ideas occurs. The key element is the voluntary (bottom-up) willingness to engage resources (financial, material, own time, knowledge) for the provision of public services, which is then backed up by public administration. Thus, the co-production of public services is completely different from the traditionally understood public administration, whose main task has so far been to plan and deliver public services to the citizens. Even the change of thinking about public management in the spirit of new public management has not changed this assumption. It was up to the politicians and officials to choose whether they would perform services by themselves or whether they would use other tools, such as outsourcing, commissioning the tasks from outside subjects or privatising them. The dilemma of whether to row or steer (Osborne & Gaebler, 1993) has only been transformed into a paradigm of governance, in which citizens have been involved already at the stage of designing

the service, and not, as has been the case to date, at the stage of planning and delivering the services.

This way of understanding co-production is classified in several ways. The first one distinguishes between various types of co-production based on the significance of the third sector in the process of realisation of public services. On this basis, the following can be picked out: (1) co-governance, understood as the involvement of a third sector in planning and providing public services; (2) new public governance, i.e. the co-operation of a third sector with public administration in the production of public services; and (3) co-production as independent production of public services by citizens and with some public sector support (Brandsen & Pestoff, 2014).

By combining the perspective of administration sciences and management science, Osborne and Strokosch proposed to distinguish between such types of co-production of public services as: (1) co-production of consumers, which is reduced to the provision of services at the operational level by their direct customers; (2) participation co-production, involving co-designing, co-planning and co-provision of a service; and (3) design co-production based on the involvement of citizens in the public services innovation process at the design stage (Osborne & Strokosch, 2013). Thus the process involves increasingly sophisticated forms of co-operation between citizens and public administration. At this point it is worth emphasising one more significant specific of public services delivered by public administration that undoubtedly distinguishes them from the production of goods delivered by private companies. Public services always arise within the relationship between the producer and the consumer. The separation of those subjects is virtually impossible. It is difficult to imagine the public education service without a teacher–student relationship or health service without a doctor–patient relationship. Hence the dynamics of these relationships have a great impact on the quality of service. This cannot be said in the case of a product manufacturer, in which the relationship between the producer

and the consumer may not exist at all. Therefore, each part of production – from the beginning (the production process) to the end (the consumption of the product) – can be scrutinised and managed separately. This kind of public service logic shows that co-production cannot be viewed as something to be added to ‘traditional’ public service delivery (Radnor *et al.*, 2014). In fact, it offers a completely different point of view about the role of public administration as a producer of public services.

A slightly different view on the classification of co-production may be seen from the legal perspective. Here the organisation, funding, direct provision and, in the end, control and evaluation are of key importance to the delivery of public services. This view is a typical approach for administration sciences. As noted by Sześciło, ‘the idea of co-production influences the process of providing public services at every stage, whereby the fundamental change is in the sphere of direct provision. Co-production takes the most specific institutional and procedural forms’ (Sześciło, 2015b, p. 291). Nevertheless, the states, and in the case of co-production – most often local government units, have the obligation to provide the services and finance them. The activity of residents conducted, for example, as part of the local initiative, allows a reduction of their costs and for them to be adapted to the needs of the local community.

The most common classification in the literature, proposed by Bovaird and Loeffler (2016b), is commonly referred to as the four Cs (from the first letters of the English words). On this basis, the following are distinguished between: (1) co-commissioning of services, which involves co-operation in choosing the best service; (2) co-design used for the preparation for the provision of public services; (3) co-delivery, manifested in co-operation of residents and local administration for the provision of services; and (4) co-assessment, i.e. the use of expertise and experience of public service users in the evaluation process.

The above-mentioned classifications enable us to draw the conclusion that there are two main references on the basis of which different

co-production models are differentiated. The first one is the question of the different phases of provision of public services. It is most often used by representatives of public administration and management sciences. In this way of thinking the researcher mostly pointed out the importance of the relationship between public administration (the producer) and citizens (the receivers). Therefore such elements as citizens’ engagement and willingness to co-produce are very much to the fore. In turn, the second one refers to public policy. This view is more often used by representatives of political sciences and draws attention to the question of individual phases of realisation of public policy (e.g. Zdybała, 2012) and therefore the very important elements are potential outcomes or decision-making process. Based on the above-presented classification, the scope of co-production is very wide. The only restriction on the use of co-production can be legal provisions that will impose barriers on its use.

Discussion

The co-creation of public services on the principles outlined above seems to have obvious advantages. They manifest themselves in promoting active citizenship attitudes, strengthening social capital among local residents, and restoring the naturalistic way of thinking about local government. However, there are a number of factors that will reinforce or limit the attitudes of co-operation. As pointed out by Podgórnjak-Krzykacz, the following will be of key importance: (1) involvement and trust between residents and local administration; (2) the attitude of officials, who may be open to new initiatives and actions of residents or to treat them problematically; (3) the tradition of co-operation between partners; and (4) organisational and managerial factors related to the decentralisation of tasks to the level of auxiliary units, organisational and substantive support for the submitted initiatives and the reduction of administrative barriers (Podgórnjak-Krzykacz, 2015). In turn, Loeffler and Bovaird pointed out such determinants of co-

operation as: (1) financial and organisational support for proposed initiatives; (2) problems related to finding added value of co-provided projects; (3) difficulty in convincing residents to engage in the provision of services through financial contributions; and (4) lack of competence to realise projects and co-operation of officials with residents (Loeffler & Bovaird, 2016b).

