Bielsko–Biała School
of Finance and Law

Efficiency of budget expenditure in the process of creating framework conditions for local development
Planning and evaluation

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Ministerstwo
Nauki
i Szkolnictwa
Wyższego

Stworzenie anglojęzycznej wersji monografii pt. "Efektywność wydatków budżetowych w tworzeniu warunków rozwoju lokalnego. Planowanie i ocena." oraz digitalizacja i wprowadzenie do zewnętrznych baz danych publikacji naukowych - zadanie finansowane w ramach umowy 504/P-DUN/2017 ze środków Ministra Nauki i Szkolnictwa Wyższego przeznaczonych na działalność upowszechniającą naukę.

Bielsko-Biała 2017

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Pre-press preparation
Dagmara Żabka

First published Bielsko-Biała 2017

ISBN 978-83-61310-70-9

Published by Bielsko-Biała School of Finance and Law
ul. Cz. Tańskiego 5 43-382 Bielsko-Biała
tel. (33) 82-972-12,15 fax. (33) 82-972-21
www.wsfip.edu.pl, wsfip@wsfip.edu.pl

Printed by UPR PASJA, 43-300 Bielsko-Biała, ul. Partyzantów 44, tel.: +48 33 499 00 47

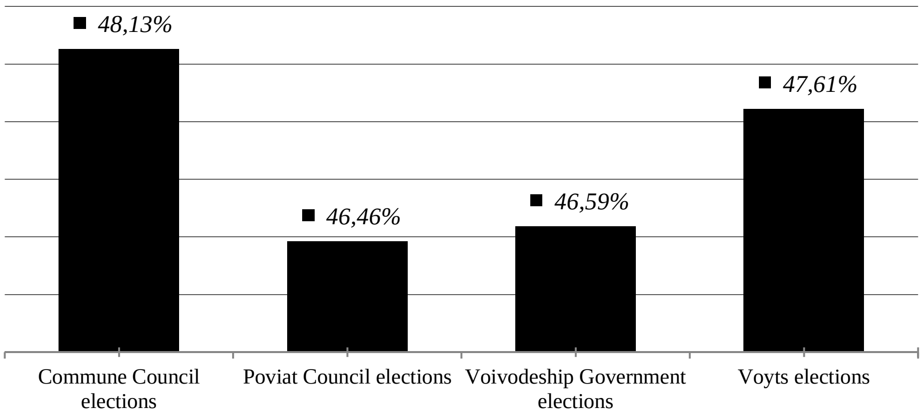
INTRODUCTION

One of the critical aspects of rapidly progressing democratization processes observed in Poland is dissemination of the principle of subsidiarity which assumes delegating decision-taking powers from the central level to administrative units below, and following on from this, decentralization of powers with respect to expenditure of public resources. This process which in the long term assumes assigning central authority only such tasks which cannot be effectively executed at lower levels, has not been completed yet. The local administration unit which, as the result of the above mentioned processes, has been empowered and can now dispose of public financial resources because it is the most competent to create favourable conditions for entities functioning in a given economic and social area in Poland, is called a commune or in case of towns and cities a municipality.

Successful development of a given area and satisfaction of needs of its inhabitants heavily depend on the efficiency of management which should combine knowledge and the ability to influence the development of resources located in this area (e.g. human resources, financial, spatial and natural resources). The available assets ought to be effectively exploited in order to achieve the intended results and appropriate conditions must be created to facilitate development of the area. Democratic system, by definition, assumes compliance of decisions taken by the authorities with the expectations of majority, therefore economic decisions related to expenditure of public resources should be evaluated from the perspective of this particular criterion.

However, there is some evidence for the contrary. A number of activities undertaken by the authorities with respect to shaping living and working conditions in a given social and economic area are not well received by the local community. The situation is illustrated by the data presented in Image 1, which shows low (not exceeding 50%) turnover of voters in elections to regional authorities for each level of local government units. Moreover, whatever the reason (be it the feeling of helplessness, lack of faith that the elections may bring any changes for the better or inborn passivity of some people) such low turnover in local elections leads to a conclusion that provision of compliance of decisions of local authorities with preferences of the majority of local people, is often purely coincidental[1].

Chart 1. Turnout of voters in local government elections in 2014.



Source: data provided by the National Electoral Commission (www.pkw.gov.pl).

The results of research conducted by the author show considerable discrepancies in perceiving the significance of decisions which were to lead to improvement in key conditions determining the critical areas of a commune development. In the most optimum situation the importance of changes would be the same for each particular area of public activity. It could be possible that the needs of each area were satisfied to the same extent, so none of the factors for needs satisfaction in any of the areas would be preferred over others. It would mean that the activities of local government units with respect to creating framework conditions for development of a given social and economic area were adjusted to preferences of local entities. As it turns out, in case of each commune or municipality under analysis, each respective framework condition has different validity depending on directions of development preferred by local entities. From the perspective of democracy, the applied policy of local development should correspond to the preferences of the local community. Therefore, local authorities ought to take into account the structure of preferences of social and economic units in their decision taking processes with respect to the directions of allocation of resources

[1] In the further parts of the publication it is argued that even turnover of 100% does not guarantee such compliance – see page 42.

from the budget. However, the methods of expenditure planning applied by local government units do not meet the postulate of linking the preferences of social and economic entities functioning in a given area (e.g. communes) to the financial decisions impacting the budget expenditure. The structure of current expenditure is planned in accordance with ratio analysis which determines the structure of expenditure in the next period not in accordance with the preferences of residents but in accordance with the volume of resources spent on a given budget item in the previous period. The problem of not providing the link between preferences of entities functioning in a given commune with the directions of development of this commune/municipality, is not solved by direct or indirect elections neither by participatory budget2.

Another problem refers to the lack of tools for evaluation of efficiency of public expenditure on the level of local government unit from the point of view of adjusting it to the preferences of the local community. The structure of preferences of voters is not reflected in the structure of preferences of elected representatives. It is connected to the fact that a voter does not choose particular expenditure items but a person who supports a whole bundle of items which, as a rule, is only to a small extent convergent with preferences of the voter. It is on this stage that the discrepancies emerge. Another important aspect is that financial decisions are taken on the basis of the resultant of the structure of preferences of representatives on the commune council and preferences of the local mayor/voyt. This may result in deepening of discrepancies in the resultant of the structure of voters preferences which determines the structure of current budget expenditure. It should be also noticed that elections to commune councils are held every four years, but the budget expenditure structure triggers consequences impacting the fluctuations in voters preferences every single year. Imperfections of the expenditure planning methods which, to some extent, result from inability to eliminate discrepancies between the resultant structure of preferences of a local community and the preferences of local authorities, directly impact effective control of the expenditure. The legislator defines four criteria of expenditure control[3]:

[2] More on the topic see: Żabka A., Łapińska H., *Budżet partycypacyjny a rozwój lokalny*, the Scientific Journal of Bielsko-Biała School of Finance and Law no 4/2014.
[3] Act on Regional Chambers of Audit (Journal of Laws of 1992 No 85 item 428 article 5 point 1 and 2).

- legitimacy - compliance of financed activities with the law,
- reliability – compliance of expenditure with the records,
- purposefulness – appropriateness of decisions concerning the allocation of financial resources in given directions,
- economy – equaled with efficiency; a criterion juxtaposing the achieved results with the expenses incurred.

The existing control methods (criteria) embrace, most of all, the notions of legitimacy and reliability. Tools of effective evaluation of local authorities with respect to purposefulness of undertaken steps and tools to measure efficiency of budget management do not exist. It should be highlighted, that the applied methods of efficiency measurement ignore the validity of effects that the undertaken activities bring, the validity seen from the perspective of expectations of local communities with respect to key changes in the framework conditions for functioning of entities in a given commune. The issues presented above signal a need to develop a tool which in its construction would take into account the connection between preferences of the local community and the structure of budget expenditure which would guarantee the highest possible efficiency from the perspective of preferences of entities residing in a given area. This tool ought to be applied both in the process of planning the structure of budget expenditure as well as in the process of evaluation of purposefulness and efficiency of financial activities undertaken in order to modify the framework conditions for local development.

The analysis conducted in the present publication shows that the information obtained due to the application of the tool proposed by the author i.e. the integrated ratio of growth in economic potential of a region IRGEP (ZWRE in Polish) makes it possible to formulate sufficient recommendations with respect to proper spending of public resources in directions preferred by members of the local community. This will create new opportunities to improve efficiency of expenditure. On top of that, the disaggregated ratio will create grounds to evaluate the level of convergence between the expenses incurred and the results achieved. Arriving at the highest possible efficiency of public expenditure should be the top priority for authorities on every level. The original construction of the IRGEP planning tool should allow determination of the scope of progress in economic potential of the commune vs. the optimum trajectory of development. This will lay foundations for evaluation of purposefulness of public expenses towards modifications in living and working conditions of inhabitants in particular areas which are critical for local development. Moreover, cyclical evaluation of the preference structure in a local community will facilitate communication between the authorities and members of the community. Synchronization of knowledge on the preferred directions of changes in the framework conditions between local authorities and the community members may further contribute to improvement in the efficiency of expenditure. The proposed method is then of great importance for those who manage communal finances. Firstly, it helps to determine the best possible structure of budget management, a structure which will enable sustainability of satisfaction of needs in all key areas of local development. Secondly, it will contribute to the improvement of communication between authorities of a commune and its residents and hence, will facilitate better understanding of the directions of development. The proposed method offers foundations for evaluation of purposefulness and efficiency of resources spent towards various directions.

The core of the author's research is the lowest administrative unit of a country's division a commune or municipality. The localities, within the powers bestowed and due to the volume and structure of revenues, are the best placed to make decisions shaping the framework conditions which are of key validity for the social and economic development of the area. The potential of local authorities is not fully exploited though, because the methods used for selection of programmes and goals to be financed by public money do not allow to create the best possible field to develop the economic potential of a commune to the full. Such thesis finds confirmation in the results of the analysis conducted on the frequently applied methods of expenditure planning. The main drawback of these methods is ignoring the directions of development preferred by entities functioning in a given area who constitute this social and economic local system. Even democratically conducted local elections do not guarantee that preferences of local people will be respected. It was shown in the analysis of sample election variants. The resultant of the above mentioned drawbacks is inability to construe a tool assisting in supervision over undertaken activities on the basis of all audit criteria prescribed by the legislator.

The premise behind Chapter 2 of the publication which consists of description of methods measuring the quality of life, is a consequence of propositions stipulated in Chapter 1. The goals of strategies applied in the three sample communes described further on, are at the same time the target actions of local authorities. The activities undertaken by local authorities towards *striving for continuous improvement in the quality of life of local residents*, should be subject to evaluation. Due to the aim of the present publication, the usability of methods measuring the quality of life in the management of local finances is determined by the possibility of their application in the process of identification of the level of needs satisfaction with respect to forming framework conditions for functioning of social and economic entities. For this purpose the author analyzed relevant literature sources as well as the methods of quality of life measurement used in practice to prove the thesis that neither of the methods meets the criteria of being useful for the decision taking processes in a commune within the domain of the present publication.

In Chapter 3 the author formulated the criteria for the proposed tool which as a social indicator could become useful in financial management of a commune. The main thesis here comes down to the statement that it is possible to use the index method to assist the process of financial management in a commune/municipality on the condition that the method meets certain postulates such as: the uniqueness of each studied area with respect to preferences of members of the local community, the dynamic update of used parameters, a postulate about juxtaposing of the achieved coefficients which describe the examined area to the preferences of the local community, assumption of the possibility to determine the extent of sustainability of development of framework conditions. The last postulate refers to the application of the ratio as a criterion for evaluation of activities which are aimed at achieving the optimum shape of framework conditions for entities active in a given area. The second part of Chapter 3 offers the construction of the integrated ratio of growth in economic potential of a region IRGEP and justification of concordance of the proposed construction with the preconditions for its applicability in management mentioned above.

Chapter 4 contains presentation of a method which supports management of local expenditure based upon the integrated ratio. The key hypothesis for the present study stipulates that it is possible to determine such structure of current expenses which will guarantee the highest possible proximity to the development trajectory i.e. the maximum progress with respect to framework conditions for further development. One should take into account two aspects which are critical for development:

- purposefulness of decisions to spend money in a particular direction i.e. selection of such expenses which will guarantee sustainable satisfaction of local community expectations in all key areas of development within the framework conditions of this particular community. In this manner the trajectory of a commune's development will get closer to the optimum trajectory which is characterized by full sustainability of the preference structure of entities living and working in the commune;
- efficiency of the expenditure – striving for maximization of volumes of relative changes in conditions of functioning of entities in a given area which may be achieved by means of budget expenditure. The possibility to measure the efficiency of utilisation of public resources is conditioned by the measurement of force with which budget expenditure impacts the dynamics of effects achieved as changes in the framework conditions understood as public weal.

The key to proper application of the solution proposed by the author is specification of relevant framework conditions for functioning of local entities taking into account the possibility to introduce modifications by the local authorities. The factor which determines the possibility of application of the tool in the planning process and evaluation of expenditure efficiency, is introduction of the ratio between the volume of expenditure and the changes that the volume helps to achieve. Thus, the model of assisting the planning processes must optimise the structure of expenditure and take into account the postulate of maximization of the effects achieved thanks to utilising public resources as well as the sustainability postulate of structure of *validity* ratios of framework conditions of communal development.

Chapter 5 is devoted to the possibilities to apply the proposed method in practice. The author conducts evaluation of efficiency of public expenditure on the basis of the IRGEP solution proposed in the publication and on these foundations formulates conclusions on such areas where the efficiency in public expenditure may be improved. Moreover, the author suggests a procedure for determination of the optimum structure what results in specific suggestions on the change of the structure of expenditure allowing for putting communes on an implicit path of optimum development which is fully sustainable with respect to structure of preferences of entities functioning in their areas.

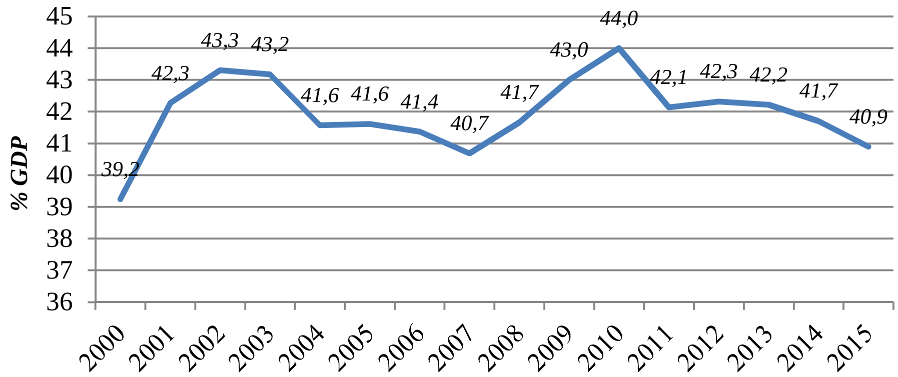
Substantiation of the author's hypotheses involved a multi-layered examination of the issue supported by literature studies as well as description and analysis of actual activities which were undertaken by authorities in the analyzed communes and municipalities. The analysis provided material for theoretical verification of validity of the applied methods for the purposes of financial management. Next, the author conducted synthesis of collected material in order to determine criteria for validity of the tool as a method supporting financial planning and control of expenditure in a commune. Collection of material for further research was conducted by means of the questionnaire method. Processing of the replies to the questionnaire was conducted by means of statistical methods and non-linear programming. Findings on efficiency of the expenditure were arrived at by means of inductive analysis.

The monograph culminates with section Conclusions which summarizes the findings coming from the conducted analysis with respect to application of IRGEP tool in financial management of the commune/municipality

CHAPTER I
MANAGEMENT OF LOCAL FINANCE VERSUS PREFERENCES OF LOCAL RESIDENTS

Public finance involves a number of processes related to accumulation and distribution of public resources[4]. The Act on commune self-government which was passed in 1990[5] and the Acts on powiat self-government[6] and voivodship self-government[7] from 1998 initiated the process of decentralization of competences related to the execution of public tasks and distribution of public resources. The three-layered structure of public finance brings Poland closer to the OECD countries. Between 2000 and 2015 the ratio of public sector expenditure with respect to GDP was as follows:

Chart 2. Expenditure of public finance sector with respect to GDP between 2000 and 2015.



Source: Own work based on data from Central Statistical Office: www.stat.gov.pl

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[4] Act of 26 November 1998 on public finance (Journal of Laws 1998 No 155, item 1014).

[5] Act of 8 March 1990 on commune self-government (Journal of Laws 1990 No 16, item 95).

[6] Act of 5 June 1998 on powiat self-government (Journal of Laws 1998 No 91, item 578).

[7] Act of 5 June 1998 on voivodship self-government (Journal of Laws 1998 No 91, item 576).

Much like in most developed countries, the system of public finance in Poland differentiates between two main groups of holders of public resources. The first group includes entities whose competence range covers the whole country. This group consists of the government, and further, special funds and government agencies. The second group of entities embraces constituents of local government: communes/municipalities, powiats and voivodeships.

As a rule, the territorial division of Poland into voivodeships, powiats and communes/municipalities is aimed at facilitating mutual contacts between decision making authorities and the people. The contacts are indispensible for smooth functioning of the state as a whole, securing the interests of local communities as well as proper management of the environment[8]. The implementation of the self-government system allowed for decentralization of public tasks and optimization of the decision taking processes with respect to selection of directions of development of respective units of territorial division. The optimization was possible thanks to creation of opportunity to adjust these directions to the unique development potential of particular regions. The practical execution of this postulate is possible providing such areas are extracted for which it will be possible to determine more or less uniform structure of directions of development preferred by local entities. According to E. Wysocka and J. Koziński extraction of areas with the desired features can be conducted according to the following criteria[9]:

- criterion of efficiency of management resulting from statutory decentralization of power expressed by the level of authority of central and local administration;
- criterion of efficient utilization of settlement i.e. utilization of polycentric characteristic of settlement network as well as cultural, social and economic potential of urban centres;
- criterion of continuity of historical tradition connected with stability and significance of material and spiritual heritage retained and stored in social awareness;

[8] Potoczek A., *Podstawy polityki regionalnej*, the Regional Centre of Studies and Protection of Cultural Environment, Toruń 1996, p. 41.

[9] Wysocka E., Koziński J., *Regionalizacja Polski – przestrzenne aspekty strategii rozwoju* [in:] 'Samorząd Terytorialny' No 6/1993.

- criterion of national utilisation of economic potential which determines possibilities to utilize assets and make adjustments to current demands of the global economy;
- criterion of effective solution of problems and conflicts arising from the complexity of such phenomena and processes which are caused by rapidly progressing civilisation and acquiring identity by local communities and business units;
- criterion of ability to tune in with the European standards resulting from progressing European integration processes;
- criterion of dynamics of changes related to the belief in active impact of territorial divisions on the pace of transformation and directions of further development.

As far as the number of levels of self-government administration and the division of competences between them is concerned, it is vital to harmonise the functions of particular units within their territorial boundaries[10]. It guarantees local authorities full and exclusive impact on shaping the conditions with respect to the executed functions. For instance, organising railway transport within boundaries of a single commune seems pointless.

Extracting units of territorial division which meet the above mentioned criteria i.e. with more or less uniform structure of needs, should make it possible to undertake effective steps leading towards local development based on stimulation of regional progress in widely accepted directions. It is equivalent to creating possibilities of better utilisation of resources which remain at the potential of the social and economic system. Creation of better opportunities for utilisation of local potential (understood as a portfolio of available potential development possibilities of each respective commune), among which, from the point of view of progress, the key role is played by the provision of development opportunities, created by the self-government, in the form of public goods, this may allow the entrepreneurial individuals to activate their potential thanks to the existence of favourable conditions.

Local development should be treated as a bundle of quality transformations in a given region with respect to the living standards of local people and conditions for functioning of businesses located

[10] See: Jałowiecki B., *Polityka restrukturyzacji regionów – doświadczenia europejskie* [in:] 'Studia regionalne i lokalne', z. 11/44, Warsaw University, Warszawa 1993, p. 11.

therein[11]. On the other hand, development seen locally should be understood as constant, jointly recognized, favourable changes in the local system, whose source are mainly local material and natural resources and characteristics of local communities facilitating development. The achieved results contribute to better satisfaction of needs of the local residents[12]. T. Domański defines local development as a process of continuous growth in the living standards of local communities, based on mutually sustainable factors of social, economic and ecological nature. Activities undertaken towards sustainable development should be understood as taking and implementing such decisions, which on the basis of a compromise reconcile opposite goals relevant for each particular development area[13]. For further considerations the author uses a definition of local development put forward by J. Parysek, who claims that local development involves multi-layered creation of the best possible living conditions in the area or perfecting the organization, structure and functioning of the territorial social system, mainly through utilisation of local development resources[14].

Activities undertaken towards shaping conditions for development should be characterized by creativity, efficiency, economic reasonableness and social utilisation of material and immaterial resources in order to create conditions for breaking the existing barriers and preventing creation of new ones in long and middle-term perspective[15]. It should be emphasized that breaking down the existing barriers should occur only in case of directions of development which are in line with preferences of local residents and the idea of creating conditions for sustainable development. When directions of development are not

[11] Wojtasiewicz L., *Planowanie rozwoju lokalnego* [in:] *Rozwój gospodarki lokalnej w teorii i praktyce*, Gruchman B. (ed.), Tarajkowski J., Poznań - Warszawa 1990, p. 38.

[12] Bardziński S.L., *Lokalna polityka gospodarcza (w okresie transformacji systemowej)*, Toruń 1994, p. 17, see: Potoczek A., *Stymulowanie rozwoju lokalnego – perspektywa społeczna i organizacyjna*, ROSiOŚK, Toruń 2001, p. 3.

[13] Domański T., *Strategiczne planowanie rozwoju gospodarczego gminy*, the Agency of Communal Development, Łódź 1999, p. 16.

[14] Parysek J., *Podstawy gospodarki lokalnej*, the University of Adam Mickiewicz, Poznań 2001, p. 46.

[15] Kot J., *Zarządzanie rozwojem gmin a praktyka planowania strategicznego*, the University of Łódź, 2003, p. 16.

desired by the local people then building barriers may become appropriate.

The benefits of extraction of communes as units of administrative structure of the country which is dictated by the striving for creation of opportunities for better satisfaction of specific needs of local inhabitants, were already recognized in the pre-war literature. The needs which are satisfied by the state are needs of general nature – their satisfaction is satisfaction of needs of the whole society. The aim is achieved when satisfaction of these needs is completed, sometimes contrary to the interests of individuals and groups which must conform to the decisions taken by the state. For the state is understood here as a superior power for the society, an authority which dictates solutions for its own sake or the sake of collectivity. In case of communes/municipalities the aim is achieved when the needs of all individual constituents of the community are satisfied. The authorities of a commune, acting in this way, appear to be in harmony with the citizen, disposing of means opposite to the means of the state. The main power of the commune used to achieve its local goals is the voluntary nature of the capacities at the disposal of a local authority[16]. It should be brought to the reader's attention, that the differences lay not only in the contrastive character of goals to be achieved by the two levels of administration but also in distinctness of capacities thanks to which the goals may be achieved. Satisfaction of needs of residents by local authorities is possible when such conditions are created in which local entities are able to fulfill their own needs.

The prospect of conscious and efficient impact on the development of local framework conditions – conditions for development which determine better possibilities of utilisation of local potential by various entities, are, in turn, determined by competences of local self-governments with respect to undertaking of specific tasks, availability of resources for financing the tasks and the quality of tools for development planning. These determinants will be discussed in the subsequent sections of this chapter.

[16] Rzeczkowski K., *Gmina jako podmiot polityki komunalnej*, print from No 3 of a quarterly publication 'Samorząd Terytorialny', Warszawa 1938. Reprint by Przemiany, Warszawa 1990, p. 14.

1.1. Profile of local finance sector in Poland

1.1.1. Self-governments – scope of competences

The legal acts in force which regulate the activities of territorial self-government in Poland are based, to a large extent, on vast experiences of the western Europe countries. In practice the idea of self-government is implemented by delegating managerial mandate to the lowest possible level of authority. Responsibility for public issues should be in the hands of such organs which, distance wise, are the closest to people[17]. Among local government units in Poland extracted as the result of the administrative reform, the communes and their urban counterparts - municipalities have been granted the most power.

A commune is a basic unit of local government[18]. The origins of other units of local government can be found in relevant legal acts[19]. The consequence of establishing a commune as the basic unit of territorial division of a country, was granting the local authorities the widest scope of competences with respect to impacting local affairs as well as the largest budget. The scope of competences of local government in Poland is regulated by two elementary legal acts:

- Act on commune self-government,
- Act on distribution of responsibilities and competences determined in specific laws between the state and local government[20].

The above mentioned acts list the following affairs as being within exclusive competence of the communes:

- spatial order, real estate management, protection of natural environment and water management;
- management of communal roads, streets, bridges and organisation of traffic system;
- waterworks, water supply, sewage system, disposing and treatment of waste water, maintaining cleanliness and order, maintaining of

[17] The European Charter for Local Self-Government ratified by Poland on 26 April 1993, article 4, item 3.

[18] The Constitution of the Republic of Poland of 2 April 1997, article 164, item 1.

[19] Act on voivodship self-government (Journal of Laws of 1998 no 91 item 578) and Act on powiat self-government (Journal of Laws of 1998 no 91 item 576) which regulate the statute and competences of local authorities.

[20] Act on distribution of responsibilities and competences determined in specific laws between the state and local government (Journal of Laws of 1990 no 34 item 198).

sanitation, landfills and disposal and treatment of communal waste, supply of energy, heat and gas;
- telecommunication activities;
- local public transport;
- health care;
- social welfare including care centres and facilities;
- local housing development;
- public education;
- culture i.e. libraries and other cultural institutions as well as protection and conservation of cultural and religious sites;
- physical education and tourism, recreational areas, sport facilities, marketplaces and market halls;
- greenery and forestation;
- communal cemeteries;
- public security and public order, fire safety, flood prevention including the supplies and maintenance of flood stock and equipment storage facility;
- maintenance of public utility and administration facilities;
- pro-family policy i.e. providing social, medical and legal care for pregnant women;
- support and dissemination of self-government idea;
- promotional activities;
- cooperation with non-governmental organisations;
- cooperation with local and regional communities from other countries.

The statutory own tasks assigned to communes embrace all aspects of communal activity. This offers local authorities a wide scope of possibilities and freedom[21] to create local development which, at the end of the day, considerably impacts the living standards of residents of the commune. Local authorities are entitled to shape conditions for functioning of entities active in a given area, mainly through provision of public goods and services, whose wide availability impact the scope of consumption and development of entrepreneurship in the area. By providing access to goods (e.g. infrastructure) and public services (e.g. promotion, counselling) local authorities can activate entities economically engaged in the area. As the consequence, new work places are created and local households are offered better consumption

[21] Within the legislation in force.

opportunities not only in the form of public goods but also as opportunities facilitating development of entrepreneurship within desired fields.

Local governments in the EU countries dispose of similar powers and bear similar responsibility with respect to these powers as local governments in Poland. The powers include competences within local spatial economy and management of assets belonging to the commune, liability for functioning of primary schools and health care system, condition of local roads, organisation of traffic and others[22].

A commonly applied principle in western Europe countries and also in Poland is the presumption of competences delegated to a commune[23] with respect to public affairs of local nature not reserved for other entities[24]. Smaller territorial units are usually inhabited by more homogenous communities which makes the satisfaction of needs so much easier[25].

Thanks to the principle of presumption of competences, the commune may, on a daily basis, react and help members of a local community in unexpected situations provided for under the laws. The reaction time is shortened to the minimum and the actions are realistically adjusted to the needs arising unexpectedly. Decisions of local authorities become more flexible what has a considerable influence on creation of opportunities aimed to improve the living standards of local residents and the efficiency of expenditure of resources at the disposal of local authorities.

Apart from own tasks assigned to communes by legal acts, the communes frequently take over duties which are often within the competence of government administration. The transfer of these tasks is possible on the basis of mutual agreements or legal acts. Such solutions are used in order to achieve higher efficiency in spending public

[22]See: *Gmina w wybranych państwach Europy Zachodniej*, J. Jeżewski (ed.), the University of Wrocław, Wrocław 1995; Dolnicki B., *Modele samorządu terytorialnego w Europie i w Polsce*, Wydawnictwo Andrzeja Abramskiego, Katowice 1994; Niewiadomski Z., *Samorząd terytorialny w Europie Zachodniej: podstawowe założenia i modele*, Foundation in Support of Local Democracy, Warszawa 1990.

[23]Commune, borough, district, municipality i.e. the most basic unit of administrative division of a country called differently in different countries but for this publication the author assumed the term *commune* which in case of towns and cities is referred to as *municipality*.

[24] Act on commune self-government (Journal of Laws of 1990 nr 16, item 95).

[25] Stoker G., The politics of local government, Macmillan, 1988.

resources. Awareness of local authorities with respect to the needs occurring in a given area seems to be bigger. Moreover, local government structures are prepared to render services in a more efficient way. Taking over tasks from central administration on the basis of mutual agreements may contribute to conscious shaping of competence area of local authorities in a way which increases the possibility to shape the key conditions for functioning of entities belonging to a local social and economic area. It may, however, pose a threat of excessive burden put on the local structures of administration. On top of that, the act[26] assumes that handing over tasks commissioned by the government administration must entail transfer of financial resources in volumes sufficient for the execution of these tasks. The sums allocated for self-governments to execute tasks commissioned by law are usually insufficient. Moreover, these tasks are likely to belong to the obligatory group, thus they are related to the fixed expenses of the budget. As it was mentioned before, the financial resources transferred for tasks execution are often insufficient, what brings about the necessity to activate additional resources from the communal coffer but such depletion of the local budget hinders the process of shaping conditions critical for local development by means of budget expenditure.

Taking into account both content based legitimacy and the legislation in force, the most critical decisions referring to framework conditions for development of a commune, and at the same time, for raising the living standards in the area, are in the hands of commune self-governments. Decisions which correspond to the preferences of majority, should generate better opportunities for developing activities which, in the long-term, improve the living standards of the local community. These possibilities should appear in the form of public goods i.e. they should be widely available, useful for most members of the local community and should not have competitive applications.

Execution of local government tasks, as a rule, requires bearing certain costs. Hence, the quality of performance of local authorities to a large extent depends on relevant financial decisions concerning the structure of communal budget expenditure, which in turn should be adjusted to the needs and preferences of the local community. In order to form an opinion about the extent to which self-governments

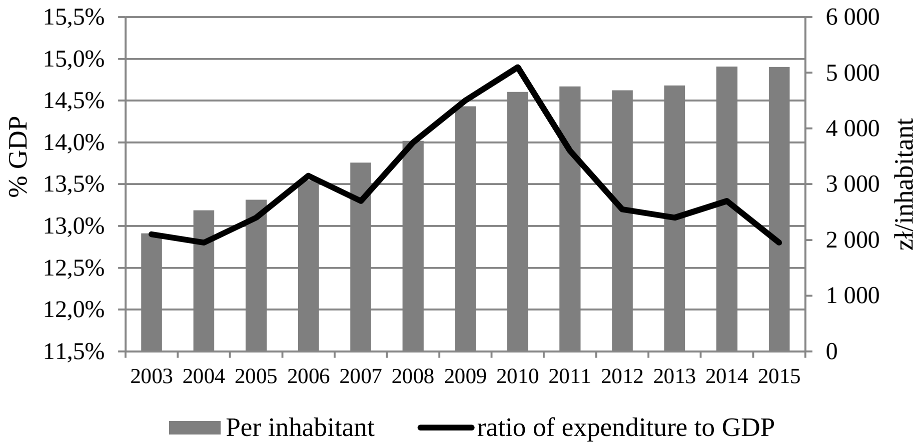
[26] Act on commune self-government (Journal of Laws of 1990 No 16, item 95, article 8, point 3).

appropriately use their scope of competences, financial conditioning of independent decisions should be examined as well as mechanisms shaping the structure of budget expenditure in a commune.

1.1.2. Legal and financial conditioning of decisions taken by local authorities

In the decentralised system of public authority, distribution of public resources is delegated to the lowest levels of power. Local authorities are responsible for 11,1% of public expenditure in the European Union with respect to GDP[27]. The highest ratio of GDP redistribution carried out by self-government can be found in Denmark (35,7%), Sweden (25%) and Finland (23,6%); while the lowest was recorded in Malta (0,6%), Cyprus (1,6%), Ireland (2,2%) and Greece (3,4%). In Poland this ratio comes above the average of the European Union countries. The volumes of expenditure incurred by local governments in Poland are presented in Chart 3.

Chart 3. Expenditure of local government units between 2003 and 2015.



Source: Own work based on data from Central Statistical Office (www.ec.europa.eu), reports of local budget execution for the period 2003 – 2015 submitted to the Ministry of Finance (www.mf.gov.pl) as well as Central Statistical Office reports (www.stat.gov.pl) on the volumes of GDP.

[27] Data for 2015 based on EUROSTAT: www.ec.europa.eu.The given ratio refers to 28 EU Member States.

The reason behind falling ratio of self-government expenditure with respect to GDP is to be found in lack of participation of local authorities in direct taxes, which are the most susceptible to changing economic cycles[28]. It seems however, that the evolution of the Polish system of public finance is moving towards granting local authorities a wider scope of competences and more freedom with respect to decisions on how to dispose of public resources. These changes were originated in the Act on incomes of local government units[29]. Pursuant to the Act the funding streams for local governments were increased. The Act in force between 2004 and 2006 was meant to serve only the transition period, in which communes were to adjust their organisational structures to the new system of feeding local budgets in order to enable further decentralisation of competences[30]. However, the regulations contained in the Act, after being tried and tested, proved to be durable and have remained in force ever since.

The communes have been granted a wider scope of competences than any other territorial category and in consequence the largest amount of financial resources[31]. The additional areas of responsibility and increased volumes of financing sets the bar really high for the local governing bodies responsible for assuring high quality of expenditure. Provision of efficient outflow of local resources is not possible without application of mechanisms maintaining proper relations between the structure of development preferences of a given local community and the structure of budget expenditure as well as effective allocation of resources towards identified goals.

[28]See: Żabka A., *Wpływ cyklicznych wahań koniunktury na dochody JST* [in:] *Polityka rozwoju regionu. Koncepcja – procedury administracyjne – Finansowanie,* K. Malika (ed.), Akapit, Opole 2010, pp. 203 – 225.

[29]Journal of Laws of 2003 Nr 20, item 1966.

[30] Żabka A., *Kształtowanie budżetów gminnych w Polsce w świetle obowiązującego prawa*, Bielsko-Biała School of Banking and Finance, Bielsko-Biała 2004, p. 136.

[31] More in: Mrowiec P., Błachut M., *Wpływ systemu podatkowego na rozwój oraz funkcjonowanie jednostek samorządu terytorialnego na przykładzie gminy Czechowice –Dziedzice w latach 2004 -2008*, [in:] *Znaczenie podatków dla funkcjonowania sektora publicznego*, H. Kuzińska (ed.), Bielsko-Biała School of Banking and Finance, Bielsko–Biała 2008.

Table 1. Expenditure of local government units per 1 resident in 2015 (PLN).

Local government unit	Communes	City/towns with commune rights	Poviats	Voivodships
Revenue per 1 resident	3 327,68	5 519,21	907,73	447,07

Source: Own work based on report on budget execution from 1 January 2015 to 31 December 2015. Information on execution of budgets of local government units, the Council of Ministers, Warszawa 2016.

Special attention must be drawn to the issue of effectiveness of financial economy to be achieved by communes. There is a need for perfecting the already existing tools and developing new solutions efficaciously supporting the processes of planning financial activity of a commune and allowing to measure the results of the undertaken financial activity.

In the analysis of revenues of local government units one must pay attention to the structure of the revenues because the allocation of resources can be easily impacted by the decision makers. The structure of budget revenues of respective local government units is presented in Table 2.

Table 2. Structure of revenues of local government units in 2015.

Local government unit	**Type of revenue**	**Share in total revenues [%]**
Commune	Own revenue	48,2
	Subsidies	31,0
	Grants	20,8
Powiat	Own revenue	29,9
	Subsidies	44,5
	Grants	25,6
Voivodeship	Own revenue	39,1
	Subsidies	16,4
	Grants	44,5

Source: Own work based on the report on execution of budgets of local government units in 2015 (www.mf.gov.pl).

Own revenues and subsidies can be spent on any goal selected by local government authorities[32] but the resources allocated as targeted grants must not be spent on a goal different than the goal specified by the organ who transferred the money. Therefore, targeted grants are often referred to as 'flagged'. Failing to spend the whole amount of a targeted grant results in the obligation to return the unused money to the authority which transferred the grant.

The structure of revenue sources in case of a commune indicates higher financial independence than in case of powiats and voivodeships where the targeted grants constitute much higher proportion of revenues, thus the destination of the resources is already pre-determined. In communes the prevailing source of income are own revenues which allows local authorities to decide about the directions in which the money is spent. Therefore, from the point of view of the volumes of financial resources which remain at the disposal of local government units as well as the structure of revenues, the communes bear the highest responsibility for the conditions and standards of living in the social and economic areas under their management.

In accordance with the changes proposed by the central government with respect to financing local government units, special emphasis is put on strengthening the financial injections from own revenues which should result in bigger influence of local authorities on the generated income.

Considering the issue of the impact the communal authorities have on the directions of allocation of financial resources at their disposal, one must not ignore the issue of determination of the part of the expenses incurred. The analysis of financial statements prepared by the communes leads to a conclusion that a considerable proportion of the expenditure is made up of investment which is qualified as flexible expenses. The share of expenses on investment in the total structure of local expenditure in 2015 is shown in Table 3.

[32] The audit of disbursement of resources is carried out only with respect to the criterion of legality i.e. compliance with the law in the process of financing particular activities.

Table 3. Structure of communal expenses in 2015 broken into categories.

