The Karol Adamiecki University of Economics
in Katowice

Volume 4 2008

Journal of
Economics &
Management

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SELECTED DETERMINANTS OF THE PUBLIC RADIO MANAGEMENT IN THE ECONOMETRICAL ASPECT

1. Media from the systematic perspective

Media are a system of complicated organisms arranged in equally elaborate and multi-level systems and subsystems, which have been captured by many sociologists, political scientists, economists, and media researchers. Such dynamic and intricate processes require encompassing in organizational guidelines. Maciej Mrozowski perceives such "guidelines" as the system of state organization, with two subsystems functioning within its limits: the political and economical. This kind of division derives from the habermasian schematic diagram distinguished by the contradictory: the social world of life and the social system[1].

The following statement: "The whole is something more than the sum of componential parts"[2] originates from the theory, formulated by Ludwig von Bertalanffy, which took place in 1937 during a philosophy seminar of the University of Chicago. Bertalanffy fully expressed the assumptions of his conception in the essay entitled: *The Theory of Open Systems in Physics and Biology* (1950)[3]. The core of the essay comes down to treating analyzed objects as open systems, i.e. "[…] the collection of elements bound in such a way that they create a particular new entity which distinguishes itself in the environment"[4].

The consequence of the abovementioned thesis was applying isomorphism for examining the notions, laws, and models, but which also caused that the theory of systems was on one hand perceived as too fantastical and bold, whilst on the other – too simplified. It was justified that applying the rule 2+2=4 with reference to apples, dollars, and galaxies is discovering the already known truths, and at the same time, a too far reaching simplification of the reality; from the scientific standpoint it is of no larger significance. However, discussing analogies between the society and the organism is confusing and leads to nowhere. Perhaps exactly these reproaches caused that the systematic issues got highly complicated by the theoretical reflections of Talcott Parson[5].

It is worth to mention that the synergic effect will be achieved as a result of the right selection and the appropriate connection of all subsystems[6]. By the synergic effect L. Krzyżanowski understands the difference between the joint effect EF of objects' {P} activity, among which the combined effect V takes place and the sum of individual effects ef, which could be reached by these objects of operating alone, thus not getting into cooperation[7]:

[1] M. Mrozowski: *Media masowe. Władza, rozrywka i biznes*. Aspra Jr, Warszawa 2001, p. 118.
[2] W. Piotrowski: *Organizacje i zarządzanie – kierunki, koncepcje, punkty widzenia.* W: *Zarządzanie. Teoria i praktyka*. Red. A.K. Koźmiński, W. Piotrowski. Wydawnictwo Naukowe PWN, Warszawa 2004, p. 694.
[3] L. von Bertalanffy: *The Theory of Open Systems in Physics and Biology*. "Science" 1950, No. 111, pp. 23-29.
[4] W. Piotrowski: Op. cit., p. 693.
[5] Ibid.
[6] L. Krzyżanowski: *Podstawy nauk o organizacji i zarządzaniu*. Wydawnictwo Naukowe PWN, Warszawa 1992, p. 167.
[7] Ibid., p. 168.

$$EF_{syn} = \mu\left[EF\left(\{P\}, V\right)\right] - \mu\left[\sum_{Li=1}^{n} ef\left(P_i\right)\right]$$

where μ is a measure of the effect.

If the difference between these expressions is positive, a phenomenon of synergy takes place; if negative – dissynergy[8]. In such a situation, synergy appears only if the synergetic effect Efsyn is positive[9].

$$SYN \equiv EF_{syn} > 0$$

L. Krzyżanowski stresses that the synergetic effect can be explained only in the following way: "[…] *the cooperation* triggers in objects the things which were kept in secret, their up to this point unrevealed properties. In this respect cooperation somehow 'reinforces' the objects, though it can also 'weaken' them in this way that the objects loose some properties as a result of entering mutual interactions[10].

2. Modeling as a device for examining the media

The model is a simplified representation of reality which includes elements joining their reactions. The researcher's task is such a selection and presentation of connections, binding them that despite simplifying the model would reflect the reality and, when affected by outside impulses, its reactions would be the reflection of real ones.

In the case of the systematic model, one has to deal with the intentional and "multidimensional" simplification which embraces the object of research together with the phenomena in all their complexity, mutual relations, and dynamics[11].

With respect to the system, structure and the surrounding of the organization, L. Krzyżanowski suggested a modified, four-element model of organization by H.J. Leavitt. Levitt claims that each organization can be presented as a layout of four basic factors; people, tasks, technology, and structure[12]. The creator of this model is adherent to presenting an organization as a system in which such relations as: "couplings", "effects", "dependencies", etc.[13] take place among its basic elements (subsystems). L. Krzyżanowski, by agreeing with H.J. Leavitt's conception, disagrees with its basic representation. According to him, "The way of presenting these dependencies on a model in a form of oppositely directed couples of vectors and referring to them as to 'effects', 'couplings' or 'dependencies' is not acceptable. This is because only

[8] Ibid.
[9] Ibid.
[10] Ibid.
[11] *Zarządzanie*..., op. cit., p. 759.
[12] H.J. Leavit: *Applied Organization Change in Industry: Structural, Technical and Human Approaches.* In: *Handbook of Organization*. Chicago 1965, p. 160.
[13] L. Krzyżanowski: Op. cit., p. 173.

real objects have the capacity to emitting and to the perception of effects. Moreover, the reason and effect dependencies take place only among them. The considered elements of an organization cannot be perceived as such"[14]. L. Krzyżanowski claims that the solution to this problem is placing the structural element in the middle of the scheme representing the model of an organization (Figure 1), which, by the way, is in conformity and according to him: "[…] with the most universal institution because somehow it constitutes the bond joining all the elements (parts) of an organization"[15].