In order to understand the reasons for success of co-production, it is worth taking into consideration some non-financial and non-institutional factors. As Meijer pointed out, the tradition of involvement of the local community in co-operation with public administration will also be of key importance (Meijer, 2016). The role of social capital in the development of new public governance tools will be crucial, as it will determine the costs of control and supervision by the public administration, the attitudes of responsibility of residents towards the surrounding reality, and the participation in local and political initiatives, which will ultimately manifest itself in the social capital (Putnam, 1995). Another factor which is also worth mentioning is the competence of officials themselves, whose outcome of activity can no longer be only procedures (as was the case with the Weberian understanding of administration) or results (characteristic of new public management), but also their attitude to change. This implies the need to strengthen the competences and skills of co-operation with external partners as well as project management (Bovaird, 2007; OECD, 2011). It is not impossible that it is even necessary to appoint a special team that will deal with such projects as co-production. In turn, Alford pointed out such factors as: (1) organisational culture; (2) the specificity of creation of specific services; (3) understanding the needs of recipients of services; (4) incentives that encourage residents to co-operate; (5) organisational structure and the administration of an office; and (6) the methods for measuring effects and budgets (Alford, 2009).

Taking into consideration the above possibilities and drawbacks with regard to the development of co-production of public services, Thomas

pointed out the principles by which the public administration should be guided. These guidelines include: (1) defining in advance what support for residents may be useful with regard to co-production of services; (2) limiting the administrative requirements for subjects that will submit initiatives; (3) considering the best form of assistance (organisational, substantive, financial or other); (4) preparing organisational structures and persons involved in the realisation of co-production projects in the relevant offices; (5) co-operation with networks/organisations/residents to promote co-production; (6) building co-operation incentives; and (7) preparing indicators through which the above activities will be evaluated (Thomas, 2012). The adversities of the above activities make it possible to indicate a barrier to the development of co-production. On this basis the following can be indicated: (1) the desire to avoid risk and ambiguity in the realisation of public tasks; (2) fear of failure; (3) lack of sufficient skills on the part of officials; (4) problems in building trust on both sides; and (5) financial constraints on the part of public and non-governmental sectors (Bovaird & Loeffler, 2016a).

The above-mentioned opportunities and drawbacks with regard to the implementation of co-production of public services are very similar to the implementation of social participation tools. In both cases four aspects of co-operation need to be taken into consideration: organisational/institutional/financial issues; information; knowledge; and competence of representatives of both sectors. The shortcomings in each of them create barriers that can lead to reduced social activity.

Conclusions

Despite a relatively long period of interest in co-production of public services, this issue remains a domain of science rather than practice. It is hard to answer why that has happened; however, the reason might be that there is still a lack of knowledge when it comes to potential barriers to co-production. Voorberg et al. pointed out that the actions to

overcome barriers were aimed at influencing elements on both the organisational side (policy that support co-production; policy entrepreneurs) and the citizens' side (lowering of the participation costs; generating a feeling of the ownership) (Voorberg *et al.*, 2014). There are no doubts that it is still too little to implement effective co-production policy in practice. Moreover, it is worth considering that it is hard to find any deepened knowledge about potential barriers to co-production in scientific literature. From the first systematic review, nothing has changed and therefore it may be an interesting postulate for further research.

In Polish literature this issue has so far been analysed to only a small extent. Except for publications by Sześciło, it is difficult to point out any authors dealing with this subject. Similarly, the tool is popular in the practice of public management in Poland and is limited to a small scale. Co-production is still considered as a non-essential form of provision of public services. Priority is given to resolving the dilemma of whether public services should be provided through tools typical for public administration or the market. Only then, with the appropriate activity of social partners, are network tools used. This article is intended to provide a cross-cutting indication of the state of scientific debate in the area of co-production of public services. Despite the different views of representatives of various scientific disciplines, many elements of analysis of co-production remain common. The components of co-creation of public services are consistent, as are the opportunities and drawbacks to provision. Certain differences can be seen in the classification of co-production. On the one hand, they depend on the research prospects and scientific categories that are of interest to researchers. On the other hand, a significant difference is the range of tools included in co-production. The *sensu largo* approach that also includes such activities as a participatory budget, to the *sensu stricto* approach, which involves the design, provision and evaluation of public services, can be seen here. However, responding to the first research question we can say that

new reasons have appeared after the publication of Voorberg *et al.* It is the financial crisis which has made co-production of public services more popular among scholar and practitioners. Therefore looking for new ways of cutting public spending and increasing the quality of public services were the main reasons for the popularity of co-production.

Regarding to the second research question, there is one element which has emerged over the last few years. Among many different elements of the definition of co-production, durability of relationships between provider (the public administration) and receiver (a non-public agent) seems to be a new one. In this way of thinking co-production is not a short, or ad hoc contact, but instead a longer-term relationship which changes mutual attitudes between partners. Another thing is that after Voorberg's review of co-production some new classifications have appeared (Voorberg *et al.*, 2014). The most important one is those introduced by Bovaird & Loeffler, who showed a different dimension of co-production (Bovaird & Loeffler, 2016a).

When it comes to the third research question, nothing can be added according to the literature review. It means that we as researchers and practitioners still do not have sufficient knowledge about tangible actions which may result in co-production development. As pointed out previously, it might be interesting to research potential barriers to co-production. So far only Bovaird and Loeffler have added this element of co-production to their research, during which they pointed out that funding and commissioning barriers may partly be a reason why co-production does not develop (Bovaird & Loeffler, 2016b). The next interesting field to cover is the question of whether there is any dark side of co-production. It can be easily imagined that changing very strict model of public service delivery may result on corruption or financial irregularities, therefore there is a point for further research.