Specification	Share [%]
Total expenditure:	**100,0**
Asset-related expenditure including: investment expenses	**16,6** 16,2
Current expenses	**83,4**

Source: Own work based on the State Budget Report (from 1 January to 31 December 2015). The information on the execution of the local government budgets, The Council of Ministers, Warszawa 2016.

Investment expenses constitute a considerable proportion of total expenditure from the communal budget. It should be emphasized that a certain part of current expenditure in a local budget consists of flexible expenses which give decision makers freedom of choice so as to the way these resources are allocated.

The tool for evaluation of efficiency and purposefulness of budget disbursement must apply both to fixed and flexible expenses. In allocation of flexible expenses local authorities enjoy full freedom with respect to the directions and ways of utilisation of public resources, as regards fixed expenses, the scope of free choice is much more limited. It does not mean, however, that in case of disbursement of resources determined by applicable laws and other regulations or in case of disbursement of subsidies, the solution of efficiency measurement does not apply. Allocation of resources towards a clearly defined direction, as it happens in case of targeted grants, may cause a smaller or bigger change in a given area depending on the chosen method of execution of the task.

In case of a vast majority of fixed expenses there is still space for improvement in the efficiency of their allocation. The improvement is particularly expected in the education and social welfare sectors which absorb the biggest part of local budgets. The improvement may be achieved through modifications in the structure of employment and raising the qualifications of personnel.

Taking into account relatively high proportion of public expenditure in relation to GDP (average of 48.6%[33] in OECD countries) as well as a likely tendency to increase public expenditure, special attention must be

[33] EUROSTAT data available at www.ec.europa.eu

drawn to efficient allocation of public funds. Achieving a satisfactory level of allocation of public funds will not be possible without application of state of the art solutions that help to coordinate the resultant preferences of local communities with the structure of local expenditure.

1.2. Budget planning: paths of gear ratio between preferences of local community and the structure of budget expenditure in a commune

Delegation of a considerable part of powers to regional and local authority members and dividing liability for consequences of the decisions taken on different levels increased their feeling of responsibility for the level of living standards in respective communes. Accepting this responsibility by local decision makers brought about the necessity of efficient and creative management of financial resources at their disposal[34]. To enable the realisation of the above mentioned postulate it is necessary to implement appropriate mechanisms supporting financial management of public resources. A number of tools currently in use by local authorities was borrowed from the business practice. The division of planning with respect to time horizon into short and long term planning[35] commonly used in the business sector, also works well when applied to local government units.

The literature devoted to management concentrates rather on dividing planning between different levels of company structure. Strategic planning is assigned to the highest executive level while operational planning is the domain of lower levels within the organization. Such division does not rule out the short-term - long-term approach. One should be aware that the higher the level in the company structure the wider scope of management mandate[36]. At the top of the organization the goals become more complicated and therefore, it is necessary to arrange their realization in the long-term perspective. It can

[34] Kryński Z., *Zarządzanie rozwojem gminy* [in:] *Od administrowania do zarządzania w gminie i powiecie, materiały pokonferencyjne*, the Academy of Podlasie, Siedlce 2001.

[35] Jaruga A., Nowak W.A., Szychta A., *Rachunkowość zarządcza. Koncepcje i zastosowania*, Absolwent, Łódź 1999.

[36] The scope of management is understood as the number of people and departments directly reporting to a given manager. Stoner J., Freeman R., Gilbert D., *Kierowanie*, PWE, Warszawa 2011, p. 309.

be said that long-term planning corresponds to strategic planning while short-term planning to operational planning[37]. Apart from the two planning horizons mentioned in literature on the topic[38], there is also a third, middle category – tactic planning[39] whose override plan is strategy. Tactic and operational plans must be developed in line with a clearly defined strategy.

1.2.1. Long-term planning

The plan which reflects long-term goals and intentions of local authorities is called local development strategy. Professional literature treats this strategy as a tool for managing local development which specifies priorities in the development and a sequence of steps which will assure realisation of the developmental goals[40]. A. Koźmiński[41] provides a broader definition of strategy adding the element of deployment of a unit in the environment. The strategy of an organisation must be based, on one hand, on the potential within the organisation itself and on the other, on the external conditions surrounding the organisation. Unlike the strategy of a business enterprises, the strategy of local development must take into account not only economic progress but also development of social and ecological spheres. From the perspective of a commune, a sustainable development means reduction of disproportions between respective spheres of social and economic life[42]. Therefore, the number one postulate for the decision makers on local level who are planning budget expenditure, ought to be adjusting the structure of expenses to the needs addressed by the local community. As mentioned before, the instruments of planning expenditure currently in use do not guarantee the

[37] E. Hellich uses the following terms: perspective planning, multiannual planning and current planning. Hellich E, *Rachunkowość jednostek samorządowych*, Difin, Warszawa 2000.
[38]Compare: *Zarządzanie. Teoria i praktyka*, A. Koźmiński, W. Piotrowski (eds.), PWN, Warszawa 1997.
[39] Koźmiński A.K., Piotrowski W., *Zarządzanie. Teoria i praktyka*, PWN, Warszawa 1997; Compare: Pęski W., *Zarządzanie zrównoważonym rozwojem miast*, Arkady, Warszawa 1999.
[40] Klasik A., *Lokalny rozwój gospodarczy i metody jego budowania* [in:] *Gospodarka lokalna w teorii i praktyce*, z. Nr 734, the Academy of Economics in Wrocław, Wrocław 1996, p. 30.
[41] Koźmiński A.K., Piotrowski W., *Zarządzanie*... op. cit. p. 163.
[42] Kot J., *Zarządzanie rozwojem gminy a praktyka planowania strategicznego*, the University of Łódź, Łódź 2003, p. 155.

fulfillment of this postulate[43]. The solution proposed by the author embodies the relation between the structure of expenditure and expectations of local residents through application of the model of validity factors (a_i)[44] that determine the significance and necessity to undertake certain actions in order to increase the level of satisfaction of development needs in a given area.

1.2.2. Strategic planning in communes

In accordance to guidelines issued by the legislator, the only units which are obliged to prepare development strategies are voivodships[45]. However, strategic planning plays a very important role also in the system of commune management. Therefore, a great number of communes chose to develop and adopt their own local development strategy.

The first step in the process of strategy preparation is the analysis of the organisation i.e. the commune as well as its immediate environment. This analysis is usually conducted by means of SWOT model[46]. The social and economic area under analysis is treated as a whole (e.g. the development strategy for the City of Kraków[47]). Still, a more detailed analysis is possible if each individual constituent of an organisation (commune) is studied separately.

It should be assumed that local management is a process in which local government authorities influence the managed entity in order to achieve the expected goals[48]. For instance, the SWOT analysis conducted in Gliwice during the process of preparing the local development strategy included examination of strengths, weaknesses, opportunities and threats in the following areas[49]:

- society,

[43] It is proved by the analysis conducted in the next sub-sections. See subsection 1.2.
[44] See sub-section 4.2, p. 110.
[45] Journal of Laws of 1998 No 91, item 576, Chapter II, article 11, item 1.
[46] More on SWOT analysis in: Obłój K., *Strategia sukcesu firmy*, PWE, Warszawa 1993, Gierszewska G., Romanowska M., *Analiza strategiczna przedsiębiorstwa*, PWE, Warszawa 1998.
[47] Attachment No 1 to Resolution XXXIII/235/99 of Kraków City Council of 20 October 1999.
[48] Potoczek A., *Zarządzanie lokalne i regionalne* [in:] *Od administrowania do zarządzania w gminie i w powiecie, materiały pokonferencyjne*, the Academy of Podlasie, Siedlce 2001.
[49] Strategy of development of the City of Gliwice for 2002-2022.

- economy,
- protection of natural environment and spatial economy.

The next important step in the construction of local development strategy is determination of the mission of the commune or municipality. The mission of an organization is a fundamental and unique state of the future towards which the organization is striving. The mission is a general statement of the most elementary intentions[50]. That is why missions in the strategies of communes are formulated in a very general way, they only highlight the most important aspirations of a given community[51]. And so, the mission of the City of Kraków is:

'Strengthening of metropolitan functions of Kraków as a European centre of culture, art, science, tourism, services and modern industries and on these foundations creating conditions for continuous improvement of the living standards for the citizens'[52].

The mission of the development strategy of Gliwice reads:

'Municipal authorities are striving towards provision of the highest possible standards of living for the citizens of Gliwice through creation of favourable working conditions, offering personal development opportunities which correspond to the needs and aspirations of the residents and strengthening the competitive position of the city.'[53]

In case of the town of Bielsko-Biała local authorities have not formulated a mission but a general direction of development:

'Shaping the town of Bielsko-Biała – the capital of Podbeskidzie region – as a multifunctional area with high living standards and high dynamics of economic development; a place where historic, cultural and ecological values are protected and treasured, a place open to investors, tourists and international cooperation, a place whose significance on domestic and international arena is constantly rising[54]'.

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[50] Koźmiński A.K., Piotrowski W., *Zarządzanie*... op. cit. p. 202.

[51] More in: Mrowiec P., Błachut M., *Rola strategii w rozwoju gminy*, [in:] *Nowoczesność przemysłu i usług w warunkach kryzysu i nowych wyzwań*, J. Brzóska, J. Pyka (eds.), Scientific Association of Organisation and Management, Katowice 2013.

[52] Attachment no 1 to Resolution no XXXIII/235/99 op. cit.

[53] Strategy of Development for the City of Gliwice for Years 2002-2022.

[54] Strategy of Development for Bielsko-Biała until 2010, Resolution of the City Council LXII/825/98 of 16 June1998, p. 59.

It is worth noticing that authorities of all cities quoted above have one common goal – achieving better living conditions and higher quality of life for their residents.

The last stage in the process of creation of development strategy is determination of priorities and strategic goals whose realisation must guarantee the success of the strategy and, consequently, sustainability of local development.

Strategic goals should constitute a detailed reflection of the mission of the commune – the way in which the mission will be accomplished. In the majority of communes the strategic goals are formulated in a similar, general, manner as the mission in the updated strategy of the city of Gliwice[55] in which the priorities are stated as follows:

- construction of modern business facilities;
- raising the living standards of local residents;
- development of metropolitan functions;
- enhancing the attractiveness of public space;
- building of civil society.

It seems, however, that goals which are too general cannot contribute to the realisation of the strategy. The second postulate mentioned above i.e. raising the living standards of local residents was also quoted earlier as an integral part of the mission statement in development strategies. In such a case strategic goals cannot constitute a reference for detailed description of activities because practically each activity may be substantiated by a goal formulated in this way. It is a source for conflicts rather than a solution. Therefore, the priorities were clarified by formulation of strategic goals. For instance, in case of the second postulate, three strategic aims were identified[56]:

- high living standards much above the average of the Silesian Metropolis, corresponding to the standards of living in other European cities;
- special attention paid to citizens who have limited chances for personal development;

[55] Strategy of Integrated and Sustainable Development for the City of Gliwice until 2020. Update. Attachment to the Resolution no XV/298/2011 of the Gliwice City Council
on 22 December 2011.
[56] Ibidem p. 23.

- economic and settlement development which does not interfere with ecological development.

When the goals are formulated in this way there are no doubts so as to the preferred directions of local development.

In the process of creation of local development strategy it is necessary to consider a number of variables which may impact its successful implementation. Among these variables weaknesses and strengths of the organisation – the addressee of the strategy- must be taken into account as well as conditions of the organisation's immediate environment. The immediate environment is assessed with respect to opportunities and threats but also with compatibility with strategic plans on higher levels i.e. voivodships[57]. Another factor which should be reflected in the goals of a strategy is the profile of preferences of the community members residing in a given social and economic system. In all the mission statements quoted above the authors were consistent with respect to the overriding goal i.e. improving the living standards of the local community which is a continuous process on each and every stage of development of a given area. The improvement in living standards is a goal which may be achieved as a consequence of the adopted development strategy[58]. When it comes to this particular goal, it seems obvious that citizens should be involved in working out this part of strategy[59]. Approval of the local community with respect to the strategic goals written down in the strategy increases the chances of successful implementation of the strategy. Participation of residents in preparation of local plans is required not only in the process of creating the strategy but also in preparation of long-term and short-term plans. Moreover, enhancing the plans with tools of assessment for their validity and efficiency and with methods of measurement of the achieved results as well as publishing financial statements, calls for greater attention on the part of policy makers. At the end of the day, effective planning and

[57] Formally, voivodship is not a superior unit for the commune, however in order to assure sustainable development of the whole region, goals and directions of development written down in the strategy of voivodship should be reflected in the strategy of the commune.

[58] Attachment no 1 to Resolution no XXXIII/235/99 of the City Council of Kraków of 20 October 1999.

[59] As presented in the analysis in sub-section 1.3., even direct elections to local government structures do not guarantee that the expectations of local residents will be reflected in strategic goals of this area. In light of the theory of public choice, the level of connection between expectations and strategic goals is purely coincidental.

measurement of the satisfaction levels in a local community should become an inherent element of management.[60].

A strategy as a long-term plan ought to embrace within its scope a period of between ten and twenty years. The strategy of the Silesian Voivodeship has a span of 17 years; the aforementioned strategy of the city of Gliwice has been designed for 20 years. A strategy is a document which must remain unchanged during the whole period of validity of this strategy. Therefore, it is critical that the goals are designed appropriately. Stability of strategic assumptions over the whole period translates into stable conditions of implementation of the strategy.

1.2.3. Tactical planning

Strategic goals determine the scope of tasks and endeavours i.e. detailed goals of lower category[61]. The objective of tactic planning is the analysis of available solutions for achievement of strategic goals and determination of the most appropriate courses of action[62].

A typical example of tactical planning on the communal level are long-term investment plans i.e. documents approved by organs of local government units which contain a list of investments broken down by various criteria. These investment tasks are written down in the development strategy of a region and must be executed in accordance with a schedule of works and funding scheme for respective years of the plan[63]. Tactical plans usually embrace periods between 3 to 6 years e.g. the horizon of long-term investment plan which complements the development strategy of the city of Gliwice covers the period of 4 years.

Unlike development strategy which is rather of a solid nature, tactical planning should be more dynamic. Tactical plans in dynamic aspect are usually built upon the rolling budget method. In this type of budgeting the consecutive budgets refer consistently to a fixed period[64]. A rolling budget calls for considerably more management attention and concentration on the upcoming period and the necessity to introduce

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[60] Kaniecka A., *Rachunkowość a zarządzanie finansami publicznymi* [in:] *Gospodarka finansowa samorządów terytorialnych, Conference materials no 4*, Bielsko – Biała, 1998.

[61] Koźmiński A.K., Piotrowski W., *Zarządzanie*... op. cit. p. 50.

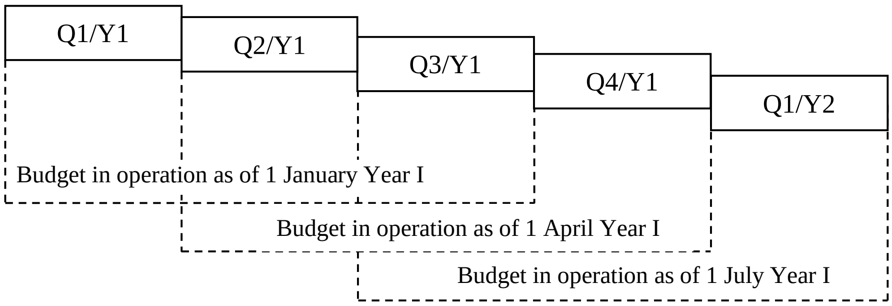
[62] Kot J., *Zarządzanie rozwojem gminy*... op. cit. p. 88.

[63] Pakoński K., *Zarządzanie finansowe i strategiczne,* Training materials of the Agency of Communal Development, Warszawa 2003, p. 44.

[64] Świderska G.K., *Rachunkowość zarządcza i rachunek kosztów* v.2, Difin, Warszawa 2002.

corrections on regular bases. This approach allows to compare the actual results with more real target volumes[65].

Image 1. Quarterly rolling budget.



Source: Own work based on Drtina R., Hoerger S., Schaub J., Continuous Budgeting at The HON Company, 'Management Accounting', January 1996.

As regards the application of the rolling budget in tactical planning, the quarterly period of updating plans seems to be unjustified due to the fact that the period of budget update is too short. However, the quarterly period is not obligatory. A better approach for that matter could be rather the so called 'milestone' method which highlights dates of events important for the project. When it comes to long-term investment plans, the milestones may denote completion of particular investments written down in the plan. Upon completion of a given investment the officials responsible for development and implementation of tactical plans, would have to review the new situation taking into account the changes made in the environment as the result of completion of this investment and introduce any necessary corrections in the investment plan. In this manner long-term investment plans could be well adjusted to changing environment which is impacted both by planned investments as well as independent factors.

1.2.4. Operational planning

Operational plans whose time horizon does not exceed the period of one year is of special importance for local government units. Preparation of operational plans is obligatory on each level of local administration. The statutory provision deploying the communal economy in the budget strengthens the position of this particular type of planning. The budget of

[65] Jaruga A., Nowak W.A., Szychta A., *Rachunkowość zarządcza...* op. cit. p. 596.

a commune is passed for each calendar year. The draft of the budget is prepared by the management board and completed with information on communal assets and relevant explanations. It is submitted to the Council no later than on 15 November of the year preceding the financial year, a copy of the draft is also sent to the Regional Accounting Chamber. The procedure for passing this bill as well as kinds and specificity of information materials accompanying the draft is specified by the Council. Until the adoption of the budget but no later than on 31 January of the financial year, the foundations for the budget economy of a commune is the draft of the budget submitted to the decision making body of the local government unit[66]. The voyt (mayor) is responsible for assuring appropriate financial management of the commune[67].

The budget of the commune assumes expected revenues as well as expenses to execute own and commissioned tasks. The budget inflows and outflows may be consciously shaped by the local authorities which is one of the key instruments remaining in their possession allowing for impacting local economic development. Following the reforms in public administration system, Polish communes operate in the free market economy**.** It means that budget expenditure and revenue must balance and continuity of investments in infrastructure must be assured in order to provide development and competitive advantage. More and more popular are such methods which support flexible utilisation of resources and allow for realisation of tasks well within the schedule and at minimum costs.

Local government budgets are prepared on the basis of balance sheet method. This method assumes juxtaposition of social and economic needs expressed as expenses and resources necessary to balance these needs expressed as budget revenues[68].

The dividing line between two budget philosophies runs between incremental budgeting and zero-based budgeting.

[66] Act of 27 August 2009, Journal of Laws of 2009 No 157, item 1240 article 239-240 as amended.
[67] Act of 8 March 1990 on commune self-government (Journal of Laws of 1990, no 13, item 74).
[68] Hellich E., *Rachunkowość jednostek*... op. cit. p. 109.

1.2.4.1. Incremental budgeting

In incremental budgeting plans for each consecutive period are made on the basis of corresponding volumes from the preceding periods. The philosophy includes the following methods:

- extrapolation method,
- ratio method,
- expense normalisation.

The extrapolation method consists of statistic and econometric methods and techniques which on the basis of a series of economic time variables allows to determine trends for future changes in order to formulate forecasts concerning the shape of these volumes in the planned period[69]. Application of this method in the process of planning the budget expenditure structure has been gaining popularity in Poland. The budget for each consecutive year is developed upon the previous year budget – necessary corrections are made with respect to the volumes resulting from implementation of this budget, rates of inflation, increased costs etc.[70]

The ratio method uses different types of relations, ratios, indicators and norms to determine certain measurable values[71]. The ratios are usually calculated on the basis of historical data.

A very specific method of planning expenses is normalisation of their volumes. The norms are determined in a way typical for all incremental methods i.e. on the basis of historical data. Normalisation was commonly used in the centrally planned economy in which norms for budget expenses were based on central social and economic plan and transferred to lower levels of territorial division of the country for execution as budget notes[72].

An advantage of incremental planning is the simplicity of preparing consecutive budgets. Still, this solution is under strong criticism. The ratios and relations applied in incremental techniques embrace volumes

[69] Kruszczyński S. *Polityka ekonomiczna i planowanie gospodarki narodowej*, Poznań School of Economics, Poznań 1970. Compare: Sokołowski B., *Polityka gospodarcza*, published by Śląsk, Katowice 1966.
[70] Dębska A., Kuchmacz J., Stańdo-Górowska H., *Budżetowanie i kontrola budżetowa w przedsiębiorstwach i jednostkach samorządu terytorialnego*, Kantor Wydawniczy, Zakamycze 2002.
[71] Kruszczyński S. *Polityka ekonomiczna*... op. cit. p. 136.
[72] Komar A., *Finanse gmin*, Państwowe Wydawnictwo Ekonomiczne, Warszawa 1977.

which may include both economic facts well-founded and purposeful but also undesired and even harmful[73]. A budget determined by means of incremental method is not free from these undesired and harmful elements. On top of that, a phenomenon which is frequently observed in practice is spending all the money by executives regardless of the reason and purpose for fear of having the budget reduced in the next period[74]. Another serious drawback of incremental planning is inability to explain reasons behind unfavourable occurrences. It should be emphasized that in practice only deviations from the original plan are subject to audit. Failing to determine these deviations equals lack of control[75]. This problem was also recognized by W. Misiąg who pointed to the absence of links between public expenditure and ratios showing the scope of subsidized public tasks and ratios measuring quality standards. According to W. Misiąg, this is the biggest departure from the principle of transparency of public finance[76]. Using this kind of planning techniques is highly inadvisable especially in the conditions of deep social and economic transformations and in the period of rapid development of a country. Due to technological and organisational progress the methods of budget economy and its results are drastically transformed[77].

1.2.4.2 Zero-based budgeting

A group of methods which assumes a radically different approach to expenditure planning is the zero-based philosophy. The most frequently used method in the activity-based planning process is activity-based budgeting. The essence of this type of budget comes down to the following principles:

- from planning expenses necessary to sustain functioning of institutions to planning necessary costs of task execution;
- for particular tasks financed from the budget it is necessary to determine the required volumes of quantitative and qualitative ratios which ought to be achieved in order to settle expenses (regarded as

[73] Kruszczyński S. *Polityka ekonomiczna*... op. cit. p. 138.
[74] Świderska G. K., *Rachunkowość zarządcza*, Poltext, Warszawa 1997.
[75] Świderska G.K., *Rachunkowość zarządcza i rachunek kosztów*... op. cit. pp. 11-75.
[76] Misiąg W., *Czy finanse publiczne w Polsce są jawne i przejrzyste*, Biuletyn Finansów Publicznych 4(16)/2005.
[77] Kaleta J., *Planowanie budżetowe*, PWE, Warszawa 1982.

purposeful and efficient) foreseen in the budget for execution of a given task[78].

The fundamental differences between incremental and zero-based budgeting are presented in Table 4.

Table 4. Differences between incremental and zero-based budgeting.

Incremental	Zero-based
• starting point for planning is the existing base (past)	• starting point for planning is not burdened with the existing base
• costs and benefits are evaluated only for new activities	• costs and benefits are evaluated for the whole (full) activity
• money volumes are the starting point for planning	• goals and different forms of activity are the starting point for planning
• new approaches are not verified as an integral part of the process	• new approaches are rigorously verified
• the result is proceeding in accordance with the rule ‘include’ or ‘not include’ in the budget	• as the result there is a choice between a number of services and costs levels

Source: Stonich P. J., Zero-Base-Planning and Budgeting, Improved Cost Controls and Resource Allocation, Dow Jones-Irwin, Homewood, Illinois 1977, p. 4.

The most popular methods of budget expenditure planning based on the zero-based principle include:

- planning, programming and budgeting system,
- selection of goals,
- cost-benefit analysis.

In the planning, programming and budgeting system (PPBS) the three phases of execution of the budget draft are:

- *planning phase* – identifications of costs and results of the strategic goals,

[78]Misiąg W., *Planowanie budżetowe w samorządach*, Municipium, Warszawa 2005, p. 115.

- *programming phase* – all activities related to preparation of detailed packages of programmes through which particular goals are to be achieved. In other words, it is translation of strategic goals into the language of execution in accordance with the schedule of implementation as well as material and human resources[79]. The programming embraces a number of formal constituents:
  - hierarchical structure of programmes – the programmes are classified pursuant to their significance. Moreover, in the same process overlapping activities of particular units of an organisation are identified and eliminated and any encountered competence gaps are filled;
  - budget statement – determination of volumes of financial resources which may be allocated for problem solving. It helps the budget makers concentrate on alternative paths for realisation of goals and their evaluation;
  - analytical studies – any research and analysis devoted to a given problem or task;
  - programme memoranda – selection criteria, justification of analysis and alternatives;
  - programmes and plans – information on funds available in the past and projected for the future. The idea behind financial plans and programmes is combining current planning with medium-term planning with respect to allocation of budget resources.
- *budgeting phase* – time and material inclusion of programmes into the annual budget.

Attempts to implement PPBS in practice were made but failed as they triggered increase in costs of the decision taking process without causing its sufficient improvement[80].

The next method is the goal selection method (zero-base budgeting). Implementation of this method consists of four stages[81]:

- determination of alternative paths of realisation of goals and selection of the best possible variant in the view of the decision taking body;

[79] Owsiak S., *Budżet władz lokalnych*, PWE, Warszawa 2002.
[80] Komar A., *Finanse publiczne*, PWE, Warszawa 1994, p. 77.
[81] Głuchowski J., *Budżet i procedura budżetowa*, Wydawnictwo Sejmowe, Warszawa 2001.

- preparation of the decision package appropriate for the selected realisation process, the package is contained in a document which specifies the goal, methods of its realization, the costs and benefits, workloads and measures of effects;
- determination of the hierarchy of particular goals which are achieved through decision packages in accordance with decreasing validity;
- juxtaposition of optional steps and chances of their financing.

A significant weakness of this method is the lack of general criteria for shaping the tasks, therefore the method may be used for purposes other than the originally assumed. This can occur when less significant tasks are assigned higher importance in order to have these tasks included in the budget for policy reasons[82].

In cost-benefit analysis[83] volumes of costs and benefits are compared for each new undertaking or an undertaking already under realization which is to be considerably extended. For each variant the method consists of:

- identification of all impacts of a given undertaking (positive and negative) on all members of the society who may be affected by the undertaking;
- measuring of costs and benefits in monetary aspect;
- recommendation to use a given variant if and only if it is to bring net social benefit i.e. total benefits will exceed total costs.

A very serious drawback of the cost-benefit analysis and other methods based on zero-based principle are huge difficulties to evaluate the effects of activities conducted by public authorities84. An equally big obstacle are difficulties to select and evaluate alternative solutions which already in initial phases of planning triggers a problem with determination of the importance of particular activities. The zero-based

[82] Komar A., *Finanse*...op. cit. p. 83.
[83] Samuelson W.F., Marks S.G., *Ekonomia menedżerska*, PWE, Warszawa 1998.
[84] Bożek K., *Metody planowania budżetu a efektywność wydatkowania środków publicznych w jednostkach samorządu terytorialnego*, [in:] *Samorząd terytorialny. Zadania – gospodarka – rozwój*, Chrzanów School of Entrepreneurship and Marketing, Chrzanów 2001. The tool of the integrated ratio of economic growth in a region's potential proposed by the author of the present publication embraces this problem through relating the actual evaluation of the improvement in the satisfaction of needs in a given area of social and economic life with the evaluation of the significance of this improvement. See: p. 98.

methods belong to the participatory, bottom up group which means that employees at the lower levels of the organisation take an active part in the process of goals formulation and cut up the paths for their realisation The bottom up process of budgeting despite a number of advantages may, in a number of cases, lead to inefficiency e.g. when too much power with respect to creation of budgets is passed down to lower level executives. It can paralyze the coordination of activities of respective units and as the result the managers of these units may pursue goals which are incoherent with the goals of the organization as a whole85. Another negative aspect of participatory budgets is a probability of a budget gap through intentional increasing of costs of tasks realisation or lowering the revenues which allows to achieve goals with smaller efforts and, simultaneously, with much lower efficiency.

1.2.5. Expenditure planning in practice

The process of planning budget expenditure on the level of a commune authorities is most commonly based on the so called index method. This method belongs to the group of incremental planning methods in which planning the expenditure side of a commune's budget is based on the structure of these expenses in the past financial periods. The structure of expenditure usually coincides with the organisational structure of the office. Each department or other organizational unit 'possesses' its unique ratio in the sum of budget expenditure which evolved from the experiences of distribution of budget resources in previous periods. This particular characteristic of the method may be considered in two ways. The experiences in planning budgets which generated the system of ratios give substantial justification for the values of the ratios in particular units and departments. A considerable drawback of the method results from the very same historic experiences, the same mistake made a number of periods before may be duplicated over and over again.

Thus, in the subsequent budget year, a minimum sum of resources at the disposal of a given organisational unit of the communal/municipal authority shall not be lower than the sum determined on the basis of the following:

[85] Świderska G.K., Rachunkowość zarządcza i rachunek kosztów...op. cit. pp. 11-24.

$$U_W = w_w \times S_b$$

where:

U_w – department's share in the budget sum
w_w – ratio for the department
S_b – budget sum

The ratio assigned to a given unit may be adjusted if the resources granted in the previous period were not fully utilised. The new ratio is calculated on the basis of the volumes which were actually spent. The effect of this system is defficiency of public resources expenditure especially at the end of a budget period. If as a result of improperly planned expenditure the unit still disposes of free resources at the end of the budget year, the resources are frequently spent foolishly and inappropriately only to keep the same quota in the next planning period. Moreover, the method does not allow to adjust the structure of budget expenditure to the hierarchy of goals represented by the authorities of the commune and is not adaptable to changeable conditions in the environment. When it comes to any kind of evaluation of efficiency of allocation of the granted resources, it does not exist as there are no set goals. Basically, the only valid criterion for evaluation of allocation of resources in a given unit is the utilization of the whole amount within the set period. The effect of application of incremental methods on the board level is the fact that changing environment conditions are not reflected in the structure of budget expenditure.

A very popular budget planning method frequently used by communal and municipal authorities is combining incremental and zero-based approaches. In the initial phase of distribution of resources between various units, the ratio method is used but for development of specific goals the zero-based approach is preferred. The incremental planning seems to have been completely abandoned. One assumes that the link between planned volumes of expenditure in given directions with volumes recorded in previous years does not exist[86]. In practice, zero-based planning which is fully compatible with methodology, is only possible when it comes to new tasks. In case of tasks which have

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[86] Żabka A., *Planowanie kosztów w metodzie budżetowania zadaniowego na przykładzie gminy Kraków* [in:] *Gospodarowanie zasobami przedsiębiorstwa w zmiennych warunkach otoczenia*, the Scientific Journal of the Silesian University of Technology No 1593, Gliwice 2003, p. 399.

repetitive nature over certain periods of time, it is natural that the decision makers are burdened with historic experiences. Eliminating this experience would be a huge mistake. Activity-based budgeting is then a method based on zero-based idea. Moreover, it refers to a well-known approach of management by objectives (MBO). Implementation of this tool is connected not only with application of a new method of planning activities but also with a certain re-organisation of the communal/municipal authority especially with respect to delegating powers. The method assumes that a local government official takes full responsibility for a given task in all phases of its realisation starting from the planning phase through supervision of its execution to the reporting phase. Such approach will surely be a motivating force towards increased efforts in assuring efficient execution of a given task. A more difficult challenge here seems to be to encourage executives to delegate powers.

Activity-based budgeting is a modern method of planning expenditure which gained popularity and recognition in local government units. It seems, however, that this approach works well only in case of detailed planning on the level of executive units where the goals are already set. The goals should be identified by the communal/municipal boards and the structure of division of budget resources among particular departments should reflect the hierarchy of goals not historical conditioning.

As mentioned before, in a democratic system the goals of local authorities should be a direct reflection of preferences and expectations of their respective local communities. The governing rule here is: preferences $\Rightarrow$ goals $\Rightarrow$ expenditure planning.

Lack of compatibility between the goals of local governments and preferences of local communities makes expenditure planning impossible. The most important mechanism which in the democratic system is supposed to guarantee the translation of preferences into goals is election to local authorities.

1.3. Preferences of a local community versus the structure of expenditure in a commune/municipality in the light of public choice theory

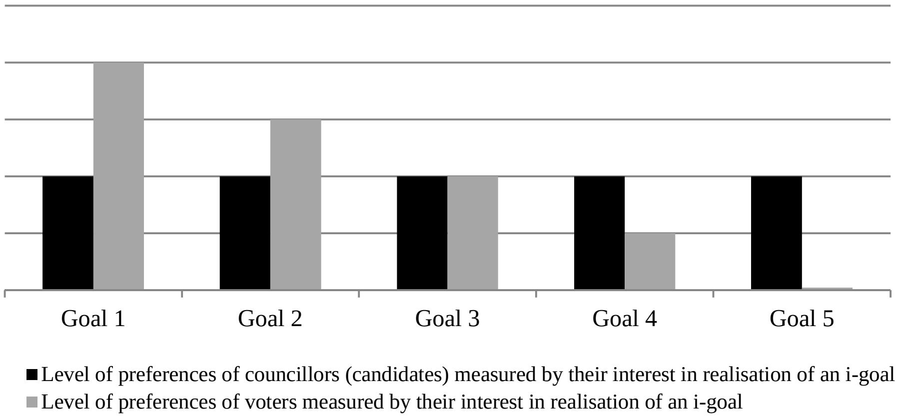
The expression of the voice of people by means of elections has been so far the best form of delegation of power in the democratic system. It should be emphasized that the election system is far from being perfect[87]. Choosing a given representative to the local authority entails supporting a whole package of solutions and goals preferred by this specific representative and chances are that some constituents of this package may be divergent with expectations of the voter. It can be argued that even direct elections do not guarantee satisfying the preferences and expectations of residents of a given area. According to the model of taking reasonable decisions[88], the process of formalization of elections proceeds in five steps:

- definition and classification of values;
- determination of goals compatible with the values,
- recognition of all relevant options and resources for achievement of these goals,
- evaluation and comparison of the options,
- contrasting options and combinations of options which may lead to a maximum level of the value of the highest rank.

If it is assumed that the content of goals reflects what the residents really want and the paths towards realisation of these goals are understood as operational concepts proposed by the candidates to local authority. The principle of taking reasonable decisions is applied for the process of electing representatives to local government. It seems however, that in reality the process involves only two first steps of the model. The analysis conducted below presents the most popular model of voters' behaviour and their impact on representativeness of the organs which emerged from elections. Assuming the fixed and balanced structure of preferences of local council representatives with respect to five goals, a considerable scope of divergences between possible extreme structures of averaged preferences of voters should be taken into account. Extreme situations are presented in the bar charts below:

[87] Owsiak S., *Finanse publiczne…*,op. cit., p. 72.
[88] Tansey S.D., *Nauki polityczne*, Poznań 1995, p. 216.

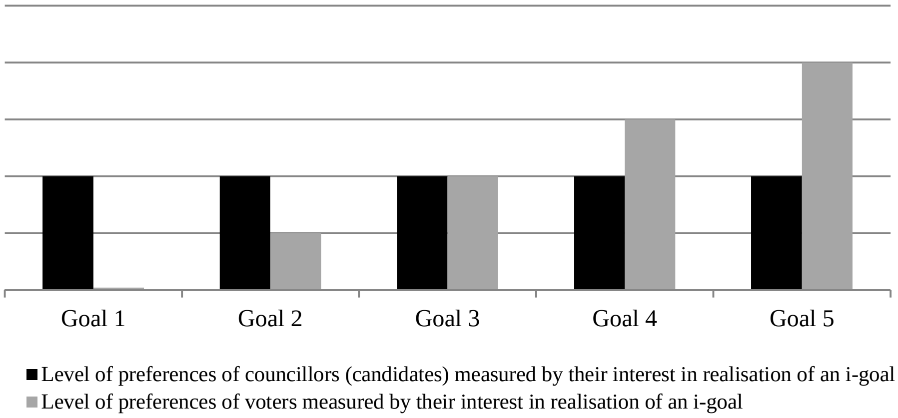
Chart 4. Divergences between preference profile of a local councillor (candidate) and a resultant profile of voters' preferences (Case 1).



Source: Own work.

In Case 1 the structure of identical preferences of local councillors was referred to one extreme, the averaged profile of residents' preferences which was possible to achieve. In this case the divergence of residents' preferences with respect to a bundle of councillors' preferences is the most significant. It is difficult to imagine such a situation because the voters usually support a candidate with whom they can identify the most, however, the average profile of preferences of the communal or municipal council as a whole may be quite distant from preferences of a single council member (candidate). The Chart however, presents an extreme variant; all resultants of preference structure fit in the scope between Chart 3 and Chart 4. In such a model the assumption of compatibility of preferences of entities constituting a given social and economic area with the profile of preferences of local council members cannot be accounted for, regardless of the election results. When considering the opposite extreme situation one arrives at a similar conclusion. The situation is presented in Chart 5:

Chart 5. Divergences between preferences profile of a council member (candidate) and the resultant profile of voters' preferences (Case 2).

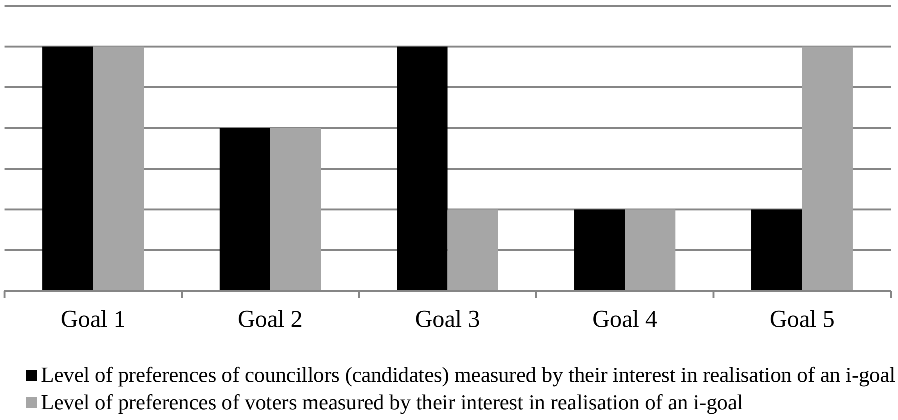


Source: Own work.