Taking into account K. Lewin's topological model[16] as well as the organizational models proposed by D. McQuail[17] and L. Krzyżanowski[18] together with the division of private and public spheres put forward by John B. Thompson[19], we receive the Triangle of Media Powers model – TSM system (Trójkąt Sił Medialnych; Figure 3), which seems to be useful for these reflections regarding the public media corporations.

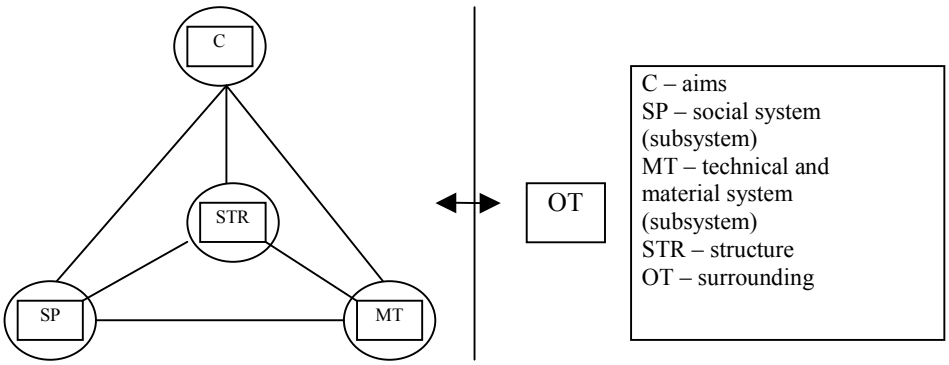

Figure 1. A modified four-element model of organization

Source: L. Krzyżanowski: *Podstawy nauk o organizacji i zarządzaniu*. Wydawnictwo Naukowe PWN, Warszawa 1992, p. 175.

In Poland, public organizations, including media, are under pressure of numerous determinants, the three of which seem to be the most essential: country, society, and market. It appears that with reference to public media these three forces should stay

[14] Ibid., p. 174.
[15] Ibid., pp. 174-175.
[16] B. Dobek-Ostrowska: *Podstawy komunikowania społecznego*. Astrum, Wrocław 2004, p. 90.
[17] D. McQuail: *McQuail's Mass Communication Theory*. 5th Edition. Sage Publications, London 2005, p. 282.
[18] L. Krzyżanowski: Op. cit., p. 175.
[19] J.B. Thompson: *Media i nowoczesność. Społeczna teoria mediów*. Astrum, Wrocław 2001, p. 126.

in balance in order to allow the media persist their public character[20]. In such a three--dimensional surrounding, communication should take place in three directions. It is important, however, to note that it is rather "communicating with each other" than solely "communicating". It is because the second process does not take into consideration the positive feedback which at the processes for which the public interest is of greatest importance, it would not be profitable. It seems that actions undertaken by public media have a systematic character both in a material evidence and attributive sense[21].

3. "The triangle of media powers" (TSM – "Trójkąt sił medialnych") – as a model of public media

Some scientists suggest that the decision-making processes concerning the service enterprises, including media enterprises, were perceives in the context of a particular triad of subjects on the market, i.e. enterprises, consumers, and competitors[22].

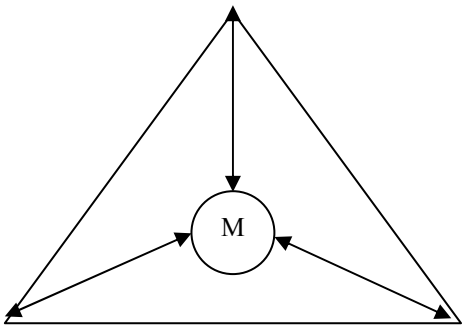

Figure 2. Media system and its main determinants

However, it appears that in the case of media, a more model where one examines the forces exerting an overwhelming influence upon media, is more optimal. It is highly

[20] B. Nierenberg: *Publiczne przedsiębiorstwo medialne. Determinanty, systemy, modele*. Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków 2007, p. 174.
[21] S. Sokołowska: *Organizacja i zarządzanie. Ujęcie teoretyczne*. Wydawnictwo Uniwersytetu Opolskiego, Opole 2000, p. 60.
[22] A. Styś, S. Styś: *Współczesne koncepcje zarządzania marketingowego w sferze usług*. W: *Marketing usług*. Red. A. Styś. PWE, Wrocław 2003, p. 27.

probable that these three basic determinants are: the authority of the state, advertisers, and media receivers[23]. In the systematic outlook it can be assumed that the market of media services is an open one, which is subject to the influence of three other systems: *the authority of the state, media receivers*, and *advertisers* (Figure 2).

Specific determinants which affect the media create the system on their own. In this case we are dealing with the system of the state authority or a media market system, the crucial "players" of which are the advertisers and media receivers.