The research postulate for further work and analysis on the phenomenon of co-production of public services is the use of IT tools in the provision

of public services and, thus, the realisation of the phenomenon of crowdsourcing on a larger than local scale. Warren, Sulaiman and Jaafar interviewed five hundred citizens and social activists on the role of social media in civic engagement and found that the use of social media by citizens increased their likelihood to participate in the public service delivery. Therefore, conducting research about co-production of public service delivery in terms of using IT, and particularly social media, might deepen knowledge about citizens' engagement and as a result start a new point of co-production public services researching.

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Piotr Tworek

Risk management in a municipal construction enterprise: A theoretical and methodical study

Abstract

Objectives: The key aim of the paper is to outline the concept of integrated risk management in municipal construction enterprises, seen as a supportive function that facilitates the overall management of an organisation. What matters most, both in the theory and in practice, is the ability to use appropriate methodology in this respect. Such issues now constitute an integral element of public management in Poland.

Research Design & Methods: A cognitive gap, identified in the scholarly literature, has served as a starting point for the theoretical and conceptual discussions addressed in this paper, in particular, within the scope of risk management methods. This paper contains a review of the literature on this subject. Deduction and induction have been used to formulate the conclusion. Another method employed in this paper is synthesis. The conclusions drawn in this paper result also from the observations made during long-term research into risk, including in the public construction sector, which has been conducted by the author at the University of Economics in Katowice.

Findings: The concept proposed in this paper is the outcome of the author's studies, conducted with a view to identifying solutions, both theoretical and methodical ones, in the area of risk management in municipal construction enterprises operating in Poland. Integrated risk management provides the basic framework for the concept which is drawn up as a result of the research.

Implications / Recommendations: In its main body this paper presents a recommendation which consists of a modification of the general concept of Construction Risk Management (CRM) into Integrated Construction Risk Management (ICRM), with a simultaneous proposal that the general risk management concept (theory), which is followed by commercial companies (Enterprise Risk Management; ERM), should be implemented in municipal construction enterprises as well. The proposed solutions may then be transferred to the practical operations of such municipal entities or of public organisations at large (the utilitarian dimension of knowledge).

Contribution / Value Added: This paper is an attempt to add to the theoretical background to risk management in the public sector, which refers, in particular, to New Public Management (NPM), the notion used by municipal construction enterprises in Poland.

Article Classification: conceptual article

Keywords: risk management, public management, municipal enterprise, construction enterprise management, public construction

JEL classification: D81, H4, H76, L7, L32

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1. Introduction

Both in theory and in practice it is commonly recognised that risk in the construction industry has its own unique profile. This also applies to the public construction sector, where risk may be analysed by adopting the subjective and the objective approach. A key participant in a construction project conducted in the public sector is a municipality/a commune or, in general, local government authorities. In addition, there is always a contractor, as an organisation which has undertaken to carry out a given construction project or, more generally, a municipal company which provides services related to maintenance of existing infrastructure. There are also other forms of construction activities which are connected with the public sector, such as municipal, social, rental, business-related and public benefit ones. It should be noted that in the scholarly literature risk management in the construction sector is usually perceived through operations of commercial companies which provide construction and assembly services, rather than by looking at municipal enterprises performing the roles of contractors, which can be treated as a separate subject of risk. Therefore, the key aim of this paper is to outline the risk management issues as analysed from the point of view of municipal construction enterprises, as such entities operate in Poland. In particular, the discussions presented in this paper concern methodical issues related to risk management as a sub-process supporting governance in municipal companies. An attempt is made to transfer the risk management patterns from the commercial sector to organisations operating in the public sector.

This paper is mostly theoretical and conceptual (the theory-cognitive dimension of knowledge) in its character but, at the same time, many of the insights presented here are of an applicable nature (the utilitarian dimension of knowledge). In the main body of this paper a proposal is put forward that the general concept of Construction Risk Management (CRM) should be modified to arrive at Integrated Construction Risk Management (ICRM)

(Tworek, 2013, pp. 180–186), while the general approach to (the theory of) risk management applied to commercial businesses (Enterprise Risk Management; ERM) (Walker & Greenwood, 2002, p. 11–34; Dallas, 2006, p. 14–48) may be implemented in the operations of municipal enterprises that provide maintenance services for existing infrastructure as well as carrying out new public construction projects. The method of synthesis is used. This paper also contains a review of the scholarly literature in this field.

2. Materials and methods

A review of the literature may lead to the assumption that it offers no response to the most essential question, namely in what ways risk should be managed (i.e. identified, quantified and responded to) by municipal enterprises that provide services related to the maintenance of existing infrastructure and perform new public construction undertakings. What is of vital importance here is the understanding of the very notion of risk in the public construction sector, as it first needs to be identified by a public investor and a contractor, is that of carrying out a construction project. Another important factor is the knowledge of an array of methods that can be used in the risk management process, so that risks in the public construction sector can be estimated and, consequently, responded to in an appropriate and effective manner by contractors. In this respect, the patterns (standards) of risk management in the commercial sector may be considered, since many Polish construction companies which are listed on the stock exchange manage their risks in an organised way, using numerous modern methodical solutions, including the ones offered by the scholarly literature. Municipal companies with a construction profile, however, do not seem to manage their risks in any formalised way, and the methods which help to identify, quantify and react to risks are applied in a highly limited manner. Moreover, it should be added that there is a statutory requirement for public sector entities in Poland to manage their risks (MF,

2017). Similar conclusions may also be drawn with regard to municipal companies, perceived as a group (Kachniarz, 2012, p. 29), which offer public services of other types (Brown & Osborne, 2013, pp. 186–208).

