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THE USEFULNESS OF THE INDEX METHOD FOR THE ANALYSIS OF THE RELEVANCE OF POLITICAL PARTIES*

ABSTRACT

The aim of this article is to present a critical overview of research methods (so called indexes) used for measuring different parameters of party systems. The starting point for further discussion is the semantic relevance theory developed by G. Sartori. In the next part of the article I will deal with the question whether this qualitative method can be quantified in any way. With this regard, I will analyse such indexes as: the effective number of parties index, the power indexes and the government relevance indexes. The article shows that despite many scholars' fears, political science has a large set of tools for making precise measurements of empirical data, which may be used for comparison. A theoretical concept of relevance, together with its "qualitative" test, combined with properly selected and configured quantitative techniques, guarantee the effective measurement of relevance also at the ordinal, or even the interval level. Thus, it is legitimate to refer to this approach as an "index method."

Keywords: political relevance, effective number of parties, power indexes, indexes of government relevance, index method.

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POLITICAL RELEVANCE AS a political science category was introduced in 1976 by an Italian researcher Giovanni Sartori when he discussed the usefulness and effectiveness of the classification of political parties based on the quantitative criterion.¹ Since that time political relevance has become one of the most important issues in the theory of parties and party systems. To put it briefly, it might be said that relevance is a quality specific to some political parties, thanks to which they occupy a special position within a complex and multi-level structure of inter-party relations called a party system. This special position consists in having the possibility of shaping these relations and, consequently, guiding the development of the whole system. A relevant party is the one, the existence and political activity of which is important not only for itself, but also, and particularly, for the other participants of the inter-party competition.² In other words, its presence affects the functioning of the party system as a whole. Thus, it determines its structure, which has the direct significance for the correct classification of a given party system and registering its reconfigurations.

Even superficial observations of the political reality lead us to the conclusion that political parties, even those having relevance, differ in weight and the degree of their influence on the political system. Hence, we should not treat them equally.³ Two issues arise here. First, we need to identify which parties are relevant; second, how relevant they are. Using Sartori's words, *How many?* (how many relevant parties are there? – BM's note) is related to the question *how strong?* [...], how strong must a party be to become relevant and to what extent does the lack of strength make a party irrelevant?⁴ Thus, we are facing a problem of measuring relevance, which has only partly been solved by Sartori. The system of "counting" political parties he proposed, sometimes referred to as the "relevance test" in the literature on the subject, makes it possible to distinguish the key parties in the political system from those which constitute the background of the political competition.⁵ In this way we obtain important information about the parties

¹ See: G. Sartori, *Parties and Party Systems. A Framework for Analysis*, Wivenhoe Park 2005, pp. 105–110.

² B. Michalak, *Czy partie polityczne można liczyć, czyli o problemie relewancji politycznej*, "Dialogi Polityczne" 2008, no. 1, pp. 232–233.

³ G. Sartori, op.cit., p. 281.

⁴ Ibidem, p. 107.

⁵ To put it shortly, according with the "counting rules," the relevant parties are those which, irrespective of their size, will be able to influence at least one potential ruling coalition (the first rule regarding the existence of a given party's coalition potential). Moreover, a relevant party is the one which, although it is not regarded as a potential coalition partner, is able to influence the models of

which exceeded the barrier of representation. However, this knowledge will be mostly “quantitative,” as the criteria for the evaluation of relevance proposed by Sartori are based more on the variable of a party’s “size,” and less on the ideological differences between parties. The test treats all parties which are relevant to the system in the same way and it does not hierarchize them. Although it may help us to differentiate parties on the basis of the fact whether they are relevant or not, we cannot do it on the basis of the strength of their relevance. Thus, Sartori’s proposal makes it possible for us to measure the level of relevance at the semantic level, but not at the ordinal one.⁶ Sartori counts relevant parties without differentiating their weight, depending on whether we deal with a party which is highly relevant to the system or whether its relevance is of marginal importance, which may cause difficulties in assessing it. Ultimately, some small centre parties (in the science of political parties referred to as “pivot” parties) are much more important, with regard to the formation of a coalition or other political goals, than large extreme parties, which have high potential of political blackmail.⁷ It seems that Sartori understood it himself as he introduced additional differentiation criteria for parties with coalition potential.⁸ Therefore, the level of a party’s relevance depends on whether it is currently part of the government or whether it only has the potential for governing. Only in the former case does this party have government relevance.