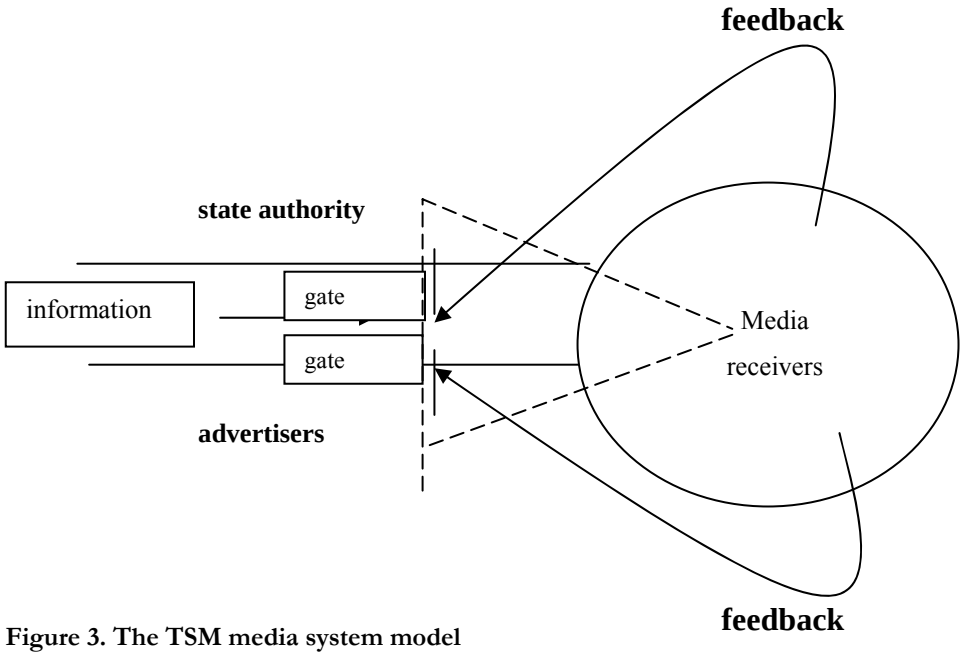

Figure 3. The TSM media system model

Source: Own elaboration on the basis of T. Goban-Klas: *Media i komunikowanie masowe. Teorie i analizy prasy, radia, telewizji i Internetu*. Wydawnictwo Naukowe PWN, Warszawa-Kraków 2000, p. 59; B. Dobek--Ostrowska: *Podstawy komunikowania społecznego*. Astrum, Wrocław 2004, p. 90; B. Nierenberg: *Publiczne przedsiębiorstwo medialne. Determinanty, systemy, modele*. Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków 2007, p. 179.

It seems that the above described dependencies lead us towards the cybernetic paradigm in which the scientific trawl is aimed at the researches concerning dependencies of the communicational chain. Such a chain is characterized by self-regulation phenomenon-reaching balance by means of feedback[24].

[23] B. Nierenberg: *Media publiczne – państwo, społeczeństwo, rynek (próba ujęcia teoretycznego)*. W: *Media elektroniczne w procesie komunikacji rynkowej*. Red. M. Duczmal, B. Nierenberg. Wydawnictwo WSZiA, Opole 2005, pp. 107-116.

[24] B. Dobek-Ostrowska: *Nauka o komunikowaniu. Podstawowe orientacje teoretyczne*. Wydawnictwo Uniwersytetu Wrocławskiego, Wrocław 2001, pp. 22-23.

The TSM model assumes that the media system of a given country has an effect with other systems: **authority, public opinion**, and the **market.** It looks as if for the efficient analysis of processes which occur among these systems, one would have to decide which factors of other systems exert a decisive influence upon the media system. Such a distinction would make it possible to choose suitable determinants in order to create an econometric media system model.

It appears that, for the model, it is the state authority (legislative and executive) that should represent the "authority". However, it is widely known that the catholic church exerts enormous influences (not only on media) as well.

The representative of the "public opinion" in here discussed model are the media receivers. It is known that a fairly large group of people, who (according to the program or at random) neither watches TV, listens to radio, nor reads newspapers. The dominating determinant of the "market" in the case of media system would be "advertisers".

It seems that at this stage one could formulate the following hypothesis: Media fulfill their public role to the fullest only if the three basic forces affecting them, represented by the state authority, advertisers, and media receivers – remain in equilibrium.

In this case, the authenticity of the above hypothesis could be verified by the econometrical model. Its analysis not only would make it possible to draw conclusions regarding mutual influences of given "forces" in the model, but also, to a certain extent, to anticipate the future phenomena.

4. Theoretical basics of the structure of the econometrical media model

It appears that the presented conception of The Triangle of Media Authorities (TSM) has a solid ontological basis. It enables applying the cause and effect prognosis methods. The heart of this matter is determining a model explaining the mechanism of alterations of endogenic variables. Such a cause and effect model is used not only in studying past phenomena as well forecasting. Generally, for such cases, one applies econometrical models, which being a simplified reflection of the reality[25] express economical laws. It proves that model variables together with its analytical version are selected in accordance with the requirements of economy, whilst the parameters are chosen on the basis of a given fragment of reality[26].

The construction of econometrical model should take place according a specific algorithm. In the classical econometrical analysis the said algorithm embraces five steps:

[25] W. Welfe, A. Welfe: *Ekonometria stosowana*. PWE, Warszawa 2004, p. 12.
[26] M. Cieślak: *Prognozowanie gospodarcze. Metody i zastosowania.* Wydawnictwo Naukowe PWN, Warszawa 2004, p. 39.

1. Specification of the variable.
2. Model construction – the specification of model relation.
3. Parameter estimation.
4. Model verification.
5. Model appliance-practical usage[27].

From the econometrical standpoint, the model of the "triangle of media authorities" (TSM) would have such a form:

$$TSM = f(W, O, R, \zeta)$$

W – variables reflecting state influence upon media,
O – variables reflecting receivers' influence upon media,
R – variables reflecting advertisers' influence upon media,
ζ – random element.

In the single-equation form the linear model should also take into account the structural parameters:

$$TSM = a0 + a1W + a2O + a3R + \zeta$$

where: $a0, a1, a2, a3$ – structural parameters.

A particular instance that could undergo the econometrical analysis would be the subsystem reflecting functioning of regional public radio stations. Their analysis, both in quantitative and qualitative sense could provide data enabling the verification of the correctness of the constructed model, which, as a result, by means of isomorphic references would make it possible to draw conclusions concerning other media subsystems.