The assumption of stability and sustainability of preferences of council members and consideration of feasible preferences of voters allows to formulate a statement that it is possible to achieve a situation in which preferences of certain council members will correspond to average structure of preferences of voters. The chances for such a situation are, nevertheless, rather small, even when the validity of only five goals is considered. Much greater are the opportunities for alternative goals selection assuming stability of the average preference of voters and evaluating probable new preferences of council members.

Another thing which should be taken into account is the fact that in real life election, already in the phase of the campaign when candidates voice their party platforms, there are certain adjustments in the presentation of the candidates' preferences to the structure of average preferences of voters. Although voters select candidates whose preference profile is the most compatible with their own, it should not be expected that they carefully analyse the whole structure of candidates' preferences. It can be assumed that a voter makes a selection on the basis of two most important goals which are the most vital for him/her. The potential divergences between the preferences of councillors or candidates to local councils and voters are shown in the series of charts below.

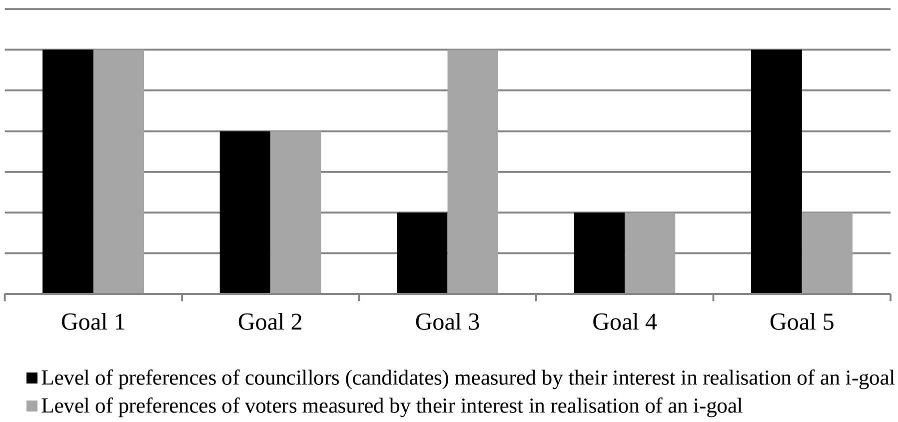
Chart 6. Divergences between preference profile of a local council and a resultant profile of voters' preferences (Case 3).



Source: Own work.

In the process of selecting the best candidate on the basis of the greatest correlation of two most important goals, one arrives at a higher concordance between preferences of candidates and preferences of local residents, however, when it comes to other goals there is a considerable divergence with respect to the structure of average preferences of voters presented in Chart 6 and Chart 7:

Chart 7. Divergences between preference profile of a local council and a resultant profile of voters' preferences (Case 3).



Source: Own work.

It should be emphasized that between extreme cases there is a chance of full correlation of preference structure of a council member (or candidate) with the structure of resultant preferences of voters. However, in practice these chances are really small. If voters make their selection on the basis of more than two goals, the probability of achieving full correlation of preferences is even smaller. The result of election in which choices are made according to the model described above may be simulated on an example where voters select four council members out of ten candidates. The structure of preferences of candidates and the structure of resultant preferences of voters are presented in Table 5.

Table 5. Structures of resultant preferences of voters and candidates.

	GOALS						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Structure of average preferences of voters	0,14	0,06	0,14	0,14	0,22	0,12	0,18
Candidate 1	0,03	0,12	0,13	0,14	0,16	0,17	0,24
Candidate 2	0,14	0,12	0,20	0,07	0,14	0,12	0,21
Candidate 3	0,07	0,17	0,20	0,09	0,22	0,06	0,19
Candidate 4	0,19	0,08	0,13	0,12	0,15	0,16	0,16
Candidate 5	0,19	0,12	0,10	0,12	0,21	0,10	0,16
Candidate 6	0,20	0,13	0,10	0,09	0,20	0,09	0,19
Candidate 7	0,15	0,21	0,07	0,10	0,17	0,13	0,15
Candidate 8	0,16	0,08	0,09	0,15	0,17	0,14	0,21
Candidate 9	0,13	0,16	0,13	0,13	0,20	0,12	0,14
Candidate 10	0,14	0,15	0,17	0,20	0,05	0,17	0,11

Source: Own work.

In compliance with the principle of selecting the candidate whose structure of preferences with respect to two most important goals is the closest to average preferences of voters, candidates 3, 5, 6 and 9 have the biggest chance to be elected. In the areas considered most vital for local residents the highest concordance of preferences can be observed in case of goals 5 and 7. Such concordance in case of other areas is not so significant while the ratio of preferences expressed by selected candidates and voters is not the highest. The values of correlation ratios between preference profile of respective candidates and resultant profile of preferences of local residents is shown in Table 6.

Table 6. Correlation ratios of preference structure of candidates and the resultant structure of preferences of voters.

	Correlation ratios of preference structure related to particular goals with resultant structure of preferences of voters
Candidate 1	0,376
Candidate 2	0,326
Candidate 3	0,365
Candidate 4	0,523
Candidate 5	0,467
Candidate 6	0,545
Candidate 7	0,129
Candidate 8	0,759
Candidate 9	0,386
Candidate 10	0,074

Source: Own work.

The analysis of preferences of candidates with respect to full profile of preferences with resultant profile of voters' preferences shows that the most representative are candidates 4, 5, 6 and 8. It is a different set of candidates from the set who was selected when the first criterion was applied. In both cases only candidates 5 and 6 would be selected. Thus, the divergences between preferences of candidates and citizens become visible already in the election phase. Moreover, one must bear in mind that local councils also take decisions by means of voting i.e. selection of particular groups of candidates generates yet another profile of preferences – the resultant profile of a given local council (Table 7):

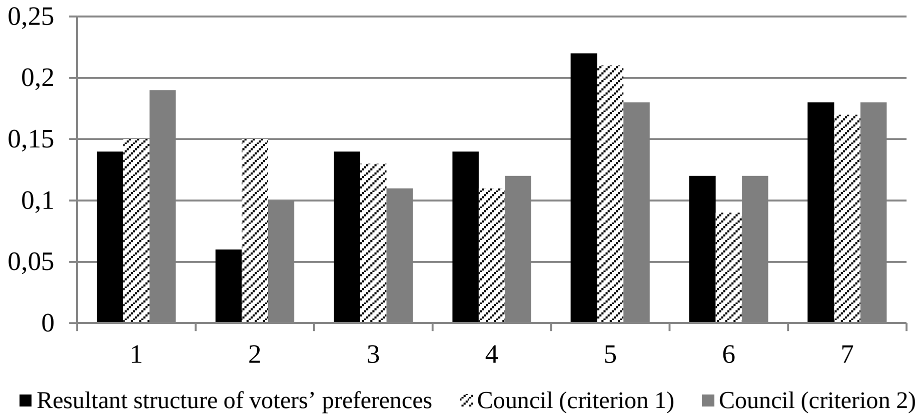
Table 7. Relation between the structure of resultant preferences of voters and the structure of resultant preferences of the council.

	Preferences with respect to particular goals							**Correlation ratio**
	1	2	3	4	5	6	7	
Resultant structure of voters' preferences	0,14	0,06	0,14	0,14	0,22	0,12	0,18	
Council (criterion 1)	0,15	0,15	0,13	0,11	0,21	0,09	0,17	**0,61**
Council (criterion 2)	0,19	0,10	0,11	0,12	0,18	0,12	0,18	**0,72**

Source: Own work.

The emergence of a new decision taking body triggered a new structure of preference resultants. The correlation ratios of these structures show that the council with higher representativeness is the council selected on the basis of the second criterion i.e. evaluation of compatibility of candidate profiles with profiles of the voters. There are, however, considerable divergences with respect to perceiving validity of realisation of particular goals. These divergences are presented in Chart 8.

Chart 8. Divergences in perception of goals.



Source: Own work.

The greatest divergence between the preference structures of voters and the council members was observed in Case 2. Also in other areas such differences are clearly visible. In an ideal situation all selected candidates have identical preference profiles with their voters' resultant profiles or the preference profiles of selected councillors are averaged to the optimum structure in which case, however, there is a threat that a commune/municipality may become indecisive (voting).

A vital fact from the point of view of the preference structure of local authorities, is that pursuant to the electoral law in force, mayors (or voyts) are elected in the direct election procedure. It means that the preferences of the voyt may be diametrically different from the resultant profile of preferences of the local council. Hence, there is a necessity to work out another consensual structure of resultant preferences which accounts for the preferences of the voyt or mayor as well as preferences of the local council.

The above analysis confirms the thesis that probability of achieving a high degree of correlation between three structures of resultant preferences (voters, council and the voyt) in real life is rather purely coincidental and does not result from functioning of democratic mechanisms. Even if majoritarian electoral system is applied, an average voter has weak chances of building his or her decision on the basis of rational premises. Therefore the choice is often determined by opinions formulated by politicians, political parties, social organizations, religious associations or other institutions conducting 'awareness raising' campaigns. An average voter becomes, in this way, a victim of manipulation by various political and social forces[89]. The electoral law relating to local elections assumes that in case of communes with population below 20,000 citizens, the election of a candidate is determined by the number of validly cast votes[90]. In case of communes with more than 20,000 residents the election is conducted according to the proportional system which assumes that all votes contribute to the final result and the seats on the council are divided proportionally to the number of votes for a given ticket. This system may cause a situation in which candidates with the highest number of votes will not sit on the council due to the fact that their ticket did not receive a required number of votes. Moreover, the electoral mechanism does not provide objectification of public and social goals. These goals are burdened with arbitrariness of politicians and political parties. It may also be the case that the preferences of voters will not be appropriately interpreted. In

[89] Owsiak S., *Finanse publiczne*… op. cit. p. 74.
[90] Journal of Laws of 1998 No 95, item 602, art. 87-88.

democratic systems it happens ever so often that programmes of victorious political parties are abandoned and forgotten right after the election[91].

Another fact deserving attention is that the ticket (programme) is nowadays just a PR and marketing tool which serves to gain affinity and support from the highest possible number of voters. The programmes are written with the so called median voter in mind and not necessarily reflect the preferences of the candidates running for local government posts[92].

The current electoral law which with respect to electing town or village mayors contains additional complications, hinder the process of achieving concordance between preferences of a local community and its representatives. There is also a threat of yet another divergence, this time between the executive and legislative sphere. Both sides have a valid mandate to rule and despite the fact that they were elected by the same group of voters, they have a different structure of preferences. Thus, a necessity arises to average the sets of preferences (of the voyt and of the council) which means that the achieved result is not representative any more for any structure preferred by a given group of decision makers: voters, council members or the voyt.

In the fragmented structure of decision makers where no party has a decisive voice, another drawback of the system is identified – the so called 'Condorcet paradox'. Let us assume that three voters can make a selection of one out of three alternatives A={x,y,z}. The first preference structure of the first voter is R_1: x y z, the second voter's is R_2: z x y, and the third's is R_3: y z x. In accordance with the majority rule, x outcompetes y with 2 to 1 vote, 'y' also outcompetes 'z' with 2 to 1 vote and 'z' outcompetes 'x' with the same advantage i.e. xPy, yPz, zPx. The P relation determined by means of the majority rule is cyclical and the relevant set of socially best alternatives is empty: against each alternative a majority coalition may be formed and demand a change in a social decision[93]. As a consequence, the election results may distort actual preferences of voters. Skilful collation of combinations of certain goals may trigger a situation in which goals preferred by the majority of voters are superseded by goals preferred by a narrow group of decision

[91] Owsiak S., *Finanse publiczne*… op. cit. p. 76.
[92] Ibidem p. 78.
[93] Haman J., *Demokracja, decyzje, wybory*, the Institute of Sociology of the University of Warsaw 'Scholar', Warszawa 2003.

makers, who are in a position to use the weaknesses of the voting system for their own advantage.

Another problem is the issue of representativeness of local authorities. The number of council members is prescribed in detail in the Act on local self-government (Table 8):

Table 8. Representativeness of local councils.

Number of residents	Number of council members	Representativeness [94]
below 20 000	15	1 333
below 50 000	21	2381
below 100 000	23	4348
below 200 000	25	8000
above 200 000	3 for every 100,000 residents	
	max 45	15 689[95]

Source: Own work based on Journal of Laws 1990 No 16 item 95, article 17.

The data in Table 8 explicitly shows that in big communes/municipalities the representativeness is much lower than in smaller communes. Therefore, there is a problem of an unequal weight of votes of residents of big and small communes. Another problem is related to representation of individuals conducting business activity in a commune different than their established residency. It goes without saying that entrepreneurs determine local development therefore their voice must be taken into account with respect to preferred directions of development. Unfortunately, elections do not provide for that.

Another vital issue is the electoral turnout. Preferences of this part of a local community who decides **not** to take part in elections to local government units must not be ignored in planning local development as excluding this particular group or acting against their will may considerably slow down the development. The research conducted for the sake of the present publication whose main objective was determination of value and scope of application of a tool based on the integrated ratio of

[94]Calculated as the number of residents represented by one councilor.
[95]The amount assigned to the municipality of Łódź with population of 706 004 residents. As at 2014. Source: Local Data Bank of Central Statistical Office.

growth in economic potential of a region[96] may activate those who were previously not interested in co-deciding about the directions of local development. An accurately designed and conducted survey may be educational for members of local communities whose local authorities dispose of real powers to determine and shape the conditions of functioning and development of these communities. On top of that, such a survey may motivate residents to get involved in the activities contributing to local development through strengthening their faith that they really have an impact on shaping directions of development in accordance with their own preferences.

The election of local authorities takes place every four years. Even if assumed that in the beginning of the term the structure of preferences of elected organs coincides with the optimum structure of residents' preferences, after the first budget period the preference structure of the latter will be changed. Spending resources on shaping respective framework conditions of development must bring results in the form of changes in perception of validity of further steps undertaken in particular areas. The change in the structure of preferences will, to a large extent, be determined by individual evaluation of successfully completed goals in a given budget period and this evaluation is a subjective measure of perception of changes. Therefore, there may be differences in the evaluation of progress in realisation of goals between the residents constituting a given social and economic area, the local council and the voyt/mayor. Thus, before the next planning period one may observe gaps in the perception of validity of undertaken activities in different areas between the groups of decision makers mentioned above. Hence, practical application of the tool recommended by the author is justified and necessary for evaluation of achieved results and coordination of decisions and activities towards adjusting them to the evolving structure of preferences of local residents.

[96]Detailed description of the ratio is presented in Chapter 3.

1.3. Audit of public expenditure on the communal/municipal level

Market mechanisms do not guarantee sufficient supply in public goods and services[97], therefore some needs must be satisfied collectively. The most urgent problem is widely understood efficiency of expenditure of public resources. Efficient system of public resources expenditure guarantees social desirability of economic activities through financial, planning and organisational solutions thanks to which only activities with social justification generate profit for individual business entities[98]. Smooth functioning of the system of supervision over public expenditure is needed to assure reliable audit of efficiency and desirability of public spending.

Pursuant to the Polish regulations in force, supervision over financial economy of communes is exercised by the Municipality/Commune Council[99] and Regional Accounting Chambers[100]. The audit begins already in the phase of planning of the local financial economy. The draft budget needs to obtain approval of the Council and the Regional Accounting Chamber with relevant territorial responsibility. The Council has the right to co-decide and control the expenditure of all resources which remain at the disposal of the local authorities. Regional Accounting Chambers have slightly narrower scope of powers in this respect. In case of own revenues and subsidies[101] local authorities enjoy wide powers with respect to selection of directions of expenditure. In accordance with the will of the legislator, supervision over public spending performed by the Regional Chambers is conducted in compliance with the criterion of legality and compatibility of documentation with the actual state[102]. Audit of expenditure of resources

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[97]Ostrom V., *Federalizm amerykański. Tworzenie społeczeństwa samorządowego*, the Polish Psychological Association, Warszawa-Olsztyn 1994, p. 165.

[98]Stacewicz J., *Jakość życia a sposób pojmowania efektywności gospodarowania* [in:] *Efektywność gospodarowania a jakość życia*, Monographs and research papers, Warsaw School of Planning and Statistics, Warszawa 1984.

[99]Journal of Laws of 1990 no 16, item 95, article 18a, point 1.

[100]Act on Regional Accounting Chambers (Journal of Laws of 1992 No 85, item 428, point 2).

[101]As of 2004 the volume of subsidies for local government units has been limited. Pursuant to the Act on local government revenue (Journal of Laws 2003, Nr 203 item 1996) as of 2004 the general subsidy is to be granted only to those communes where the ratio of fiscal revenue per one resident does not exceed 92% of the analogical ratio calculated for all communes in the country.

[102] Journal of Laws of 1992 No 85, item 428, article 5, point 1.

assigned to local government units as designated subsidies includes additional criteria[103]:

- functionality;
- reliability;
- economic efficiency.

The above mentioned criteria of supervision over public funds allocated through communal budgets seem to cover the most important aspects of public authority activities. However, the problem how to apply them in practice still remains. The criterion of legality and compatibility of plan with the actual state does not raise any objections with respect to univocity of evaluation of activities undertaken by local authorities. The activities may be compatible with law and plans or not. If the activities are inappropriately planned the criterion is practically useless. As regards spending own revenues, the right to evaluate the expenditure is assigned to the Municipality/Commune Council. The criteria of economic efficiency and functionality in practice raise some doubts due to the many possibilities of their interpretations. In the evaluation of economic efficiency it is possible to apply tools used by business entities. However, their implementation in public domain encounters a serious obstacle in correct measurement of effects brought by the activities and their expression in monetary units[104].

The criterion of functionality of the undertaken activities proves to be even more difficult because the evaluation in this matter is rather subjective. The biggest challenge of all, however, in conducting evaluation of activities according to the functionality criterion, is lack of crystallization of goals understood as a selection of the right goal and selection of the method for its achievement. This phenomenon is very common in communes where the budget is prepared by means of incremental method. E. Łojko stipulates that efficient realisation of a commune's own tasks is feasible when within areas of activity set out in the law, two conditions are met[105]:

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[103]Journal of Laws of 1992 No 85, item 428, article 5, point 2.

[104]Bożek K., *Metody planowania budżetu a efektywność wydatkowania środków publicznych w JST* [in:] *Samorząd terytorialny. Zadania, gospodarka, rozwój*, Anna Harańczyk (ed.), Chrzanów 2001.

[105] Łojko E., *Warunki życia środowisk lokalnych w samorządowym modelu ustroju terytorialnego* [in:] *Funkcje samorządu terytorialnego a lokalna jakość życia*, A. Piekara (ed.), Warsaw University, Warszawa 1995.

- local communities understand their own needs and are able to summon around common interests;
- local organs as well as individual authority members have the ability to recognise the local needs and on their basis prepare programmes for local development.

It seems that compliance with the above postulates would contribute to formulation of a detailed bundle of goals which would be shared by residents and local authorities of a commune. Formulation of specific goals will make it possible to consider, in a democratic way, which of these goals fulfill the criterion of functionality to the greatest extent and determine which path will be the best for realization of these goals.

The measure of functioning of a high efficiency organisation are consumer values. In case of a town or a city treated as an organization, the system of values of its residents creates the reference point for development management[106]. It is impossible to imagine a town/city in a democratic world managed contrary to the values represented by its residents[107]. Therefore all activities undertaken by local authorities must be reflected in the structure of validity of goals preferred by the entities functioning in a given area. The structure must be periodically reviewed and revisited and incorporated in the process of planning activities. The analysis of different methods of budget expenditure planning shows that the methods do not guarantee that the structure of preferences of entities residing in a given social and economic area will coincide with the structure of validity of goals to be achieved by the local authorities and consequently, with the current structure of budget expenditure. Neither direct nor majority electoral systems guarantee convergence of preferences of the both parties.

In order to meet the requirement of inclusion of voters' preference system in the process of managing a commune's development, it is necessary to work out a solution subordinating the public expenditure plans to preferences of the local community. At the same time, it is necessary to break down or at least reduce the already existing 'critical moments' in the form of barriers (thresholds) and disproportions in

[106]More in: Mrowiec P., Błachut M., *Koncepcja zarządzania rozwojem lokalnym na przykładzie gminy Czechowice-Dziedzice*, [in:] *Nowoczesność przemysłu i usług –nowe wyzwania,* J. Pyka (ed.), Scientific Society of Organisation and Management, Katowice 2012.
[107] Noworól A., *Instrumenty zarządzania rozwojem miasta,* Institute of Spatial Management and Housing, Kraków 1998, p. 65.

development conditions with respect to particular framework conditions, in order to create new conditions for further dynamic economic development and achieve considerable improvement in living conditions for the residents.

The quoted missions of municipalities together with theoretical deliberations assume that realisation of the development strategy of a given region, at the end of the day, must result in improvement in living standards. Therefore, the analysis of available methods of measuring the living standards and ways of their application in the process of expenditure planning seems to be fully justified. Such analysis is undertaken in Chapter 2.

CHAPTER II.
METHODS OF MEASURING THE STANDARD OF LIVING AND POSSIBILITIES TO USE THEM FOR THE COMMUNE FINANCE MANAGEMENT

The analysis of the objectives and methods of planning the commune finance conducted in the previous chapter makes it justified to consider that the main objective of the local authorities is to improve the standard of living of the communities in the area managed by the commune authorities. The above statement is proved in literature[108]. As a result, the most measurable and final effect of the actions taken by the commune authorities that impact the *development* of the given social and economic area is a positive and the greatest possible improvement of the standard of living of the local communities. Therefore, one should consider possibilities to apply the existing methods of measuring the standard of living as supporting tools for planning the commune expenditure and evaluation of the obtained effects of the undertaken measures.

2.1. The standard of living as a reflection of the social and economic development – the measurement concepts

The standard of living is variously defined, depending on an attitude towards this issue. In literature the standard of living, living standards and prosperity are considered synonymous[109]. L. Zienkowski also considers welfare as synonymous with the standard of living[110]. A. Luszniewicz distinguishes two basic types of approach towards the problem of measuring the standard of living, hence two definitions. One of the points of view is considering the standard of living as a purely economic issue; the other regards the level of the demands met as the key category. According to the first point of view, the standard of living is defined as "the amount of goods and services that each human being consumes, a notion that at least theoretically may be defined with one

[108] See: i.e. Kot J., *Zarządzanie rozwojem gmin*.. op. cit. p. 22.
[109] Bywalec Cz., *Wzrost gospodarczy a poziom życia społeczeństwa polskiego*, the Institute of Internal Market and Consumption, Warszawa 1991.
[110] Zienkowski L., *Poziom życia. Metody mierzenia i oceny*, PWE, Warszawa 1972.

figure giving the value (in a certain coin) of all the goods and services consumed within a year by all members of the society"[111].

A. Luszniewicz defines such an approach as valuable[112]. Nevertheless, it seems that equating the standard of living only with the amount of expenditure is definitely too narrow because it does not include the satisfaction of needs that result from spending those funds. Moreover, a vast majority of methods based on the valuable approach does not include the diversity of the income obtained by the individuals that constitute the analysed area.

Cz. Bywalec claims that prosperity is a source of consumer goods (consumer products) and funds at the disposal of a human being (a society)[113]. J. Drewnowski[114] defines the standard of living as meeting of needs per unit time – a result of benefitting from the goods and services, and living conditions that people enjoy at that time. It should be noted that it is the first definition in which – by including the living conditions – the possibility for the standard of living to be influenced by the public goods flow was directly included, hence a possibility for the public authorities to influence this volume.

T. Słaby in his works distinguishes two notions - the standard of living and the quality of life. The standard of living, defined as meeting the material needs, refers to hierarchically basic human needs (physiological needs). The quality of life includes all elements of human life related to existence, being someone and going through emotional states resulting from the fact of having a family and friends[115]. In terms of the problem considered in this monograph, which is the management of the commune expenditure, it should be said that meeting higher needs[116] is not public authorities' intention at any level, therefore, this definition of the quality of life will not be taken into consideration. M. Rakowski points to the necessity of including the yardsticks in the definition of the standard of living in order to measure it. Defining the

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[111] After: Strzelecka M.: *Konsumpcja a poziom, sposób i jakość życia*, IHWiU, Warszawa, 1979.

[112] Luszniewicz A., *Statystyka poziomu życia ludności*, PWE, Warszawa, 1972.

[113] Bywalec Cz., *Wzrost gospodarczy*... op. cit. p. 31.

[114] Drewnowski J., *On measuring and planning the quality of life*, Mouton, Hague _ Paris, 1974.

[115] Słaby T., *Poziom życia, jakość życia* [in:] Wiadomości Statystyczne, Volume 6, 1990.

[116] See more: Maslow A. H., *Teorie hierarchii potrzeb* [in:] *Problemy osobowości i motywacji w psychologii amerykańskiej* (ed.) J. Reykowski, PWN, Warszawa 1964.

standard of living or prosperity should be the first step, the basis for the method of shaping the conditions that determine it[117]. For L. Rendos, the most significant determinants of the development level of a society, its effectiveness and progress is the structure of needs in this society, the degree and the quality of their satiation, and the rationality in the forms of consumption[118]. A Finnish sociologist, E. Allardt[119] assumed that social prosperity includes three areas of human needs: possession *(having)* as an access to resources such as money or knowledge, feeling *(loving)* as social integration, the family, and existence *(being)* with a particular focus on self-realisation. The definition of the standard of living adopted by Z. Żekoński[120] describes it as the overall living conditions of the society, a professional group, a household or an individual, which are primarily expressed in facilities related to the process of meeting the needs. There are also other definitions of the standard of living; most of them describe it as satisfaction of human needs, hence the obtained effects.

In terms of the subject undertaken in this publication, the closest definition is the one drafted by E. Allardt who focuses on providing access to certain resources and creating possibilities (conditions) for self-realisation. The key aspect of this approach is defining the standard of living as conditions or potential possibilities created on a given area, not the extent to which the needs of individuals are met.

The authorities who administer the development of a commune should concentrate not only on the level of this development achieved in a certain period but primarily on defining the factors which determine it, and the causes of its inequality. Moreover, it seems that the conducted research cannot focus only on the measurement of the achieved results but it should rather indicate the areas which require corrective actions and event suggest solutions. What the author of this paper points out here is a distinction between the measurements of the achieved standard of living of the population (response variables) and determinants of the

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[117] See: Rakowski M., *Pojęcie wycena i analiza poziomu życia*, Ekonomista no 3, 1976.

[118]Rendos L., *Poziom życia jako odbicie współczesnych przemian społeczno – gospodarczych*, Kraków Academy of Economics, Kraków 1998

[119] After Esping – Andersen G., *Social Indicators and Welfare Monitoring,* Social Policy and Development, Programme Paper no 2, May 2000.

[120] Żekoński Z., *Z problemów metodologicznych sformułowania społeczno – bytowych celów rozwoju,* Gospodarka Planowa no 6.

achieved standard of living (explanatory variables)[121]. The solution presented in the monograph contains such a distinction[122]. Furthermore, the use of synthetic measures of the economic size only (e.g. economic growth) results in the so-called first estimation – general knowledge on the growth process. In practice synthetic measures require complementing with a more precise measuring system to provide detailed information on the whole growth process[123].

Another solution that seems to be better is disaggregativity of the living standard growth synthetic measure for particular elements that condition this growth. The effect was obtained due to disaggregativity of the presented integrated ratio[124]. This allows not only an estimation of the achieved standard of living or its growth rate but it is also possible to indicate the changes in terms of its main determinants and causes or actions that evoked those changes.

The wide-scale living standard research programmes that have been realised for a long time, initiated by international organisations, caused a justified increase of interest in this issue. The research on social prosperity came down to defining the factors and criteria of its growth[125]. As a result, the lack of tools supporting social and economic policy in a given area came to light – particularly the possibilities to estimate the changes in the given area in terms of ongoing actions.

In order to fill the gap, a range of methods that measure the living standard and the prosperity level was prepared. According to the authorities, these structures were developed to measure significant parameters related to certain social and economic areas. Depending on the geographic scope of the area of concern, there may be two objectives of such a measurement:

- in case of research in domestic economy, the measuring methods were unified intentionally due to the fact that their results were to provide a basis for domestic comparisons;

[121] A. Luszniewicz , *Statystyka poziomu…* op. cit. p. 2, see: Miles A., *Social indicators of human development*, Fraces Printer (Publishers), London 1985.
[122] See sub-section 3.2, p.67.
[123] Bywalec Cz., *Wzrost gospodarczy a poziom życia społeczeństwa polskiego*, the Institute of Internal Market and Consumption, Warszawa 1991.
[124] See sub-section 3.2, p. 67.
[125]See: Pazio W., Pazio N., *Polityka gospodarcza i dobrobyt społeczny. Wybrane zagadnienia*, Warsaw University of Technology, Warszawa 1985.

- in case of regional research, its objective was to provide policy makers with information on dynamics of the analysed parameters of the given area and, possibly, an opinion on usefulness of the planned actions. Due to the uniqueness of the particular structures of the measuring tools that results from adjustment to certain needs and the character of the analysed social and economic area, the comparisons of the particular areas are usually not possible.

It seems that currently available methods of the living standard measurement prove relatively low usefulness in terms of improving the planning of the financing structure of local-government organisations' actions for the local development. The resulting figure, arising from the structure of the methods applied so far, is the information on the level of a certain condition or conditions[126] in a given area; it is quantified, with no information on the causes of the condition, hence no suggested course of socially balanced actions[127] aimed at the improvement of these condition level. Therefore, the major problem is the effectiveness of social policy considered as a ratio of the total resources invested in the policy to the sum of the effects caused in the society, measured by the social progress[128]. It seems that there are no obstacles to include in this definition the whole area of actions undertaken by local authorities, not only social policy. Moreover, as the above-cited author claims, the social policy task is to create the conditions for economic effectiveness through reducing the poverty areas, promoting social integration, preventing social exclusion and reducing the risk of job loss[129]. However, it seems that narrowing the scope of actions aimed at achieving the effect merely to social policy is a mistake. The proper economic policy, both at the central and local level, has a definite impact on creating the conditions for this efficiency.

The achieved standard of living is the resulting figure (effect) obtained through taking certain decisions and actions. It should be noticed that in the presented methods the dominating approach is the so called "resulting approach" where the aim of the research is the

[126] Depending on the level of aggregation.

[127] I.e. actions adjusted to the local community preferences.

[128] Dziewięcka-Bokun L., *Dylematy pomiaru efektywności polityki społecznej*, w *Metody pomiaru zjawisk społecznych w skali makro i makroregionalnej* (ed.) Frąckiewicz L., i Frąckiewicz-Wronki A., Katowice Academy of Economics, Katowice 2001, p. 27.

[129] Ibidem p. 30.

measurement of the achieved standard of living. Modern approaches concentrate rather on “root causes”, hence on determinants of the obtained condition. Therefore, the basic premise of the methods used so far and the new approach towards measuring the standard of living remain the same – the measurement of the standard of living and usefulness of the actions taken to improve it. Nevertheless, the approach towards achieving the objective has been changing. Therefore, it should be analysed to what extent the available methods of measuring the standard of living could be used for planning actions to develop a certain area according to its inhabitants.

2.1 Methods of measuring the standard of living and their usefulness for the social and economic development in a given area

On the basis of the research carried out, it can be stated that the main objective of the mission of the local authorities of particular communes is ultimately creation of possibly the best living and development conditions for their inhabitants. The concept of creating increasingly better conditions for the improvement of the standard of living of the local community members is reflected in most of the community development strategies[130]. The ambition of the local authorities to create the best possible conditions for the living standard improvement of the inhabitants in the area is also substantially justified: it would be difficult to imagine that the local authorities who represent the local community set radically different main objectives. Therefore, the key to solving the problem outlined in the paper, which is defining the planning tools for the authorities actions and the related expenditure from the commune budget, is finding a method which will allows direct or indirect constructive connection between the standard of living (its increase framework conditions) and preferences of all representatives of the local community. Therefore, further research starts with an analysis of the living standard measuring methods applied so far, carried out in terms of adapting those methods for the purposes of the publication. As a result, the information obtained by means of these methods will be evaluated in

[130] See i.e. the Development Strategy of Kraków of 20 October 1999; the Development Strategy of Gliwice for the years of 2002-2022; the Development Strategy of Biała by the year of 2010, adopted on 16 June 1998; the Strategic Development Programme of Poznań; and others.

terms of information needs of development management of a given social and economic area.

2.1.1. Gross Domestic Product (GDP), *Net Economic Welfare (NEW)*[131]

The most recognised measures of the standard of living expressed in value are: gross domestic product (GDP) and gross national income (GNI) per capita. Gross domestic product is the measure of the production level caused by generating factors located in the territory of a given country, regardless of the owner. The analysis of the living standard by setting the size of demand for the final production in a given time and the amount of gross national income *per capita* have the undoubted advantage – by using the same counting method both values are fully comparable between the analysed areas.

However, it is worth noting that GDP, as a measure of the living standard, does not include all factors that influence it (e.g. some goods conditioning the achieved living standard do not have the market valuation – so they cannot be included in GDP). Moreover, as measured by GDP, it is impossible to determine to what extent goods influence the achieved living standard of inhabitants in a given region on the basis of their subjective assessment.

An attempt to create a better method of setting the living standard than GDP, which can be considered in terms of value, is *Net Economic Welfare* (NEW)[132], a measure that should also be considered *per capita*. The structure of this measure includes in the national income (NI) the elements that correct its value by[133]:

- the monetary value of own work effects (non-profit production activities) in a household as the one that forces a certain value of market services,
- the monetary value of spare time considered as an asset, being an alternative to the time spent on work,
- the nuisance assessment due to environmental pollution, including public transport in cities,

[131] In Polish literature the following term is sometimes used: *Economic Prosperity Measure (Polish: MED).*
[132] Samuelson P.A., Nordhaus W.D., *Economics*, McGraw-Hill Book Co., New York 1985.
[133] Ibidem.

- assessed and valued effects resulting from the exploitation of dwellings or accumulating durable goods

A fundamental disadvantage of value solutions considered *per capita* is that they blur disproportions between social, professional groups or regions. Furthermore, it is impossible to evaluate the extent and quality of public good (services such as health care, education or cultural services). It also seems significant that the size of GDP includes the value of anti-goods (weapon). The production value of such goods should be considered as a de-stimulant of the living standard.

Another disadvantage of such methods is the fact that on the basis of the value of GDP, NI or NEW and the methodology of counting them, it is virtually impossible to evaluate the influence of particular factors that condition the development on its level in a given area.

In conclusion, the valuable approach towards the issue of standard of living may help, to some extent, to form a view on the achieved level of social and economic development and it enables comparisons between the analysed areas, without any suggestions about correcting the achieved condition. Therefore, this approach does not serve any purpose relating to the development management of those areas.

Another concept of the living standard described in literature is the concept that extends this category by social factors. A. Luszniewicz claims that the living standard is a social category, and as such, it should be defined as the extent to which the society's material and cultural needs are met through a stream of goods and paid services and the collective consumption fund in a specific time and area[134]. Such methods are called quantitative methods. It can be stated that quantitative methods allow to obtain some supplementary information related to the results gained through valuable methods while defining the standard of living.

Valuable methods allow assessing the value of goods which conditions the achievement of a certain living standard level and quantitative methods typically should allow determination of the extent to which the society's material and cultural needs are met regardless of this value.

In order to determine the extent to which those needs are met, the group of instruments (measures) used so far was enlarged by a new category – social factors. Social factors determine the standard of living in terms of efficiency, providing information on the extent to which the

[134] Luszniewicz A., *Statystyka poziomu*… op. cit. p. 12.

needs are met, and such as, they are characterised by the following features:

- they have evaluative function,
- they are concentrated on exemplifying the extent to which the needs are met,
- they cover all human needs,
- they provide a basis for regulating the directions and pace of social changes.

All modern methods measuring the standard of living combine the valuable approach and quantitative approach, which allows obtaining a relatively complete image of functioning of the analysed social and economic areas.

2.2.2. Human Development Index (HDI)[135]

One of the oldest and most publicised methods of measuring the standard of living are: the HDI synthetic index and the so-called Geneva Method. The HDI synthetic index (Human Development Index) is promoted by a UN agency as the United Nations Development Programme. It is an index of intentionally very simple structure. It was supposed to be a counterbalance to the commonly used GDP index per capita. In a special statement made on the occasion of the publication of the tenth Human Development Report, Amartya Sen, the Nobel Prize winner in economics, writes that HDI [...] "had to be a simple index being only an incentive to gain people's interest in the substantial information included in the report".

The main objective of this index is based on four measures in three key areas:

- *Life expectancy* – a measure adopted in this area is the average (expected) length of human life,
- *Education* – there have been two measures adopted. The first is literacy of adults (the weight of $^{2}/_{3}$) and the other - the percentage of "school-aged" and studying people (the weight of $^{1}/_{3}$),
- *Living standard* – measured by the amount of GDP *per capita* according to the purchasing power parity considered as "the cost of

[135] Nowak L., *The Indicator of Social Development, Statistical Indices*, Programme Paper no 4, May 2001.

maintaining a happy life" that guarantees physical and social mobility, communication and participation in social life.

For every area there are minimum and maximum values (0 stands for the minimum value, 1 for the maximum value) to which the values obtained by the measurements are assigned. The value of the index for each area is dependent on:

$$I_{ok} = \frac{W_u - W_{\min}}{W_{\max} - W_{\min}}$$

where
$I_{ok.}$ – the index value of the key area
W_u – the value obtained by the measurement
W_{min} – the minimum index value
W_{max} – the maximum index value

After setting up the indices of the component areas they are aggregated to their synthetic form. The aggregation is conducted through determining the arithmetic mean of those three areas. The simple construction of the index is its asset due to the availability of data and easiness of its determination. Its value is also entirely comparable in all countries, which was the main objective of its structure. Such a far-reaching simplification of the structure is useful when trying to show the difference in the social development of the developed countries and e.g. the Third World countries. The main objective of the annual calculation of the HDI index and the supplementary Human Development Report is highlighting the world extremes. It seems that with such clearly defined objectives of calculating the HDI index as a measuring tool for the standard of living it functions perfectly. However, it is difficult to consider the use of the HDI index as such a tool and for comparisons between the highly developed countries and also the regions within one country.