Comparative political science has developed a lot of specialist measurement tools based on quantitative techniques – so-called indexes. They are particularly useful in comparative research, in which they help to make objective comparisons and make it possible to precisely establish similarities and differences between analysed objects. All this may be presented in the form of measurable quantities, which enable us to identify the size of differentiation and to grasp the moment of a political change. Thus, it seems that the quantitative approach would be particu-

interaction, the direction of competition, the nature of alliances, etc. existing among the other relevant parties. (the second principle concerning the use of political blackmail). See: G. Sartori, op.cit., p. 108; for more details see: R. Herbut, *Systemy partyjne w Europie Zachodniej – ciągłość i zmiana. Studium porównawcze*, Wrocław 1996, pp. 167–179; A. Antoszewski, R. Herbut, *Demokracje zachodnioeuropejskie. Analiza porównawcza*, Wrocław 1997, pp. 137–41; B. Michalak, *Czy...*, pp. 232–241; B. Michalak, *Partie protestu w Europie Zachodniej. Analiza relewancji politycznej*, Toruń 2008: 68–80.

⁶ A. Antoszewski, R. Herbut, op.cit., p. 139; B. Michalak, *Czy...*, p. 239.

⁷ R. Taagepera, *Predicting Party Sizes. The Logic of Simple Electoral Systems*, Oxford 2007, p. 63.

⁸ See: G. Sartori, op.cit., pp. 267–268.

larly useful for measuring the relevance of political parties, especially as regards its strength.⁹

However, our analysis so far, although it could not be very thorough, clearly shows that political relevance is a complex and multidimensional phenomenon. Hence, we must be aware that any attempt at finding a specific relevance index is doomed to failure. After all, the author of this category himself formulated two principles of the semantic measurement of relevance depending on whether the party under analysis supports or opposes the political system in which it functions. That is why, instead of looking for a universal algorithm of relevance, it would be more justified to propose a certain way of operationalizing this phenomenon with the use of well-known and well-tried tools and methods of measuring party systems. If we properly select and correlate them, construct adequate measurement scales and interpret correctly the information obtained on this basis, we will be able to propose a complex method of the identification and measurement of political relevance. In the next part of this article we shall analyse whether the current indexes and the collections of measures which may be built on the basis of them can be used for this purpose.

The most obvious measure of the political relevance of a given party seems to be its size, defined either as the number (percentage) of votes gained in the last election, or as the number of seats it has in the legislature.¹⁰ Thus, the bigger size, the higher the relevance. This concept is based on the wrong assumption that influence on authority increases proportionally to the increase in the number of seats in parliament. In multi-party systems, however, in which coalition governments are the norm, the winning subject rarely has the sufficient number of seats to exercise authority independently. Moreover, the official winner of the election may even be outvoted and be forced to move to the opposition. Even parties which do not participate directly in ruling the country, thanks to the fact that they sit in parliament, gain a number of instruments and tools for controlling the ruling parties and, consequently, they can more or less directly affect the direction of state policy. It is also difficult to anticipate whether the opposition's votes will become necessary (political blackmail potential), whether because of the increased majority threshold for some parliament's decisions, a change in the political configuration, or the necessity of developing a nationwide consensus in a given issue, etc. There are two implications of this situation, which must be taken into consideration

⁹ A. Antoszewski, R. Herbut, *op.cit.*, p. 37.

¹⁰ R. Herbut, *op.cit.*, p. 168.

when evaluating the usefulness of different measurement techniques. First, the political relevance of a given party does not only result from its size (although it is obviously of the key importance in this respect), but from the distribution of strength among all parties in parliament and in the whole system. Second, the lack of direct involvement in exercising power does not mean having no influence on authority.