In the greatest simplification it can be assumed that the "powers" of the authority in TSM model "represent" decisions of constitutional body – Krajowa Rada Radiofonii i Telewizji (KRRiT; National Board of Radio and TV broadcasting). KRRT's Influence upon public radio is of double kind:

1. In the form of orders concerning functioning of the radio (these orders equally refer to all the broadcasting stations, thus can be omitted in the model).
2. Subscription rate (RA) admitted by KRRiT to the public radio broadcasting stations.

The "powers" of media receivers would be manifested in the form of the listening rate **(*SŁ*)**, i.e. the number of people listening to a particular station at given moment.

The "powers" of the market would depict income form advertisements of particular radio stations **(*RE*)**.

In this respect:

$$TSMRP = a0 + a1RA + a2SŁ + a3RE + \zeta$$

[27] D. Strahl, E. Sobczak, M. Markowska, B. Bal-Domańska: *Modelowanie ekonometryczne z Excelem. Materiały pomocnicze do laboratoriów z ekonometrii*. Wydawnictwo Akademii Ekonomicznej, Wrocław 2004, p. 30.

where:
RA – subscription rate,
SŁ – listening rate,
RE – advertising,
a0, a1, a2, a3 – structural parameters,
ζ – random element.

The structural parameters would allow leading into the model data comparativeness, e.g. comparativeness of incomes from advertising for regions of differing number of inhabitants (Śląsk province is inhabited by about 4 million people; Opole province by a million people, so the sum of advertising income would have to be counted over per one inhabitant).

The random element would take into account the impossible to predict events which exert influence on functioning of the public radio. Such an event in the case of Radio Opole, was the flood of 1997.

The basis of the construction of synthetic variable is the collection of diagnostic variables. The condition of marking out this variable for a given scheme of characteristics is making all the initial features to their comparativeness. This aim can be achieved by applying the standardizing procedure expressed by formulas:

$$z_{ij} = \frac{x_{ij} - S_j}{D_j}$$

where:

$$S_j = \frac{1}{n}\sum_{i=1}^{n} x_{ij},$$

$$D_j = \sqrt{\frac{1}{n}\sum_{i=1}^{n}\left(x_{ij} - S_j\right)^2}, \qquad (i = 1,2,\ldots,n, \qquad j = 1,2,\ldots,m).$$

As a result, from the standardized characteristics the mother is formed. The mother of standardized features for Radio Opole is presented on the example of Radio Opole. For the remaining regional broadcasting stations the identical procedure was applied.

Table 1

The mother of standardized features for Radio Opole

Years	Diagnostical proces		
	Subscription rate	Advertisement	Listening rate
2000	1,131	1,417	–1,395
	–0,511	0,996	0,580

Table 1 contd.

	–0,569	–0,267	–0,151
	–0,544	0,996	–0,290
2001	1,583	–0,056	–0,923
	–0,574	0,449	–0,236
	–0,571	–0,814	–0,349
	–0,191	–0,898	0,185
2002	1,562	–0,393	–1,089
	–0,231	–0,687	–0,865
	–0,246	–0,940	–0,885
	–0,459	–0,140	–0,132
2003	1,801	–0,603	–1,074
	–0,378	–0,477	–0,362
	–0,337	–0,561	–0,364
	–0,477	–0,182	1,455
2004	2,623	–1,108	0,430
	0,122	–1,361	1,539
	0,405	–0,982	1,891
	–0,011	–0,477	2,037

Source: B. Nierenberg: *Publiczne przedsiębiorstwo medialne. Determinanty, systemy, modele*. Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków 2007, p. 184.

Following the procedure, on the basis of a selected variable aggregation methodology, the synthetic variable is created[28]. In this case the pattern method, so-called Hellwig's taxonomical development measure was applied. The diagnostic features are divided into stimulants and dissimulants. By stimulants one understands the variables, the high values of which are desirable from the overall standpoint of the characteristics of examined phenomenon. On the other side, by dissimulants we understand such variables the high values of which are undesirable from the overall standpoint of examined phenomenon. In the Hellwig's method, the constructed thing is a model object which is formed by optimal observable values of the features. It is expressed by the formula:

$$p_j = \begin{cases} \max\limits_i z_{ij} - stimulant \\ \min\limits_i z_{ij}, - \quad dissimulant \end{cases}$$

In the case of Radio of Opole the values of stimulants/dissimulant for selected diagnostic features were included in Table 2.

[28] K. Hanusik, U. Łangowska: *Modelowanie ekonometryczne procesów społeczno-ekonomicznych*. Wydawnictwo Uniwersytetu Opolskiego, Opole 1994, pp. 32-38.

Tablet 2

Diagnostical stimulants/dissimulant for diagnostical features in the case of Radio Opole

Years	Diagnostical features		
	Subscription rate	Advertisement	Listening rate
	2,623	1,417	2,037

Source: B. Nierenberg: Op. cit., p. 188.

In the next stage, the measures of its distance from the pattern are set up:

$$c_i = \sqrt{\sum_{i=1}^{n} \left(z_{ij} - p_j\right)^2}, \qquad \left(i = 1,2,\ldots,n\right)$$

The distance measures for Radio Opole are presented in Table 3.