For the same reason, the possibility of adaptation to the local expenditure management in the highly developed countries is rather small. The needs in the key areas that constitute the HDI index are usually sufficiently met in those countries. Therefore, the HDI index does not provide any indications in terms of the importance of modifying the particular conditions of functioning of social and economic entities in a given area and the changes in the structure of local budget expenditure related to this fact. Reducing the number of factors which determine the index value, does not open opportunities for conclusions on the development direction preferred by a local community, or effectiveness of budget expenditures in the particular areas of activities of local authorities. An arbitral determination of *constant* weights for the particular areas of life of the local community, reflecting their influence on the general index value, does not allow showing the preferences of the local community and their evolution over time, affected by the changes. The standard of living is a subjective category because at the same consumption level, development possibilities etc. it may obtain a different assessment in terms of preferences of various local communities.

The HDI method is useful when applied according to its purpose, which is showing the development disproportions between the Third World countries and the countries defined as highly developed. However, applying it for the development management purposes is impossible.

2.2.3. The Geneva Method

With the method of measuring the standard of living adopted by the Collegium of Socio-Economics of Warsaw School of Economics (SGH), based on the so-called Geneva Method, it was possible to establish seven primary groups (areas) of needs[136]:

- Alimentation,
- Housing,
- Health,
- Education,
- Recreation,
- Social security,
- Material development.

For each of the key areas from 3 to 4 measures were formulated to allow setting the index value of the key areas (Table 9):

[136] Luszniewicz A., *Statystyka poziomu życia ludności*, PWE, Warszawa 1972.

Table 9. The factors determining the standard of living according to the Geneva Method.

GROUP OF NEEDS	MEASURES
Alimentation	• Caloric value of food • Daily protein consumption per capita • Daily animal protein consumption per capita
Housing	• The quality of housing services (the bathroom criterion) • The number of persons per room • The ratio of the number of flats to households
Health	• Availability of health care (the criterion of the hospital bed number) • Infant mortality • Risk factor for tuberculosis
Education	• The level of compulsory schooling for children and youth • Productivity rate in training institutions • The number of students per teacher
Recreation	• Time off work on an annual basis • Turnout in theatres and at concerts per thousand inhabitants • The number of television subscribers per thousand inhabitants
Social Security	• Frequency of sudden deaths per million of inhabitants • Percentage of people covered by health insurance • Percentage of people with old age security • Frequency of accidents at work (non-fatal accidents)
Material Development	• Current income surplus • Past income surplus • Individual motorisation rate • Works mechanisation rate in a household • Non-professional international tourism rate

Source: A. Luszniewicz, *Statystyka społeczna*, Warszawa 1982, p. 40-41.

The method of measuring the comprehensive synthetic index is very similar to the HDI method. The obtained results are compared to the values established as minimum and maximum. The only difference is that this method includes two-level weight assignment to the selected parameters. The first level involves the assignment of weights to the measures and on this basis the key area indices are determined. The second level is a process of determining the “main” index. As the HDI, the index proposed by the Collegium of Socio-Economics is also determined only on the basis of objective measures, which seems to be a disadvantage of both solutions. The methods by which the indices for the key areas will be determined raise numerous doubts. For example, the application of the measures from the “Alimentation” group is difficult even in a single test, not to mention systematic tests. Moreover, there is still the problem of converting kilocalories into units that will be possible to synthesise with the results of the other areas. The number of such doubts is increasing. A common weakness of all the methods described in this chapter is the arbitral way of selecting the test parameters and assigning the weights to them. It does not seem that an analysis of the areas of various social and economic development level, without a reference to the specific conditions that those areas function in, could bring reliable results. The necessity of adjusting the values to the parameters every time with an assistance of experts eliminates such methods as universal.

Similarly to the HDI index, the selection of factors determining the standard of living disqualifies the application of the described method in the management of the regional development. The elementary disadvantage of this method is the fact that it does not include an improvement of the conditions enabling economic development, whereas such an improvement undoubtedly influences the development of a region. Furthermore, it seems that undertaking actions in the areas included in the described method would have to be connected with financing private consumption by public authorities. The role of authorities is to create the best possible framework conditions for self-development of entities operating in a given area, not incapacitate them by overprotection. Moreover, the measures in the analysed method are too detailed. To cover the whole area of local authorities operations with the research, the number of measures would have to be large, which would definitely cause an increase of the number and scale of the mistakes in the process of the index aggregation. It is also worth noting that in case of some parameters determining a given area, the commune does not have and should not have any competence to modify the conditions of the parameters in their area. There also reoccurs an objection to overriding the preferences of the entities that constitute the local social and economic system. Due to the reasons listed above, the method does not qualify for application in the regional development management.

2.2.4. The social index

The social index is yet another structure, the use of which should be considered in the context of this monograph. The social index is based only on objective measures. Its structure is based on two groups of measures – social development indices and deprivation indices.

The group of social development indices includes:

- Wealth of inhabitants – determined by commune's participation in personal income tax;
- Availability of education – as the index there was adopted the participation of secondary school graduates at the age of 19 – 20;
- Availability of health care – measured by the number of outpatient healthcare per 1000 inhabitants;
- Housing conditions – as the index there was adopted the number of completed flats per 10 000 inhabitants.
- The group of deprivation indices includes:
- Elderly people – measured by the participation of the people in post-productive age in the total population;
- Poverty – the number of people who benefit from social security per 1000 inhabitants;
- Unemployment – measured by the number of the unemployed with no benefit right in the total number of the unemployed;
- Social pathology – measured by the number of recorded crimes per 1000 inhabitants.

The adopted method of determining the living standard index is the comparison of the obtained results to the adopted minimum and maximum values. The method of determining the synthetic index is a little different than the methods presented so far. The calculated measures in the group of social development indices are marked with a "+" and the measures in the group of deprivation indices are marked with a "-". The synthetic index is calculated by summing the values of all the measures.

When analyzing all the presented methods of measuring the standard of living, it can be noted that all of them concentrate on the measurement of the current condition. It seems that modern methods of measuring the features of a tool allowing a determination of the actual condition and the factors that influence the level of this condition. All the classifications or rankings of the areas in terms of their attractiveness are not useful for the development management if they are not supplemented by an analysis of the factors that determine their attractiveness. For this reason, the structural concept of all modern methods of analysing the social and economic areas should include such a combination of measures and social indices that will provide the basis for conclusions in terms of the management of these areas. One should consider the areas that are a potential opportunity and the development of which will be an element of building up the competitive advantage of a given area over others. It is also necessary to mark the so-called deprivation areas which may pose a potential risk. Moreover, in case of both deprivation areas and areas with a development potential, the function of a tool measuring the level of the social and economic development is providing information on the factors that determine the existing level. It is obvious that in case of risk, affecting the cause is more effective than mitigation of the effects. The confirmation of this theory is the fundamental change in the strategy of development of the lagging regions.

The structure of the index is similar to both methods presented earlier, therefore, it is characterized by the same features which disqualify the index as a tool supporting the management of the commune development. The disregard of determinants of economic development, the lack of reflection upon the residents' structure of preferences and as a result, the lack of possibilities to determine the relevance of the undertaken actions in particular areas, the lack of possibility to determine the effectiveness of the expenditure incurred – these are the most significant disadvantages which make any considerations on adopting this method in order to support the development management of communes invalid.

2.2.5. The NLLS Method

Another method that should be put to the test was developed by the Nordic Level of Living Studies (NLLS) [137]. It involves the measurement of indices in nine research areas:

[137] Source: G. Esping – Andersen, *Social Indicators and Welfare Monitoring*, Social Policy and Development, Programme Paper no 2, May 2000.

- **Income and equivalent resources;** the index measures: the average income of individuals and households, savings, assets, sources of income, information on sudden interruptions in the income stream – their frequency and duration, indebtedness;
- **Health;** the index measures: the frequency of headaches, backache, blood circulation problems, hospitalisation, sick days, motor skills, regular work and functioning, mental stress, exhaustion, need for care;
- **Education;** the index measures: the average level of education, participation in education of adults, information on the use of human capital, trainings;
- **Housing;** the index measures: the housing conditions (sewage, heating), assistance of neighbours, distance to work and shopping centres, physical isolation;
- **Family, social integration and network;** the index measures: the characteristics of the family members, friendships and contacts with people, frequency and regularity of the contacts, ability to use the network in everyday life, information on the influence of the network on achieving goals (e.g. getting a job), information on the access to childcare and eldercare facilities;
- **Leisure and pleasure;** the index measures: the time spent on pleasure, information on activities frequency (TV, reading, hobby, etc.);
- **Work;** the index measures: the level of employment, physical and mental involvement in work, opportunities for a promotion, non-salary benefits, independence, decision making, routine level, use of skills, supervision hierarchy, contacts and cooperation with work colleagues and supervisors;
- **Political resources;** the index measures**:** participation in public life, membership in organisations and social activity, political skills (e.g. the ability to write a protest letter to the Ombudsman), frequency of discussions and reading about politics, participation in voting;
- **Dangers;** the index measures**:** experience of violence, thefts, assaults, accidents.

A weakness of this method is an attempt to describe a phenomenon of meeting the needs. In case of adapting the discussed solution as a management tool for the commune development, an attempt to evaluate meeting the needs defined as higher needs, misses the point for at least two reasons:

- diversity of needs in the psychological area is so wide that meeting them by public expenditure is impossible,
- this is not the objective of social and economic policy.

Moreover, this method follows the mistake of authoritarian selection of parameters and assignment of weights. The value is updated every time before starting an analysis in a subsequent period. Nevertheless, it does not exhaust the universality postulate and automatching of the index with the character of an examined commune. An important feature of this method is the fact that to some extent it reflects the postulates presented by E. Allardt that is concentration on the diagnosis, ability or availability of some resources, the use of which provides the individuals with the fundament for development.

2.2.6. The social diagnosis

The social diagnosis is an annual panel analysis of the living standard conducted by J. Czapiński. It is based on the statistical research on a group of 4000 households. The social indices included in the research may be divided into three general classes[138]:

- Demographic and social structure of households,
- Living standard in households related to their material condition, access to medical benefits, culture and recreation, education and modern communication technologies,
- Life quality, lifestyle and citizens.

The indices defining the demographic and social structure of households are not a separate subject of the analysis in this report; their objective is stratification of the groups of households and the population to enable a comparison of the conditions and quality of living for particular social categories.

In this project the division of social indices into the standard of living and the life quality is roughly equivalent to the division into an objective description of the life situation (conditions) and its psychological significance expressed with a subjective opinion of

[138] *Diagnoza społeczna 2005. Warunki i jakość życia Polaków* (ed.) Czapiński J., Panek, the Council of Social Monitoring, Warszawa 2013, p. 13-15.

a respondent (life quality). The measurement of the living standard of a household includes:

income situation of a household and the income management,
- alimentation,
- material situation of a household, including modern communication technology (mobile phone, computer, Internet),
- housing conditions,
- social assistance that a household benefits from,
- education of children,
- participation in culture and recreation,
- use of health care system,
- situation of a household on the labour market,
- pension insurance and cover,
- poverty, unemployment, disability and other aspects of social exclusion.

The indices of life quality and lifestyle of individual respondents include:

- general mental well-being (including: the will to live, feeling of happiness, life satisfaction, depression symptoms),
- satisfaction of particular areas and aspects of life,
- subjective opinion on the material situation in life,
- various kinds of life stress (including: administrative stress ("Kafkaesque") related to contacts with public administration, stress associated with health condition, parenting stress, financial stress, stress associated with work, ecological stress, marital stress, problems associated with taking care of elderly people, stressful random events such as assaults, burglaries, arrest),
- somatic symptoms (distress measure),
- strategy of dealing with stress,
- assessment of contacts with health care system,
- personal finance (including: personal income, pension insurance and cover),
- value system, risk tendency, lifestyle and individual behaviour and habits (e.g. smoking, alcohol abuse, using drugs, religious practice),
- social attitudes and behaviour, including social capital,
- social support,

- general assessment of the transformation process and its influence on the lives of respondents,
- use of modern communication technologies (computer, Internet, mobile phone).

The social diagnosis is a project that covers a wide scope of factors associated with the quality of life. When analyzing the method in terms of possibilities to adapt it to the requirements of commune finance management support, it should be noted that the research covers many life areas for which the commune authorities have a great potential to shape. As key areas were also designated areas which cannot be modeled by the local authorities with respect to conditions for functioning of the particular local community representatives by providing public goods. Moreover, the information resulting from the detailed factors determining the level of meeting the needs in an analysed area does not seem to be useful as information supporting the process of the commune finance management. For example, one of the detailed factors designated in the area named "Housing Conditions" is housing autonomy of households. The announced information that almost 3.4 % of the analysed households was not autonomous in February 2005[139], without additional parameters[140] determining the needs in this regard, is only datum, practically useless for the process of planning expenditure in a commune. It is possible that a situation when households inhabiting a common property consider it satisfying, therefore, they do not feel the need for obtaining a property on their own. Such interpretation of datum diametrically changes already its value as information in terms of management. The lack of reference to the level of needs satisfaction or the preference for taking up actions in the particular areas disenables the processing of the obtained data into information useful for the management process. Another exemplary factor is household equipment e.g. washing machine, fridge, microwave oven etc. All mentioned goods in terms of this factor are private goods. Public authorities cannot and should not interfere with the households property in this regard. These goods are not public goods and only such should be provided by the public authorities at all levels. In terms of private goods, the public authorities should create possibilities for the entities in a given area to

[139] Panek T., *Warunki mieszkaniowe,* [in:] *Diagnoza społeczna*…op. cit. p.63.

[140] The proposed factor is the lowest level factor, therefore, there are no additional parameters taken into consideration that allow to interpret the obtained datum.

progress to such extent so that needs satisfaction could be improved in an individualized way.

The research method of interpreting the obtained data does not include the aggregation of data. Every piece of the data is converted into information on the basis of its interpretation by the researcher, determined by the researcher's knowledge and experience. In such a case prioritising of the objectives or actions taken in the particular areas[141] is impossible. It also results in serious problems with the application of the method to support the effectiveness evaluation of public spending.

In conclusion, it should be stated that the conducted wide-scale research provides a lot of information and allow to explain numerous phenomena form the past. However, the character of most of the data obtained by means of the research and the way of its processing means that the conclusions can be used more extensively in sociology rather than in management.

2.2.7. Regional (local) research

As a result of the administrative reform of the country, communes became the most significant, in terms of both the scope of the management area and the amount of funds left at their disposal. Therefore, the commune authorities have the greatest possibility to create the regional (local) policy and due to a definitely smaller distance between the voters and the local authority than the central authority, they are strongly motivated to undertake as effective actions as possible. It seems to be the main reason for which the commune authorities most frequently use the local public opinion survey on the functioning of the local authorities and on preferred directions of activities[142]. Among the methods used in communes two dimensions of the research areas can be distinguished. The first is the standard of living of inhabitants without considering their belonging to a given commune while the other is strongly connected with the functioning of inhabitants in a given territorial unit. In the subsequent sub-sections the author provides examples of analysis of the living standard of residents conducted by local authorities.

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[141] Due to the lack of formalised criterion of the factors aggregation.

[142] Dąbrowski Z., Pużanowska U., *Zintegrowane bazy danych jako źródło informacji statystycznych o regionie*, [in:] Statystyka regionalna: sondaż i integracja baz danych, Internetowa Oficyna Wydawnicza, Poznań 1997.

[143] CBJŻ is an organisational unit of the Municipal Office in Poznań.

An example of research which takes into account both dimensions can be a study conducted by the Quality Life Research Centre (CBJŻ) in Poznań[143]. On the basis of the desk research, quality and quantity research conducted among residents and consultation with experts, the following areas of life were extracted:

- life situation of a respondent and his/her family;
- accommodation, neighbourhood;
- health and health care centres;
- feeling of security and violence risk;
- work and income;
- education and educational institutions;
- leisure and pleasure, entertainment, culture;
- information and involvement level of inhabitants;
- city – identity and urban space;
- social security and poverty areas;
- natural environment, the condition and resources;
- demographic characteristic of the population.

In every area mentioned above two main characteristics were selected and within them – proper indices and their formal construction[144]. The value of the social indices adopted in the method is between 1 and 5. The values of these two indices are converted into two integrated forms. The first way of integration is establishing the average percentage of positive answers[145] (satisfied respondents) and the percentage of negative answers, and then setting the difference between them. The second model of integration is establishing the arithmetic mean of all the results of the social indices between 1 and 5. Additionally, the answers are considered in terms of sex, age, residential area, education and income. The information obtained on the basis of the social indices are supplemented by the data collected by the measures.

2.2.7.2 The research of the Municipal Office in Gliwice

The model of research applied in Gliwice involves only an analysis of the parameters strictly connected with the living conditions in the city and the city management. The level of the satisfaction of the inhabitants

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[144] See the annex.
[145] A positive answer is marked with 4 or 5 in the 5-degree scale.

and the directions of development preferred by them, are determined on the basis of the following parameters:

- Identification of residents with the city evaluated on the basis of:
  - force of the relationship between the residents and the city,
  - declared will to continue to live in Gliwice,
  - preferred directions of migration from the city,
  - identification of the name of the inhabited district,
  - period of residence in Gliwice.
- Satisfaction with housing conditions in the city districts evaluated on the basis of:
  - distinguished positively assessed aspects of life in the districts,
  - distinguished negatively assessed aspects of life in the districts,
  - comparison of the living conditions in relation to the previous research,
  - level of satisfaction with life in a district (comparison of the districts),
  - inconvenience of living in a given district,
  - assessment of the municipal services operation,
  - distinguished priority tasks for the municipal authorities in a district,
  - perception of changes in the living conditions including:
  - ability to do shopping every day,
  - quality of street lighting,
  - frequency of refuse collection, unloading dustbins and cleaning the dustbins area,
  - esthetics of the city's development
  - quality of signposting,
  - availability of service outlets,
  - communication network density and its functioning,
  - access to health care service,
  - street cleanliness maintenance,
  - quality of services provided by health care centres,
  - density of dustbins,
  - condition of pavements surface,
  - ability to use libraries and educate youth and adults,
  - education level in schools,
  - access to leisure facilities for the inhabitants,

- possibility of doing sports and recreation,
- condition of road surface,
- quality of road maintenance in winter,
- development of playgrounds for youth and children,
- feeling of security,
- demand for wastewater treatment station,
- general negative changes of functioning in the city,
- feeling of security in the city and particular districts,
- assessment of the effectiveness of the Municipal Guard and the Police,
- assessment of the effectiveness of the public services,
- perceived level of influence on the municipal affairs,
- perceived level of influence on district affairs,
- channels of contacts with the Community Council,
- assessment of effectiveness of the Community Councils.

• Assessment of the availability and quality improvement of the services provided by medical clinics based on:

- frequency of using medical clinics after 01.01.2001,
- perception of changes in functioning of medical clinics,
- assessment of medical clinics in Gliwice against the background of health care system in Poland.

• Assessment of the municipal authorities operation perceived through:

- improving the attractiveness of the region for tourists,
- increasing competitiveness of the local economy,
- attracting investors,
- improving needs satisfaction,
- demand for financial involvement of the city into creating new workplaces.

• Satisfaction with the functioning of the Municipal Office determined by:

- defining strong points of the Municipal Office operation,
- defining weak points of the Municipal Office operation,
- necessity to change the type of service in the Municipal Office,
- conditions that were improved in terms of the service in the Municipal Office,

- conditions that deteriorated in terms of the service in the Municipal Office,
- assessment of the level of service in other similar institutions,
- assessment of the Municipal Office operation in Gliwice against the background of other similar institutions,
- frequency of using the Municipal Office after 01.01.2001,
- manner of dealing with an issue.

* Availability and quality of the source of information on municipal affairs evaluated by:
  - access to computers and the Internet,
  - forms of access to computers and the Internet,
  - visual accessibility of the online information service of the City of Gliwice,
  - knowledge of the web address of the online information service of the City of Gliwice.
* Development prospects, strong and weak points of Gliwice in terms of:
  - preferred foundations for the city development,
  - perceived limitations of the city development,
  - affairs considered the most significant for the development of Gliwice.
* Support for the investment priorities measured by:
  - compliance in terms of the hierarchy of investments perceived by inhabitants as key investments together with those conducted in a commune,
  - level of support for the bypass construction,
  - declaration of acceptance of the reverse charge system in favour of the city development.
* Assessment of the cultural and recreational offer for the inhabitants of the city considered as:
  - availability of various forms of recreation preferred by the residents,
  - level of participation in plays by the Music Theatre in Gliwice,
  - preferences in terms of the cultural offer of the Music Theatre in Gliwice,

- assessment of the quality of the sport and recreation facilities in Gliwice.

It seems that the selection of indices corresponds much better with the objective of the research related to the City of Gliwice than CBJŻ in Poznań where the result of the research was a huge amount of chaotic information. The unfortunate selection of the indices and measure has a significant influence e.g. “victims of suicides” which is also a descriptor of “health care infrastructure”. A long list of such examples could go on. Despite being based mostly on social indices[146], the research in Gliwice seems to be systematised and clearly focused on concrete answers in terms of functioning of the city. Moreover, in the research for the first time it was attempted to assess the activities of the commune authorities in various areas, a relative change of their condition. However, the research covers a five-year analysis on the basis of which one can only determine an average efficiency of expenditure. More detailed analyses based on such data are impossible. Nevertheless, the model of this research follows the mistakes of such index methods previously described. Additionally, any actions were taken towards focusing on aggregating the value of the ratio which resulted in the loss of ability to determine the preference structure of the entities functioning in the commune. The questions about the commune development were open-end questions. It seems to be wrong. Unfortunately, the knowledge on the competence of communes in terms of shaping key framework conditions of development is rather small. Moreover, an open-end question creates a possibility to present concrete necessary actions, according to the preference of a given respondent, in order to improve his/her development conditions. This puts in doubt the existence of the authorities and administrative system. As it was mentioned earlier, there was an attempt to determine the magnitude of the effects obtained by expenditure related to the particular areas, as a source of information for the management purposes. The parameters distinguished in the research do not define totally the abilities of the commune in terms of creating operating conditions that would support its development. Furthermore, some parameters were formulated in such a way that an average respondent – resident may have found them difficult to assess (e.g. the basis of the city development). The result is, as it was noted earlier, the loss of ability to determine the complete view of preferences of voters

[146] Gauges may only be useful in the profile of a research sample.

which means a proper structure of the priority of the actions taken in the particular areas.

To summarise this chapter, it should be stated that the methods measuring the living standard of residents presented in literature and used in practice do not meet the requirements of adapting them as tools supporting the commune finance management. In terms of the objective of this monograph, the critical factors disqualifying the methods presented above are:

- The failure to recognise the complete range of abilities of communes in terms of shaping the factors that determine the framework of their development.
- The lack of possibilities to determine the resulting structure of preferences of entities operating in a given commune – this feature is partly the effect of the failure to recognise all areas of activities of local authorities – in this case it is impossible to determine actual relations in terms of the priority of particular objectives.
- The lack of reference of the results obtained in particular areas to the level of satisfying the needs in those areas reported by residents and entrepreneurs – it may result in incorrect interpretation of the obtained data and, in consequence, taking wrong decisions in the area of the commune development management.
- The lack of disaggregativity of the research results obtained through the discussed methods to the cluster of objectives being part of the decision powers of the commune. Therefore, there is no practically formalized criterion of transformation of the obtained data into the structure of current expenditure in the following year.
- The lack of an attempt to measure the effects obtained in the previous period in relations to the expenditure incurred – the key element of the analysis, both in case of considering the application of the method to support the planning of the commune development and to assess the effectiveness of public expenditure.

Considerations on applicability of the methods measuring the standard of living in order to manage the development of the commune, allow to conclude that it is possible only by a method which is based on the complete profile of preferences[147] of the entities operating in the

[147] The complete profile has to be based on a complete range of competence areas of the commune in terms of shaping the framework conditions of development.

commune will allow to determine the expenditure structure and, as a result, it will indicate the direction to obtain the balanced preference structure in terms of implementation of the particular objectives. The planning of expenditure structure cannot prescind from their efficiency obtained in the previous period. A failure to recognize this element will lead to an incorrect assessment of the influence of those expenditures on the preference structure of the entities operating within the commune. The problem of identifying an appropriate tool is considered in Chapter 3.

The ratio (IRGEP) presented in the following part of the publication is not a tool measuring the standard of living but it indicates what should be changed in order to create better conditions to improve this standard. Therefore, it does not reflect the way people live but **how beneficial are the directions of the evolution of the framework development conditions in terms of development preferences and possibilities of the local community.** In other words, it can be said that the ratio shows how much better or worse the people in a given area could live if they totally used the possibilities that they became aware of as the result of evolving framework conditions of development in a given area. Moreover, there are indications on how to improve those conditions. The structure of the IRGEP ratio is similar to some structural features of the methods measuring the standard of living. It can be stated that it is the effect of their evolution, another better supporting tool[148]. On one hand the measure in terms of social needs, on the other – the efficiency of undertaken actions.

[148] In contrast to the methods measuring the standard of living, calling the presented index a tool supporting the management is totally justified.

CHAPTER III
THE CONSTRUCTION OF INTEGRATED RATIO OF GROWTH IN ECONOMIC POTENTIAL OF A SOCIO-ECONOMIC AREA (IRGEP)

3.1. Basic determinants of construction of an instrument supporting development management

The role of local self-governments is to shape the elements of economic, social and natural environment in order to successfully satisfy the individual and collective needs of residents and to create conditions for versatile development[149]. It should be highlighted that local development is a process of preferred and desired changes in a delimited sub-region i.e. in a local socio-territorial system characterized by special features of space, economy and culture as well as local preference of needs and hierarchy of values[150]. The changes ought to be shaped through limiting the possibilities of acting in certain areas of development and by creating and encouraging activities in other areas. Such sequence of enhancing and obstructing is perceived in the present monograph as the process of shaping *general* anthropogenic *conditions*[151], determining development of a given area. These framework conditions have the nature of public goods and they must be accepted by members of the local community. The pre-requisite for stable development of a local government unit is acceptance and approval from local residents with respect to activities undertaken by

[149] Domański T., *Strategiczne planowanie rozwoju gospodarczego gminy*, the Agency of Communal Development, Łódź 1999.
[150] *Zarządzanie rozwojem lokalnym. Studium przypadków*, R. Brol (ed.), Wrocław 1998, p. 9.
[151] General conditions of development here mean all features of a given area moderating this development. They might be both the product of natural processes (e.g. topography, landscape, accessibility to natural resources) and the product of human activities (e.g. road infrastructure, character of fiscal commitment, accessibility of education facilities, public assistance etc.). The general conditions of development of anthropogenic origin concern all units active in a given area and have characteristics of public goods in a wide scope. That is why, their shaping should be the domain of self-government units' activities of this level on which the knowledge of the developmental needs of a given area is the best.

local authorities[152]: local economic programmes (strategies) should be the effect of autonomic decisions taken by the authorities after being discussed with and approved by local communities[153]. This requirement can be met only when the development concept preferred by the authorities is in accordance with the averaged preference profile of entities of this community. There is no successful and effective accomplishment of developmental aims in separation from residents' preferences, even when objectively the aims are formulated properly and with benefits for the commune. The dialogue with members of a local community is very important, they must be informed about the competencies of local authorities and activities that are performed by them.

The method proposed by the author based on the integrated ratio of growth in economic potential of a region (IRGEP) will assist local authorities in evaluation of efficiency and expenditure planning processes as it is ready to perform both functions in a natural way by means of data collection. As the result of conducting a questionnaire, the information about the competencies (defined as general conditions of development) is disseminated among the residents, and in the years to follow the interest in the changes of framework conditions allowing to evaluate the structure of importance and dynamics of changes in every new period within the scope of individual framework conditions will be so to say "forced" on the residents. It must be stressed that the information flow is two-way, which makes the social dialogue more effective. The situation could be deemed ideal when the aspirations of a local community with respect to their developmental needs are fully satisfied by local authorities. It should be remembered that the strength of a local system lies in direct delegation of proper competencies to the level of local authorities to enable realization of articulated needs of the local community[154].

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[152] Szaja M., *Wspólnoty lokalne w rozwoju gminnych jednostek samorządowych*, Scientific Journal of Wrocław School of Banking No 29/2012.

[153] Frąckiewicz L., *Ubóstwo jako kwestia społeczna*, Praca i Zabezpieczenie Społeczne 1989, No 9, p. 13; after: Pająk K., *Samorząd terytorialny i jego wewnętrzna transformacja*, Publisher by Adam Marszałek, Toruń 2007, p. 82. See: Kowalczyk L., 2004, *Zarządzanie miastem* [in:] *Ekonomika i zarządzanie miastem*, R. Brol (ed.), Oskar Lange Academy of Economics, Wrocław, p. 168; Wojciechowski E., *Zarządzanie w samorządzie terytorialnym*, Difin, Warszawa 2003, p. 137.

[154] Potoczek H., *Programowanie rozwoju lokalnego i regionalnego jako zadanie samorządu terytorialnego* [in:] *Stymulowanie rozwoju lokalnego – perspektywa społeczna i organizacyjna*, Patrzałek A. (ed.), Toruń 2001, p. 11.

Therefore, the optimum situation is when the structure (resulting from general framework conditions) of satisfaction of needs for development clearly articulated by the entities residing in a given area, is in line with the structure of their preference. Then it might be recognized that the level of satisfaction of developmental needs is fully sustainable. If it is assumed that framework conditions that determine development define a certain developmental space, it might be said that points whose coordinates reflect such level of need satisfaction in every next period create optimal undisclosed[155] *trajectory of development*, characterized by full balance of the structure of preference of entities active in the area.

In light of the results of the analysis conducted earlier, it should be emphasized that the consistency of preferences of voters i.e. representatives of a local community with the directions preferred by representatives elected to local self-government authorities might be only coincidental[156]. It should then be assumed that the importance of a large proportion of preferences of the residents is to some extent overlooked by the authorities of the commune; also there might be a considerable difference between preferences of the residents and preferences of the local authorities. As a consequence, certain amounts of money may be spent in directions not necessarily preferred by the residents[157]. Nevertheless, the residents are usually not fully aware of the actions undertaken by their local authorities. That is why a modern and effective instrument for development planning must ensure authentically social nature of planning what in practical terms means "planning with the people" instead of "planning for the people"[158].

Therefore, to assure applicability of the method based on the system of ratios in supporting commune development management and

[155]Undisclosed here means that in a given situation there is no necessity of direct determination of the optimal trajectory, it is enough to know the criteria of evaluation of how close the development to the trajectory is, in a proposed solution the appropriate level of importance of „ai" factor has the role of such a criterion. Check also pp. 98-102.

[156]See sub-section 1.3, p. 42.

[157] Ostrom V., *The meaning of American Federalism. Community organization*… op. cit. p. 172.

[158] Wojtasiewicz L., *Planowanie rozwoju lokalnego*… op. cit. p. 38.

facilitating evaluation of efficiency of the pursued socio-economic policy it must be characterized by the following features[159]:

- it should be possible to disaggregate the global criterion into levels of administration and into branches[160] where credibility of the results obtained should not depend on the level of disaggregation,
- partial and quantitative ratios of effectiveness should be coherent i.e. it should be possible to bring them down to a "common denominator". It would then be possible to conduct a comparative analysis regardless of characteristics of the economic activity[161],
- the proposed method should be characterized by a complex approach i.e. such description of the evaluated aspects of functioning of the object under examination must be provided to assure consideration of all factors affecting its realization.

An aspect of the ratio which is very significant from the perspective of management of communal development is update of its parameters in time. It is obvious that if as a result of undertaken activities the intended aims are achieved, in the next period, more attention should be paid to those areas whose significance will be perceived as relatively higher and to areas where it will be possible to improve in an economically effective way general conditions which constitute the base for realization of development. Therefore, the efficiency of activities undertaken to accomplish a given effect is equally important as the accomplished effects.

Another assumption to be considered is equipping the tool proposed by the author with universality of its application. There is no justification for a study in which areas with different diversities are examined, e.g. urban and rural, using the very same set of volumes and weights assigned to them. This approach is a common weakness of all the methods presented so far. Unevenness of the level of development of various local areas means that some communities have to take actions to make up for the civilization gap. Therefore, the scope of social needs and,

[159] Ostoj J., *Teoretyczne podstawy tworzenia kryterium efektywności gospodarowania* [in:] *Wybrane problemy teorii i praktyki efektywności gospodarowania*, Scripts of the Silesian University No 402, Katowice 1982.

[160]In case of local self-government units, the levels are the management levels, whereas branches would be divisions or other units of administrative structure.

[161] It is therefore possible to compare e.g. industrial communes with typically touristic communes.

consequently, the tasks for local authorities should be focused on providing a minimum of a decent existence for the residents of a given commune[162]. However, in communes which are characterized by a much higher level of development, more efforts should be directed towards satisfaction of more sophisticated needs. Therefore, the proposed instrument must automatically adjust the values of certain parameters to the specifics of particular areas where it is used.

The implementation assumptions of the new tool should include the postulate of *sustainable level of satisfaction of developmental needs* in particular areas represented by suitable parameters of the proposed ratio. The characteristic feature of actions which shape the optimum *general* conditions of a particular area cannot be intensifying actions in domains where the high level of development is already reached at the cost of domains where the level of development is not satisfactory as this will result in deepening of the developmental gap in these areas. Therefore, the management of a particular socio-economic area must be characterized by efficient striving towards achievement of the optimum state of the local system i.e. in which purposefulness of all directions of allocated resources creating framework conditions for development is identical[163].

The methods of measuring the living standards reflecting the level of development of a particular area presented in Chapter 2 do not meet the above postulates, therefore, application of research results in practical management of a commune seems to be insignificant. The results are most commonly used as instruments for creating all kinds of ratings of countries, regions or other territorial units. The winners of that ratings gain additional prestige while the losers are usually not able to draw conclusions. The effect of sui generis "*benchmarking*" i.e. learning from the best is not observed here. What is more, such research points only to the final results and the value of the results cannot be fully interpreted in accordance with the process(es) or conditions which triggered these results. Neither the results may be interpreted with respect to the areas of needs reported by community. The absence of links mentioned above leads to a situation in which currently used methods of evaluating the living standards do not reflect the real situation of a local community.

[162] Kida J., *Samorząd terytorialny a zaspokajanie potrzeb społecznych i rozwój* [in:] *Funkcje samorządu terytorialnego a lokalna jakość życia,* A. Pieczara (ed.), Warsaw University, Warszawa 1995.
[163]Compare: Pazio W., Pazio M., *Polityka gospodarcza*… op. cit. p. 111.

That is why the examination of territorial units by means of *the same, standardized* set of indicators and measures (not to mention the fact that standardization does not always go hand in hand with content-related justification of the indicator construction) does not provide enough information required to achieve an improvement in the structure of expenditure of a commune. Attempts at evaluation based on the set of the same standardized measures, of a fixed research area in time also seem to be unjustified due to changeability of conditions of the environment where the examined objects function and because of changes in the preference hierarchy of the objects themselves.

In conditions of tight control of the directions of expenditure which is meant to measure economic efficiency of self-governmental units and other national agencies, financing of relatively expensive research must have strong justification. Therefore, the main objective behind application of the proposed instrument should be and must be support of planning activities by means of supplying information necessary in the process of creation of the general conditions for development also in the area of social policy[164]. The second application of IRGEP planning tool is the evaluation of effectiveness of relevant actions undertaken in previous periods.

In the analysis and evaluation of social processes and effectiveness of realization of the assumed social goals the most commonly used tool are the so called Social Indicators. In a research conducted under the auspices of the UN the basic criteria of quality of social indicators were formulated. It is deemed that each and every indicator of social nature should[165]:

- be available for the entire country,
- permit disaggregation by respective regions or by population groups[166],
- be reliable enough to be used as time series.

Among contemporary methods of building systems measuring the level of social development one may distinguish two approaches. In the

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[164] Kordos J., *Metodologia i wykorzystanie wskaźników społecznych* [in:] *Jakość życia i warunki bytu*, the Library of Statistical Data, Volume 40, Warszawa 1991.

[165] *Handbook on Social Indicators*, United Nation Statistical Office, Studies and Methods, Series F, No 49, New York 1989.

[166] Considering the indicator as an instrument for management, one must pay attention to the possibility of its disaggregation to the group needs.

first one the starting point is to forecast the so called *social risks*[167]. This approach assumes that social policy is forced by certain imperfections of the market. It presumes that most people, most of the time will be able to derive adequate benefits provided by the market to the extent sufficient enough to satisfy their needs. However in some situations which are relatively easy to predict the market may fail e.g. reduced productivity, disability caused by old age, unemployment, illnesses etc. It implicitly leads to a passive definition of social policy: solving a social problem by means of social welfare system[168]. The reality shows that such form of social aid fulfills its role only in a short-term perspective. In case of massive, long-term inability to earn money, application of passive social policy freezes the system instead of giving it an impulse to change.

An alternative approach promotes a view based on resources (possibilities) for creation of potential wealth and on future needs (*the resources and needs approach*). Theoretical foundations underlying this approach is A. Sen's[169] definition of poverty seen as the absence of capabilities for realization of life goals. This approach focuses mainly on the resources[170], which a person may mobilize in each and every situation. In opposition to the *"social risk"* approach where more important than precise forecasts of possible future situations more effective seems to be provision of such conditions that will facilitate the growth of objects by means of their own initiative. This concept suits better the idea of endogenous growth, which emphasizes self-satisfaction of social needs by empowerment namely creativity and activity of a human being[171].