The first directive, which demands that the size of other parties be taken into account when measuring the size of a given party, which in practice means relativizing its size to the size of competitors, can be implemented with the application of a measure, which has often been used in empirical political science for making different comparisons (especially for comparing the shape and change of format of a party system and the degree of its fragmentation over years). It is the index of the effective number of parties (usually marked with symbol N_z), based on the earlier index of fractionalization proposed by Douglas Rae. This index was devised by a Finnish political scientist Markku Laakso, who developed it later together with Reien Taagepera.¹¹ In this case, however, not all parties existing in the system are taken into consideration, but only those which are “effective,” i.e. the existence of which has notable influence upon the shape of the political system. The effective number of parties determined by the index means the hypothetical number of parties of equal size, which have the same fractionalization effect as the one which is actually generated by parties of unequal size. If all parties have the same size, the value of the index must equal to the number of all parties.¹² For example, in a 100-seat parliament composed of three parties with the distribution of seats 51–47–2, the effective number of parties $N_z=2.08$, which means that this political system consists of two big parties and a small one. If the distribution of seats is 35–33–32, there will be three such parties (precisely $N_z=2.9958$), exactly the same as in the case of dealing with four parties of more diverse size, e.g. 48–23–21–8.

¹¹ The index value is computed in such a way that the summation of squared fractions of the votes of all parties (or the seats, depending on whether the index represents the number of parties at the electoral or the legislative level) is a divisor for the dividend equal 1. The mathematical formula is: $N_z = \frac{1}{\sum (s_i)^2}$, where N denotes the effective number of parties and s_i denotes the party's fraction of the seats. For more details about the index and its characteristics see: M. Laakso, R. Taagepera, *Effective Number of Parties*, “Comparative Political Studies” 1979, vol. 12, no. 1; R. Taagepera, *Predicting...*, pp. 48–49; A. Antoszewski, R. Herbut, op.cit., pp. 176–8.

¹² M. Laakso, R. Taagepera, op.cit., pp. 4–5.

The effective number of parties can identify the number of significant parties in the system only if it is based on easy to establish, minimal qualitative data. According to Taagepera, in most cases it is also as precise as a single index based on the size of parliamentary factions can be, without detailed knowledge of the characteristics of a given country and the number of relevant parties as defined by Sartori.¹³ Unfortunately, this index does not tell us everything.¹⁴ Moreover, its construction may lead to incorrect results. Many flaws of N_z stem from the fact that it often overestimates the number of relevant parties, giving too much weight to the parties which are completely irrelevant as regards their potential participation in the government. The index measures each party, taking into account its proportional share in the whole parliament, but it does not really attach enough importance to the distribution of seats of the other parties and to the resulting coalition constellations.¹⁵ For example, the index assumes the approximate value of 3 both in the case of the relative balance among parties (the distribution of seats 33–34–33), a slight advantage of one of them (45–29–21–5), the dominance of two relevant parties over twenty marginal ones (48–32–1–1–1–1–1–1–1–1–1–1–1–1–1–1–1–1–1–1–1), and the absolute hegemony of one party (55–7–7–7–7–7–7–3). However, as the size of the fraction of the biggest party increases (and the size of others gradually decreases), its relevance potential (coalition or blackmail) also grows. This potential is balanced by the fact that (at least from the arithmetic point of view) at least one alternative majority coalition is still possible. If we use the third example from this paragraph we will notice that both the party with 48 seats and the one which has 32 seats need smaller partners for obtaining the parliamentary majority (provided that the two parties do not come to an agreement). In practice, however, it is easier for the former to gain three partners out of 20 than for the latter to win over 19 partners. Thus, it is highly likely that the first party will become the hegemon. The index of the effective number of parties becomes even more imprecise when the size of one party is bigger than a half, and at the same time we deal with the very big, general fractionalization of the party system (see: the last of the above examples of the distribution of seats).

¹³ This was already recognized by Sartori himself, who tested Rae's fractionalization index (with a few reservations), which is based on the same data and provides the same set of information as N_z , but expresses it in a different form. See: op.cit., pp. 271–291.

¹⁴ R. Taagepera, *Supplementing the effective number of parties*, "Electoral Studies" 1999, vol. 18, no. 4, p. 498.

¹⁵ R. Kline, *How we count counts: The empirical effects of using coalitional potential to measure the effective number of parties*, "Electoral Studies" 2009, vol. 28, no. 2, p. 263.