Table 3

The measures of the distance from the pattern in division into quarters in years 2000-2004

Years	Quarters	Subscription rate	Advertising	Listening rate	Total amount	c_i
2000	I quarter	2,226	0,000	11,776	14,002	3,742
	II quarter	9,822	0,177	2,122	12,122	3,482
	III quarter	10,191	2,834	4,788	17,813	4,220
	IV quarter	10,034	0,177	5,412	15,623	3,953
2001	I quarter	1,083	2,170	8,761	12,014	3,466
	II quarter	10,225	0,937	5,164	16,326	4,041
	III quarter	10,201	4,975	5,689	20,865	4,568
	IV quarter	7,920	5,357	3,427	16,704	4,087
2002	I quarter	1,127	3,275	9,771	14,172	3,765
	II quarter	8,148	4,428	8,421	20,996	4,582
	III quarter	8,234	5,554	8,535	22,323	4,725
	IV quarter	9,500	2,425	4,704	16,628	4,078
2003	I quarter	0,677	4,080	9,676	14,433	3,799
	II quarter	9,007	3,586	5,753	18,346	4,283
	III quarter	8,761	3,912	5,764	18,437	4,294
	IV quarter	9,615	2,557	0,339	12,511	3,537
2004	I quarter	0,000	6,376	2,581	8,957	2,993
	II quarter	6,259	7,715	0,247	14,221	3,771
	III quarter	4,920	5,754	0,021	10,695	3,270
	IV quarter	6,938	3,586	0,000	10,524	3,244

Source: B. Nierenberg: Op. cit., p. 189.

The received distances are transformed in such a way that they take the values from the <0.1) partition and their increase corresponds to the more profitable form of analyzed phenomenon. It takes place when applying the following formulas:

$$q_i = 1 - \frac{c_i}{c_0} \qquad (i = 1,2,\ldots,n)$$

where:

$$c_0 = S_c + 2D_c$$

$$S_c = \frac{1}{n}\sum_{i=1}^{n} c_i$$

$$D_c = \sqrt{\frac{1}{n}\sum_{i=1}^{n} (c_i - S_c)^2}$$

In this way, with the probability close to unity, the transformed synthetic variable receives values from the <0.1> partition. The values of synthetic variable for Radio Opole after dividing into quarters in the years 2000-2004 are presented in Table 4.

Table 4

Values of the synthetic variable for Radio Opole, divided into quarters in the years 2000-2004

Years	Quarters	Synthetical variable q_i
2000	I quarter	0,224
	II quarter	0,278
	III quarter	0,125
	IV quarter	0,180
2001	I quarter	0,281
	II quarter	0,162
	III quarter	0,053
	IV quarter	0,152
2002	I quarter	0,219
	II quarter	0,050
	III quarter	0,020
	IV quarter	0,154
2003	I quarter	0,212
	II quarter	0,112
	III quarter	0,110
	IV quarter	0,267
2004	I quarter	0,379
	II quarter	0,218
	III quarter	0,322
	IV quarter	0,327

Source: B. Nierenberg: Op. cit., p. 191.

After marking out the synthetic variable, by means of the Smallest Square Classical Method (Klasyczna Metoda Najmniejszych Kwadratów – KMNK), the estimation of econometrical model has been made:

$$\mathbf{a} = \left(\mathbf{X}^{\mathrm{T}}\mathbf{X}\right)^{-1}\mathbf{X}^{\mathrm{T}}\mathbf{Y}$$

Table 5

Structural parameters of the model and the determination coefficient for given provinces*

Provinces	Structural parameters of the model				Determination coefficient
	a3	a2	a1	a0	
dolnośląskie	0,045	0,098	0,059	0,227	0,885
kujawsko-pomorskie	0,082	0,089	0,062	0,204	0,873
lubelskie	0,022	0,127	0,101	0,243	0,824
lubuskie	0,101	–	0,054	0,227	0,772
łódzkie	0,082	–	0,060	0,231	0,932
małopolskie	0,112	0,129	0,090	0,331	0,881
mazowieckie	0,066	0,095	0,080	0,258	0,893
opolskie	0,065	0,064	–	0,212	0,970
podkarpackie	0,098	–	0,120	0,198	0,778
podlaskie	0,019	0,114	0,108	0,299	0,949
pomorskie	0,083	–	0,066	0,340	0,946
śląskie	0,044	0,103	0,061	0,231	0,926
świętokrzyskie	0,030	–	0,072	0,210	0,911
warmińsko-mazurskie	0,064	0,112	0,103	0,307	0,912
wielkopolskie	0,064	0,105	0,079	0,315	0,948
zachodnio-pomorskie	0,080	–	0,089	0,287	0,951

* Radio Koszalin S.A. has not been taken into account in the above calculations because one could have to section off (out of zachodniopomorskie and pomorskie provinces) such a number of inhabitants that constitutes the totality of listeners of this radio. Resulting from the lack of appropriate studies, it could be done in approximation and with the danger of making a mistake.

Source: B. Nierenberg: Op. cit., p. 193.

On the other hand, the size of parameters proves the power of influence of the explanatory variable, next to which there is a given parameter of analyzed phenomenon. The higher the value of a given parameter, the bigger the influence of the explanatory variable, which stands by this parameter on the explained variable. Thus, the analyzed econometrical model would have the following form:

$$y = a0 + a1x1 + a2x2 + a2x3$$

where:
x1 – subscription rate; a1 – the parameter referring to the subscription rate,
x2 – advertisement; a2 – the parameter referring to the advertisement,
x3 – listening rate; a3 – the parameter referring to listening rate.

By this method the calculated parameters a1, a2, a3 together with the determination coefficient for given provinces, in which regional public broadcasting stations operate, were collected in Table 5.

Moreover, the determination coefficient which constitutes the measure of model adjustment to the empirical data has been calculated. The values of this coefficient are included in the <0,1> partition. The closer the values are to the single, the better the model adjustment to empirical data. In the analyzed case the fact of a high model adjustment to the actual data becomes visible.