For the purposes of supporting management of commune development understood as creating *possibly* optimum potential opportunities (framework conditions) of using the potential available in its territory, it seems appropriate to build a system of indicators based on the concept of the second approach discussed above because this approach is based on sources of creating potential wealth. The application of this approach will help specify general *framework* conditions determining the areas of activity of the objects functioning in given area.

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[167] Esping-Andersen G., *Social indicators and welfare monitoring*…op cit. p. 9.
[168] Esping-Andersen G., *Social indicators and welfare monitoring*…op cit. p. 12.
[169] Sen A., *Ineuality reexamined,* Clarendon Press, Oxford 1992.
[170]Resources are mostly public goods.
[171] Kida J., *Samorząd terytorialny a zaspokojenie potrzeb*… op. cit. , p. 71.

For this purpose, one may attempt to apply the concept of pentagon proposed by Nohlen and Nuscheler[172], whose 5 tops define the conditions of activity of entities in a given area:

- growth,
- work,
- equality/justice,
- participation,
- independence/self-reliance.

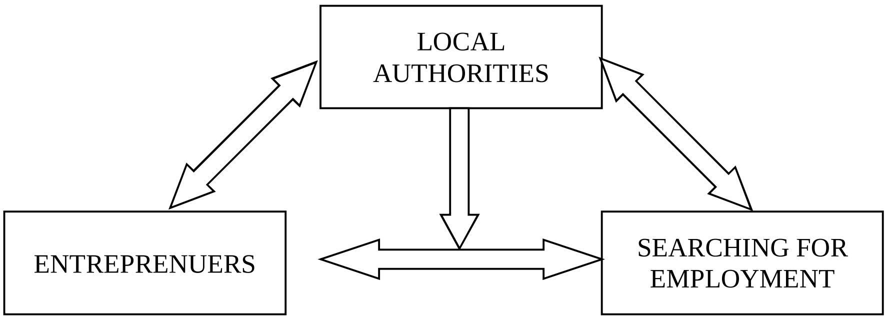
Growth as an economic indicator does not cause any significant measuring problems. The right questions to be posed here would be the question about determinants of economic growth in a given commune and especially those determinants that can be easily influenced by the local authorities. It seems that special attention should be paid to the possibilities of local authorities to create infrastructural conditions. The success of local economies heavily depends on the access to road infrastructure which opens distribution channels for goods and services. The development of telecommunication and IT networks is of equal importance. Another vital aspect of facilitating economic growth is the attitude of local authorities towards entrepreneurs. This attitude should manifest itself in openness to the needs of entities actively acting in the commune and support, within financial and legal possibilities, for local initiatives defined by a widely understood social interest.

The second top of the pentagon – work - is understood as the activity of people employed in the manufacturing process, subject to work division and organized. Although it is not untrue, it leaves out a large part of the population working in developing countries as the so called *self-employed poor*, both in rural and urban regions[173]. It is therefore appropriate to consider both dimensions of work. Thus, in each commune there is a number of workers available for hire who expect working conditions to be created for them and entrepreneurs (including the self-employed), with whom it is necessary to maintain close cooperation in the process of creating those conditions. The size and structure of work

[172] D. Nohlen, F. Nuscheler: *Was heißt Entwicklung?*, [in:] id.: *Handbuch der Dritten Welt*, Bd. 1, 3. Bonn 1992, pp. 55–75.
[173] Thimm A., *Demokracja, demokratyzacja, prawa człowieka*, NOWA KRYTYKA 12, 2001.

resources is of fundamental importance in this case[174]. It seems that local authorities should have an impact on both dimensions mentioned above. The role of local authorities then, is to influence those searching for employment[175], influence employers functioning in the area and coordinate their mutual cooperation. This interdependence is illustrated in Image 2.

Image 2. The role of local authorities in shaping the conditions for opportunity to fully utilize the work resources.



Source: Own work.

Hired workforce should be treated as a resource and the role of local authorities should be creating such conditions in which this resource can be effectively utilized. When it comes to local authorities this pursue should manifest itself in shaping such conditions for development of this resource in which its size and structure with respect to qualifications corresponds to the current needs of entrepreneurs. In order to meet this requirement (arrow no. 1) local authorities should create favourable conditions for residents to settle down in a given commune (satisfaction of housing needs). Shaping an appropriate structure of qualifications of the workforce available in a given area is only possible thanks to providing the members of the local community with educational services which are in line with what the employers need. The notion of people searching for employment should also embrace those who have to make

[174] Szymla Z., *Regionalne uwarunkowania rozwoju przemysłu,* Zakład Narodowy im. Ossolińskich, published by Wrocław 1994, p. 67.

[175]In the considered issue the term *people searching for employment* also includes potential job seekers, namely the youth making decisions concerning their profile of education.

a decision about the profile of their further education. Local authorities should be able to correctly anticipate the directions of development of their local economy in order to identify the demand for employees with certain qualifications. The probability of achieving the forecasted conditions or needs in case of communes may be relatively high as local authorities belong to the group of initiators and facilitators of development.

The relations between local authorities and entrepreneurs (arrow no. 2) are bilateral. On one hand, entrepreneurs provide information on their current demand for employees with certain qualifications and with preferred directions of development. On the other, the entrepreneurs are under influence from local authorities: their activity is determined by the general conditions created by the authorities of the commune/municipality. All activities undertaken by authorities in this matter should be focused on creating better conditions for activity in the preferred directions and limiting the possibility of development in areas which are undesirable.

The coordination of the relations between entrepreneurs and entities searching for employment (arrow no.3) should be aimed at opening efficient information channels. In this way the commune may support the activities of powiat self-governments which are responsible for counteracting unemployment.

The activities undertaken by local authorities should be devoted to such modifications of the resources and conditions available in a given area to facilitate prompt and sustainable development. To achieve this aim local authorities should dispose of instruments allowing to evaluate firstly the state of particular areas of their activity which are essential for development, and secondly the extent to which these actions provoke changes in development which may be accomplished thanks to those actions. Obviously, from the point of view of evaluation of efficiency of the undertaken activities it is very important to stimulate such development which is compatible with preferences of local residents.

A development policy, which is not based on voluntary cooperation between the citizens (for their own sake) with the authorities, will be ineffective and might even be harmful[176]. In all areas of their activity public authorities deal with people who focus on their own benefit and they are naturally entitled to do so. The decisions taken by local

[176] Thimm A., *Demokracja*... op. cit.

authorities to a large extent determine the framework conditions for independent activity of local people. However, if the decisions are seen by citizens as a threat to their own interests, they will try to oppose them. If political resolutions are to be effective their addressees must perceive them as beneficial for their own interests. Participation on the part of local residents in decision making processes is indispensable to ensure the result. If people contributed to the planning process they will also cooperate in the implementation phase of those plans. Hence, the participation has two dimensions: the dimension of planning and the dimension of implementation. It shouldn't be ignored however, that residents also plan on their own (individually or in cooperation with others) and pursue their ideas and concepts relating closer (and possibly more distant) future[177]. The decisions of central and local authorities set general framework conditions for independent plans, however, these conditions are included in calculations of future actions.

There is yet another formal aspect which cannot be neglected, the general conditions must be deemed stable and reliable. The stability of general conditions means that the relevant regulations must refer to longer time perspectives and should not undergo any sudden modifications.

The last top of the pentagon i.e. independence/self-reliance should be perceived through the prism of independence of opinions as well as economic independence. The latter might, in turn, result from the condition concerning work. Moreover, self-reliance should be understood as a possibility to make one's own choices. As it was previously mentioned, the authorities should create a proper framework in which entities can act freely, however this freedom cannot exceed the defined area.

To put the concept of supporting commune development proposed in this monograph into practice, it is necessary to specify general conditions for entities functioning in the area and to define the state of this conditioning. It is a pre-condition for definition of effective steps which will have to be taken in order to modify the conditions.

[177]That is why the form and the methods of research in the area of monitoring evolution of preferences with respect to local developmental conducted in order to establish preferred changes in conditions moderated by a commune's self-government, has an incredibly significant role. The research (e.g. questionnaire) might perform informative - cognitive function but also educational-inspiring function for a local community.

In this situation it is possible to use two kinds of indicators proposed by H. Zemelman[178]:

- result indicators,
- processes indicators.

Using these two kinds of indicators allows to arrive at two important pieces of information as the result of conducting a single research:

- current evaluation of the present condition of the examined feature (e.g. development condition of road infrastructure) that define a given general condition of development,
- which phenomena (activities) brought about a given condition.

The knowledge of the values of indicators defining the state of a given area (result indicators) provides information that supports decisions concerning the necessity of undertaking actions correcting the general conditions which were evaluated with respect to their validity. Moreover, this knowledge also allows to compare the structure obtained in the of levels of importance/validity for particular areas with the optimum structure which assumes balancing of all general conditions which are of key importance for development.

Referring the size of the obtained changes (processes indicator) to the quantity of relevant expenditure gives foundations for evaluation of the efficiency of activities taken in defined directions. The opinion poll conducted among the residents offers the base for establishing the value of both indicators. The survey method respects the postulate of adjusting the tool to the state and evolution of specific features of functioning in the examined area.

The objectives accomplished in a given period of time have direct influence on planning future activities. The achieved level of needs satisfaction with respect to general conditions of a given socio-economic area which constitute basic elements of the ratio, as it was mentioned before, should not be a direct object of research. However, it must be included indirectly, as it undoubtedly impacts the hierarchy of preferences of a local community concerning particular general conditions for further development. That hierarchy is very significant in the planning process of actions in the subsequent period of time, when it

[178] Zemelman H., *Indicators and complexity. Some conceptual proposals*, Proceedings of the Conference held by the United Nations University, UNESCO and Committee POLAND 2000, Jabłonna 3-5.12.1981.

is necessary to choose between many different aims in conditions of limited financial resources.

The level of particular components of the ratio reflects the relationship between the level of significance of necessity of change of a given general condition and relative real change, which occurred in the area, is the starting point for further analysis and the base for evaluation of efficiency of expenditure. It may be arrived at through comparing the dynamics of expenditure associated with the improvement of a given general condition and the dynamics of change of component parts of the ratio.

Supporting local development is possible through identification (in cooperation with entities functioning in the area) of appropriate general conditions and consistent maintenance of selected directions of development. The next step should be specification of the need for a change or the necessity to upkeep the general conditions to enable the development of resources located in the area in the desired direction. However, it must be observed that the need in the scope of size and the structure of resources desired by a local community may be precisely defined after the user makes a decision expressing his/her preferences in regard to a service or good[179]. Therefore, it is appropriate to examine the structure of validity of particular resources and effects brought by allocation of financial resources as well as decisions taken with respect to development of those resources. What is more, the instrument which is to support the local authorities in their planning processes aimed at creating possibly the best conditions for local development should consider the dynamics changes in the preference structure of the examined community. Social development triggers changes in meaning of certain factors for further development or even entirely eliminates such influence. There are also new social phenomena or structures the influence of which cannot be overlooked. For example one may observe a change in the view on raising children. In the conditions of imperfect job market which generates involuntary unemployment, young mothers try to shorten their maternity leave to maximum and get back to work as soon as possible. For local authorities it is a signal that a new need to expand the existing childcare system emerged. It is a change that must be provided for in planning of the development policy. Therefore, the

[179] Ostrom V., *The meaning of American Federalism. Tworzenie społeczeństwa samorządowego*, the Polish Psychological Association, Warszawa-Olsztyn 1994.

proposed method for measuring development of a socio-economic area must be dynamic with respect to the set of values integrated therein as well as the meaning of each and every one of them.

Describing the assumptions of the method of measuring development of a socio-economic area it is worth remembering that in any deliberations concerning actions for creating development conditions the good of citizens should always be in the center of attention. The idea of lasting and sustainable development cannot be accomplished in isolation from the issue of protection of the natural environment. The development processes must also account for the needs of future generations[180]. Development planning must be a process embracing a long-time horizon taking into account the needs of future generations. On the basis of the postulates formulated during the conference in Rio De Janeiro on sustainable and lasting development, Poland adopted the understanding of sustainable development as such direction in socio-economic development which integrates political, economic and social activities while preserving the balance in natural environment and stability of basic natural processes to guarantee possibility of satisfying the basic needs of communities and citizens of present and future generations[181]. In deliberations about optimum development of a region, it must be acknowledged that preservation of natural environment is an integral part of sustainable development policy and a significant factor defining standards of living in a given area. The above-mentioned conclusion implicates the necessity of considering environmental protection in the considered set of general conditions determining the possibilities of development in a given area.

The application of IRGEP tool, whose construction is based on examination of preferences and dynamics of change with respect to satisfaction of needs within the scope of evolution of framework conditions of development, should facilitate relations between local authorities and members of the local community. Local authorities raise their awareness of development directions preferred by the residents and the residents, in turn, are better informed about the initiatives and steps undertaken by their local authorities. As the result, the process of

[180]Report of the United Nations Conference on Environment and Development (Rio de Janeiro, 3-14 June 1992), Annex I, Rio Declaration on Environment and Development, principle 4.

[181]Act of 27 April 2001- Environmental Protection Act (Journal of laws 62, item 627, article 3, point 50).

managing development in a commune/municipality is enhanced, which is a "value added" coming from the application of the solution proposed by the author.

3.2. Integrated ratio of growth in economic potential of a region (IRGEP)

The considerations so far focused on the definition of features characteristic for a social indicator to be useful as an instrument supporting local development planning. Such indicator/ratio should meet the requirement of universality what, in this case, means the possibility to adjust it to the characteristics of the examined area whenever it is necessary. What is more, the ratio should account for the dynamics of changes occurring in the area and ensure that these changes are included in the process of expenditure planning in subsequent periods. In accordance with the postulate of creating the possibility to use the instrument based on the integrated ratio of growth in economic potential (IRGEP) to improve the conditions of functioning of entities in a given area, the tool based on the ratio must be able to determine the level of needs satisfaction with respect to key general conditions of development. The criteria presented in the work meet all the required conditions; therefore, it may be considered as an instrument supporting expenditure planning and evaluating the efficiency of expenditure.

Unlike other methods for measurement of the level of development suggested so far, the concept of the integrated ratio (IRGEP) assumes measuring relative changes in values of volumes essential for development which describe developmental space of the commune not just the values of these volumes achieved in a given area. This assumption distinguishes the method proposed by the author from others presented in the literature. IRGEP planning tool does not measure the level of development that was reached in a given socio-economic area but it examines the dynamics of this development conditions in a certain period of time. Therefore, the results of study of key factors describing a given area are relative values. The obtained results are useful in the evaluation of accuracy of directions undertaken in the past and help to determine future directions of activities. But as it was said before, the tool does not measure the level of development reached in the commune. The advantage of results arrived at by means of IRGEP is that they help evaluate efficiency of activities of local authorities and this evaluation is provided through the eyes of voters. The construction of IRGEP ensures full comparability of the obtained results regardless of the features of the examined areas such as: size, the character of the area (urban or rural) or the volumes of revenue. What is more, as a result of measurement of relative changes in the examined values, the proposed ratio is an instrument of dynamic nature. It means that the value of the ratio reacts to each and every change in the parameters of the environment, therefore it is possible to take any necessary correcting actions in case of lack of expected effects in the form of satisfaction from undertaken steps, or to direct a flow of expenditure in a new direction in case of achieving the assumed aims in a given field. The relative change value in case of values directly measurable assumed in the construction of the tool, allowed to obtain a result which is not burdened with any unit, therefore making aggregation possible.

Measurement of the dynamics of change in the scope of general conditions of functioning in the commune, defined as a key to its development, is implemented through referring the state of an i-determinant of development at the end of the examined period (Qi) to the base value of this evaluation at the beginning of the period of examination (Qibaz). It is worth emphasizing that improvement in conditions for functioning in an i-area may be accomplished in two ways: increasing expenditure in a given area (ai) or improving the efficiency of utilization of available means. In such a case, one arrives at efficiency or efficiency of undertaken actions. In case of increasing the expenditure in a given area, the effect should be immediately visible due to intensification of actions. The same effect may be achieved by means of increasing the efficiency of utilization of available means. Within the same amount of resources the produced effect may be even better. It is possible to imagine a situation in which the changes (the actions taken) are not recognised by the residents in but there is a considerable improvement in functioning conditions in the area. An investment in a teacher training scheme, for example, will result in children achieving better grades at school and higher satisfaction from the learning process, but parents will probably remain unaware of the investment local authorities made in teachers' education[182]. A well conducted informative policy concerning actions undertaken by local governments is very

[182] Described effects may be indicated in the analysis of the results from the questionnaire, in particular on pages 112 and 121.

important for that matter. It might be a good idea to copy the model of dissemination of information used in case of investments made with the participation of EU funds.

Application of the ratio of measuring the dynamics of change in particular areas and ranking indicators described below, makes it possible to apply some kind of benchmarking of undertaken activities. It results from the possibility to analyze parameters in particular areas or even within particular actions or institutions e.g. primary schools.

Selected general conditions of commune development, apart from the presented criterion, will be additionally verified through researching a representative group of entities constituting a given socio-economic area[183]. Such verification shall be conducted as a result of naming ranging indicators by those entities in accordance with perception the level of validity of undertaken activities aimed at modification of particular conditions.

$$Q_i \big/ Q_{ibaz} * a_i$$

where:

***Q_i** – evaluation of the condition and its development determinants (e.g. road infrastructure) done by a representative group of commune residents at the end of the examined period.*

***Q_{ibaz}** – evaluation of the condition and its development determinants (e.g. road infrastructure) done by a representative group of commune residents at the beginning of the examined period.*

***a_i** – ranking indicator reflecting the validity of a given determinant (general condition) of further development.*

The value of ranking indicators is established in such a way that their sum must always equal one[184]. Thanks to these indicators IRGEP tool can be adjusted to each examined area, which is in accordance with the postulates to be found in the work of E.S. Solomon[185]. Giving the examined general condition low value of ranking indicator automatically lowers its share in the final indicator value or eliminates it totally. For example, it might occur that in touristic areas the density of road network

[183]The construction of the instrument assumes the choice of particular aims, not their relation. The significance of such solution was justified in sub-chapter 1.3, p.42.

[184] A detailed way of determination of ranking indicators was described on Supporting the evaluation of expenditure efficiency .

[185]See page 87.

is not as important as in industrial areas, therefore the rank of this type of a general condition will be relatively lower there.

It is assumed that a commune is on the optimal path of development when the value of all ranking indicators is the same and equals $^1/_n$ (where n is the number of examined general conditions of development). It results from the fact that from the point of view of the local community the equality of ranks reflects the same validity of different areas of activity with respect to shaping conditions which have a big impact on development of the commune.

A simple sum of changes of developmental possibilities created and moderated by the commune extracted by means of indicator ai, used as a criterion, has a certain defect. This defect results from the lack of comparability of evaluations of progress in developmental opportunities preferred by the residents - as in theory there is a possibility of growth of IRGEP ratio with lower volumes of expenditure in the condition of unbalanced ai.

That is why the index of dispersion correcting the value of ratio by the value of dispersion of the structure of validity of particular areas of activity[186] was introduced.

Ultimately IRGEP takes the following form:

$$ZWRE = \frac{\sum_{i=1}^{n} \frac{Q_i}{Q_{ibazowe}} \times a_i}{1+\sigma}$$

where:
Q_i *– evaluation of the state and this determinant of development at the end of the examined period (e.g. the condition of road infrastructure),*
$Q_{ibaz.}$ *– evaluation of the state and this determinant of development at the beginning of the examined period,*
a_i *– ranking indicator reflecting the significance of a given determinant (general condition) of further development,*
σ *– standard deviation of ranking coefficients.*

Including in the ratio the coefficient of variation of the standard value of importance factor ai which defines the necessity of taking

[186] Żabka A., *Zastosowanie zintegrowanego wskaźnika rozwoju ekonomicznego potencjału regionu w zarządzaniu gminą*, [in:] Rozvoj Euroregionu Beskydy II, Zilina 2003, p. 285.

further actions in particular areas, allows to juxtapose the achieved direction of commune development in the examined period to direction in full accordance with undisclosed optimal trajectory of development.

As a result of comparing two communes with the same values of relative changes in the area of examined general conditions of development, the commune with larger dispersal of preference structure obtains a lower aggregated value. Therefore, a situation where two communes reach precisely the same relative changes of parameters but different preference structure should be considered. The data included in Table 10 illustrate the example better.

Table 10. Comparison of communes A and B with respect to the obtained value of IRGEP.

AREAS	**COMMUNE A**		**COMMUNE B**		$\sum \frac{Q_i}{Q_{baz}} \times a_i$	
	Q_i / Q_{baz}	**a_i**	**Q_i / Q_{baz}**	**a_i**	**COMMUNE A**	**COMMUNE B**
1	2	0.1	2	0.2	0.2	0.4
2	2	0.6	2	0.2	1.2	0.4
3	2	0.03	2	0.2	0.06	0.4
4	2	0.07	2	0.2	0.14	0.4
5	2	0.2	2	0.2	0.4	0.4
		Σ = 1		Σ = 1		
				ZWRE	**2**	**2**

Source: Żabka A., *Zastosowanie zintegrowanego wskaźnika rozwoju ekonomicznego potencjału regionu w zarządzaniu gminą*, [in:] Rozvoj Euroregionu Beskydy II, Zilina 2003, p. 287.

In case of obtaining the same value of coefficient of relative changes in the area of general conditions of development, both communes obtained the same value of the ratio. If we consider an assumption that an area is developing in an optimum way when all ranking coefficients are equal[187], the actions undertaken in commune B should receive better marking due to more homogeneous preference structure in the area of shaping general conditions of development. Dispersal of such structure should be deemed unwanted and hence the value of indicator should be adjusted by coefficient of this dispersal. Standard deviation was used as the

[187]Development of a region runs in accordance with the undisclosed optimum trajectory postulated by the author. See page 13.

coefficient. As the result of inclusion of the coefficient correcting the achieved growth by dispersal coefficient of preference structure, new appropriate value of indicators for both communes were obtained:

Table 11. Comparison of communes A and B with respect to the adjusted value of IRGEP.

	COMMUNE A	COMMUNE B
$\sum \frac{Q_i}{Q_{baz}} \times a_i$	2	2
STANDARD DEVIATION	0.23	0
ZWRE	1.62	2

Source: Żabka A., *Zastosowanie zintegrowanego wskaźnika*…op. cit., p. 288.

As the result of application of an extended version of the ratio, by including dispersal of the preference structure, the difference between both communes became more apparent. The value of the ratio in the commune with optimum structure did not change, however the value of IRGEP in case of the commune with large dispersal in the level of the structure was corrected. The example shows the comparison of the ratio in two different communes but it is also possible to apply the instrument to conduct inter-periodic comparisons.

The construction of methods for evaluating standards of living presented in Chapter 2 is based on one out of three kinds of solutions:

- construction of sets of individual (partial) measures,
- construction of synthetic group indicators for particular groups - kinds of needs,
- search for one synthetic measure, characterizing the examined phenomenon.

The most appropriate approach would be applying all three procedures at the same time as only then it is possible to get the full picture of standards of living seen globally and to understand its structure. The application of synthetic indicator, characterized by a collection of variables (measures), which will show the level of needs satisfaction to qualification of living standard seems justifiable[188]. The tool proposed by the author meets the requirement of combining all three kinds of solutions mentioned above. The construction of the ratio ensures aggregability of evaluation of areas where local authorities act towards creation of general conditions for development from the point of view both the needs recognized and effects arrived at as the result of incurred expenditure, to one synthetic measure. As a consequence, the phenomenon of loss of certain amount of information which usually accompanies the process of data aggregation, does not occur.

A significant feature of the integrated evaluation is a fact, that it relates only to actions taken in the examined period. This evaluation is not influenced by strong and weak points of particular communes resulting from actions undertaken in the past. The absolute values used in other studies carried this occurrence. For example, if in a commune the road infrastructure is very well developed, the evaluation of this area will, to a large extent, influence the final aggregated value of the ratio, despite the fact that in the examined period the expenditure in this field was minimal.

When it comes to the methods discussed so far both the construction of ratios and conducting relevant evaluation by means of the developed ratios were in the hands constructors of the instrument. It raised a concern that choices made in this area could have influenced the objectivity of research results. In relation to the presented method the problem does not exist as the entities functioning in a given socio-economic area are the ones that create the list of significant determinants of the development and they rank those determinants by attributing validity factors to them. As a consequence of assigning certain determinants with factors equal to 0, they are eliminated from the research as irrelevant. Within this scope the obtained result is absolutely objective. Such manner of selection of development determinants and the factors of their validity ai ensures accomplishment of two very important postulates:

- auto-adjustment of construction features of the ratio to the examined area,
- ranking of indicators of relative change of determinant evaluation in the process of each and every research creating possibility to adjust its

[188] Szymla Z., *Przestrzenne zróżnicowania warunków życia ludności* [in:] *Problemy gospodarki regionalnej,* Kraków Academy of Economics 1997, p. 31.

features in time; it allows for direct inclusion in the value of the indicator of important phenomena associated with the process of evolution of societies, important for the process of commune management.

It seems however, that more important from the point of view of management is disaggregability of the ratio to the level of competence of particular units in the commune also by this development determinant. The analysis of the value obtained as a result of the examination of particular areas, allows to support the process of allocation of expenditure among these units. Disaggregability of the ratio makes it possible to direct financial means towards goals which are a potential source of opportunities or towards neutralization of the areas of the so called deprivation which constitutes a potential threat. The possibility to apply the indicator not only in the process of identification of potential opportunities but also in the process of eliminating threats is a distinguishing feature of the tool proposed by the author.

In accordance with current and economically justified outlook on the application of instruments based on ratios, the IRGEP planning tool adjusted in a way suggested in the publication, may prove especially useful in the processes of development management with respect to the allocation of resources available for a given commune. Properly directed activities should trigger lowering of the rank of given action area in the next research period. Otherwise, one would have to consider the change of instruments influencing a given phenomenon because those in use so far proved ineffective. However, there is a certain concern that the same changes in conditions will be evaluated differently by respondents, and as a consequence, the validity evaluation of future changes in particular areas will also be different. To compensate this unfavourable phenomenon it is necessary to normalize the situation through such transformation so that the sum a_i always equals 1. It forces, so to say, a normalization of classification of a commune’s areas of activity from the least important to the most important. Thus, it is fully justified to apply the suggested construct as a tool supporting the process of evaluation of efficiency of activities undertaken in previous periods. Substantially it is treated as a mistake to identify local authorities only with activities related to allocation of financial resources. It is very important for local authorities to take steps in the broadly understood sphere of regulation by taking decisions in the scope of competencies of local authorities as well as individual negotiations with larger investors.

Apart from supporting evaluation of undertaken activities IRGEP planning tool has another practical application. It facilitates the process of communication between the members of local community and their representatives in local self-governments. Conducted periodically and properly publicized survey of public opinion forces, so to say, the interest of local residents in local affairs and encourages their involvement. What is more, such opinion poll may contribute to creation of civic society, who want to have an impact on their immediate environment not only in times of elections. The flow of information is bilateral. On one hand the authorities send a message about planned directions of development, on the other, they receive feedback on the vision of that development represented by people.

It may be predicted that intertwining of competences of four levels of administration (commune, powiat, voivodship and central government) may constitute a problem with respect to application of IRGEP. There is a fear that the problem of distinguishing particular competencies of particular bodies and ascribing them activities taken in the commune may be difficult and it may distort the result of the research. For example, critical state of a national or a voivodship road passing through a commune may negatively influence the evaluation of this general condition of development, even though it does not constitute a competency of the commune. Equally one may imagine an opposite situation. Such influences may be limited by precise formulation of questions in the questionnaire. However, this problem may easily be eliminated in a very short time by appropriate dissemination of relevant information conducted by local authorities. Such informative campaign may be accomplished through implementation of the tool developed by the author.

CHAPTER IV.
A MODEL SUPPORTING PLANNING OF COMMUNE EXPENDITURE WITH THE USE OF *IRGEP* CONCEPT

4.1. Model assumptions

In the conditions of market economy and within democratic social structures which include local self-government, it is not possible to authoritatively direct socio-economic development of a territorial unit or to shape its spatial organization, structure or functioning in an arbitrary way from the outside[189]. It may be assumed that development is based on endogenous development factors[190] and, first of all, it is the result of actions of non-governmental organizations. The role of public authorities is to create conditions so that the development may occur[191]. The quality of development path is therefore largely determined by local self-government policy[192]. The role of any authorities should focus on creating the best possible conditions for activities of entities active in a given area. These conditions, defined as general (framework) conditions, are understood here as either restrictions or chances for certain development opportunities. Optimization in utilization of public funds may be implemented only by accomplishing concordance between the preferences of residents and, indirectly, business entities acting in a given area in accordance with the developmental concept of authorities. Therefore, sustainable development should be understood as such development where individual areas are developed in accordance with the residents' preferences. That is why creating bilateral systems of social communication including business environment[193] and local authorities is of great importance. Thanks to such solutions it is possible to diagnose

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[189] Parysek J., *Podstawy gospodarki…* op. cit. p. 52.
[190] Ibidem p. 46.
[191] Potoczek H., *Programowanie rozwoju lokalnego i regionalnego jako zadanie samorządu terytorialnego* [in:] *Stymulowanie rozwoju lokalnego – perspektywa społeczna i organizacyjna*, Patrzałek A. (ed.), Toruń 2001, p.25.
[192] Nogalski B., Wójcik-Karpacz A., Karpacz J., *Partnerstwo samorządu regionalnego i przedsiębiorców w rozwoju małych i średnich przedsiębiorstw,* Organization Overview 4/2004, p. 22.
[193] It is important to communicate with 'potential entrepreneurs', who as a result of creating beneficial conditions, will start conducting business activity.

real preferences of all interested parties. Only then it is possible to utilise scientific, technical, material and human resources of the region. It can cause an increase in effectiveness of economic potential located in the area[194] in a way which guarantees specific balance of its utilization. Activities undertaken by authorities at any level should focus on actions directed at reaching such a developmental state of particular area, where the validity of all general conditions should be equally perceived. The points specified by parameters[195] of optimal structure validity within general conditions, create an undisclosed optimal[196] trajectory of commune development. This trajectory is different for different communes depending on preferences of residents and local authorities. The same level of satisfaction of certain developmental needs might be seen, in some communes, as satisfactory whereas in others as unsatisfactory. The level of residents' satisfaction should not be evaluated as it is totally subjective and depends on their perception of the situation. Efficiency or evaluation of spending public funds is largely determined by residents' preferences. Therefore, the key conditions should be specified and then necessary corrections introduced. Satisfying those key conditions is determined by development due to utilization of resources located in the commune. The above mentioned corrections require an appropriate amount of means. The expenses must help achieve sustainability in terms of perception level of individual validity connected with development conditions.

The method supporting planning the structure of expenditure based on the use of integrated ratio (IRGEP) proposed by the author is related to two basic units:

- structure of residents' current preferences in terms of key areas moderating commune development;
- values of relative changes obtained in those areas in the previous period.

Determination of preferences makes it possible to arrive at the structure of validity of actions in various conditions for commune

[194] Nogalski B., Wójcik-Karpacz A., Karpacz J., *Partnerstwo samorządu*…op. cit. p. 22.
[195] The parameters are factors a_i . See p.98.
[196]Trajectory recognized as optimal is characterized by balancing the structure of preference of units active in the commune. See: p. 86.

development in the way it is perceived by its residents. It should be noted that changes in the system of human values show the tendency to[197]:

- overestimate the value factors to meet the strongest of unsatisfied needs;
- underestimate factors to meet the weakest of unsatisfied needs (and the power of these needs);
- underestimate, or even devaluation, factors to meet already settled needs (and the power of these needs).

Therefore, the areas where residents' needs, during the change of development general conditions, are not fully met, will be strongly exposed in their preference structure. Whereas the areas where the needs are met to an adequate level, will get low rank. Examination of relative change, which occurred in individual areas, will give an overview on the strength ratio of spending budgetary resources to the value of obtained changes[198].

The proposed tool (IRGEP) is based on the assumption of maximizing the value of the ratio sum of development of a given general condition validity indicators and evaluation of relative change which occurs in the area as a result of spending certain funds. Apart from maximization, it is assumed that the optimal structure of expenditure should guarantee that the commune will find itself on the path of optimal (sustainable) development. Here such development is defined as a state where the necessity of satisfying the needs in all key areas will be recognized by both the commune authorities and by the residents. Therefore, one should specify those needs that must be satisfied in order to create the best possible framework conditions for development of resources located in a commune.

Applying the tool described in Chapter 3 in the process of supporting the process of planning commune expenditure in certain areas, requires considering in a subjective evaluation of residents and entrepreneurs, the level of needs satisfaction in relation to the examined general conditions. The dynamics of changes in these areas should also be studied.

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[197]Maslow A., *Motywacja i osobowość*, Pax, Warszawa 1990, p. 105.

[198] They might be both positive and negative changes in case where budgetary resources are not sufficient to keep satisfactory level of needs satisfaction in a given area.

4.2. Identifying the basic parameters of the model optimizing the structure of commune expenditure

Local authorities influence local development by creating opportunities (general conditions) of development in line with subjective evaluation of entities operating on the territory of the commune. The change of these conditions is obtained by delivering certain public goods that influence the development of a given area[199]. In such a case, the only instrument allowing to obtain the quantity evaluation of activities undertaken by the commune authorities in the area is a questionnaire. The key areas to evaluate with respect to development sustainability are[200]:

- economy- system activity including resources and organization, technical and economic activities directed at creating and distributing own resources,
- society- treated as community of population residing in a given area, connected by generally accepted forms of collective residing, cultural and civilization values, patterns of behavior etc.,
- natural environment – the nature surrounding people, the whole of ecologic factors important for life and development of living organisms of a given population;

Considering the above, it might be assumed that shaping general conditions might be viewed in two following areas of commune activities:

- consumption area - creating appropriate general conditions for development of residents registered in a given commune,
- economic area - shaping the conditions directed at creating favorable possibilities for creating new and developing the already functioning enterprises in the commune. The climate supporting local development creates the conditions to make local resources available for development[201].

[199] Every general condition is not only a determinant of development but also public good which moderates development in an important way. Delivering new goods from this group constitutes a change of general conditions.

[200] Miller D., *Obszary zrównoważonego rozwoju*, Prakseologia No 144/2004, p. 72, compare: Szymla Z., *Przestrzenne zróżnicowania warunków życia*… op. cit. p. 31.

[201] Parysek J., *Podstawy gospodarki lokalnej*, Adam Mickiewicz University, Poznań 2001, p.10.

The condition of natural environment as the arena of commune development was included in a broadly understood issue of consumption.

Confrontation of the above areas related to creating general conditions with pro-developmental needs of residents of a given area makes it possible to break these conditions into details. In this way the shaping of conditions might be referred to competencies of individual organizational units of the Commune Office which would be responsible for implementation of local policy in those areas. Therefore, the identification of certain instruments shaping general conditions and their parameters is possible.

Defining the key pro-development needs of residents in the area of consumption was based on research on living standards presented in literature[202]. The research was limited to those significant needs defining development which are in line with the competence of the commune authorities. Among the essential conditions of functioning of entities in a commune there are following kinds of needs that determine the areas of framework conditions of development:

- ability to find employment,
- accessibility of housing resources,
- accessibility of commercial and network facilities,
- accessibility of social care services,
- accessibility and the quality of health care,
- accessibility and quality of educational services,
- accessibility of public property for recreation,
- condition of natural environment,
- needs of public safety.

The selection of key general conditions for development in the area of economy was conducted on the basis of factors of local development[203] presented in literature and assessed by experts. The

[202] See among others: Maslow A.H., *Motywacje i osobowość*, PAX, Warszawa 1990, Kocowski T., *Potrzeby człowieka. Koncepcja systemowa*, Publishing House of Wrocław University of Technology, Wrocław 1978, Luszniewicz A., *Statystyka poziomu życia ludności*, PWE, Warszawa, 1972.

[203]See among others: Kot J., Zarz*ądzanie rozwojem gmin a praktyka planowania strategicznego*, Publishing House of University of Łódź, Łódź 2003; Patrzałek L., *Finanse samorządu terytorialnego*, Publishing House of Wrocław University of Economics, Wrocław 2004; Domański K., *Gospodarka przestrzenna*, PWN, Warszawa 1993; Trojanek M., *Oddziaływanie władzy lokalnej na efektywność przedsięwzięć*

following areas of framework conditions were defined as key general conditions of local development which fall within the competences of local authorities as key for commune development:

- formal difficulties with commencing business activity,
- supporting business activity by public authorities,
- condition of communication infrastructure,
- possibility to find employees,
- possibility to use municipal property by businesses,
- access to media.

Similarly to the consumption sphere, the study carried out in the economy area was to determine the validity of the actions in terms of modification of general conditions. These conditions should not be examined according to their significance connected with the achieved standard of living or running a business. Therefore, the questions are concentrated on defining the necessity of taking more actions to improve the condition of a given area. This method of examining general conditions allows to apply suggested changes to the structure of expenditure used in another year. Asking the right questions in the right way in the questionnaire is very important. It would be a mistake to ask about *precise* actions that, in the opinion of respondents, should be taken. In the research respondents are asked about certain *aggregated areas* of *activities* undertaken by local authorities. The choice of the manner of spending financial resources in that area should remain in the hands of commune authorities.

Another key information provided by the questionnaire is the extent of the obtained changes during the last period in the area of every tested framework condition. The average change seen by entities operating in the commune is the key to functioning of the model as a tool for planning support. Relating the scope of the change to the amount of expenditure that caused that change can allow to define the strength of shaping a given area with the use of incurred expenses.

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inwestycyjnych, Scientific Journal of the University of Economics in Poznań, 1994, series II, Volume 137; Markowski T., *Instytucje i instrumenty wzrostu konkurencyjności regionów*. *Raport uzupełniający*. Project team for regional development in Poland, Warszawa 1998; Wojtasiewicz L., *Ekonomiczne uwarunkowania rozwoju lokalnego* [in:] G*ospodarka lokalna w teorii i praktyce*, Volume 734, Publishing House of the University of Economics in Wrocław 1996; Parysek J., *Podstawy gospodarki lokalnej*, Scientific Publisher UAM, Poznań 2001.