In such case $N_z = 3.0$ is simply a mistake.¹⁶ Dunleav and Bouček indicated that the index of the effective number of parties does not guarantee stable and permanent relations between changes of the size of the biggest party and index values. N_z index fluctuates when the fractionalization is low. It often has a surprisingly high value when the biggest party has a strong position. Using it as a variable which will be independent from qualitative analyses may lead to reality distortions, which is particularly likely for the countries having plurality voting systems.¹⁷

Another problem connected with this index is the fact that it does not differentiate the size of a party in relation to the weight of its competitors. If a given party has ten seats, its “contribution” to the index will be the same with another party having 90 seats and with nine other parties having ten seats each.¹⁸ In both cases N_z value will obviously be the same (1.22 in the former case and 10.0 in the latter one), but the relativization which was mentioned in the first directive occurs at the level of the aggregated value of the index rather than of individual parties. It stems from the fact that the index of the effective number of parties is a measure of the party system for the shape of which the number of relevant parties is an important, but not the only determinant of its characteristics. Moreover, each party’s strength and influence on authority is often different than the distribution of seats among parliamentary factions. In case of a three-party parliament with the distribution of seats 49–49–2, the index has value of 2.08, which implies that there are two big parties and the third one of marginal meaning.¹⁹ None of these parties, however, has enough deputies to rule on its own. Nobody has a majority and each party needs the cooperation of one of the others to govern. In this way the real weight of each party in our example is exactly the same as they all need each other to form a majority coalition, and at the same time it may “tip the scales” in favour of an alternative coalition and may change the balance of power among parties, which, against the indications of N_z , assumes the two-and-a-half-party character in this case. In the language of the public choice theory we may say that each of these parties has a position of a “critical” player. Thus, their political relevance is not determined by their size (not exclusively), but the degree to which they are indispensable in the process of forming a given majority coalition. In this sense, all

¹⁶ R. Taagepera, *Supplementing...*, pp. 498–489.

¹⁷ P. Dunleavy, F. Bouček, *Constructing the Number of Parties*, “Party Politics” 2003, vol. 9, no. 3, p. 307.

¹⁸ R. Kline, *op.cit.*, p. 263.

¹⁹ We may notice that in this case value N_z is almost identical (the difference concern tenths or hundredths) as in the example of three parties with the distribution of seats 51–47–2. However, in that case the first party dominates over its competitors thanks to having a majority.

parties, even the smallest ones, may be as relevant as the large ones.²⁰ Although the index of the effective number of parties has become one of the most widely used measures of the number of parties, partly because of its simplicity,²¹ it is not always precise. Rein Taagepera admits that N_z cannot provide accurate information about the number of parties which are relevant to the system in case they largely differ in size. It stems from the fact that this index measures centre tendencies and works perfectly when all parties are of similar size. Especially in case its value is between 2 and 4, it does not provide reliable information about the dominance of one party when it has an absolute majority of seats. This lack of precision could be easily eliminated by introducing the supplementation in the form of a reverse index of the biggest faction (N_∞). If the value of this index falls below 2.0, it means that there is hegemony of one party, which gains over 50% of votes. And *vice versa*, the value above 2.0 indicates that none of the parliamentary parties possesses such strength.²²

In any event, the index of the effective number of parties cannot provide clear and precise information about the format of a party system, which was expected to be its biggest advantage. Not only is it unable to fully and, more importantly, correctly answer the question “How many relevant parties are there?”, but it also fails to address the issue of their strength (“How strong is each of them?”). Does it mean that the attempt to use indexes for examining political relevance have to end in failure? Not necessarily, as we may also use *power indexes*, which have not been often applied in empirical science, but are well known in the game theory. They measure the relative power of voters in collegial bodies under a specified rule of settlement (it is usually an absolute majority). The Banzhaf power index is an example. It is derived by counting, for each member, the number of winning coalitions they can participate in, but which are not winning if they do not participate. Such voters are referred to as “critical.” Each party’s strength is calculated by finding for how many winning coalitions a given party is a critical player, which means that if it left, the coalition would lose the parliamentary majority needed to rule. The value obtained is then standardized by being divided by the total number of winning coalitions, with the index ranging from 0 (lack of influence on any

²⁰ For more details see: B. Michalak, *Partie...*, pp. 94–95.