Apart from the literature studies, the conceptual discussions presented in this paper draw on the author's expertise gained from long-term research into risk, conducted independently as well as in research teams at the University of Economics in Katowice. Many of the conclusions mentioned here come from the studies carried out in 2017 as part of the project titled "Risk in public management. Stage II: Theory versus practical experience of risk management in public organisations in Poland" performed in the Department of Public Management and Social Sciences, the University of Economics in Katowice, where the author acted as a project leader. At the same time, this paper is an integral part of this project as well as the first stage of the research conducted in 2016 within the project titled "Risk in public management. Stage I: Methods of risk management in public organisations in Poland", which used, *inter alia*, a case study. The methods of deduction and induction are employed in this paper, which contains a review of the basic legal documents that govern the subject matter analysed herein.

In this context it should be noted that a regulatory attempt has already been made in Poland in the area of construction risk identification for projects conducted within the framework of public-private partnership (PPP) (Adamek-Hyska & Tworek, 2011, pp. 7–11). Under the Regulation of the Minister of Economy dated 21 June 2006 on risks connected with the implementation of ventures under private-public partnership, the following basic types of risks are enumerated, *i.e.* first, "(...) construction site risk; second, availability risk (a risk which affects the provision, quality or quantity of services to be provided under a PPP agreement); third, demand risk (a risk which leads to changes in a demand for particular services); fourth, enterprise planning risk (a risk which affects the cost and the time of a bidding process); fifth,

market risk related to availability of funding for the execution of a project (a risk which affects the cost, quantity, quality and the time of provision of funds needed to execute the project); sixth, political risk (a risk of changes on the political scene which affect the directions of development for public-private partnership projects); seventh, legislative risk (a risk of changes in legal regulations which affect projects executed under public-private partnerships); eighth, macroeconomic risk (*e.g.* risks of inflation, fluctuations of interest rates and currency exchange rates); ninth, regulatory risk (a risk of changes in regulations on payment schemes in specific public benefit services, which may affect the costs of a project or which may lead to changes in the scope of rights and obligations of contractual parties in a project); tenth, return-on-investment risk (a risk which may affect the level of profit to be generated from a project); eleventh, force majeure risk; twelfth, dispute resolution risk (a risk which affects the way in which a dispute will be settled and the effectiveness of such settlement for disputes arising out of PPP agreements); thirteenth, environmental risk; fourteenth, project location risk (a risk which affects accessibility of the area on which a project is to be executed); fifteenth, asset transfer risk (a risk which affects the conditions under which and the time at which assets are transferred as part of the project); sixteenth, final asset value risk (a risk involving the material value of the assets as at a PPP project delivery date); and seventeenth, lack of social approval risk (a risk of protests and objections from local communities, *e.g.* during the planning and execution of infrastructural projects under PPP partnerships)" (ME, 2006). Therefore it may be assumed that these are the key types of construction risks, perceived from the subjective and the objective perspectives, which make up the general picture of this phenomenon, and which need to be taken into consideration by a private investor and by a public investor when planning and executing infrastructure construction projects (Tworek, 2013, p. 41); although the said regulation has ceased to be formally valid.

Looking from the scientific point of view, however, this list should refer to risk quantification issues. In economic sciences risk is regarded as a measurable category, unlike uncertainty, which cannot be fully estimated (Knight, 1921, pp. 6–17). That is why a question arises about the suitability of the methodical solutions offered by international risk management standards and, in particular, the one created having in mind public sector organisations – i.e. the UK's FERMA standard (Federation of European Risk Management Associations). It takes into account the fact that risks may be associated both with opportunities (the positive aspect) and with threats (the negative aspect) (FERMA, 2002, p. 2). This overlaps with the position expressed by the offensive approach to the definition of risk in the scholarly literature, which is represented by, for example, Drucker (1974, pp. 17–62). It is particularly important to be able to differentiate between the categories of risk and uncertainty, as risk is a function of uncertainty and, at the same time, it is always accompanied by uncertainty (Karmańska, 2008, p. 59). Risk, however, may be defined as a combination of the likelihood of an event and its consequence (FERMA, 2002, p. 3). The usefulness of the standard solutions offered in public management is indirectly referred to by, for example, Young and Fone (2001, pp. 9–58). Their risk management concept in the public sector (Public Sector Risk Management), however, does not take into account a complete range of the methodology solutions which public risk managers could possibly find useful when doing their jobs.

3. Literature review and theory development

The preconditions for managing risk in the construction industry in an effective and efficient way are accurate risk identification and risk definition. What is needed, therefore, is to have risks for municipal enterprises performing construction and assembly activities specified.

Even though the scholarly literature – as mentioned in the introduction – explains this problem in an in-depth manner when it comes to commercial construction companies, this issue still requires more scientific research in the case of the public sector and, to be more specific, the operations conducted by municipal construction entities. Reference should here be made to Drucker (1964, p. 17), who states that almost every branch of industry has its specific risks which need to be handled well, to be able to continue in operations. This also applies to any forms of public sector construction activities. In the international literature attention is drawn – by a large group of authors (Saporita, 2006, pp. 13–51; Bender, 2000, pp. 14–189; Revere, 2003, pp. 13–76; Flanagan & Norman, 1993, pp. 51–118; Edwards, 1995, pp. 4–68; Bunni, 2003, p. 44; Burtonshaw-Gunn, 2009, pp. 48–93; Godfrey & Halcrow, 1996, pp. 13–59; Smith, Merna & Jobling, 2007, pp. 26–92; Hatem, 1998, pp. 432–453) – to the need to manage risk in the construction industry. The methods suggested in the literature, however, tend to focus on the attempts to attain the key objective pursued by commercial providers of construction and assembly services, which is maximising value (Walker & Greenwood, 2002, pp. 11–38; Dallas, 2006, pp. 14–48). In municipal construction enterprises, in turn, due to a different form of ownership (local government ownership), a risk management process may run differently. This may be caused by the importance and the impact of political risk, among others – a factor which is normally of a negligible relevance for contractors operating in the commercial sector. That is why, apart from the identification of a typical construction risk – which is related, first of all, with the quality of construction and assembly work (quality risk), secondly, the time for execution of infrastructural projects (time risk), thirdly, a contractual price established in an agreement between an investor and a contractor (the price risk resulting also from construction project cost calculations) and fourthly, safe execution of a construction project (the safety risk) – political risk should always be taken into