On the other hand, the quantity of parameters testifies for the force of the explanatory variable influence, by which there is a given parameter of analyzed phenomenon. The greater the value of a given parameter, the bigger the influence of explanatory variable, which appears by this parameter, on the explanatory variable. To illustrate the outcomes of the calculations, one suggested drawings reflecting TSM for selected regional public broadcasting stations in Poland.

5. The TSM diagrams for broadcasting stations of the public radio in Poland

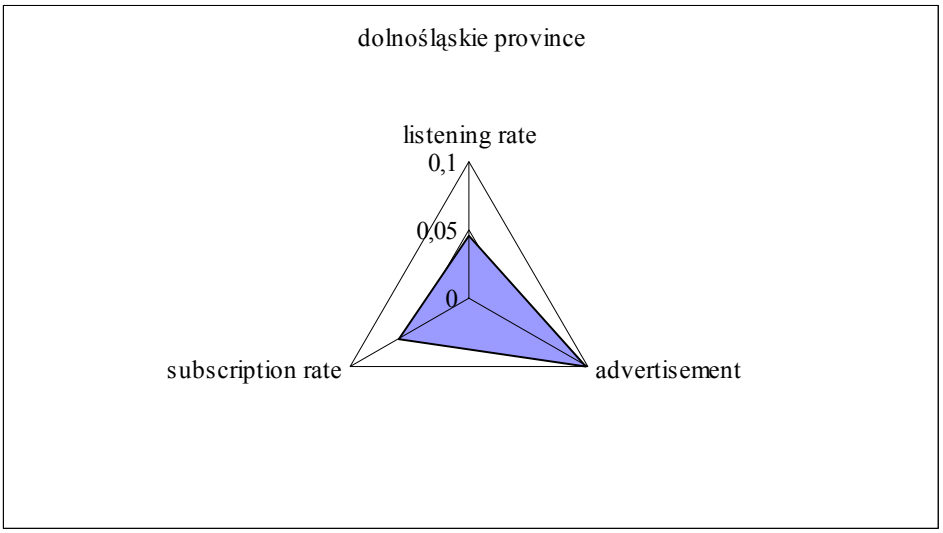

Figure. 4 A TSM diagram for Radio Wrocław S.A.

Source: B. Nierenberg: Op. cit., p. 195.

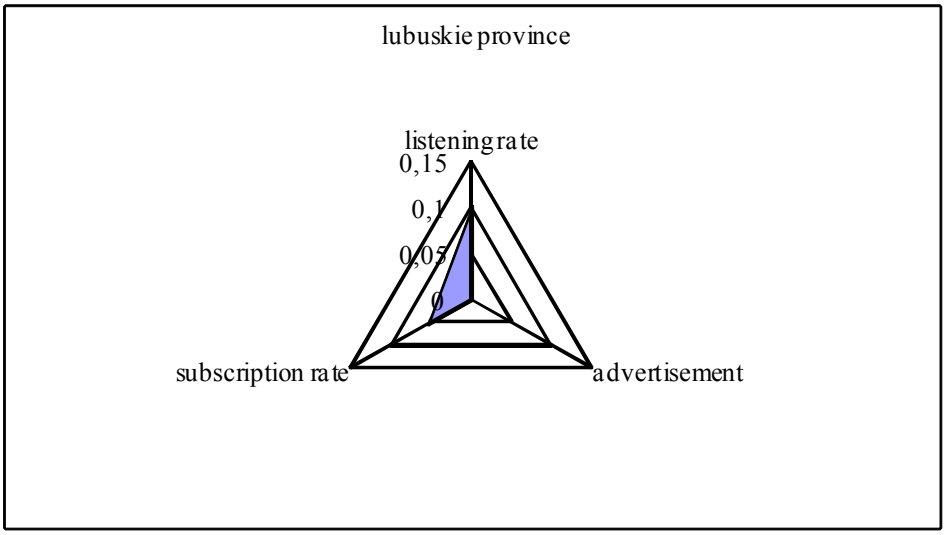

Figure. 5 A TSM diagram for Radio Zachód S.A.

Source: B. Nierenberg: Op. cit., p. 198.

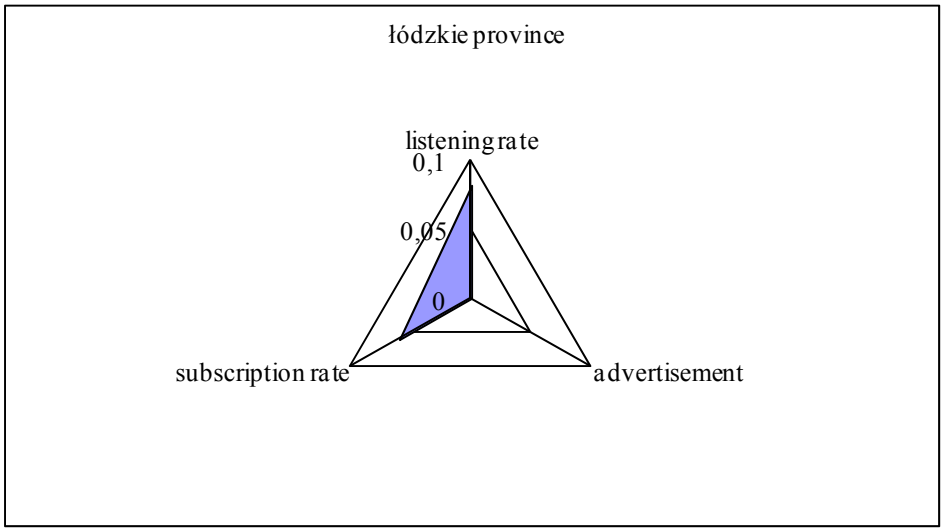

Figure. 6 A TSM diagram for Radio Łódź S.A.