²¹ Such view was expressed by Arend Lijphart. See: A. Lijphart, *Electoral Systems and Party Systems. A Study of Twenty-Seven Democracies 1945–1990*, Oxford 1994, p. 70.

²² R. Taagepera, *Predicting...*, p. 62. The formula: $N_\infty = 1 / s_i$, where s_i denotes the size of the biggest parliamentary faction. For more details about the index and its characteristics see: R. Taagepera, *Supplementing...*; R. Taagepera, *Predicting...*, p. 48.

coalition) to 1 (having an independent majority). The Banzhaf index has five different characteristics which are useful for measuring political relevance. Firstly, it does not require collecting any other data than those required by N_z . Secondly, its application helps to precisely calculate each party's ability to sever a given coalition, i.e. to establish the degree of its relevance to a given alliance. The higher this ability is, the bigger changes in the system of inter-party relations will take place if a party actually uses this possibility. This characteristics may be of extreme importance in the case of measuring the potential for political blackmail, which may be used to threaten coalition partners, thanks to which the power of the blackmailing party increases. Thirdly, it meets most mathematical postulates required form this kind of indexes, including the ones which are key to the issue in the area of our interest, and it fully and satisfactorily implements the second directive. Fourthly, because of complex and painstaking calculations, especially when there is a large number of subjects, precise values may be obtained only by using special computer programmes, which are relatively easily available for this index. Fifthly, B_z value may be successfully used as a parameter for constructing a new index of the effective number of relevant parties (N_{B_z}), based on N_z , which will differ in a way of "weighing" parties, but will be recorded in the same form.²³ Given the fact that the Banzhaf index provides precise information about the likelihood of influence on the system depending on the weight of the other parties in parliament, its link with the criteria for relevance determined by Sartori's test becomes evident.²⁴

Patrick Daumont and Jean-Francois Caulier²⁵ proposed an index of the effective number of relevant parties, which is free of the distorting qualities of the Laakso-Taagepera index and is the most useful tool for measuring the number of relevant parties in a system from the point of view of Sartori's concept. Its mathematical notation is almost identical to that of N_z , the only difference being that in the denominator, instead of the sum of a given party's squared proportion of seats or votes, there is the sum of all parties' squared individual values B_z of seats. N_{B_z} , just like N_z , takes into consideration the size of a party, which is the most important effect of electoral competition, after all. What is of the key importance, however, is the fact that this index goes one step further as it also takes into account simplified, but useful, aspects of coalition-forming potential. Moreover, it does so

²³ B. Michalak, *Partie...*, pp. 96–98; R. Kline, *op.cit.*, p. 264.

²⁴ P. Dumont, J.-F. Caulier, *The Effective Number of Relevant Parties. How voting power improves Laakso-Taagepera's index*, <http://mpira.ub.uni-muenchen.de/17846/>; 2005; accessed on August 23, 2010, pp. 15–16.

²⁵ See: *ibidem*.

without the need for gathering more data. Therefore, if we want to find out the effective number of parties from the point of view of their coalition “profitability,” which is important for the stability of rule, N_{Bz} may appear to be the right choice.²⁶ If we use one of the power indexes presented above, we will be able to assess the strength of a given party in relation to the other players on the political scene. Despite unquestionable advantages of this approach, it is only “mathematical” evaluation of its potential, which does not have to lead to the formation of a real coalition. Coalition arrangements are determined by specific political circumstances and the ideological distance between party groupings. Hence, apart from the cases in which the configuration of all parties’ power (or the lack of it) simply forces a certain arrangement (e.g. in case a party has an absolute majority of votes or there is no other arithmetic or political alternative to a coalition of certain parties in parliament), competitive alliances are always possible. Power indexes measure relevance *a priori*, which in the political reality does not always translate into real influence. That is why, according to Sartori, the qualitative approach – with all its advantages, which make it possible to construct a complete and orderly measurement scale – is unable to replace the relevance appraisal based on the semantic criterion. For example, it is difficult to establish a precise and universal threshold of “dominance,” which enables the identification of all systems with a dominant party. In particular, the difference between the system in which the dominant party has 40% of votes or seats and the one with the biggest party having 30% of them does not reveal significant implications for the characteristics of the whole system. The semantic approach, with all its limitations, appears to be a lot more useful in theoretical and predictive terms than mathematical techniques.²⁷