consideration due to the specific settings in which the public sector operates, as well as the specific form of ownership of municipal construction entities. These core categories of risks combined present an overall picture of risk in the public construction sector, which should also be analysed against the theoretical background. A particularly relevant category is political risk, which, in broad terms, is connected with political events occurring, and political decisions made, in a given country (Buła, 2015, p. 17). When it comes to construction undertakings operating at the local government level, such risk is associated with the dependence of building entities on the political decisions made by the local authorities. This – according to the literature – is regarded as an external construction risk factor (Adeleke *et al.*, 2017, p. 3). Additionally, risk sources for public contractors include public procurement regulations (PPO, 2017), which also demand special consideration. On the whole, construction risk is a research category that needs to be reviewed in a multi-disciplinary way.

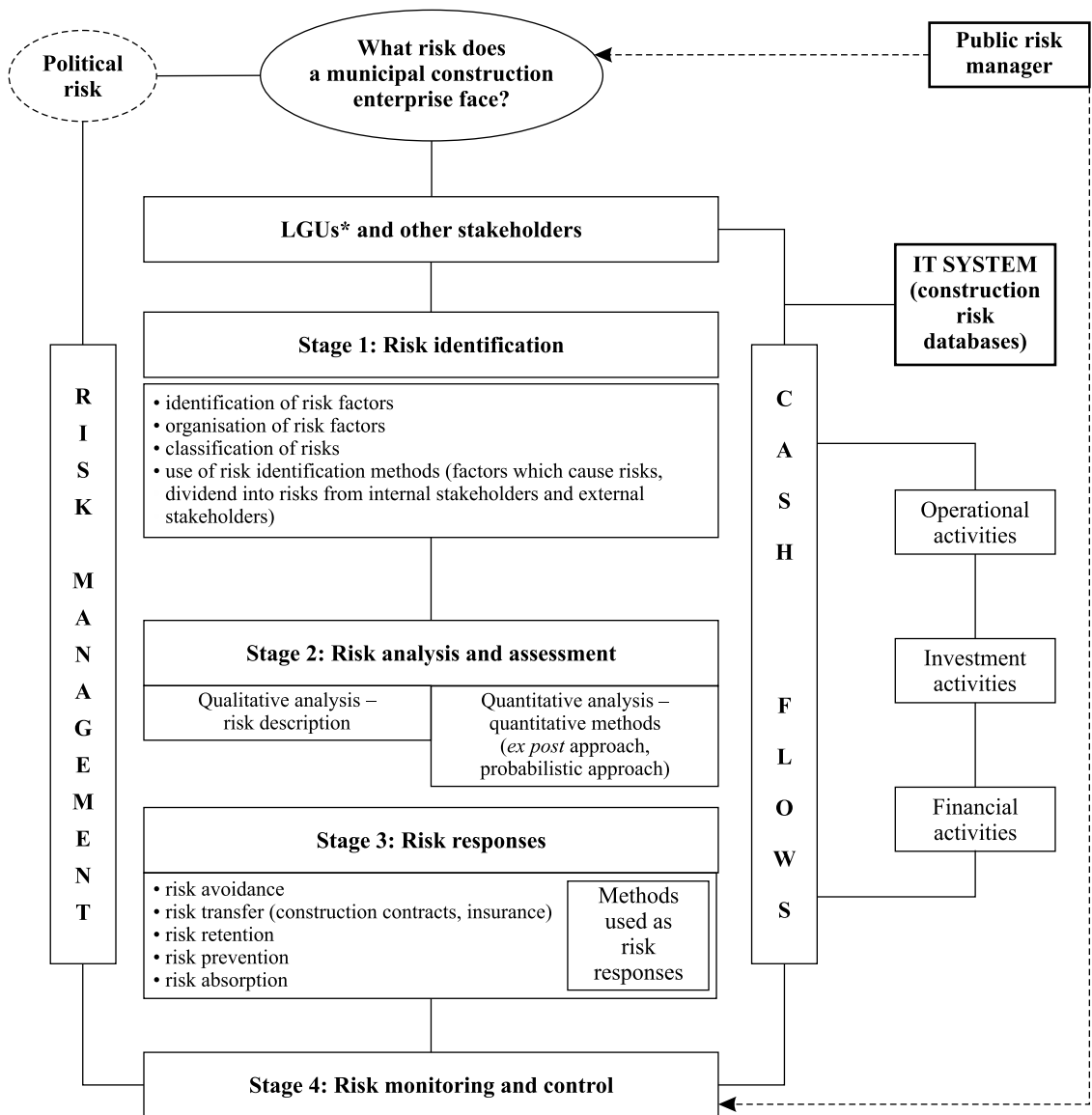
4. Discussion

The initial studies conducted in this area lead to the conclusion that municipal enterprises manage their risks indirectly and without having any formalised system in place. This means that, in practical terms, risk is not managed in any on-going, comprehensive or organised way, using a complete set of methods or across all the functional areas in which a given (municipal) enterprise works, with a special focus on investment, operational and financial ones. No integrated risk management system is implemented in these entities and risk management is limited to identification of the risks related to the quality of construction or repair work (the risk of quality, including quality of services). Risk is not managed in any integrated way due to several reasons, i.e.: firstly, there isn't sufficient willingness and motivation to introduce such a formula in enterprises; secondly, the implementation of such a solution (system) is

costly, i.e. operation of the system generates high expenses; thirdly, no independent managerial role – a (public) risk manager – has been established in the Polish public construction sector yet; fourthly, contractors generally share the belief that ordinary optimisation methods suffice, as risk cannot be avoided completely on any construction site and, consequently, the only effective method of risk financing is insurance (Tworek, 2013, pp. 164–176).