Further information about the data from metrics allows to define geographical dispersion of intensification of certain groups of needs.

4.3. Competences of commune authorities and shaping framework conditions for development

The possibility of using the proposed instrument in the process of planning commune expenditure requires specification of framework conditions in a way so that local authorities have real possibilities of their shaping. Commune authorities have a statutory right to create local development; what is more, commune self-government legislation contains the rule of *assumed competencies* in local affairs. It means that all tasks not allocated in different acts to competencies of other levels of authority belong to the commune. It offers vast possibilities to take a whole range of actions towards modifying framework conditions of an area[204].

The quantities distinguished in the research with respect to framework conditions were analyzed according to the scope of commune self-government competencies. The analysis was saved as matrix allocating certain framework conditions for the development of guidelines for the implementation of commune authorities and instruments through which those directions can be accomplished. Some directions of commune activities are presented below[205]:

- real investments of the commune which increase the municipal assets e.g. expenditure on road infrastructure, municipal company, education facilities, sports fields, parks;
- stimulating private material investments e.g. expenditures or profit limits to stimulate the construction of private enterprises, shops, development of telecommunication network, public transport, development of consulting services as well as territorial marketing;

[204]The Act of 8 March 1990 on Communal Self-government (Journal of Law 1990 No. 16, item 95, Art. 6 section 1).

[205]Obviously, there are possibilities of further disaggregation of communes' directions of activity assuming their specification in connection with a spatial map of intensity for pro-development preferences. They can be a tool to assist decisions of expert task force in the commune. In the present publication, application part was introduced to indicate the method which assists the process of determining the structure among the main directions of spending.

- financing development of communes' institutions e.g. commune schools, institutions of social care;
- creating better conditions for household investments e.g. creating possibilities to buy plots of land for recreational purposes, building houses;
- stimulating local community investments e.g. building local roads, water transmission pipelines, creating culture clubs, sports clubs, voluntarism[206].

When it comes to instruments serving the purpose of local development in the above mentioned directions, the following have been identified[207]:

Operations on local taxes - write-offs, tax reliefs, extension;

Operations on commune expenditure - financing material investments, reliefs in investment loans, social care, education, experts' assistance;

Operations on material property of the commune - lending, lease, sale;

Operations on financial assets of the commune - issuance of municipal bonds[208], granting loans, purchase of shares;

[206]More on the topic of stimulating local initiatives: Żabka A., *Wspieranie inicjatyw lokalnych na przykładzie gminy*, [in:] *Beskid Euroregion Development III*, Bielsko-Biała/Zilina 2005.

[207] The powers of municipalities to carry out these lines of actions is determined on the basis of the acts [The Act on communal self-government of 8th of March 1990 (Journal of Law 1990 No. 16, item. 95), Act on the division of tasks and competencies defined in specific acts among the commune authorities and public administration authority (Journal of Laws 1990 No 34, item 198)] and expert research.

[208]More: Pyka A., *Obligacje komunalne w finansowaniu jednostek samorządu terytorialnego na szczeblu lokalnym i regionalnym,* [in:] *Beskid Euroregion Development – V, Determinanty wzrostu ekonomicznego potencjału regionu,* University in Žiline, Fakulta Prevádzky a Ekonomiky Dopravy a Spojov, Bielsko-Biała School of Banking and Finance, Žilina, Bielsko – Biała, 2008, pp. 70-83; Pyka A., *Obligacje przychodowe jako instrumenty finansowania inwestycji jednostek samorządu terytorialnego i podmiotów zależnych od jednostek samorządu terytorialnego*, [in:] *Zarządzanie długiem publicznym. Aspekty finansowe i płynnościowe*, E. Denek, B. Filipiak, Scientific Journals of University of Banking in Poznań No 36, Poznań 2011, pp. 239-252 and Pyka A.: *Rola obligacji komunalnych w finansowaniu JST w warunkach kryzysu gospodarczego*, [in:] Scientific Journals No 72, 'Economic Studies' – *Finanse publiczne i finanse przedsiębiorstw wobec światowego kryzysu gospodarczego*, A. Walasik, J. Błach, Katowice University of Economics, Katowice 2010, pp. 101-115.

Operations on local legal acts - alternation of regulations, regulations concerning payments, land utilization plans.

Every relationship identified in the research was analyzed according to commune competencies in the scope of possibilities to shape conditions. The result of this analysis is a matrix allocating possible actions of the commune to appropriate directions presented in Table 16. Certain numbers in the table correspond to the key for development of areas of framework conditions previously outlined[209]:

1. possibility to find employment;
2. accessibility of housing resources;
3. accessibility of commercial and service facilities;
4. accessibility of social care services;
5. accessibility and the quality of health care;
6. accessibility and quality of educational services;
7. accessibility of public property for recreation;
8. condition of natural environment;
9. needs of public safety;
10. formal difficulties with commencing business activity;
11. supporting business activity by public authorities;
12. condition of communication infrastructure;
13. possibility in the scope of finding employees;
14. possibility to use municipal property for conducting business activity;
15. access to media.

[209]See: 4.2. Identifying the basic parameters of the model that optimize the structure of commune expenditure.

Table 12. Allocation of possibilities of commune actions to appropriate directions

			Possibilities of commune actions (groups of instruments)				
			Operations on local taxes	Operations on commune expenditure	Operations on material property of the commune	Operations on financial assets of the commune	Operations on local legal acts
			A	B	C	D	E
Directions of commune actions	1	real investments of the commune increasing municipal assets		1,2,3,4,5,6,7,8,9, 12,13,14,15	4,5,6,7,9,12, 14,15	1,4,5,6,8,12, 14,15	12,15
	2	stimulation of private real investments	1,2,4,5,6,11, 12,13,15	1,4,5,6,11, 12,13,15	1,2,4,5,6,12, 13,14,15	1,2,4,5,6,8, 11,12, 15	1,2,4,8,10,11, 12,13,14,15
	3	development of commune institutions		1,2,3,4,5,6,7,8,9, 10,11,12,13,15	2,3,5,6,7,8,9,10, 11,12,13,14,15	1,3,4,5,6,7,8,9, 11,12,15	3,10,11,12,13,15
	4	creating better conditions for household investments	1,4	1,4,7,12,15	1,7,12,15	1,4,12	1,4,7,12,15
	5	stimulation of local community initiatives	1,4,5,6,7,9,12,13	1,4,5,6,7,9,11,12, 13,15	1,4,5,6,7,9,11, 12,13,15	1,4,5,6,7,9,11, 12,13,15	1,4,5,6,7,9,11, 12,13,15

Source: Own work.

Emplacement of the given number in the matrix at the intersection of the direction and possibilities for action of the commune, should be interpreted in such a way that local authorities might influence a given framework condition corresponding to that number by undertaking actions in the direction defined in the row. Accomplishing the required results of actions undertaken in those directions is possible thanks to the fact that local authorities have the powers presented in the table e.g. shaping possibilities in terms of availability of housing resources (in number 2) might be accomplished by constructing buildings constituting the property of the commune (action in direction 1: real investment increasing community property). Undertaking action in this direction obviously results in budget expenses (possibility B: operation on commune expenditure). Therefore, shaping the availability of housing resource is written in the field located after crossing direction 1 and possibility B. Another way of shaping that framework condition is creating better possibilities for household investment (direction 3). Actions in this direction might be implemented by creating a system of tax preferences for decision makers to build a house (operations on local taxes A), financing expert assistance at design works and meeting formal requirements (operations on commune expenditures B), making commune land available for one-family housing (operations on material property of the commune C) as well as by creating a system of financial support for those investments through guarantees and preferred loans.

The analysis of all key framework conditions for commune development conducted this way shows that commune authorities have various possibilities of influencing every specified condition. Therefore, local authorities have been granted a full range of possibilities in terms of shaping the directions of local development conditions. Choosing the right directions and tools allowing for accomplishment of actions in those directions should be left at the discretion of commune officials.

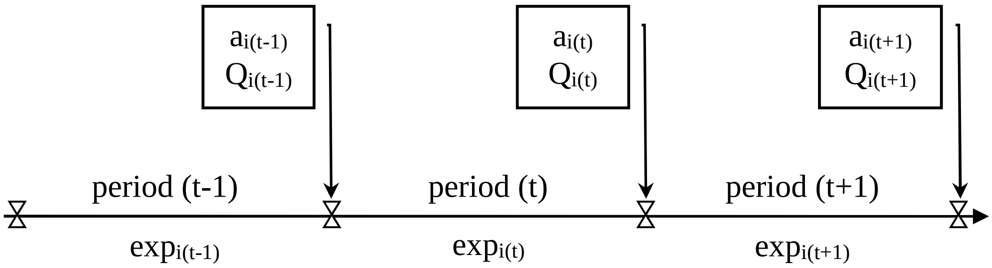
4.4. IRGEP planning tool – a model supporting planning of commune expenditure

The superior function of the budget is management. The scope of management embraces: planning profits, expenditure and monitoring[210] of the effects accomplished by means of the expenditure. To make the discussion on the possibilities of applying IRGEP panning tool based on

[210] Owsiak S., *Budżet władz lokalnych*, PWE, Warszawa 2002, p. 32.

the integrated ratio of growth in economic potential possible, it is necessary to identify the designations of indicators accepted in this model. Such identification is presented in Image 3:

Image 3. Definition of designations accepted to introduce interactions of the model.



where:

$a_{i(t-1)}$, $a_{i(t)}$, $a_{i(t+1)}$	*– level of **factor validity** and the area of framework conditions of commune development measured at the end of the period accordingly: t-1, t and t+1;*
$Q_{i(t-1)}$, $Q_{i(t)}$, $Q_{i(t+1)}$,	*– level of **change factor** and the area of framework conditions of commune development measured at the end of the period accordingly: t-1, t and t+1;*
$exp_{i(t-1)}$, $exp_{i(t-1)}$, $exp_{i(t-1)}$,	*– incurred expenses and the key area moderating the commune development in period accordingly t-1, t and t+1.*

Source: Own work.

The optimum structure of expenditure based on the model constructed on the basis of IRGEP panning tool, was defined with regard to the following:

1. The value of purpose function is subject to maximization (maximization of the effect with assumed input), the form of that function was identified as an appropriately adapted ratio of IRGEP.
2. There is a balance of preference structure at the end of the planned period (optimal development trajectory)[211].
3. The assumed amount of incurred expenditures to form the framework conditions of development (budget sum) is a restrictive condition.

[211] See p. 98.

The purpose function is formulated as follows:

$$IRGEP = F_c = \sum_{i=1}^{n} \frac{Q_{i(t+1)}}{Q_{i(t)}} \times a_{i(t+1)} \qquad [1]$$

where:

Q_i/Q_{ibaz} – *stipulated relative change accomplished in the area of development framework conditions*

a_i – *the level of the factor validity in the area of framework conditions, where* $\sum_{i=1}^{n} a_{i(t)} = 1$

The merit of the method is based on the assumption of value maximization of IRGEP reduced to the sum of products accomplished as a result of incurred expenses as well as relative measures of changes and factors validity in given areas. It is very significant to assume that the sum of factors validity $\mathbf{a_i}$ always has to equal 1. With such formulated function the highest result will be obtained in case of allocating budgetary resources in those areas where the needs are relatively low. Therefore, the value of factor validity a_i in the previous period of planning is the highest. Assumption of sustainability expenditure structure, defined in general form of the ratio as adjustment by term $(1+\sigma)$[212], was considered in the model as a condition restricting the purpose function[213]. Likewise, the assumption concerning the amount of budgetary resources that remain at the disposal of the commune in a given area. Total budget expenditure remaining at disposal of the commune in a given year was introduced to the model as a limited condition[214].

Determination of the value of stipulated relative change within the examined framework conditions is based on the assumption that in a short period of time[215] the strength of ratio of budgetary resources for the ratings of the value of relative change in given area is the same. Therefore, the value of translating the budgetary resources to the relative change of framework conditions of development in a given area, is the

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212 See p. 98.

213 If $a_1 = a_2 = a_3 = \ldots a_n$, then $(1+\sigma) = 1$.

214 The amount introduced to the model may be increased by return funds possible to obtain.

215 In this case it is the period of budget planning, namely budget year.

strength of this ratio obtained in the previous budget year. It is determined by the factor of expenditure strength ratio $R_{Qi(t)}$:

$$R_{Qi(t)} = \frac{Q_{i(t)} / Q_{i(t-1)}}{\exp_{i(t)}} \quad [2]$$

where:

$R_{Qi(t)}$	*– factor juxtaposing strength of budget expenditures to the obtained relative change of framework conditions in this area in the period preceding the planning period;*
$Q_{i(t)}/Q_{i(t-1)}$	*– relative change of framework conditions in the period preceding the planning period;*
$exp_{i(t)}$	*– value of budgetary resources during the period preceding the planning period; the purpose of changing framework conditions of development in the area.*

It means that the budgetary resources in period (t) cause improvement of general conditions also in this area in period (t) in comparison to the period (t-1). Accepting the assumed stability of value of R_{Qi} in a short period allows to predict the results of spending certain budgetary resources in a given direction. Therefore, the value of product obtained by transformed equation [2]:

$$Q_{i(t+1)} / Q_{i(t)} = R_{Qi(t+1)} \times \exp_{i(t+1)} \quad [3]$$

Because: $R_{Qi(t+1)} = R_{Qi(t)}$ ***it*** $\dfrac{Q_{i(t+1)}}{Q_{i(t)}} = R_{Qi(t)} \times \exp_{i(t+1)}$

where:

$Q_{i(t)}/Q_{i(t-1)}$	*– relative change of framework conditions in a given area was achieved in this area in the period preceding the planning period;*
$R_{Qi(t)}$, $R_{Qi(t+1)}$[216]	*– factors juxtaposing strength of budget expenditure to the obtained relative change of framework conditions of functioning in this area;*
$exp_{i(t+1)}$	*– value of stipulated budgetary resources in the period preceding the planning period to change development framework conditions in a given area;*

[216] Accepted assumption: in a short period of time $R_{Qi(t)} = R_{Qi(t+1)}$.

The value of the product is likely to be predicted. As a result it is possible to allocate the budgetary resources in such a way to obtain maximum result with given input in accordance with basic economic rule.

It should be noted that in those areas where satisfaction of needs is perceived as high, the strength of juxtaposing the expenditure to the obtained changes would be lower than in the areas where needs satisfaction was perceived as low. What is more, spending budgetary resources in certain directions causes the growth of satisfaction level of needs. Then it will be more difficult to obtain a significant change of a given framework condition. Spending budgetary resources towards developing framework conditions of those exact areas is reflected in the value of purpose function, both by higher factor of juxtaposing the expenditure to the obtained result and also by higher coefficient value (a_i) of these conditions.

However, the model would be faulty if the assumptions were restricted only to the maximization of purpose function. In such case, it would be possible to omit the area where validity factors reach high levels. In the long run, the value of all factors would "naturally" reach the same level because spending budgetary resources in the direction of area with low validity factors would result in lowering of their values.

The process of development management of a socio-economic area must include sustainable development of all aspects of its operation. That is why the model uses additional assumption in form of a condition of equality among all validity factors. To introduce such criterion to the model it is necessary to determine a formula allowing to forecast the values of validity factor for the end of the planned period. It was accepted that in a short period of time the result of single relative change of framework conditions in a given area to the change of validity factor is permanent. On the basis of this assumption the following factor was determined:

$$R_{ai(t)} = \frac{a_{i(t)} / a_{i(t-1)}}{Q_{i(t)} / Q_{i(t-1)}} \quad [4]$$

where:

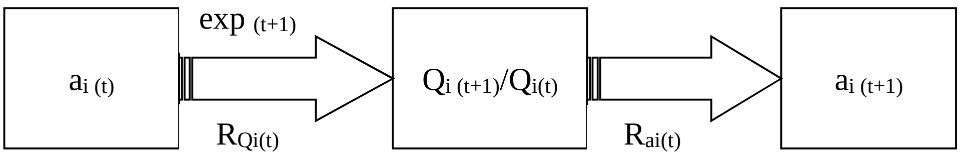
$R_{ai\,(t-1)}$	*– factor juxtaposing the obtained value of relative change of framework conditions in relative change of framework conditions of functioning in this area in the period preceding the planning period to the change of validity factor of this framework condition;*
$a_{i(t)}/a_{i(t-1)}$	*– relative change of validity factor and this framework condition was accomplished in the period preceding the planning period;*
$Q_{i(t)}/Q_{i(t-1)}$	*– relative change of functioning conditions in this area of functioning accomplished in the period preceding the planning period.*

Factor $R_{ai(t)}$ informs how, in a given area, an individual change in a framework condition influences the change of condition validity level. In the long term it would be possible to obtain a more precise determination of values of R_{Qi} and $R_{ai.}$ Ratios achieved through temporary series of their values. This will allow to eliminate the impact of positive or negative influences on the commune resulting from completion of the investments taken by other entities[217].

Introducing ratios $R_{Qi(t)}$ and $R_{ai(t-1)}$ to the model allows to formalize record of the purpose function in the form used in the model of planning expenditure. It is assumed that actions taken by commune authorities in order to change the framework conditions in a given area, represented by spending defined budgetary resources, result in certain relative change of framework conditions of this area. The value of this change might be forecasted on the basis of value of $R_{Qi(t).}$ The obtained relative change of a framework condition in and within the area is reflected in the change of the validity factor (a_i) resulting from taking more actions to change those framework conditions in a particular area in another period of time. The concept of application of IRGEP planning tool for budget expenditure planning is illustrated in Image 4.

[217] The example of such investment in case of Gliwice may be motorways A4 and A1, as their completion influenced the change of potential opportunities in the area of road infrastructure. However, the ratio of the value of commune expenditure to the obtained result in this way cannot be discussed.

Image 4. Validity factor and relation of the value of expenditure to the obtained relative change in a given area.



Source: Own work.

Transforming the equations [4] and [3] and taking into consideration the accepted assumptions regarding stability of R_{ai} ratio in a short period of time, allow to determine the expected values of validity factors (a_i) for individual areas of development framework conditions, depending on the value of budgetary resources in those areas:

$$a_{i(t+1)} = \frac{R_{ai(t)} \times R_{Qi(t)} \times \exp_{i(t+1)}}{a_{i(t)}} \qquad [5]$$

Finally, the purpose function [1] after substituting dependencies of the obtained above transformations [3] and [5], has the form:

$$\underset{\max po \exp_{i(t+1)}}{ZWRE} = \sum_{i=1}^{n} \frac{Q_{i(t+1)}}{Q_{i(t)}} \times a_{i(t+1)} = \sum_{i=1}^{n} \frac{(R_{Qi(t)})^2 \times R_{ai(t)} \times (\exp_{i(t+1)})^2}{a_{i(t)}} \qquad [6]$$

In order to introduce a commune on the optimal undisclosed development trajectory it is necessary to provide sustainable development of every area adopted in the research and the sustainability refers to the structure of preferences of residents. In relation to the proposed tool, it will be visible as the equality of the structure of validity factors of all areas. Therefore, $a_i=1/n$, where n is the number of development framework condition under research. This condition was introduced to the model in the form of restriction for purpose function. In the model of expenditure structure the condition is fulfilled at the end of every planned period. However, it seems that in practice it would be difficult to achieve such operation. It is important that dispersion in terms of the value of validity parameters of each area was reduced.

The last assumptions that were made to the model is the condition which restricts the sum of budgetary resources to the present value. Communes have limited profit inflow and the Act on public finances[218] defines precisely the limit of obligations taken by local authorities. Therefore, the assumption is very significant from the point of view of commune finance. The proposed method of supporting expenditure planning offers great opportunities to stimulate framework conditions with different values of budget expenditure. It is possible that a slight exceeding of the planned expenditure might result in obtaining a much better result. The values obtained as a result of implementing stimulation cannot, however, constitute the basis for decisions to undertake obligations by the president, commune administrator, mayor or voyt. Finally, the model takes the form of:

Purpose function [6]:

$$\underset{\max\ po\exp_{i(t+1)}}{ZWRE} = \sum_{i=1}^{n} \frac{(R_{Qi(t)})^2 \times R_{ai(t)} \times (\exp_{i(t+1)})^2}{a_{i(t)}}$$

Restricting conditions:

1. a1(t+1) = a2(t+1)=…= ai(t+1),

where: ai(t+1) is the value of validity factor of i area at the end of the period the expenditure was planned for;

2. $\sum_i \exp_{i(t+1)} \leq W(t+1)$,

where: expi(t+1) is planned expenditure including budget expenditures W(t+1) is the sum of financial means left at the disposal of the commune in the planned period

3. $\exp_{i(t+1)} \geq 0$

where: expi(t+1) is planned expenditure including budget expenditure

On the basis of the presented dependencies a spreadsheet was prepared thanks to which, based on the method of nonlinear programming, it is possible to determine a stipulated optimal structure of budget expenditure allowing to put the commune on the path of optimum

[218] Act of 26 November 1998 on Public Finances (Journal of Laws 1998 No 155, item 1014).

development. It must be emphasized, however, that one cannot apply the ratio thoughtlessly, clerically. The preferences of residents might trigger such development in infrastructure that the cost of its maintenance will burden the commune budget to such an extent that possibilities for further development or even functioning will be blocked. Therefore, the decision whether to go ahead with an investment or not does not only refer to allocation of budgetary resources but also to the aspect whether the commune will be able to bear the costs of maintenance of this investment in the future.

4.5. Application of the IRGEP model in supporting evaluation of efficiency of expenditure

The evaluating of efficiency of public spending, in addition to the expenditure planning, is the most serious problem which local authority members encounter in their work. It is impossible to discuss management without considering the control function of management. In its assumption the procedure of task budgeting requires determination of indicators allowing to evaluate the effects of undertaken activities. However, these indicators frequently assume reaching unit cost individual on the level which was determined in advance. Indicators of this type give too little information, even for the purpose of determination of efficiency of the projects from the point of view of the accepted purpose with minimum input. Indicator of the type *individual cost of construction per one kilometer of a road* is only a datum. It does not constitute an item of information because it is unknown to what extent the road is needed from the point of view of majority of residents in this area. What is more, two or three lanes road will obviously be more expensive than a single lane road. The indicator does not allow for occurrence of the objective external causes influencing the costs of the task. In practice, by using this types of tools among municipal offices, the indicator structure is determined by the employee responsible for planning and completing the task. That evokes certain doubts as to the choice of values used in their construction and as to the stipulated threshold value to be obtained while qualifying finished tasks as completed effectively or not.

The most important argument against such a way of measuring efficiency is total lack of consideration for the social results of the undertaking. Sticking with the gauge that assumes measuring the individual cost of building one kilometer of the road, it can be figured out that the kilometer of road leading through dirt way will be cheaper than building ring road. The latter will require demolishing of the buildings and making accompanying investments e.g. noise barriers. However, social effectiveness will be much higher than in case of dirt road. In case of public tasks, economic efficiency cannot be the only criterion for their evaluation.

In accordance with the accepted assumptions, considering the application of IRGEP planning tool in supporting planning, the test parameter will be in this case the total value of obtained change measured by validity factors of individual areas where the changes were observed, corrected by the level of balancing the structure of entities preference which constitute administrated a socio-economic area in relation to those conditions. Therefore, supporting the evaluation for efficiency of actions undertaken will be based on the value of IRGEP obtained in accordance with the following:

$$ZWRE = \frac{\sum_{i=1}^{n} \frac{Q_{i(t)}}{Q_{i(t-1)}} \times a_{i(t)}}{1+\delta} \quad [7]$$

where:

ZWRE	*– ratio of growth in economic potential*
$Q_{i(t)}/Q_{i(t+1)}$	*– relative change of framework conditions of functioning in a given area obtained in this area;*
$a_{i(t-1)}$	*–validity factor and framework condition*
δ	*– reached standard deviation of the structure of preference of the examined entities at the end of the examined period (structure $a_{i(t)}$).*

The above criterion allows to evaluate both, the strength and appropriateness of chosen directions of spending budgetary resources. Therefore, it is possible to evaluate the balance of activity in terms of administering the development of commune potential by creating appropriate framework conditions of development.

The essence of this method based on the application of IRGEP as the tool assisting the evaluation of efficiency of budgetary resources allocation, is the information obtained by disaggregation of the value factor to the level of individual areas of commune activity. The aggregated value of the ratio allows for inter-periodic and cross-areas comparisons of expenditure efficiency which should be the basis for further analysis to determine the differences of values of the ratio in subsequent years and in different communes.

Inter-periodic comparisons are accomplished by examining time sequence of values of R_{Qi} and R_{ai}. It can be assumed that with the growth of the level of development in a given area, the relation of the incurred expenditure to relative change of the factor will decrease. As a result, certain deviations of its value might be deemed justified. In case of reaching a higher value of the ratio than in the previous year or occurrence of a large deviation, the situation is slightly different. In both cases there is an assumption that in some period budgetary resources were not used in accordance with the assumed efficiency and on the basis of already obtained value in present or previous periods. The analysis of factors determining the value of the obtained ratio will be much easier and more effective in communes where the procedure of task-based budgeting was applied. Task-based budget, constituting the record of a commune's activity broken into individual tasks, is a natural complement of the analysis conducted on the basis of the ratio. Such budget allows the commune to intensify investigation connected with additional level of disaggregation.

Similarly, as in case of relating the budgetary spending to the value of relative change of framework conditions obtained in a given area, time sequences of R_a factor values, meaning the relation of the obtained relative change value to the change of validity factor in a given area of framework conditions for development, should be analyzed. When a change occurred and it was seen by residents as significant but the value of the ratio remained unchanged, and the residents notice positive changes recognizing at the same time that the satisfaction of needs in this area is at the same unsatisfactory level as in the previous period, then it should be assumed that the directions of undertaken actions do not meet the criterion of efficiency. A more detailed analysis of reasons behind such occurrence is required where the record of budget in task-based form finds its application. As the level of the area validity decreases, it is expected that it would be difficult to obtain $R_{ai(t)}$ on the same level every year. These factors will decrease naturally, because achieving the improvement in the area where satisfaction of the needs, as seen by the residents, are very high. It will certainly require more financial input and a more complicated and time-consuming analysis. But in case of value analysis carried out on the volume ratio of obtained changes, the differences in the values of R_a cannot be significant.

Reaching a maximum efficiency, in economic and social sense, cannot be the only criterion classifying decisions of local authorities in terms of taking certain actions or refraining from actions to create development. Balancing development is as important as improving the state of satisfaction of the residents' needs in particular areas. That means ensuring an equal level of needs satisfaction in all regions. After all, the necessary requirement for putting the commune on the optimal trajectory of development is counterbalance of structure preference. Therefore, to fulfill the analysis for the total scope of self-government activity, the indicator was completed with a parameter correcting the value of reached total development in a given area by the level of dispersion δ of preference structure of residents from a given socio-economic area. The results analysis connected with the construction of parameter indicator dispersal of the preference structure was provided in Chapter 3.

Economic models constitute theoretical generalization of the defined section in examined reality which, in a synthetic way and to some extent, reflect economic processes occurring within[219]. The tool proposed by the author of the monograph, constructed as an economic model, overlooks certain aspects of economic reality that certainly have an impact on the results obtained in reality. It seems that the greatest possibility of deviations exists in case of the expenditure ratio on the obtained change of (R_{Qi}) in a given area and ratio achieved on relative change in the significance level (R_{ai}). As it was mentioned before, in case of those factors there is a number of phenomena (e.g. a one-time effect of synergy) which may evoke differences in the values of factors in certain years[220]. The actual value of translation in a given area is possible but it would have to be done in yet another research. So in the case of the application of tools to support the effectiveness of budget spending, any calculations are based on actually recorded factors. As a result this calculation will be deprived of uncertainty emerging from forecasting certain values, as it was observed when IRPEG planning tool was applied to support the process of expenditure planning.

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[219] Nasiłowski M., *System rynkowy. Podstawy mikro- i makroekonomii*. Key Text, Warszawa 2001, p.21, compare: Rekowski M., *Wprowadzenie do mikroekonomii*, Poznań 1998, p. 33, Begg D., Fisher S., Dornbush R., *Mikroekonomia*, PWE, Warszawa 2000, p. 71.

[220]The model assumes that in a short period of time the value of those ratios is stable.

As a result of application of the IRGEP model allowing for evaluation of efficiency, the obtained value of the factor cannot be the only basis for effective evaluation policy in terms of allocation commune budgetary resources by its authorities. The value shows only *general relevance* of undertaken actions. The result of calculating the ratio allows to determine the intensity (value) and direction of changes occurring in a given commune. Threshold value of the ratio is 1. The ratio with value below 1 refers to communes where the development trajectory is far from optimum. Any value of the ratio higher than 1 means that communes with this score have undertaken correct actions, and their position on the development path is close to the optimum situation. Optimum is reached when, in any existing restrictions, the IRGEP reaches its maximum value. Concluding, it is appropriate to strive to maximize resulting value of this ratio[221].

The instrument designed in this way allows not only for comparisons of different periods within one commune, the results may be comparable between different communes. It is also possible to apply benchmarking in managing public funds. Thanks to the indicator disaggregability into individual areas of communes' activity, one may compare the efficiency of activities undertaken by self-governments. The occurrence of large divergences in indicator values of translations may indicate higher efficiency of individual self-governments or specific factors of their activity which are outside local authorities' mandate The analysis of these differences might increase the efficiency of actions of "weaker" self-governments.

4.6. Additional possible results offered by IRGEP

The applied tool should facilitate mutual relations between local authorities and the entities functioning under their administration. The conducted research will impact the awareness of residents with respect to development directions taken by their local governments and will facilitate their settlement in the created development conditions. Knowledge about accomplishments in the field of shaping conditions for development will definitely increase the efficiency of expenditure. On the other hand, results analysis of the survey connected with directions of

[221] Żabka A., *Zastosowanie zintegrowanego wskaźnika rozwoju ekonomicznego potencjału regionu w zarządzaniu gminą* [in:] Development of Beskidy Euroregion II, Zilina 2003.

commune development postulated by its residents and the dynamic changes in tested areas allow for possible verification of ways and directions of shaping functioning conditions in the commune by its authorities. The value of certain indicators, determined as the result of the conducted questionnaire, is also the basis for supporting the evaluation of commune efficiency by comparing their dynamics associated with the improvement of a given general condition, and dynamics within the change of the indicator element. As a result, it is possible to arrive at better development management in the commune.

The procedure of applying the ratio as a tool supporting development should also contribute to the improvement of the organization of the Commune/Municipality Office by establishing competencies of individual organizational units. Division of commune activities, resulting from introduction of activity-based budgeting on elementary and coherent tasks and representing reasonably homogeneous actions, becomes the first step to establish competencies and organizing the work of the office. However, it means ordering in “micro” scale. Another step should be arrangement of tasks in logical sequences of actions. This ensures not only improvement in the economic efficiency of their completion, but also by ensuring coordination of sequences connected with tasks necessary to accomplish certain goals i.e. increasing the efficiency of the whole process. The optimum solution would be to organize those competencies so that each general condition, reflecting the needs of entrepreneurs and residents, is assigned to one organizational unit. In this way this unit would gain the influence on the whole phenomena associated with a given framework condition and better possibilities of their shaping. This condition would contribute to supporting the control and evaluation of individual units from the perspective of development stage of the tasks assigned to conditions moderating development entrusted to their management.

CHAPTER V. CONDITIONS FOR IMPLEMENTATION OF THE PROPOSED SOLUTION AND EXPECTED RESULTS

5.1 Implementation of the proposed solutions in the organisational structure of a Commune Office

Organizations are functioning in a volatile environment, therefore a high level of efficiency and the ability to react fast when conditions are changing is crucial for their survival. When it comes to public authorities this efficiency means rapid response to social needs which are determined by the necessity to modify the framework conditions describing the area of local development. Implementation of the tool supporting the processes of planning and efficiency evaluation (IRGEP planning tool) which is based on the concept of integrated ratio of growth in economic potential of a region (IRGEP), implicates a necessity to introduce changes in the organizational structure of Municipal/Commune Offices. The changes are supposed to contribute to the creation of a brand new kind of organisation which can function on a higher level. This improved organisation is supposed to be able to shape such framework conditions for development which would reflect the development preferences of the residents to the highest possible degree. The new system will also involve improving the efficiency of expenditure of public resources.

Efficiency of public administration should be understood in functional and organizational sense. Functionally, it is about execution of planned undertakings, tasks and operations. Organisation-wise, it is about the efficiency of units, teams and systems which constitute the public administration apparatus. The main areas which are subject to evaluation are: lucrativeness, efficiency, cost-effectiveness and speed[222]. The implementation of the proposed solutions in the practice of financial management of a commune/municipality should be considered in two aspects[223]:

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[222] Dawidowicz W., *Zagadnienia teorii organizacji kierowania w administracji państwowej*, Warszawa 1972, p. 54.

[223] Management understood as expenditure planning (determination of structure) with respect to the expected goals, organisation of financing of particular undertakings and

- as a one-time action of implementing the solutions in the everyday running of the Office through equipping the units of its organisational structure in appropriate competences; the process of implementation should be conducted as a thoroughly planned series of consistently organized and supervised steps and activities;
- as long-term procedure realized annually as a part of the budget planning process, it requires performing constantly recurring activities in the area of planning, organising, leading and supervising which will guarantee that IRGEP planning tool will become a real tool assisting decision taking processes in managing finance of local government units.

Implementation of IRGEP planning tool in the Municipal/Commune Offices involves developing and initiating a chain of activities which will generate information supporting the process of expenditure planning based on the proposed method and incorporating this information in the existing planning, supervision and evaluation procedures. In the development phase of the new information system the following factors determining the quality of the system must be taken into account[224]:

- desirability – the system is desirable when the information is adjusted to goals and to recipients, and the volume of the information does not exceed the absorbing ability of recipients. Each member of the organization should receive only such amount of information which is necessary to take a good decision[225];
- cost-effectiveness – the volume of information generated by the system is not too excessive, the information is not too detailed and the cost of generating the information does not exceed the effects of the decision taken on the basis of this information;
- investment effectiveness – when appropriate circulation of information between workstations is provided, the information is reliable and the whole system functions smoothly.

The activities related to the development of the module structure of the information system, assigning resources and skills to the module and

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audit of achieved results. The measure of quality of the whole management process will be the value of the integrated ratio of IRGEP.

[224] Mreła H., *Dyrektor jako organizator*, PWE, Warszawa 1976, p. 107.

[225] Trzcieniecki J., *Systemy informacyjno-decyzyjne w przedsiębiorstwach przemysłowych* [in:] *Przygotowanie przedsiębiorstw do wprowadzenia nowoczesnych systemów informacyjno-decyzyjnych*, SIiTMP, Warszawa 1974, p. 5.

incorporating the sub-system into the existing organisational structure of the Office are characteristic features of a project described by A. Karbownik[226]:

- definite duration time;
- goal-oriented;
- coordinated activities;
- unique and unrepeated activities;
- controlled course of action.

The fundamental issue to consider while implementing this project in the Municipal/Commune Office is identification of organisational units in the existing structure which will be responsible for execution of the processes assigned to particular modules of the information system. Identification of organisational units which possess the portfolio of skills required for the execution of the processes will be critical for the implementation. If the necessary skills are not identified, the staff of relevant units must undergo training in order to acquire the skills needed to execute the assigned processes.

Considering the second aspect of the implementation process i.e. annual repetition of certain activities in order to supply the knowledge about the preferences of local residents needed for taking the right decision, it should be understood as a set of detailed instructions on the method of performing a series of frequent or re-occurring activities. At the end of the day, the method is supposed to provide decision makers with information supporting the process of planning budget expenditure and with evaluation of efficiency of public spending.

Economic information is an indispensable element of the process of taking economic decisions which, in turn, is an element of the steering process in the system[227]. Free flow of information is thus critical for functioning of the IRGEP solution; information understood as a meaning assigned to data, taking into account the convention used for their interpretation. Data becomes information if it can be understood by the recipient and provokes changes in his/her knowledge about an object[228].

The purpose of this particular part of the publication is determination of a general module of a part of the information system in

[226] Karbownik A., *Zarządzanie dużym projektem*, Przegląd Organizacji 2/2004, p. 17.
[227] Bendkowski J., *Informacja naukowa w przedsiębiorstwie*, the Silesian University of Technology, Gliwice 1993, p.67.
[228] Ibidem p. 10.

a Municipal/Commune Office i.e. the structure through which the user may transform certain input data[229] into output data by means of appropriate procedures and models[230].

The first key aspect to consider is addressing appropriate data to template organisational units of the information system[231], which perform their assigned functions and group sets of data needed for realization of tasks of the organisation's units[232]. The result of writing out this part of the information system as modules will be a coherent project allowing for direct implementation of the proposed solution in each functioning organisation regardless of their existing division of competences. The scheme of assigning modules of the proposed solution to organisational cells functioning in the structure of the Office is presented in Image 5.

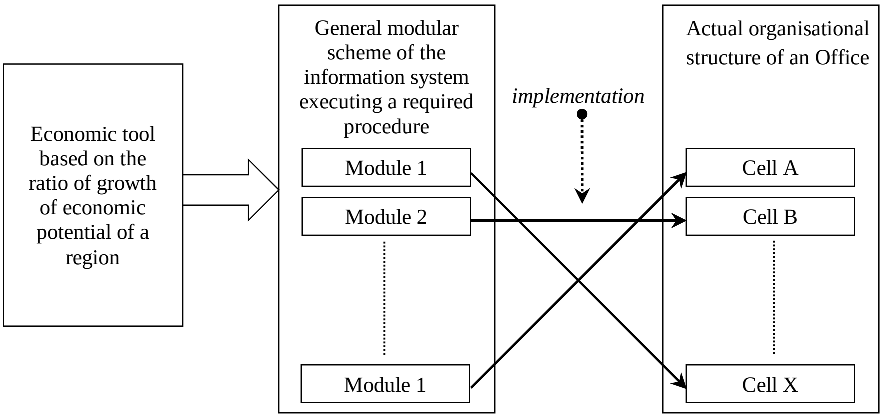
[229] It must be assumed that the information system for generating information on the basis of the proposed solution is powered by data. Each information is a piece of data but not every piece of data is information. Compare: Bendkowski J., *Informacja naukowa*, op. cit. p. 10.