On the other hand, the application of mathematical indexes, being the basis of the “mechanic approach” as defined by Taagepera, is the best solution in case we have no other knowledge of the party system we are interested in. What is more, this approach makes it possible for us to analyse a large number of cases at a time, without having to go through a lot of detailed data and the resulting threat of getting stuck in a multitude of solutions. On this basis, Taagepera refutes Sartori’s criticism, claiming that his method of calculating relevant parties is less “operationally useful” (in the meaning of intersubjective communicability) than the application of the effective number of parties.²⁸

²⁶ R. Kline, *op.cit.*, p. 263.

²⁷ G. Sartori, *op.cit.*, p. 282.

²⁸ R. Taagepera, *Predicting...*, p. 63.

If the arguments of the Finnish political scientist are not enough to undermine the objections formulated by Sartori, the index of the past coalition potential comes in handy. This index, denoted as (I_{pk}), is calculated as a ratio of the coalition cabinets a given party participated in to the total sum of coalition governments formed in the period under examination.²⁹ The closer to 1.0 the measure is, the higher applied potential this party has and *vice versa*.³⁰ Thus, while power indexes measure coalition potential *a priori*, I_{pk} measures it *a posteriori*, reducing the limitations mentioned above. Of course, we only obtain historical information whether and how each party's mathematical potential translated into their actual ability to form a coalition with other subjects. Hence, this is mainly statistical knowledge, and it is risky to use it as the basis for making deductions about the future. However, it is an inevitable limitation and, as a matter of fact, each causal-effect statement made by means of inductive reasoning is also risky.

The analysis of the relevance of political parties in relation to their size could become even more detailed thanks to the application of many additional indexes. In this context Alan Siaroff's³¹ extensive empirical research of European party systems after 1945 is worth mentioning. The research involved 372 elections in 44 countries. Apart from such obvious variables as: the number of votes cast, the effective number of parties (both at the electoral and the legislative level), the degree of fractionalization, disproportionateness and others, the author also used the two-party index (a fraction of votes/seats obtained by two biggest parties) and a measure based on the ratio of the biggest party in parliament's seats to the number of the second party's seats (index 1:2) and the ratio of the second to the third one (2:3), thanks to which he was able to establish precisely and then compare the distance between the parties of the biggest size. Having compared these indicators, he built a complete classification of party systems, encompassing all countries under research.³²

The relevance measurement would be incomplete, however, if it was made only at the parliamentary level. In fact, each political party's principal objective is to form (on its own or as part of a coalition) the government. A party's participation

²⁹ What is interesting, Sartori also came up with an idea of this kind of index for relevant parties in the government arena and tested it later. See: G. Sartori, *op.cit.*, pp. 268–289.

³⁰ A. Antoszewski, *Partie chadeckie w Europie Zachodniej w latach 1945–1998*, [in:] *Chrześcijańska demokracja we współczesnym świecie*, K. Krzywicka, E. Olszewski (eds.), Lublin 1999, p. 67.

³¹ See: A. Siaroff, *Comparative European Party Systems. An Analysis of Parliamentary Elections since 1945*, New York–London 2000.

³² See: *ibidem*, pp. 27–33, 69–80.

in the government may also vary in character, depending on how many ministerial portfolios – and the most important post of Prime Minister, in particular – its members received, how long this party has been part of the government, and whether it played the role of the “initiator” while the government was being formed or it only “complemented” it. However, all these important parameters may be measured much more easily and without mathematical paradoxes by using the indexes of government relevance. The first of them is the index of government participation, thanks to which we find out what influence a specific party had on the formation of cabinets in a given period. It is calculated on the basis of two dependent variables: the number of governments established with the participation of the party under research divided by the sum of all cabinets formed during that time.³³ The value of such indicator ranges from 0 – the party has never taken part in any government – to 1, when each cabinet was formed with its participation. Analogically to I_{p_i} , the index of government responsibility (I_o) – which measures the extent to which a given party controlled the post of Prime Minister in the period under research – may be constructed. The application of this index – apart from obtaining additional information – allows us to overcome the limitations of the previous measure, which does not take into account the fact that the strength (thus relevance, as well) of parties composing government coalitions varies and treats each cabinet in the same way no matter whether a party played the initiating or complementary role in it. There is no doubt that the party which has always headed the government is, by principle, more relevant than the one who has always been in the role of a weaker coalition partner. In order to conduct an even more thorough analysis, we may also apply the chronometric relevance index (I_c). It is calculated by dividing the number of months (or years) in which a given party participated in the government by the total number of months (years) in the period under research. On the basis of the information obtained by means of all three indexes we may carry out the multidimensional evaluation of the relevance of all parties in the government arena by using the so-called combined or multidimensional index, built through mixing (usually in equal proportions) the other indexes of government relevance and reducing them to one common indicator. Such operation is particularly useful for comparing the relevance of many political par-