Consequently, it can generally be concluded that if risk management is to be looked upon as a practical and cross-functional type of knowledge, it should be implemented by municipal construction enterprises across all of the areas in which they operate, with the focus on operational, investment and financial ones (Tworek, 2013, p. 186). That is why – both in practice and in the theory – a common denominator needs to be found so that risk may be identified, estimated and responded to appropriately, using the right set of methods, in the three main types of activities conducted by municipal entities: operational, investment and financial activities. Such a common denominator may be cash flows (CFs) generated in a construction municipal enterprise, as all economic events, including risk-bearing ones, have their reflections in financial reporting (Tworek, 2013, p. 186). A graphic illustration of this point is given in Fig. 1.

Figure 1 generally presents a conceptual flow of a risk management process in municipal construction enterprises, analysed by adopting an integrated approach. Only such a formula, if followed by a municipal enterprise, may be expected to ensure success, i.e. the achieving of a desired outcome in the area of risk management, irrespective of the type of public services which are provided. This concept is underpinned, first of all, by a core value established by an enterprise, around which a public risk manager (Fig. 1) would be able to deal with or, to be more specific, quantify encountered risks in an effective way. According to this approach, the most vital phase in the entire risk management process is risk analysis and assessment (Stage 2), where special knowledge of risk quantification methods which can possibly be



* local government units

Figure 1. A conceptual diagram of integrated risk management in a municipal construction enterprise – methodical proposal, process-based approach

Source: Own elaboration based on Tworek (2014, p. 498).

used is required. When quantifying risk by looking at cash flows (CFs) generated by a construction municipal enterprise, a historical method may be used to analyse financial reporting data (the *ex*

post approach), as a starting point for specific financial methods, but a probabilistic approach may also be adopted (Fig. 1), based on specific probabilistic methods (Tworek, 2013, p. 186).

In the case of the former approach the methods developed in the field of corporate finance, including an index analysis, are suggested, and these can further be supplemented by, for example, financial and operational leverages (Tworek, 2013, p. 186). In the latter approach, in turn “(...) taking into consideration a criterion of net cash flows and a net profit generated by an enterprise, (...) two methods are recommended for risk measurement, i.e.: Earnings at Risk (EaR), focusing on the earnings which may be exposed; and Cash Flow at Risk (CFaR), focusing on the cash flows which may be affected” (Jajuga, 2007, p. 383).

The selection of these methods for risk quantification in a (typical) construction enterprise seems justified, as net cash flows are a source of value creation for an entity (Tworek, 2013, p. 193). In addition, the methods result from the expansion and modification of the Value at Risk (VaR) concept (Tworek, 2013, p. 193). This constitutes a foundation for the methodical approach illustrated in Fig. 1, which results from the proposal of having the risk management methods available in the commercial sector transferred to municipal enterprises which provide building services. This approach also seems justified due to another substantive reason, namely the fact that municipal enterprises in Poland, in addition to their construction and assembly activities, also provide a range of services (such as lease of building machines and equipment, transport services for the building industry) for example for commercial construction companies, as well as manufacturing and selling concrete or aggregates for building purposes, etc. That is why profit (net income) needs to be calculated, taking into account risk and employing the methods for risk analysis and assessment in typical construction and assembly production, such as a sensitivity analysis. The methods which are available for municipal construction enterprises in this area are presented in Table 1.

Table 1 outlines the pros and cons of the risk quantification methods which are available to municipal enterprises performing the role

of contractors in infrastructural projects. The methods may be employed in a variety of ways, depending on the type of construction project to be executed or the scope of construction and assembly work to be carried out. These are standard methods, designed for the general construction sector, and they address typical construction risks. However, when looking at the specific character of municipal construction enterprises and, first of all, their form of ownership, what needs to be noted in a process of risk quantification or, more importantly, risk identification (Stage 1), is political risk – a category which should be re-emphasised here. Potential options available to identify such risk by applying a separate set of methods should also be highlighted. This predominantly refers to the risks originating from internal and external stakeholders (Fig. 1), while the most relevant risk is the one resulting from a founding body (local government authority). Hence what matters in the risk identification process is the selection of the correct risk identification method, which should largely be linked here with the qualitative approach, including when it comes to risk analysis and assessment. To that end a number of methods are recommended in the foreign literature in this field (Saporita, 2006, pp. 13–51.; Revere, 2003, pp. 13–76.; Flanagan & Norman, 1993, pp. 51–118.; Edwards, 1995, pp. 4–68; Bunni, 2003, p. 44; Burtonshaw-Gunn, 2009, pp. 48–93; Godfrey & Halcrow, 1996, pp. 13–59; Smith, Merna & Jobling, 2007, pp. 26–92; Hatem, 1998, pp. 432–453), and special relevance is attached to a public debate. From the methodical perspective, an important thing is, first of all, the need to modify risk identification methods to tailor them better to the needs of organisations which offer municipal services; secondly, the fact is that in the risk identification process one has to consider the advantages and the drawbacks of every single method; thirdly, there is a need to use these methods complementarily, just like in the case of risk quantification methods (Tab. 1). Consequently, two different approaches – the qualitative one and the quantitative one – may