[230] Kisielnicki J., Sroka H., *Systemy informacyjne biznesu*, Placet, Warszawa 2005, p. 38.

[231]Identification of chains which could instantly take on functions resulting from implementation of the new solutions in a functioning organisation is not always possible. Therefore, in order to avoid mistakes and inaccuracies it is necessary to build a theoretical general model of a template organisation consisting of modules extracted according to the criterion of main tasks which they perform. The organisation is able to apply the tool assisting the process of planning the structure of commune/municipal expenditure in practice. The next step is assigning tasks and links in a template organization to the scope of tasks performed by cells actually functioning in the organisational structure of the Municipal/Commune Office and (or) creation of new cells in the office, if necessary. In this way the problem of implementation of the tool in practice can be solved because organisational structures of various Offices are not identical.

[232]*Analiza i modelowanie systemu informacyjnego przedsiębiorstwa*, S. Senczyna (ed.), published by the Silesian University of Technology, Gliwice 2000, p. 25.

Image 5. Relation between competences of different organisational modules of the general model solution and competences of the cells of actual organisational structure of the Commune/Municipal Office.



Source: Own work.

The end user of the information generated by means of IRGEP planning tool is the voyt/mayor of the commune/municipality. Considering the process of implementation of the solution it is necessary to include all the modules which will be involved in the process of gathering and processing data. The full profile of the organizational module requires determination of purpose, organisational conditions as well as the following[233]:

- processes executed in the module;
- resources in the module;
- information necessary for the module to work;
- information flows between modules.

Once the tool is implemented, the procedure of developing information must be broken into the following tasks:

- acquiring input data for the model (based on a survey and the analysis of budget expenditure);
- processing the acquired data to make them fit the requirements of the model;
- correction of the volumes of expenditure due to one-time effects e.g. synergy or completed long-term investments;

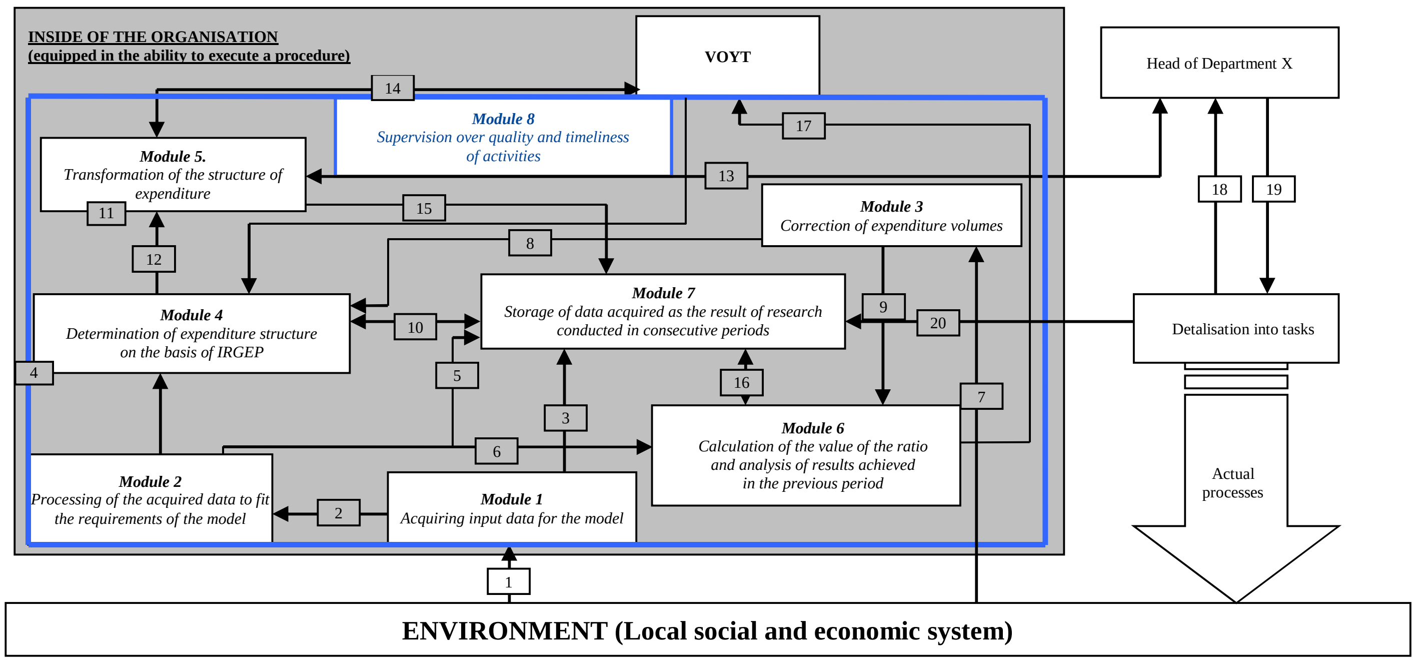
[233] Bendkowski J., *Informacja naukowa*...op cit. p. 125.

- determination of expenditure structure on the basis of the proposed method;
- confrontation of the structure of expenditure achieved by means of IRGEP planning tool with the structure corresponding to competence structure of particular departments in the Office;
- determination of the value of the ratio and analysis of the results achieved in the previous period in order to arrive at information supporting the evaluation of efficiency of expenditure;
- storage of information acquired as the result of research conducted in consecutive periods;
- supervision over quality and timeliness of activities.

Each activity listed above is assigned to an organisational module which is authorised with competences for its execution and which is given the same number as the task. The information prepared in this way constitutes a supporting aid in the process of planning the structure of budget expenditure for the voyt/mayor because it helps to adjust the structure to the preferences addressed by members of the local community.

A general model of the process of information flows in the Commune/Municipal Office is presented in Image 6

Image 6. Map of information flow in the Commune/Municipal Office resulting from application of IRGEP (template model)



Source: Żabka A., *Model procesu tworzenia informacji dla potrzeb planowania budżetowego w gminie* [in:] *Rachunkowość i finanse podmiotów gospodarczych w erze informacji*, Caputa W. (ed.) CeDeWu, Warszawa 2008, p. 139.

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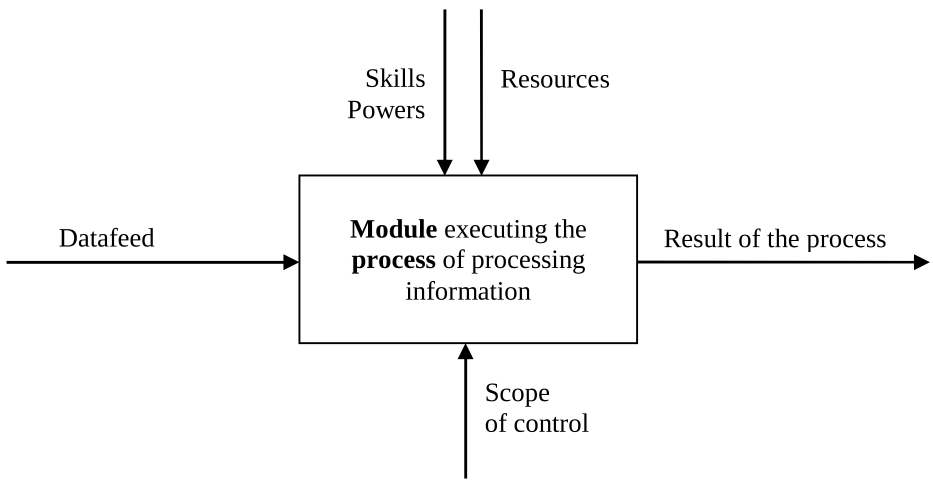
The organisational units expressed in Image 6 by means of numbers correspond to the numbers of relevant tasks. Additionally, verbal description of the tasks is provided. The arrows show the flow of information.

The employees responsible for execution of tasks assigned to particular modules receive appropriate documents and instructions so as to the type of operations they need to perform on their assigned set of documents or data. Such approach triggers a certain type of assembly line – each procedure requires appropriate division of competences and scopes of responsibility[234]. Application of the proposed tool requires extraction of competences represented by module which will enable execution of the process of acquiring and processing information. The competences needed for functioning of the module are presented in Image 7.

Image 7. Profile of the module executing the process of acquiring and processing data.



Source: Own work.

For each extracted module in the general model it is important to define:

- datafeed – data which is to be acquired or processed in the process executed by this module;

[234] Szyjewski Z., *Zarządzanie wiedzą jawną* [in:] *Problemy zarządzania* 1/2005, p. 40.

- skills – knowledge with respect to the possible ways of acquiring or processing data in the executed process and the ability to put this knowledge into practice[235];
- resources – material and intangible resources indispensable for execution of the assigned process (e.g. hardware and software);
- scope of control – key parameters for the quality of the process subject to control;
- result of the process – datafeeds processed in accordance with procedures assigned to the module.

Among processes executed in Module 1 there are activities related to annual acquisition, in strictly defined period of time, of data on volumes of indirect changes in the structure of preferences of the local community (information flow 1). This datafeed is pre-processed into the tabular form which sums the number of equal in value opinions with respect to uniform areas. The cells responsible for executing the process must dispose of authorisation[236] and resources to conduct annual surveys among residents and entrepreneurs. The information that should be at the disposal of employees responsible for conducting the functions of this module relate to the kind of data which must be obtained by means of a survey and presentation of results. Additionally, at this stage it is necessary to possess the skill of data processing and the module must be equipped with appropriate hardware and software. The key supervised element is the time of passing the result data to the consecutive unit. Moreover, the congruency of grouping the results with respect to relative changes and levels of significance of particular framework conditions should also be subject to supervision i.e. verification of the number of returned surveys with the sums of numbers of results in each examined area. The form of recording the result data will also be audited.

The data processed in this way is transferred to Module 2 for further processing and to Module 7 for archiving of annual surveys (Information flow 3). This information is stored in the archive on the off-chance of doubts concerning the quality of result values of the process and will not be utilized in future periods.

[235]The assigned information necessary for appropriate execution of the process, is the key element of the profile of the module. The ability to utilize the information should be considered in the implementation phase e.g. appropriate training courses should be provided for if necessary.
[236]Or power of attorney to delegate them to external units or to get access to pollsters.

Module 2 consists of activities related to processing of the acquired data to such a format which meets the requirements of the model i.e. determination of the structure of the averaged preferences of entities of a given social and economic area and the volumes of averaged relative changes that occurred as the result of expenditure of public resources in particular areas. Datafeed of this module corresponds to Information flow 2 i.e. the result values of data processing in Module 1. Entities responsible for execution of this process must possess knowledge on how to average the received data. In order to efficiently conduct the process of structure determination, it is necessary to equip this process with hardware and software. Also in this module the time of completion of all the required activities and passing on final results is critical. Each achieved value of the aggregated sum of importance ratios for all framework conditions which, according to assumptions[237], must equal 1, is also subject to audit. The end result of data processing in this module is information about the structure of averaged preferences of entities residing in a given commune/municipality and about volumes of relative changes observed within particular framework conditions as perceived by local residents. This information is then transferred to Module 3 (Information flow 4) for further processing in the process of determination of an optimum expenditure structure, to Module 7 (data archiving; Information flow 5) and to Module 5 (efficiency analysis, Information flow 6). The result information developed in this module will also be used in the next year's annual survey as benchmark (baseline).

The essence of the process executed in Module 3 is correction of the values of ratios between the amounts spent and the dynamics of parameters constituting the ratio due to one-time effects (e.g. synergy with large public investments in infrastructure or completion of a long-term investment in the period preceding the planning period) achieved in a given year and having a considerable impact on the perception of residents with respect to changes in framework conditions in particular area and on the assessment of the importance of these changes. This will guarantee a greater precision in determination of the size of expenditure ratios to the dynamics of changes in the conditions of functioning of entities in a commune/municipality and on dynamics of importance of these conditions and, by extension and will cause an increase in

[237] See: p. 98.

probability of achieving the goals set with respect to shaping framework conditions for local development[238].

The correction of values of importance ratios for particular areas of communal activities and values of perceived relative changes of functioning in these areas which were achieved by means of a survey, is not recommended though. What should be the subject of correction is the sum of budget expenditure of a commune/municipality on similar undertakings inclusive of realization costs of the aforementioned external activities which trigger one-time effects such as synergy. Although the efficiency of expenditure depends on the entity which bears the costs, an error resulting from inclusion of these expenses in the process of determining the values of the examined ratios, will certainly be smaller than their total omission.

In cases when the commune/municipality is the investor, the amounts of expenditure assumed in the model should also be corrected in both directions. The investments under realisation have already consumed a certain amount of money but they do not produce measurable results until they are completed and put into service. Inclusion of the expenditure incurred will falsify the extent of ratio of expenses to the amount of relative changes achieved in the examined area. Therefore, it is appropriate not to include these expenses in the aggregated amount of the expenses incurred in the examined period. These expenses should be included in the model when the investment is ready to use. If the investment is put into operation in a number of stages, only such proportion of the expenses should be included in the aggregated amount of expenses, which was directly connected with this part of investment which is put into service. The aggregated amount of expenditure should also include returnable and non-returnable expenses which constitute budget revenues and which were spent in order to improve framework conditions of development of this commune/municipality.

Module 3 will be fed with data acquired from the environment (Information flow 7) on the costs of implementation of investments which were completed in the commune/municipality and which, to a large extent, impact the assessment of framework conditions for development by entities residing in a given social and economic area.

[238]Such solution allows for on-going update of parameters of the expenditure planning process resulting from the changes in framework conditions of development which did not result from the activities of local authorities.

The unit performing the functions in Module 3 should be competent with respect to the method of obtaining this type of information, and should be able to develop a system of monitoring of key investments finalised in the commune/municipality in the examined period. The result of the process performed in this module will be juxtaposition of investments completed in the period preceding the planned period together with amounts which were spent on these investments and assigning them to appropriate areas of activity of the commune/municipality which are specified in the structure of the tool. The supervision over realization of the process in this module will concern the dates of transfer of the information and properties of assigning investments to particular areas. The result of the process is transferred to Module 4 (Information flow 8) and to Module 5 which performs analytical processes (Information flow 9).

Module 4 performs processes related to determination of optimum structure of budget expenditure on the basis of the method of integrated ratio of growth in economic potential of a region (IRGEP). This module is fed by: Information flow 4 representing passage of result information on the structure of preferences and the volumes of evaluation of relative changes in framework conditions (this information comes from Module 3); Information flow 8 representing information on the corrections of budget expenditure; Information flow 10 representing flow of baseline information (as at the end of the previous period) on the structure of preferences (source of this information is Module 7); information provided by the voyt (Information flow 11) about the volume of the planned aggregated amount of expenditure.

To assure the right course of realization of the process in Module 4 an algorithm calculated on the basis of IRGEP is used in order to determine the optimum structure of budget expenditure. The condition necessary for the realisation of the procedure is equipping the module with appropriate hardware and software. The issues under supervision here are the date of generation of the result information; the date of transfer of this information to subsequent units; the aggregated amount of budget expenditure used in the calculation which must be equal to the amount of expenditure planned by the voyt and to the value of postulated importance parameters of particular boundary conditions at the end of the planned period[239]. The outcome of the process in Module 4 is the information about the optimum structure of expenditure in configuration corresponding to the structure of framework conditions described in the model, within the available resources. The information is transferred to the Archive Module (Information flow 10) and to Module 5 (Information flow 12).

Organisational structures of different communes/municipalities and the areas of activities determined by the construction of the ratio may vary therefore, it is necessary to transform the structure of expenditure arrived at by means of IRGEP planning tool, to the structure corresponding to the organizational division of the office into departments. In the best possible situation the organisational structure of the office should be adjusted in such a way so that its particular constituents are directly responsible for shaping specific framework conditions of development of a given region. Unfortunately, the organisation of a vast majority of examined communal and municipal offices considerably differ from the ideal model.

The processes of transforming the structure of expenditure recorded in a configuration resulting from the framework conditions to the structure resulting from the organisation of the office are performed in Module 5. This module is fed with information having optimum structure of expenditure determined in Module 4 (Information flow 12) and a list of suggested tasks[240] (Information flow 13). Budget conclusions concerning the tasks proposed for realisation in a given period in accordance with the procedure of activity-based budgeting, are presented to heads of departments by members of staff (Information flow 18) in the following form[241]:

- Profile of a budget task – description of the task, needs related to its realisation and tools for measuring the efficiency of its realisation.
- Action plan for a budget task – a list of activities necessary for realisation of the task and the volumes of related expenditure.

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[239]In accordance with assumptions of the model, the value of importance must be identical for all framework conditions, which balances the process of their creation.

[240] In case of communes which use the activity-based budgeting method this process will be much less time-consuming.

[241]Compare: Filas J., Piszczek M., Stopnicka I., *Budżet zadaniowy – narzędzia i procedury*, the Municipal Development Agency, Kraków 1999, pp. 41-85.

The heads of departments review the budget applications in accordance with priorities and transfer them as Information flow 13 to Module 5.

In the process realised in this module tasks are being assigned to the structure resulting from application of the tool developed by the author of this publication i.e. the tasks are matched with appropriate area of communal/municipal activity. Thus, critical information here is the information about the catalogue of tasks executed in the commune/municipality and method of their assigning to particular framework conditions. A sample format of such catalogue is presented in Table 13.

Table 13. Extract from the catalogue of tasks realised in the commune/municipality

		Assignment to framework conditions of development	**Assignment to departmental structure of the Office**
TASKS	Renovation of road surfaces	impact of the condition of communication infrastructure on conducting business activity	Maintenance Department
	Payment of housing allowance	availability of social welfare benefits	Social Welfare Centre

Source: Own work.

Information about the structure of expenditure arrived at thanks to the application of IRGEP planning tool together with the catalogue of tasks assigned to each activity area is handed over to the voyt[242] (Information flow 14) who, if necessary, makes corrections in the structure of the postulated expenditure and then identifies tasks for realization in each area of activity. The tool that assists the process of selection of tasks is information generated by Module 6 which analyses

[242]The term ‘voyt’ is only arbitrary. It corresponds to the level of responsibility for realisation of processes conducted within this module. Depending on the size of the commune/municipality responsibilities assigned for this module are in the hands of a voyt, mayor or president.

the effects of budget expenditure in order to modify particular framework conditions (Information flow 17).

The aggregated amount of expenses involved in the realisation of tasks included into the budget plan may not exceed the volume of resources (resulting from the corrected model structure) allocated for development of framework conditions of the region. The group of tasks qualified for implementation is passed on as feedback (Information flow 14) to Module 5. The outcome of the process realised by Module 'Voyt' allows for transformation of the expenditure structure created by means of application of IRGEP planning tool into the structure of expenditure resulting from the competence structure of departments. This transformation is carried out on the basis of the catalogue of tasks. Information on allocation of budget resources and tasks selected for realisation is passed on to the heads of departments as feedback (Information flow 13). The heads of departments communicate the information about tasks selected for implementation to employees specifically responsible for their execution (Information flow 19).

The operation of transforming the expenditure structure will also be required in case of the structure of expenses resulting from the organisational division of the office; this structure must be adjusted to the structure resulting from framework conditions postulated in the model. The knowledge of the base structure of expenditure adopted in the IRGEP method is indispensable in the process of determining of the optimum structure for the next planning period. This knowledge also facilitates inter-period comparisons. Efficient execution of tasks assigned to this module requires appropriate hardware and software. The aspects which should come under direct supervision is punctuality of generating the results of the process. Moreover, the criterion of process verification will be compatibility of aggregated amounts of budget expenditure resulting from both ways of recording expenditure[243] and the property of assigning randomly selected tasks to appropriate departments. The information generated in this process is submitted to the voyt (Information flow 14) as information assisting planning of preliminary distribution of resources and sent to the module in which data is stored (Information flow 15).

[243] There are two systems of recording expenses. One results from departmental structure and the second results from assigning to framework conditions for development of a commune/municipality.

Module 6 consists of processes related to determination of the value of aggregated ratio IRGEP and to the analysis of results achieved as a consequence of disaggregation of the general form of the ratio to particular framework conditions. It is particularly important in case of ratios between expenses and the effects achieved in previous periods. It seems that the best possible solution here is combining information achieved through application of IRGEP planning tool with information generated by means of task-based budgeting method. This module is fed with data from Module 2 on the volumes (determined by means of a survey) of evaluations of relative changes in framework conditions for functioning in the particular areas of activity $Q_{i(t)}/Q_{i(t-1)}$ and levels of importance ratios of particular framework conditions for development $a_{i(t)}$ (Information flow 6). Moreover, to assure correct course of the process it is necessary provide information on the levels of importance ratios of particular framework conditions for development forecasted for the end of the preceding period $a_{i(t-1)}$. The source of this information is provided by Module 7 (Information flow 16). The last datafeed for Module 6 is Information flow 9, representing flow of corrected values[244] of budget expenditure incurred in order to change the framework conditions of development in particular areas. Here the source is Module 3. The organizational units responsible for process assigned to Module 5 are obliged to conduct the analysis of the achieved ratio between the volumes of budget resources spent on shaping particular conditions for development and the relative change in these conditions. The ratio between the relative changes of framework conditions in particular areas and dynamics of the importance parameter $a_{i(t)}$ are also subject to analysis. The outcome of tasks performed in this module is achieving information on the reasons of changes in values of the ratios mentioned above. The main recipient of this information is the voyt of the commune. As already mentioned, it is possible to use the documentation which is created in the process of task-based budgeting as this documentation constitutes a source of information which helps to arrive at a full picture of performance of local authorities in the period preceding the period under planning process.

The units realizing the process assigned to Module 6 should be equipped in skills of conducting economic analysis and interpretation of

[244]The correction refers to expenses within framework conditions of development in which the phenomenon of synergy between the achieved effect with financial activities related to sources other than communal/municipal budget occurs.

achieved results. These units should dispose of resources such as hardware and software. The effect of the process is information about efficiency of activities undertaken in the commune aimed at improving the framework conditions of growth of economic potential of a region. This information, represented by Information flow 17, is handed over to the voyt as a tool supporting the process of selecting tasks for implementation.

Module 7, in which information from consecutive years is stored and archived, has an additional function of an information buffer between the remaining modules. The information generated by each of the module is transferred to the next module for further processing, and to the module which stores the information. In this way the employees responsible for executing processes assigned to particular modules can easily access the data they need to assure prompt and smooth realization of processes. This module is fed with results of processes completed in particular modules represented by information flows 3, 5, 10, 15, 16 and 20. The process assigned to Module 7 involves distribution of achieved data into the archive or for further use in future periods. The second category of data must be easily accessible and the data must be recorded in a way corresponding to the requirements of the processes which may need this data in the future. The characteristic feature of storage process in case of data that only need archiving is high degree of compression. To assure smooth functioning of processes assigned to Module 7 it is necessary to build a database in which data may be sorted out in accordance with different criteria, including the date of record and maturity in future periods. The required resources when it comes to Module 7 is appropriate hardware and software as well as data carriers allowing for data archivisation. The outcome of the process in this module is data made available, as datafeeds, for processes executed in Module 4 (Information flow 10) and Module 6 which serves organizational functions (Information flow 16).

It should be emphasized that the key factor in the process of budget preparation is time. Badly coordinated budget proceedings between team members in terms of time may cause a number of perturbations in the process of realisation of the task. The process of creation of the communal budget must be completed by the end of the year preceding the year for which the budget is prepared. Pursuant to the legislation in force[245] the voyt is obliged to submit to the Commune Council a draft of the budget by 15 November of the year preceding the budget year. The budget calendar should then allow a sufficient amount of time needed to prepare the information supporting the process of expenditure planning on the basis of the algorithm presented in this publication. The deadline for passing the budget is 31 March of the budget year. In case of disturbances in the process of developing information supporting budget planning process on the basis of IRGEP, application of this information may prove impossible due to statutory deadline for passing the budget. Therefore, it should be assumed that the information about the schedule for communicating result information is of key importance for functioning of each module. For this reason Module 8 was equipped with a set of powers with respect to supervision over the procedure of preparing information supporting the planning process achieved by means of application of IRGEP planning tool. The unit responsible for the supervision must possess extensive knowledge on processes in each module and on key aspects of control over each of them.

The deliberations undertaken in Chapter 4 on the application of the method based on IRGEP construction for supporting the process of planning the structure of expenses covering the costs of development of framework conditions and the methods of its implementation, allow to formulate a statement that technical conditions to apply this tool in the organizational structure of the office do exist. Functional approach to the process of determination of the optimum structure of the expenses and to generating the information that allows analysis of their efficiency on the basis of IRGEP planning tool, made it possible to extract template competence modules whose tasks and information interrelations may be assigned to actual organizational units of an office. A considerably high degree of flexibility that can be achieved here allows for implementation of the proposed solution in any self-government organisation regardless the organizational structure of a given office.

A major improvement in the process of determination of the optimum structure of budget expenses is the application of the task-based budgeting in the budget planning process. But it is also possible to implement IRGEP planning tool in offices in which task-based planning is not used. Transformation of the structure of expenses to such a form

[245] Act of 8 March 1990 on local self-government (Journal of Laws 1990 No 16, item 95, article 52, point 2).

that it corresponds to the organisational structure of the office may be based on the division resulting from budget classification.

The biggest challenge in implementation of new solutions in general is the resistance to change of the workforce. Therefore, the procedure of generating information supporting the process of planning expenses and evaluation of efficiency of the process does not entail increasing the workload on employees. In case of implementing IRGEP planning tool the problem of resistance is almost completely eliminated.

IRGEP as a method supporting the process of planning expenses is not expensive to implement and maintain. The cost driver here is the annual opinion survey of entities functioning in a given area. But these costs may be reduced by application of the panel research method. The assumption behind the construction of the survey is arriving at extensive and comprehensible instrument which is user-friendly so that it is easy to assemble the representative group of respondents. It is even possible to conduct the survey online by publishing it on the website of the office[246]. Such solution would allow to automate, to a high degree, the process of data processing in the process of planning budget expenditure.

All the arguments mentioned above support the thesis that implementation of the tool of planning budget expenditure and evaluation of efficiency of this expenditure by means of IRGEP will help to achieve positive results at considerably low costs and the extent of the these results cannot be measured a priori.

5.2 Supporting the evaluation of expenditure efficiency

The opinion survey conducted among residents and entrepreneurs in Ruda Śląska in November 2008 and repeated in November 2009 embraced a group of 742 respondents. The selection of respondents to the group was carried out by means of proportionate methodology taking into account the number of residents in particular parts of the town, age structure, education and profession of the residents.

The basis of the survey was a questionnaire prepared specifically for the method which constitutes an attachment to the present publication. The survey involved 15 areas which determine the conditions for functioning of entities corresponding to the conditions specified in sub-section 4.2. Respondents were asked about the importance of activities undertaken in respective areas which are, in fact, the framework

[246] It must be accompanied by appropriate steps for dissemination of this solution.

conditions for development of their municipality. They were also asked about the extent and directions of changes that occurred in these conditions. The questions were formulated in the following way:

1. How important to you is *creating further facilitations* in finding employment in your commune?
2. How important to you *is further improvement of availability* of sales and service outlets in the territory of the commune?
3. How important to you is *further improvement of operations* of institutions providing assistance in case of income loss?
4. How important to you is *implementation of further facilitation* in finding accommodation in the territory of the commune?
5. How important to you is *further improvement in the access* to basic health care services and units associated (e.g. pharmacies) located in the territory of the commune?
6. How important to you is *further improvement in the access* to educational services developed in the territory of the commune?
7. How important to you is *further improvement* of the conditions of using the common communal facilities (parks, playgrounds, bicycle paths etc.) for recreational purposes?
8. How important to you is *undertaking further actions* aimed at improvement in environment protection (air, water and soil quality) in the territory of the commune?
9. How important to you is *undertaking further actions* aimed at improvement of the security level of people and property in the territory of the commune?
10. What is your opinion on the extent of bureaucratic formalities associated with starting a business activity in the territory of the commune?
11. How important to you is *improvement* in the quality of the administrative and legal service and support in the development of enterprises?
12. How important to you is *improvement* in the road and railway infrastructure in the commune?

13. ∗How important to you is improvement in the possibilities to find the right employees?
14. ∗How important to you is the possibility to use the commune property (e.g. through leasing) for production purposes?
15. How important to you is improvement in the access to utilities (water, gas, electricity) and waste disposal?

Each question is complemented with another question relating to the evaluation of the relative changes which occurred in a given area. The layout of a sample question is presented in Table 14.

Table 14. Sample survey question.

1. How important to you is creating further facilitations in finding employment in your commune?								
Totally unimpo rtant	Unimp ortant	Not really importa nt	Rather unimpo rtant	Modera tely importa nt	Rather importa nt	Quite importa nt	Importa nt	Very importa nt
0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
To what extent did the situation change in the last year?								
Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement? What %?
0	**..........**	**80**	**90**	**100**	**110**	**120**	**130**	**.........**

Source: Own work.

The research on the importance of undertaking activities with respect to particular areas was conducted in order to determine the parameter of its importance a_i. The span of the scale i.e. the level of importance of undertaking activities which modify conditions in a given area, was determined as [0;8] spread, in which 0 means lack of necessity to modify the conditions, while 8 represents a very strong need to improve conditions in a given area.

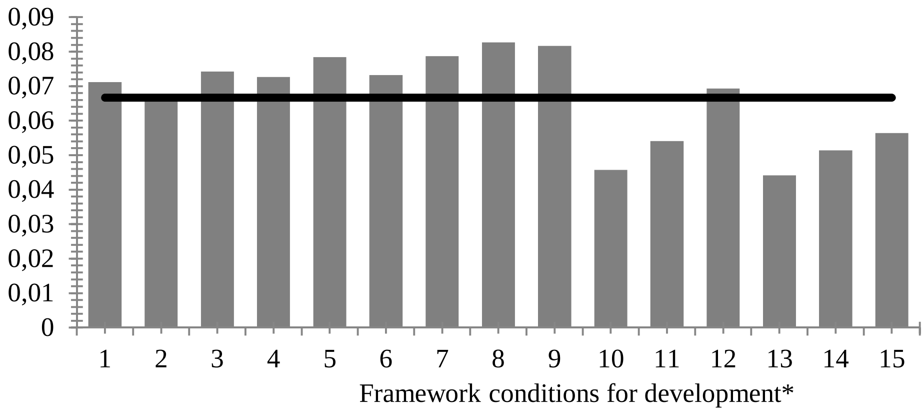
* to be filled in by entrepreneurs.

* to be filled in by entrepreneurs

The question referring to the evaluation of the level of changes in conditions which occurred in the passing period in these areas, allows to determine the volumes of $Q_{i(t)}/Q_{i(t-1)}$. The changes may be perceived as positive or negative, therefore the accepted scale is [0;+∞]. It was also assumed that the determinant of lack of changes with respect to framework conditions for functioning in a given area is assigned the value of 100. Deterioration within a given condition is assigned the spread from 0 to 100, where 90 denotes deterioration of a given framework condition by 10%. The evaluation of a change in framework condition (scale from 100 to +∞) denotes improvement of functioning within this condition. The value 110 means that a given framework condition improved by 10%. The value of evaluation of improvement with respect to the examined conditions is in no way limited in order to retain the completeness of the set of ratios determining the values for the extent of the change. The questionnaire comes with a short note on the purposes of the research and instructions how to fill it in.

The examination of importance of activities undertaken in particular areas was conducted in order to arrive at parameter a_i. The achieved results are presented in Chart 9:

Chart 9. Structure of averaged preferences according to respondents in Ruda Śląska in 2008.



*See the list on page **Błąd! Nie zdefiniowano zakładki.**

Source: Own work.

For the structure of averaged preferences the author determined standard deviation σ of the value of importance parameters ($a_{i(t)}$) for undertaking activities in particular areas. The scope of changeability of the standard deviation of parameter structure a_i ranges from 0 to 0,258199; where 0 deviation denotes optimum structure in which all importance parameters are balanced for particular areas, while σ=0,258199 shows a structure in which one of the parameters takes the value of 1 and all remaining parameters are at the level of 0; it is a structure with the smallest level of sustainability.

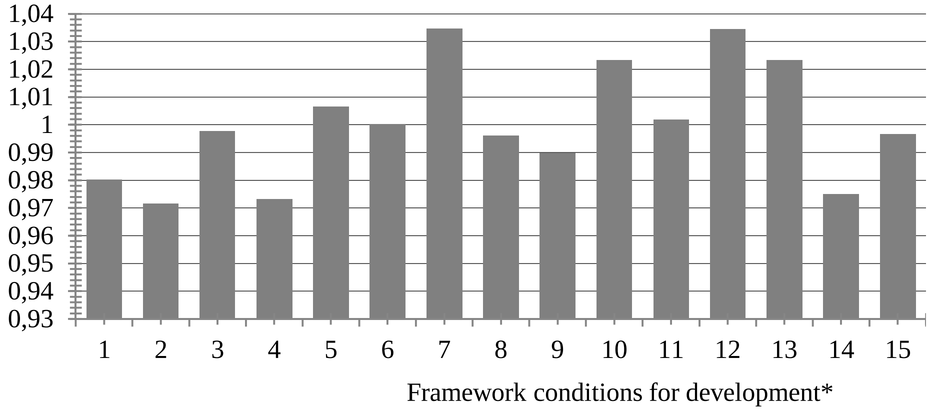
The value of standard deviation of the preference structure achieved by means of a survey conducted among individuals and business entities functioning in the municipality of Ruda Śląska, with $\sigma_{RŚ}$=0,01301, places it well within the range of the parameter. Taking into consideration the assumption that in optimum structure all importance ratios are equal to one another and amount to 0,0667, the areas which, in the opinion of respondents, require changing are areas number 3, 5, 7, 8 and 9. The area of entrepreneurship, as was shown in the study, is one with the smallest need for change. The respondents found the conditions of functioning in this particular area satisfactory.

This parameter is under a very strong influence of the results of dissemination campaign conducted by local authorities. When the residents of a given area are aware of the development plans of their commune/municipality, their perception of the level of needs satisfaction is affected i.e. the feeling that a given need is not satisfied is diminished. Well-informed residents will start to point to areas in which long-term activities ought to be undertaken. When not enough information is communicated by local authorities about planned activities with respect to improving conditions for functioning, residents perceive the conditions in relevant areas as unsatisfactory. In such a case, local authorities may intensify their efforts in the wrong direction as the result of inadequately interpreted data which may trigger a situation in which efficiency of public expenditure is weakened.[247].

The second factor taken into account in the survey was the extent of changes occurring in a given area in the year preceding the survey. The achieved results are presented in Chart 10.

[247] Żabka A., Jonek-Kowalska I., *Znaczenie przepływu informacji w zarządzaniu rozwojem lokalnym. Wnioski z badania* [in:] *Ewaluacja rozwoju regionu w wymiarze społecznym, gospodarczym i środowiskowym,* Malik K., [ed.], Opole 2009, p. 291.

Chart 10. Values of averaged relative changes in the evaluation of respondents ($Q_{i(t)}/Q_{i(t-1)}$) of Ruda Śląska in 2008.



*See the list on page 153

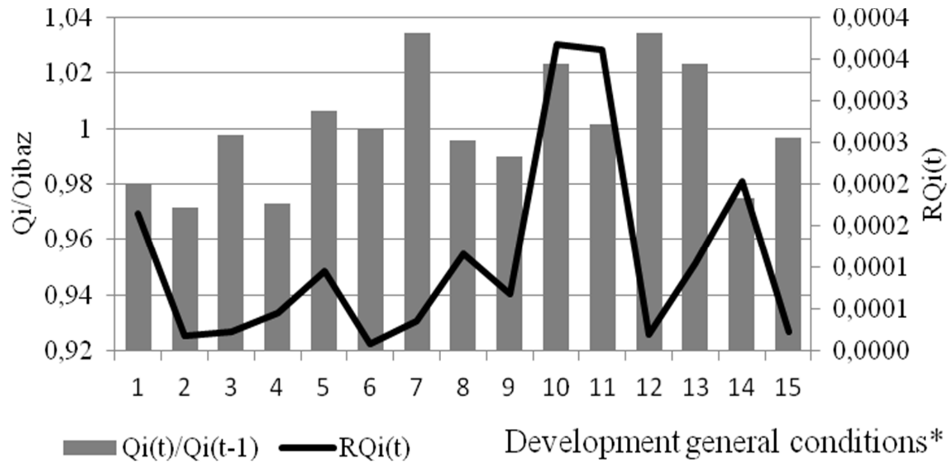
Source: Own work.

The values of relative changes are characterized by great spread. A slight deterioration in the functioning conditions was noted in areas 1, 2, 4 and 14; whereas improvement was noted in areas 7, 10, 12 and 13. It is worth noticing that considerable changes were reflected in satisfaction expressed by entrepreneurs with respect to created conditions (see the same areas in Chart 21).

Like in case of the first parameter, the information that the office communicates to entities functioning in the commune has big influence on the evaluation of completed changes. The research showed that the residents are not aware of the full scope of activities performed by their local authorities. They are rather more prone to credit the commune with activities of a small range, crediting other institution with large investments. It seems that it would be a good idea to copy the manner of informing about co-financing of the investments which is obligatorily used when it comes to EU funds. Each and every investment co-financed by the EU must have a plate with full information on the source of financing. Such policy was adopted in Ruda Śląska with respect to investments financed from local budget. Another problem may be the fact that some of the commune's activities do not translate into physically noticeable results. However, in this case it is reasonable to assume that the lack of awareness of existence of some needs means that they are satisfied well enough or are not significant to the residents because the changes in the system of values are shown in the tendency to undervalue or even devalue the factors satisfying the needs already satisfied[248].

It would be a hasty action to try to evaluate the obtained values of relative changes in individual areas without relation to the value of expenditure that brought about those changes. The ratio reflecting the value of this translation is R_{Qi}. Relating the values of obtained changes to the value of expenditure which caused them is shown in Chart 11.