Source: B. Nierenberg: Op. cit., p. 199.

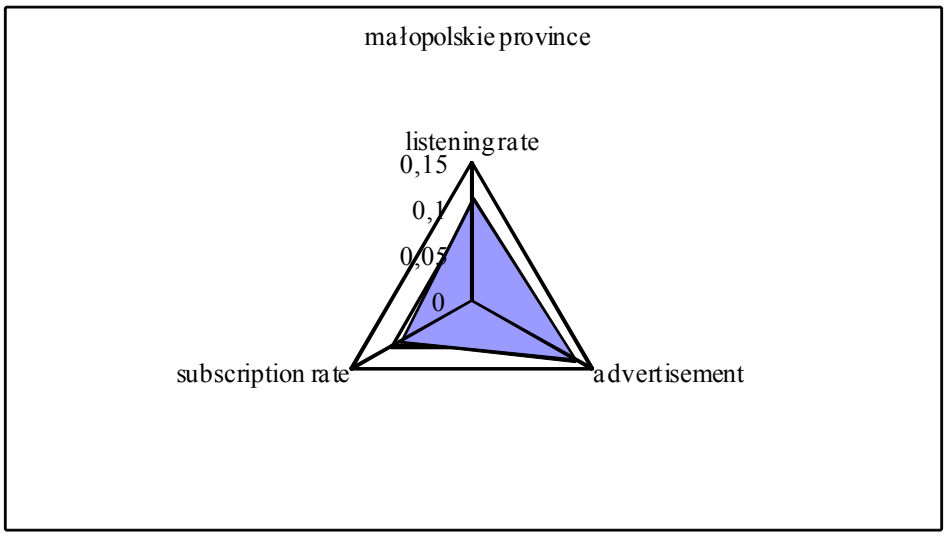

Figure. 7 A TSM diagram for Radio Kraków S.A.

Source: B. Nierenberg: Op. cit., p. 201.

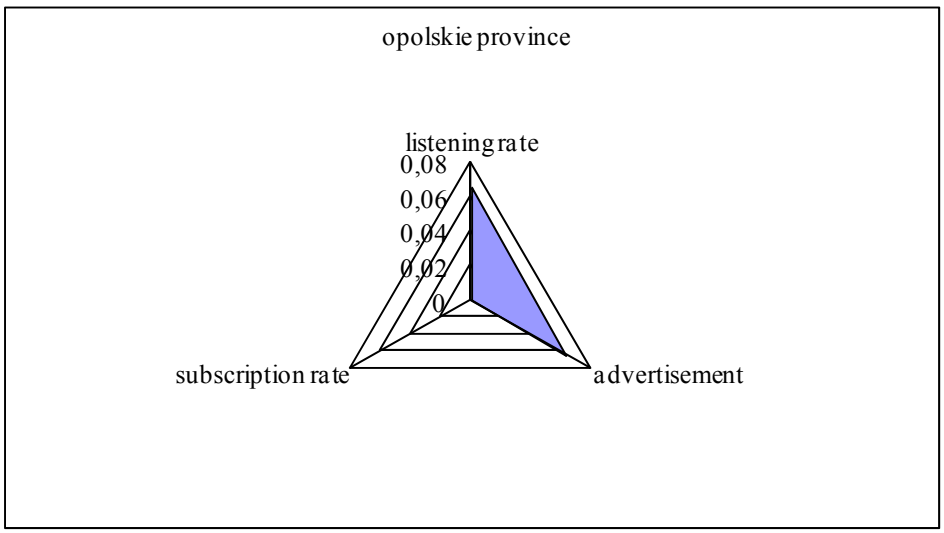

Figure. 8 A TSM diagram for Radio Opole S.A.

Source: B. Nierenberg: Op. cit., p. 203.

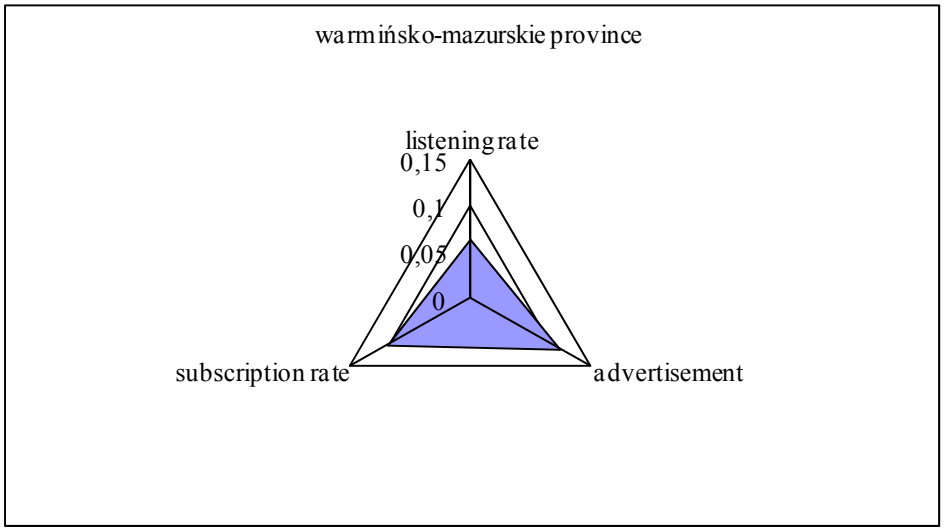

Figure. 9 A TSM diagram for Radio of Warmia and Mazury S.A.