Table 1. Risk quantification methods in the infrastructural construction sector

Method	Key Strengths	Key Weaknesses
Decision Tree Analysis	Graphical layout of expected value calculation	Must convert continuous into discrete distributions
	Evaluating alternatives with sequential decisions (e.g. value of information)	Must limit the number of decision alternatives and chance event outcomes
		Requires a decision policy value function
Monte Carlo Simulation	Can accommodate complexity easily, such as dynamic behaviour under contingencies	Time versus accuracy tradeoff; solution can be computationally time-consuming
	Very generally applicable	Solution is approximate and changes with random number seed
		Poor precision with regard to low-probability events
Influence Diagram	Similar to decision trees	For EV calculation the theory and calculations are more difficult
	Better represents relationships between variables	
Scenario Analysis	Simple	Seldom quantifies risk and uncertainties
Moment Methods (parameter method)	Medium complexity; quick; reproducible solutions	Provide only statistics about the shape of the solution distribution
		Calculations often ignore important details, such as correlation
Fuzzy Logic	Low/medium complexity; quick	Only approximates probabilistic reasoning
	Reproducible solutions	Potential developments needed to improve accuracy
CPM, PERT, and PDM	Simple	Simplistic project network model may be inadequate
		Only one critical path is recognised and, with PERT, used in stochastic calculations
Sensitivity Analysis	Simple	Does not recognise risk versus value tradeoffs
Multi-Criteria Approaches; Analytic Hierarchy Process	Simple, if non-probabilistic	Risk or uncertainty is merely one of several attributes; problems with consistency
		Probabilities can be used if the criteria hierarchy represents the value function
Design of Experiments; Taguchi Methods	Value optimising or variance reduction with efficient handling of many decision (controllable) variables	Limited representation of uncertainty, noise, e.g., using low and high for each chance event
Approximate Integration	Rapid, repeatable solution	Little recognition in practice and literature; emerging technique

Source: Schuyler, 2001, p. 222.

be followed at the same time, as a requirement for a comprehensible assessment of risk. Only such behaviour would enable one to come up with the correct risk response (Stage 3), and here a special role in the public construction sector is attributed to all-risk insurance, which enables contractors to transfer risks to insurers (Fig. 1). Not only in the theory but also in practice, every public risk manager in a municipal construction enterprise should be able to control a risk management process in an accurate and on-going way, and introduce required improvements if and when needed (Stage 4). As risk in the construction sector is a dynamic category and contractors may always be exposed to some extraordinary risks, which have not been anticipated before, there may be a need to use an additional new method for managing the risk (Tworek, 2013, p. 186). No matter which risk management method is selected, what should be kept in mind is the specific profile of the construction work to be performed by the given contractor. Risks which can occur in projects where buildings are erected by assembling are managed differently to risks in typical civil engineering projects (roads, tunnels, etc).

Conclusions

The integrated risk management concept to be implemented in modern municipal construction enterprises (Fig. 1), as suggested in the paper, should mean that: first of all, it is clearly defined in the given enterprise who is to manage risk and bear the related responsibility; secondly, risk is managed across all the areas in which the enterprise operates; thirdly, a full set of risk management methods are used in a complementary way; fourthly, risk management supports the overall governance of the enterprise; fifthly, risk management conducted by risk managers also applies to other participants of the construction process and stakeholders in general; sixthly, risk is managed in a continuous and reliable manner and seen as a process; and seventhly, effective risk management reduces the overall risk faced by the municipal construction

enterprise (Tworek 2013, p. 205–214). The main conclusion in this paper states that integrated risk management may, on one hand, effectively support general management of a municipal construction enterprise and, on the other hand, it reflects the modern concept of strategic management in organisations, fully compatible with the notion of New Public Management (NPM), which in practical terms should be performed by public risk managers. Therefore, to put it in a broader perspective, today's practical risk management in public sector organisations (Drennan & McConnell, 2007, pp. 13–25; Farnetia & Young, 2008, pp. 89–99; Hunt, 2010, pp. 377–402; Chen & Bozeman, 2012, pp. 277–400; Brown & Osborne, 2013, pp. 186–208; Asenova, Stephen, Bailey & McCann, 2015, pp. 552–465; Flemig, Osborne & Kinder, 2016, pp. 426–430) should be analysed both as a functionality and as a function (Tworek, 2014, pp. 498–499). The methodical considerations seem to play the most important role here (Tab. 1), which should be referred to municipal enterprises that provide services related to the maintenance of existing infrastructure and carry out new public projects in their municipalities or communes. The methodology is then key to the concept depicted in Fig. 1, if risk is to be managed successfully, effectively and, what is most important, in an integrated fashion. Municipal enterprises need to determine their core value around which risk should be estimated; cash flows (CFs) – both in the theory and in practice – should be recommended for this purpose. Only then will a public contractor be able to measure their risk by using risk management methods which have frequently been tried and tested in the commercial construction sector. Therefore, risk management in the public construction sector is a complex and highly specialised phenomenon, which still seems to require substantial scientific research. This is one of the reasons why cross-functional teams are often assembled, including experts from various fields and with various professional backgrounds, when organisations executing public projects need to examine their risks. These teams tend to be

composed of (construction) engineers, economists and lawyers. Now such professional teams should also include public managers and the problem addressed in this paper can be an integral element of public management as a specific type of scientific knowledge (Kožuch 2004, pp. 49–59; Hausner, 2008; Frączkiewicz-Wronka, 2009, pp. 11–47; Ćwiklicki, Jabłoński & Mazur, 2016, pp. 13–390). Such a concept is advocated worldwide by, for example, PRAM (the Public Risk Management Association) and PURMA (the Public Utilities Risk Management Association) in the US, and PRIMO (the Public Risk Management Organisation) in Europe. At the same time, in the scholarly literature special attention is drawn to the research options in risk management in the public sector, as indicated by Young and Fone (Young & Fone, 2001, pp. 9–112).