³³ It may be illustrated by the following formula, where I_{p_i} denotes the index of government relevance for party i , P_i is the number of cabinets in which it participated, G is the total number of cabinets formed in a given period: $I_{p_i} = \frac{P_i}{G}$.

ties from different countries throughout years as it reduces the number of comparable data, which makes it much easier to analyse them later.³⁴

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Although only the most important indexes have been discussed in the article and their analysis could not be very detailed, their characteristics show that, despite fears or criticism from some scholars, political science has a wide set of research tools for conducting precise measurements of empirical data, which are useful for making comparisons. Many of them may be well applied to comparative studies carried out especially in the field of party and electoral systems. What I wanted to put special emphasis on in this article is the problem of the application of some of these tools for analysing the phenomenon of political relevance. I tried to show that, in defiance of the scepticism expressed by the author of this concept, the operationalization and then the measurement of this phenomenon is absolutely possible, even without the need for developing new tools. It appears that mathematically well-founded indexes, which are well-known in political science, may help to answer the question *how many* relevant parties there are in a given system and *how much* relevant they are. Although in the course of this analysis it turned out that one of the most popular indexes, i.e. the index of the effective number of parties, cannot be used for this purpose – both because of the imperfections of measurement and because of its construction, which makes it impossible to compare relevance between individual parties – the application of power indexes fully eliminates this problem. Moreover, thanks to correlating them with relevance indexes *a posteriori*, it becomes possible to quantify Sartori's relevance criteria. What plays a crucial part here is the mathematical inventiveness of Taagepera, who in an admirably simple way tries to find an algorithm which will identify the relations between the concepts developed by Sartori on the one hand, and between them and the index of the effective number of countries on the other.³⁵

³⁴ For more details see: A. Antoszewski, R. Herbut, *Socjaldemokracja w Europie Zachodniej. Studium porównawcze*, Wrocław 1995, pp. 137–40, 147–148, 151; R. Herbut, op.cit., pp. 201–203; A. Antoszewski, op.cit., p. 63.

³⁵ Thus, according to this scholar, the relation between the total number of relevant parties (R) and the number of relevant parties in the government arena (G), with a few exceptions, is expressed by the formula: $R = G + 1.5$. In turn, the formula for the relation between G and the effective number of parties (N) is: $G = N - 1$. Hence, as a result $R = N_z - 0,5$. Of course, as the author emphasizes himself, these are only approximate values. See: R. Taagepera, *Predicting...*, p. 64.

As can be seen, we have specialist tools which enable us to measure relevance. However, does it justify the thesis that there exists a comprehensive method of examining this phenomenon. If a method is defined as a tool of theoretically justified conceptual and practical efforts encompassing all the activities performed in the course of a research procedure, then, in my opinion, in this case it is a method, which, on account of the kind of a measurement technique used, may be called the “index” method. The theoretical concept of relevance together with its qualitative “test,” combined with appropriately selected and configured quantitative techniques, guarantees not only the effective measurement of this phenomenon, but also the possibility of using it as a basis for building a unified scale at the ordinal, or even interval level. Owing to this, it becomes easier to compare both the number of relevant parties in specific party systems, but also the degree of its intensity for given parties. Some research examples³⁶ show that such approach may also appear to be fruitful.

³⁶ A. Antoszewski, R. Herbut, *Socjaldemokracja...*; R. Herbut, op.cit., pp. 201–216; A. Antoszewski, op.cit.; B. Michalak, *Partie...*