Source: B. Nierenberg: Op. cit., p. 210.

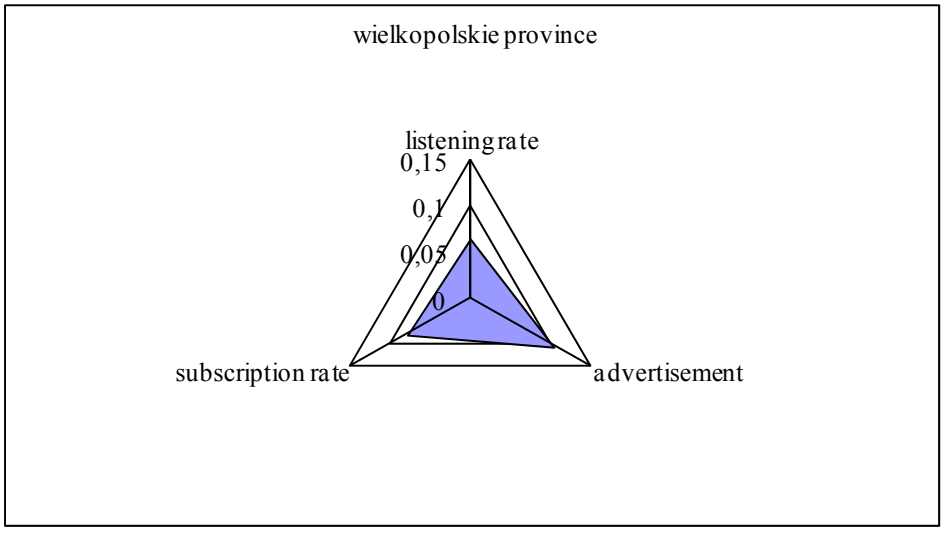

Figure. 10 A TSM diagram for Radio Merkury S.A.

Source: B. Nierenberg: Op. cit., p. 211.

6. The interpretation of TSM study outcomes

TSM models for selected regional public broadcasting stations may belong to one of the four groups:

1. A model of a broadcasting station "insensitive" to advertising.
2. A model of a broadcasting station "insensitive" to listening rate[29].
3. A model of a broadcasting station "insensitive" to the subscription rate.
4. A model of a broadcasting station "sensitive" to TSM.

The broadcasting stations in: Zielona Góra (Figure 5), Łódź (Figure 6), and Rzeszów, Gdańsk, Kielce, and Szczecin belong to the first group.

In the conducted studies none of the broadcasting stations turned out to be "insensitive" to listening rate. This interpretative category was brought into solely in order to preserve the "mathematical correctness", however as a matter of fact, it is a kind of a false syllogism, which on the account of two true premises would lead towards misleading conclusions. An organization cannot be "insensitive": to the receivers of its products. After all, the carried out studies have proven the reasonableness of such a way of thinking.

There was only one broadcasting station – in Opole (Figure 8), which belongs to the "insensitive" to the subscription rate third group.

The broadcasting stations in: Wrocław (Figure 4), Kraków (Figure 7), Olsztyn (Figure 9), Poznań (Figure 10), and Białystok, Bydgoszcz, Lublin, Katowice, and Warszawa belong to the fourth group, which meets the requirements of TSM model.

The first group of regional stations "insensitive" to advertising in a conscious or unconscious way, "behaves" like classical public institutions of largo sense[30]. They offer such social goods as libraries, schools, or museums. Their aim is not profit, although they can obtain incomes not only from social funds (libraries or health protection outlets collect various charges; render for a fee different services, make use of the support of sponsors, etc.)

There was only one station belonging to the third, "insensitive" to the subscription rate – Radio Opole. In the case of Radio Opole S.A. we have received a dependency characteristic for a commercial radio, i.e. a model which is "insensitive" to the subscription rate, showing almost linear dependency between the advertisement and listening rate (Figure 8)

It appears that from the point of view of public institution functioning it is an unprofitable case; it indicates that commerce is the dominant "philosophy" in actions of this radio.

[29] This interpretative category was brought into only as a theoretical possibility given by the assumed econometrical model.
[30] M. Bednarczyk: *Organizacje publiczne. Zarządzanie konkurencyjnością*. Wydawnictwo Naukowe PWN, Kraków 2001, p. 19.

The results received for 9 broadcasting stations (60% of examined cases) seem to confirm the rightness of this conception. The results for regional public radiostations in Wrocław, Bydgoszcz, Lublin, Kraków, Warsaw, Białystok, Katowice, Olsztyn, and Poznań prove, to a larger or smaller extent, the rightness of the conception. Such an equilibrium was achieved to the greatest extent by broadcasting stations in Kraków, Olsztyn, and Poznań.

It seems that in the case of Radio Merkury and Radio Olsztyn it was the manager of the company who had great influence upon the achieved results. Although the company matters were run by the managing board, the powers of the chairman is prevailing.

Unfortunately, the Polish radio producer's market is not fully developed yet. It seems that it was the main factor affecting the legislator when passing an amendment to the radio and television act, ordering "devoting at least 10% of the quarterly time of bursting programs to broadcast created by independent European producers"[31], at the same time, referring this note solely to the television, except for the broadcasting market.

It seems that each of here described cases requires a separate, detailed analysis as regards the substantial content of the program, ways of its influence, the inner and outer surrounding analysis, analysis of advertising market and the market of receivers (the listeners and viewers). In fact, these questions are reaching far away the frames of this publication, but are undoubtedly worth to be taken up.

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[31] The act of broadcasting and television of 29th December 1992 (The Law gazette of 1993, No. 2/15), clause 15 and 15a.

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