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Use comma (,) after each line of bullets/numbering, and dot (.) after the last one. In most cases please use bullets instead of numbering!

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- There are three factors (Smith, 1999, p. 2):
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For full sentences, use (.) after each line and start with the capital letter.

Numbering:

Following Smith (2014, p. 22) we applied the following procedures:

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2. Execution of the BP test, allowing to choose between the pooled model, and the model with random effects (RE).
3. Execution of the Hausman test, allowing to choose between the FE model and RE.

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$$\min \rho = 1 - \frac{1}{m} \sum_{i=1}^m s_i / x_{i0} \quad (1)$$

$$X = \begin{bmatrix} x_{11} & x_{12} & \dots & x_{1n} \\ x_{21} & x_{22} & \dots & x_{2n} \\ \cdot & \cdot & \dots & \cdot \\ x_{m1} & x_{m2} & \dots & x_{mn} \end{bmatrix}, \quad Y = \begin{bmatrix} y_{11} & y_{12} & \dots & y_{1n} \\ y_{21} & y_{22} & \dots & y_{2n} \\ \cdot & \cdot & \cdot & \cdot \\ y_{m1} & y_{m2} & \dots & y_{mn} \end{bmatrix} \quad (2)$$

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 - a thousand million (10^9) is a billion
 - (not ‘a milliard’ as it used to be in Old British English!).
 - For details please see: <http://mathworld.wolfram.com/Milliard.html>
7. **DO NOT** use dots to separate thousands, millions, etc. (e.g. 32 046; 45 263 721; 741 592 438 526).
8. Numbers till 10 are usually best written as full words (one, two, three etc.). 11+ would be written as numbers. There’s no strict rule on this: 11–20 may often also be written as words, but 21+ would almost always be put down as numbers. Be consistent over this: don’t sometimes write twenty but in other places 20.
9. **Money**
 - a) Do not use graphic signs for currencies. Always use international codes (e.g. USD – American dollar, GBP – pound sterling, EUR – euro, PLN – Polish zloty, LTL – Lithuanian litas, RUB – Russian rouble).
 - b) The currency codes placed after the numerical value: 4.99 EUR, 100 USD etc. Always make clear what currency you’re referring to.
 - c) Millions are often abbreviated to m. – for example:
 7m EUR = 7 million EUR
 4.7m USD = 4.7 million USD.
 However, we advise to use full names (million, billion ...)

Final Remarks at the End of the Article

- All submissions must include:
 name/degree/title/affiliation,
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- **We follow good practice in science and research statement** including:
 - contribution share of authors for *co-authored articles only*,
 - financial disclosure stating all agencies, sponsors or other supporters,
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 (we applied rules against guest-writing),
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1. The bibliography **must include more than 10** scientific references.
2. The bibliography **must include at least 4 references indexed in Web of Science**.
3. Recent studies published for last five years must be included in references.
4. **Other than English literature should be kept to the minimum**. We advise to use no more than 20% of references written in non-English languages (unless the country-specific article). Articles based only on Your own domestic literature (in your native language, not English) will be rejected.

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Please use APA style for referring literature.

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Text: All citations in the text should refer to:

5. *Single author*: the author's name (without initials, unless there is ambiguity) and the year of publication (Smith, 2017);
6. *Two authors*: both authors' names and the year of publication, as demonstrated (Alan & Jones, 2010); but in the sentence: Alan and Jones (2010) proved
7. *Three or more authors*: first author's name followed by "*et al.*" and the year of publication. Citations may be made directly (or parenthetically). Put semicolons (;) between multiple works cited.

Groups of references should be listed first alphabetically, then chronologically. Examples: "as demonstrated (Allan, 1996a, 1996b, 1999; Allan & Jones, 1995). Kramer *et al.* (2000) have recently shown"

List: References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters "a", "b", "c", etc., placed after the year of publication.

Reference to a journal publication without DOI:

Author, A. (Publication Year). Article title. *Periodical Title*, Volume(Issue), pp.–pp.

Examples:

Ku, G. (2008). Learning to de-escalate: The effects of regret in escalation of commitment. *Organizational Behavior and Human Decision Processes*, 105(2), 221–232.

Sanchez, D., & King-Toler, E. (2007). Addressing disparities consultation and outreach strategies for university settings. *Consulting Psychology Journal: Practice and Research*, 59(4), 286–295.

Reference to a journal publication with DOI:

Author, A. (Publication Year). Article title. *Periodical Title*, Volume(Issue), pp.–pp. <https://doi.org/XX.XXXXX>

Example:

Chrabąszcz, R., & Zawicki, M. (2016). The evolution of multi-level governance: The perspective on EU anti-crisis policy in Southern-European Eurozone states. *Public Governance*, 4(38), 17–31. <https://doi.org/10.15678/ZP.2016.38.4.02>

Reference to a book:

Kidder, T. (1981). *The soul of a new machine*. Boston, MA: Little, Brown & Company.

Gibbs, J. T., & Huang, L. N. (Eds.). (2001). *Children of color: Psychological interventions with culturally diverse youth*. San Francisco, CA: Jossey-Bass.

Reference to a chapter in an edited book:

Labajo, J. (2003). Body and voice: The construction of gender in flamenco. In T. Magrini (Ed.), *Music and gender: perspectives from the Mediterranean* (pp. 67-86). Chicago, IL: University of Chicago Press.

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