Chart 11. The strength value of expenditure for obtained relative changes for individual framework conditions (R_{Qi}) and obtained relative changes (Qi/Qibaz) in Ruda Śląska in 2008.



*See the list on page 153

Source: Own work.

Information concerning the value of relative change ($Q_{i(t)}/Q_{i(t-1)}$), in individual areas, in connection to the information concerning the value of expenditures translation to the value of obtained relative change ($R_{Qi(t)}$), allows to formulate initial conclusions concerning the effectiveness of spending public funds in individual areas. Indicator $R_{Qi(t}$ may be interpreted as the growth of the relative change value caused by increasing the expenditure by one unit. Together with the growth of this indicator the efficiency of expenditure grows. In the conducted research

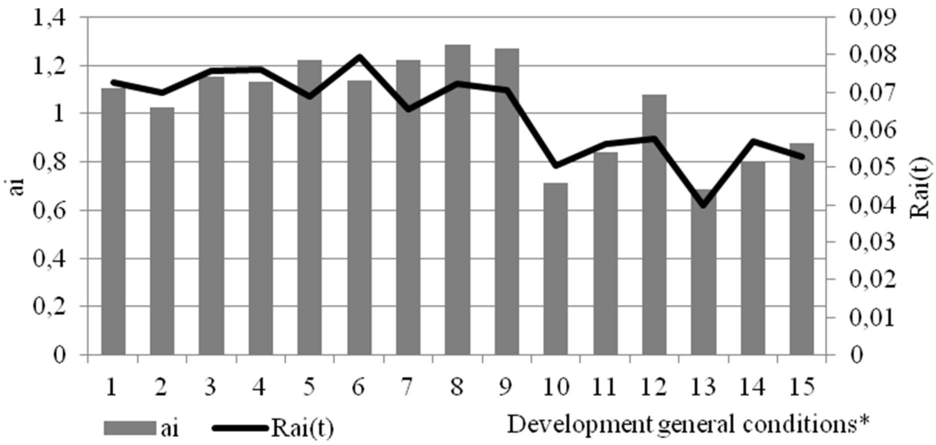
[248] Maslow A., *Motywacja i osobowość*, Pax, Warszawa 1990, p. 105.

the greatest values show indicators $R_{Q1(t)}$, $R_{Q10(t)}$, $R_{Q11(t)}$ and $R_{Q14(t)}$ and what follows, in the area of those framework conditions the greatest relative changes were obtained. The situation is different in case of indicators $R_{Q2(t)}$, $R_{Q3(t)}$, $R_{Q4(t)}$, $R_{Q6(t)}$and $R_{Q12(t)}$. In the areas characterized by low translation $R_{Qi(t)}$ value, considerable change can be obtained only by directing relatively larger expenditures stream. It should be pointed out that noticing changes by the residents and the awareness of the source financing those changes have significant influence on the parameter value. The residents must notice the changes which have been financed from the communal budget. It seems that an effectively conducted informative policy allows to raise that awareness. The analysis of research results clearly shows the areas where the residents notice the changes and those where the changes have not been recognised. The dichotomy may have two reasons: wrong informative policy concerning undertaken activities or lack of completed changes. The analysis of the ratio of expenditure in the examined period to the relative change of functioning triggered by the expenditure with respect to i-area, is the basis for taking further analytical actions to establish the reasons for discrepancies in indicator values.

The model supporting efficiency evaluation constructed on the basis of IRGEP allows also to draw a conclusion concerning the area of influence of the obtained relative change on the perception of the importance of taking further actions in individual areas by the authorities of the commune/municipality. The influence is defined by the ratio of relative change in i-area to importance parameter dynamics of this area. The indicator describing this ratio is $R_{ai(t)}$. In order to determine this ratio, it is necessary to know the preference structure of the entities active in the area at the end of the previous and the examined period, namely parameters $a_{i(t-1)}$ and $a_{i(t)}$.

A significant advantage of IRGEP is the possibility to define parameters values for any defined administrative area. It is vital especially in case of communes with large number of residents accomplishing large number of tasks in various areas. In such a case it is possible to define the value of IRGEP, as well as individual parameter for those districts which will translate into improvement of purposefulness of activities undertaken in individual areas. The values of importance parameters for the areas at the end of the previously examined period, for which the source is the questionnaire conducted a year before, is presented in Chart 12.

Chart 12. The value of $R_{ai(t)}$ ration and ratios of areas importance $a_{i(t-1)}$ in Ruda Śląska in 2008.



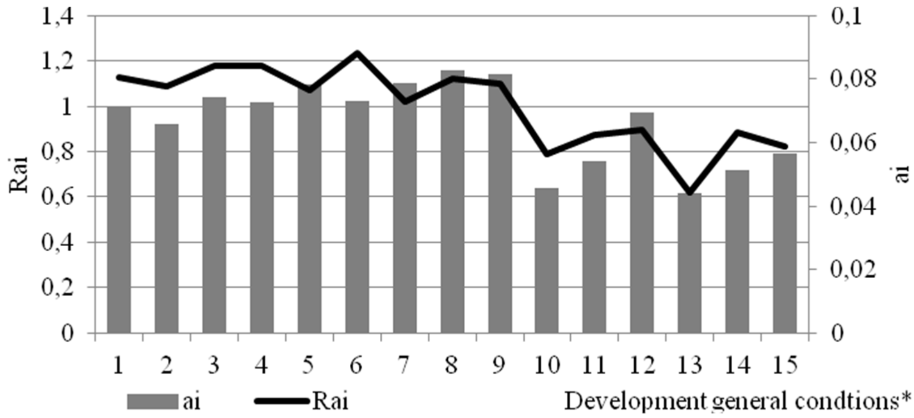
*See the list on page 153

Source: Own work.

The values presented in the chart allow to notice a certain dependency. The higher the level of the ratio of importance of a change in a given general condition, the relatively higher the ratio of relative change in the framework condition to the dynamics of i-area importance parameter. It seems to be justified because in areas with low level of need satisfaction even small changes result in a noticeable improvement in functioning conditions in the area, and as the result, the change in the perception of their importance.

From the point of view of the conducted analysis, it is necessary to consider the relation between the value of the achieved relative change in functioning conditions of entities in i-area ($Q_{i(t)}/Q_{i(t-1)}$ and the translation of this change into the change of the level of importance parameter ($R_{ai(t)}$) for this area.

Chart 13. Values of the achieved relative change for functioning of entities in i-area ($Q_{i(t)}/Q_{i(t-1)}$), and the ratio of this change with respect to the change of importance level of this area ($R_{ai(t)}$) in Ruda Śląska in 2008.



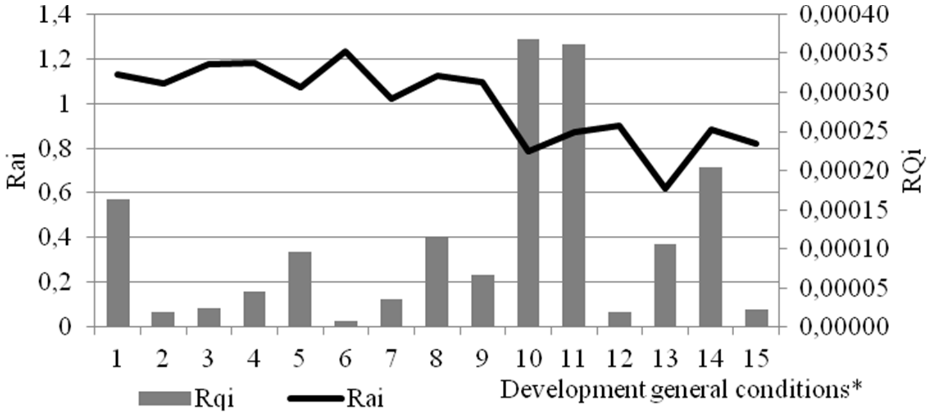
*See the list on page 153

Source: Own work.

The above data analysis allows to make a general statement that there is a relation between the evaluation of the relative change (Qi(t)/Qi(t-1)) in framework conditions of functioning, and the level of translation of this dependencies into dynamics of evaluation of the importance of those changes Rai(t). Obtaining a considerably big relative change in functioning conditions in a given area should be reflected in the dynamics of importance parameter in the area where the change has occurred. In the absence of such a situation, one might risk a statement that the change was attractive (noticeable), but ineffective as it did not evoke the improvement of needs satisfaction. In case of such discrepancy it is necessary to analyse its reasons i.e. the purposefulness of changes occurring in the area so far should be examined. For instance, members of a local community do not see activities undertaken by local authorities with respect to education (e.g. buying new equipment for school labs or financing training courses for teachers) however, they are able to notice that children attend school more willingly and they come back satisfied. Also when it comes to the issue of environment protection, the residents do not see what particular steps have been undertaken, but they see the final result – there are fish in their local river where they were not before.

The above analysis should culminate with consideration of the relation between the values of ratios of expenditure and the value of the relative change in functioning conditions and the value of ratios of those changes to importance parameter dynamics of respective areas. This relation is presented in Chart 14.

Chart 14. Relation of factors values $R_{Qi(t)}$ and $R_{ai(t)}$ in Ruda Śląska in 2008.



*See the list on page 153

Source: Own work.

Complementing the consideration with analysis of dependencies $R_{Qi(t)}$ and $R_{ai(t)}$ shows the lack of definite dependency between the values of those ratios. A certain compatibility can be observed in areas 10, 11 and 14, where the ratio of the volumes of budget expenditure is relatively stronger. In practice, it would be good to allocate expenditures in i-areas where translation $R_{Qi(t)}$ and $R_{ai(t)}$ would be the biggest as they prognosticate the highest technical effectiveness of actions. However, in reality the preferred activities are those that lead to balancing the evaluation a_i, and not their dynamics. Therefore, it happens that the commune should spend means in those areas where translations $R_{Qi(t)}$ i $R_{ai(t)}$ are not necessarily the highest.

The tool presented in the present publication is an instrument providing information for support of all activities of local authorities. The analysis conducted so far was connected to the disaggregated form of the ratio. The last stage of this analysis is determination of the value of the ratio that would embrace all activities of local authorities in the examined period. The integrated ratio of growth in the economic potential (IRGEP) for the municipality of Ruda Śląska has the value:

$$ZWRE = \frac{\sum_{i=1}^{n} \frac{Q_{i(t)}}{Q_{i(t-1)}} \times a_{i(t)}}{1+\delta} = 0{,}987$$

$Q_{i(t)}$ – the state of result value for the end of the examined period,
$Q_{i(t-1)}$ – the state of result value for the beginning of examined period,
$a_{i(t)}$ – ranking coefficient reflecting preference structure,
σ – standard deviation of ranking coefficients ai(t).

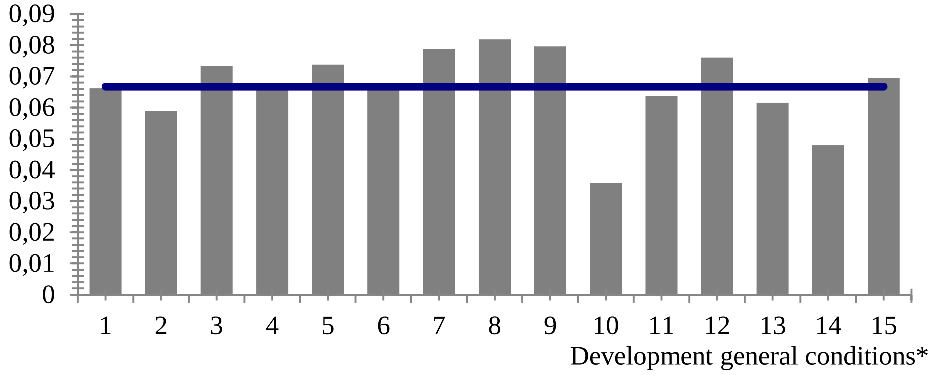
Arriving at the value above 1 proves the unity of directions of undertaken activities with the structure of residents' preferences within the area of shaping development general conditions because for the equivalent state of any change lack, with the balanced preference structure as to the importance state of a given area a_i, the value of IRGEP is always equal to1.

The aggregated value of the ratio shows the neutrality of directions of activities undertaken by authorities of a commune. The analysis of disaggregated form allows to obtain information concerning areas where it is possible to reach higher level of expenditures effectiveness. However, the level of standard deviation different than zero σ shows that the possibilities to get closer to optimal development path were not fully exploited.

The same questionnaire was conducted among residents and entrepreneurs running business activity in Ruda Śląska was conducted in February and November of 2009 with a representative group of 789 respondents. The choice of the survey group was done by means of proportional method taking into consideration the number of residents in individual districts, age structure, education and employment.

The examination of importance of undertaken actions in the scope of individual areas was conducted to define significance parameter a_i. The scale range of the level connected with the importance of taking activities modifying the conditions in a given area was defined in range [0;8], where zero means lack of necessity to modify conditions in a given area and the value 8 represents very strong need to improve conditions in a given area. The obtained results are presented in Chart 15.

Chart 15. The structure of averaged preferences in respondents' evaluation in Ruda Śląska in 2009.



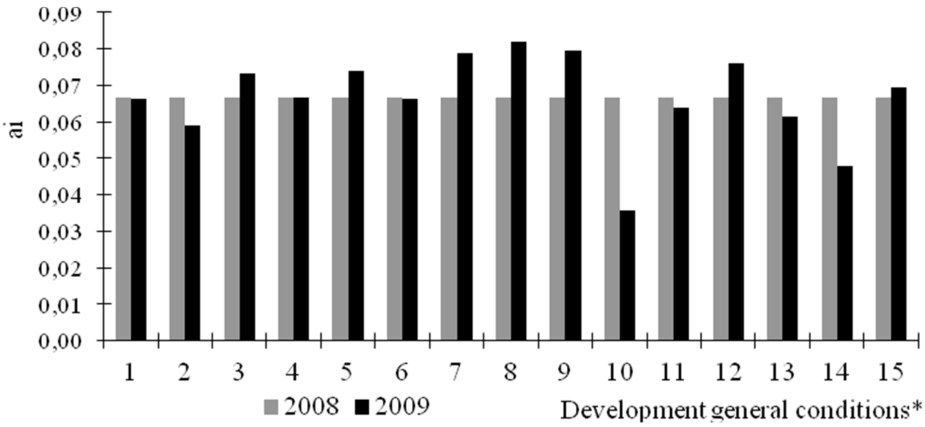
*See the list on page 153

Source: Own work.

For the structure of averaged preferences the author determined standard deviation σ of the value of importance parameters ($a_{i(t)}$) for undertaking activities in particular areas. The scope of changeability of the standard deviation of parameter structure a_i ranges from 0 to 0,258199; where 0 deviation denotes optimum structure in which all importance parameters are balanced for particular areas, while σ=0,258199 shows a structure in which one of the parameters takes the value of 1 and all remaining parameters are at the level of 0; it is a structure with the smallest level of sustainability.

The preference structure standard deviation value obtained as a result of the research conducted among socio-economic entities functioning in Ruda Śląska is $\sigma_{RŚ}$=0,0123 (it was 0,01301 in 2008). Taking into consideration the accepted assumption that the optimal structure is the one where all importance factors are equal and have the value 0,0667, areas 10 and 14 are the ones that require changes in the view of respondents. A positive change direction; however, must be noted in the scope of this parameter value. The changes in preferences expressed by the residents as compared to 2008 are presented in Chart 16.

Chart 16. Dynamics of changes in residents' preference structure in Ruda Śląska in years 2008-2009.



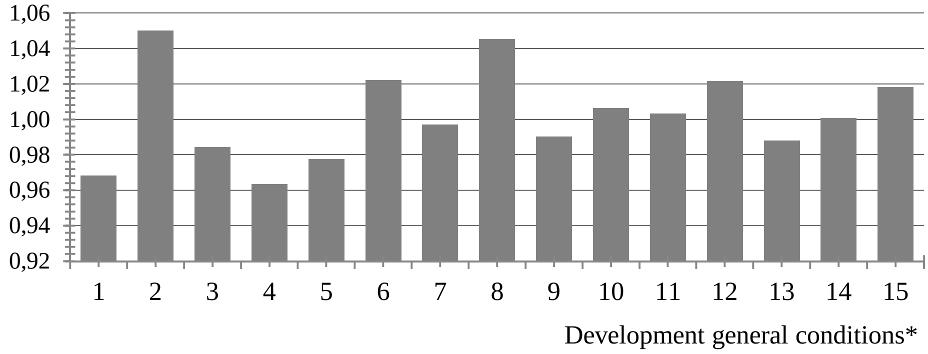
*See the list on page 153

Source: Own work.

The presented data analysis allows to point to the areas where the residents feel a strong improvement in their living conditions (a drop in the value of importance parameter of introduced changes). Among those areas 2,10 and 14 must be mentioned. In case of areas 3, 5, 7, 8, 9 and 12 there the value of the parameter went up. The reason behind this situation might be the fact that the conditions in other areas were improved, therefore respondents paid more attention to those areas where their needs are satisfied to a smaller extent and require more intense changes.

The second factor considered in the research was the extent of changes in a given area in the period preceding the year under examination. The values obtained in the research are presented in Chart 17.

Chart 17. Values of averaged relative changes in the evaluation of respondents (Q_i/Q_{ibaz}) in Ruda Śląska in 2009.

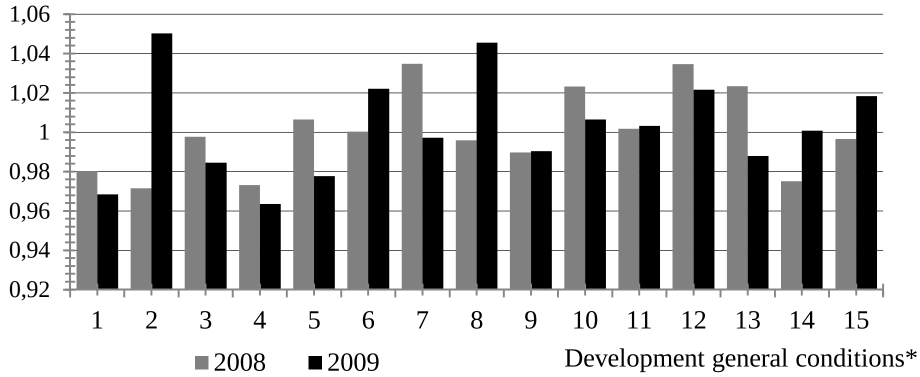


*See the list on page 153

Source: Own work.

The values of relative changes are characterized by great spread. A noticeable change in the condition was noted in areas 2, 6, 8, 12 and 15. A deterioration in conditions of functioning was observed in areas 1, 3, 4, 5, 9 and 13. It seems that the overall lowering of social moods triggered by unfavorable economic situation might be of significance in this case. This thesis is confirmed by the analysis of parameter dynamics in the period 2008-2009 presented in Chart 18.

Chart 18. Dynamics of relative changes in conditions in years 2008-2009.



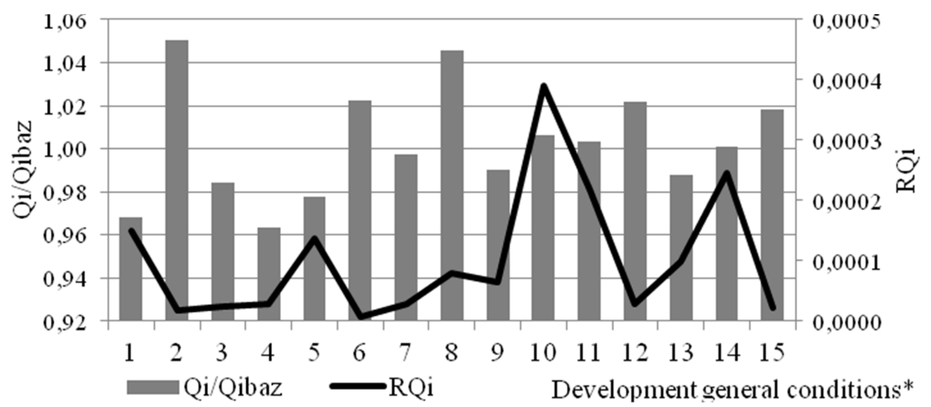
*See the list on page 153

Source: Own work.

A firm growth of the parameter value was noted in areas 2, 6, 8, 14 and 15. It means that changes in functioning conditions with respect to these areas have been noticed by the residents. A fall in the parameter value was observed in areas 5, 7, 10 and 13.

It would be a hasty action to try to measure the obtained values of relative changes in individual areas without relation to the value of expenditure that provoked those changes. The indicator reflecting the value of such translation is R_{Qi}. The reference of the obtained values to the volume of expenditure that was incurred is presented in Chart 19.

Chart 19. Force of ratio of the incurred expenditure to the obtained relative changes for individual relevant conditions (R_{Qi}) and obtained relative changes (Qi/Qibaz) in Ruda Śląska in 2009.



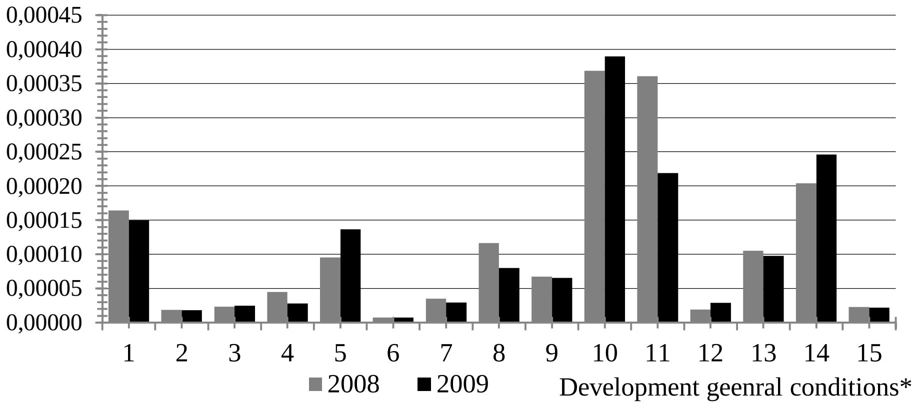
*See the list on page 153

Source: Own work.

The information concerning the relative change value (Q_i/Q_{ibaz}) in individual areas in connection with information concerning the translation value of expenditures to obtained relative change value ($R_{Qi(t)}$), allows to draw initial conclusions about the efficiency of utilization of public funds in individual areas. Indicator $R_{Qi(t}$ may be interpreted as the growth of the value of relative change caused by increasing the expenditure by one unit. The growth of this indicator triggers the growth in efficiency of expenditures. In the conducted research the biggest values are those of $R_{Q10(t)}$ and $R_{Q14(t)}$ indicators, and what follows, the biggest relative changes were obtained in those framework conditions. The situation is different in case of indicators

$R_{Q2(t)}$, $R_{Q3(t)}$, $R_{Q4(t)}$, $R_{Q6(t)}$and $R_{Q12(t)}$. In the areas characterized by low value of translation $R_{Qi(t)}$, a considerable change may be obtained only by directing relatively larger stream of expenditures. It should be pointed out that recognition of changes and the awareness of the source of financing those changes have significant influence on the value of the parameter. The residents must notice the changes financed from the communal budget. It seems that an effectively conducted informative policy can considerably raise that awareness. Comparison of the translation value of expenditure to the value of obtained changes in the period of 2008-2009 is presented in Chart 20.

Chart 20. Dynamics of the value of the parameter of translation of incurred expenditure on the obtained relative change of functioning conditions.



*See the list on page 153

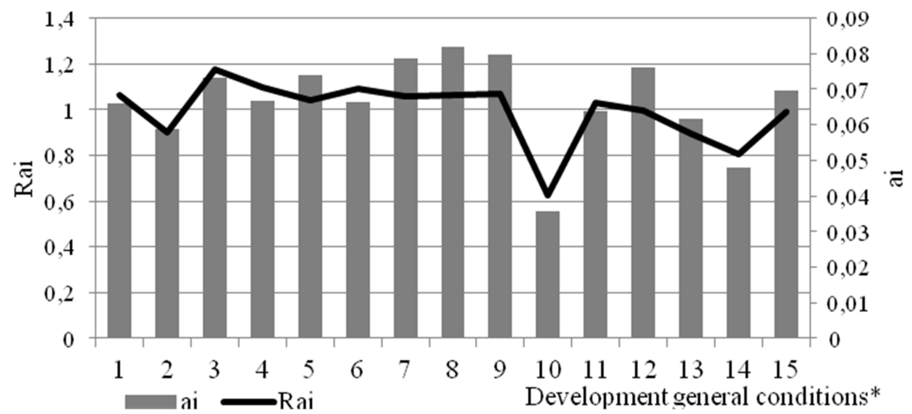
Source: Own work.

The presented data clearly shows the growth in the efficiency of expenditure in areas 5, 10 and 14. It means that the changes in those areas are perceived by the resident more clearly than in the previous year. In areas 8 and 11 there was a drop in the analyzed parameter. In case of area 11 (supporting business activity by public authorities) it might be justified by the current economic situation. In hard times entrepreneurs would expect more help from public authorities than before and, as a result, the help so far is deemed to be insufficient. In case of area 8 (protection of natural environment) despite significant volume of expenditure allocated for improvement of that parameter, the change has not been recognized.

The analysis of the extent of impact of the expenditure incurred in a given period, to the relative change in functioning in i-area provoked by this expenditure, is the basis for taking further analytical actions to establish the reasons for discrepancies in indicator values.

The model for supporting efficiency evaluation developed upon the integrated ratio of growth in economic potential of a region (IRGEP) allows to draw yet another conclusion concerning the scope of influence the obtained relative change has on the perception of the importance of undertaking further actions in individual areas by the authorities of a commune/municipality. The influence is defined by the ratio of relative change in i-area to the dynamics of importance parameter of this area. The indicator describing this translation is $R_{ai(t)}$. For appropriate definition of this indicator it is necessary to possess knowledge of the preference structure of the entities active in the area at the end of the previous and current period under examination, namely parameters $a_{i(t-1)}$ and $a_{i(t)}$. Values of importance parameters at the end of the period preceding the examined one whose source is constituted by the questionnaire survey conducted a year before, are presented in Chart 21.

Chart 21. The value of R_{ai} indicator and areas a_i importance factors.

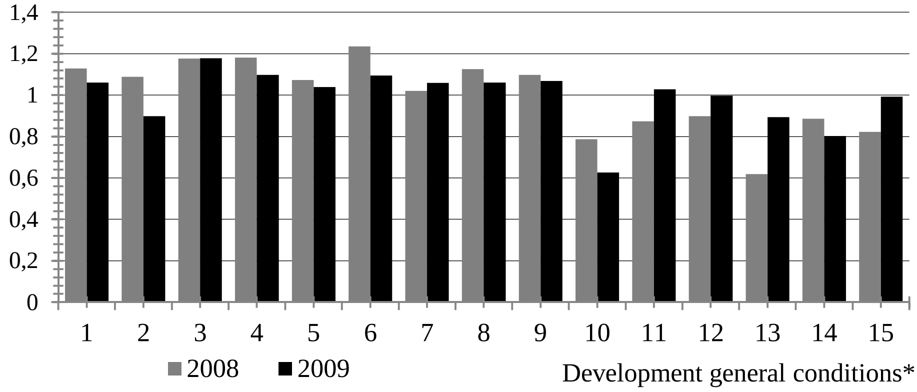


*See the list on page 153

Source: Own work.

The values presented in the chart allow to observe a certain dependency. The higher the level of importance factor of change in a given general condition, the relatively higher the translation factor of relative change in a framework condition to dynamics of i -area importance parameter. It seems to be justified as in areas with low level of need satisfaction even little changes result in noticeable improvement of functioning conditions in the area, therefore the change in perception of their importance. Important observations with respect to efficiency of expenditure are presented in Chart 22 which contains dynamics of the parameter of a relation between the achieved change and the increase in the level of needs satisfaction (R_{ai}) as felt by the surveyed residents in years 2008-2009.

Chart 22. Values of the ratio of the relative change in conditions to the increase in need satisfaction in years 2008-2009.



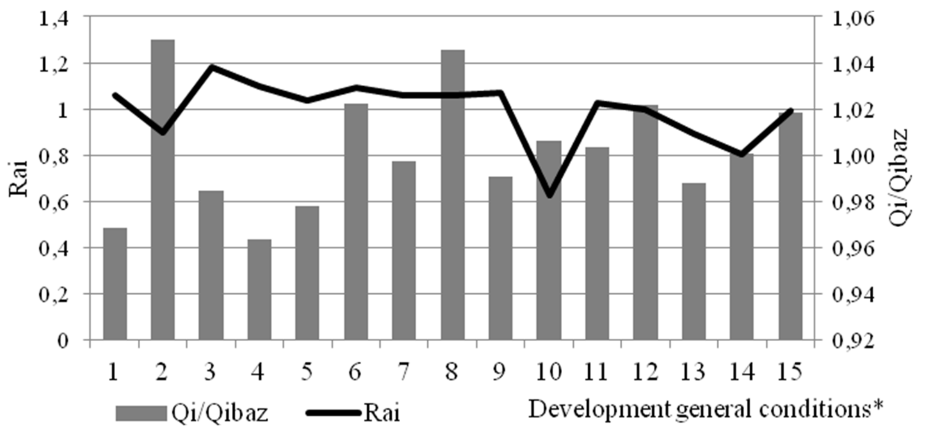
*See the list on page 153

Source: Own work.

In the examined period there was a noticeable improvement in efficiency of expenditure, especially with respect to the economic zone (areas 11, 12, 13 and 15). It means that the selection process of goals destined for execution and financed from public funds in the examined period was successful. A considerable fall in efficiency of expenditure was observed in area 2 i.e. availability of housing resources. This area, however, is characterized by a certain volatility resulting from the length of the investment process and, as the result, a considerable spread in terms of commissioning of new housing units.

From the perspective of the analysis conducted by the author of the publication, it is significant to consider the relation between the value of the achieved relative change in living conditions in i-area ($Q_{i(t)}/Q_{i(t-1)}$ and translation of this change into the change in importance parameter ($R_{ai(t)}$) for this area.

Chart 23. The value of relative change in the conditions for functioning of entities in i-area ($Q_{i(t)}/Q_{i(t-1)}$ and the translation of this change into change of importance parameter ($R_{ai(t)}$) for this area.



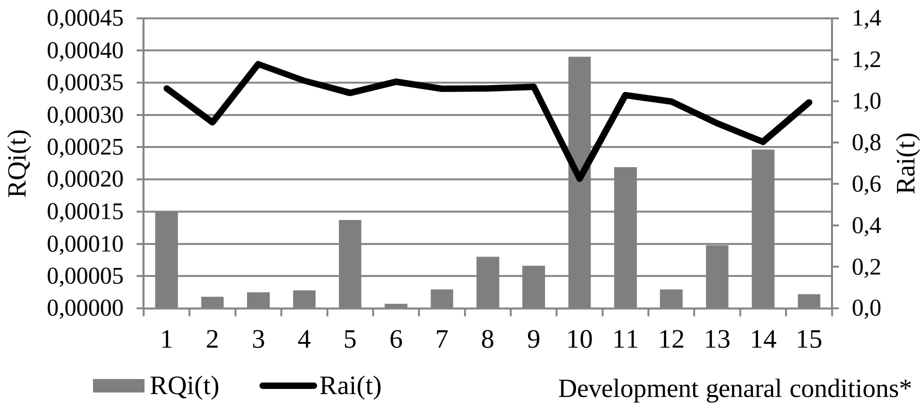
*See the list on page 153

Source: Own work.

The presented data analysis confirms the improvement in civic economy on the basis of the relation between the evaluation of relative change in framework general conditions for functioning of entities ($Q_{i(t)}/Qi_{(t-1)}$), and the level of translation of this ratio into dynamics of evaluation of importance of the change $R_{ai(t)}$. Arriving at relatively big relative change in functioning conditions in a given area should be reflected in dynamics of importance parameter in the area where the change has occurred. If this is not the case, one may say the change was attractive (noticeable), but not effective as it did not cause any improvement in the level of needs satisfaction. In case of such discrepancy it is necessary to analyse its reasons i.e. the purposefulness of changes occurring in the area so far should be examined. In the examined period, a certain advantage was observed of such areas where considerably minor relative changes in living and working conditions brought about significant improvement in the level of needs satisfaction.

The above analysis should be completed with considerations about the relation between the values of ratios of the volumes of expenditure and the values of the obtained relative change in conditions for functioning; as well as the ratio of the volume of the change to the dynamics of importance parameters in respective areas. This relation is presented in Chart 24.

Chart 24. Relation of factors values $R_{Qi(t)}$ and $R_{ai(t)}$.



*See the list on page 153

Source: Own work.

When the considerations are complemented with the analysis of dependencies $R_{Qi(t)}$ and $R_{ai(t)}$, one discovers the absence of definite dependency between the values of those ratios. However, the analysis of data presented in Chart 24 confirms the thesis about significant effectiveness of expenditure. The changes are not recognised by residents (the postulate of improving the informative policy was already mentioned) but they bring about a considerable improvement in the level of needs satisfaction. It is optimal to allocate expenditure in areas where ratios $R_{Qi(t)}$ and $R_{ai(t)}$ would be the biggest as they prognosticate the highest technical efficiency of undertaken activities. However, in reality such activities are preferred that lead to balancing the evaluations of a_i, and not their dynamics. Therefore, it is often the case that authorities of a commune should consider allocation of resources in such directions where $R_{Qi(t)}$ i $R_{ai(t)}$ are not necessarily the highest.

The IRGEP planning tool postulated in the present publication provides information for support of all activities of local authorities. The analysis conducted so far was connected to the disaggregated form of the ratio. The last stage of this analysis is determination of the value of the ratio that would embrace all activities of local authorities in the examined period. The integrated ratio of growth in the economic potential (IRGEP) for the municipality of Ruda Śląska has the value:

$$ZWRE = \frac{\sum_{i=1}^{n} \frac{Q_{i(t)}}{Q_{i(t-1)}} \times a_{i(t)}}{1+\delta} = 1,\ 0987$$

$Q_{i(t)}$ – the state of result value for the end of the examined period,
$Q_{i(t-1)}$ – the state of result value for the beginning of the examined period,
$a_{i(t)}$ – ranking coefficient reflecting preference structure,
σ – standard deviation of ranking coefficients $a_{i(t-1)}$.

Arriving at a value higher than 1 proves the compatibility of directions of undertaken activities with the preference structure of residents with respect to shaping development general conditions because the equivalence to the situation in which there is absence of any kind of change, with sustainable level of preference structure so as to the importance state of given area a_i, the value of IRGEP is always 1.

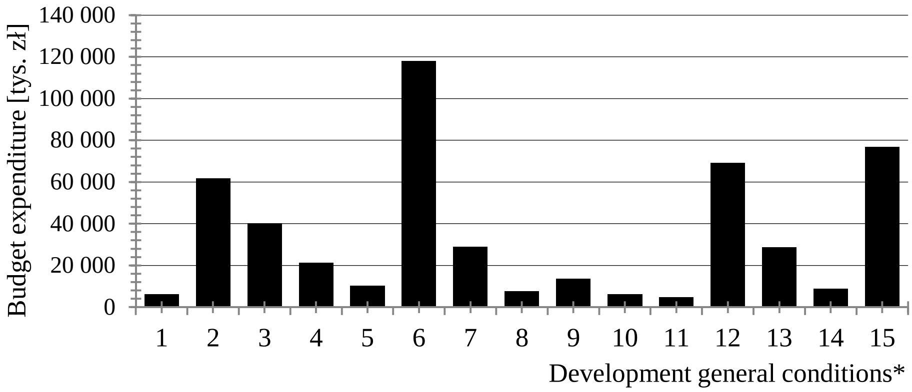
The aggregated value of the ratio shows a positive perception of the directions of activities undertaken by communal authorities. Taking into consideration the value of the ratio obtained in 2008 ($IRGEP_{2008}$=0,987) improvement in the quality of management must be credited. The analysis of the disaggregated form allows to obtain information concerning areas where it is possible to reach a higher level of efficiency of expenditure. However, the level of standard deviation σ different than zero shows that the possibilities to get closer to the optimum development path were not fully exploited.

5.3 Supporting planning of budget expenditure

Another important function of IRGEP planning tool apart from the already presented function of supporting efficiency evaluation, is supporting planning of budget expenditure. On the basis of assumptions presented in this monograph it is possible to conduct optimization of the structure of budget expenditure in order to put the commune on the optimum undisclosed development trajectory[249], characterized by sustainability of the preference structure.

As the result of feeding the data obtained thanks to the questionnaire into the optimization model based on non-linear programming, it was possible to obtain postulated structure of budget expenditures for 2009 (see Chart 25).

Chart 25. Stipulated expenditures in 2009.



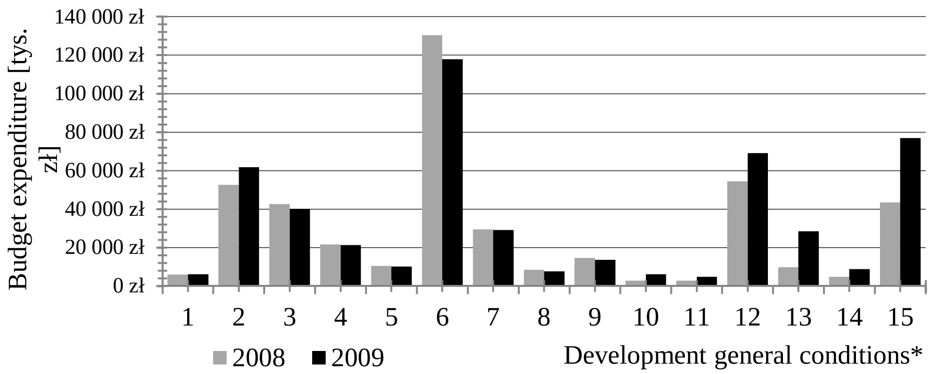
*See the list on page 153

Source. Own work.

Juxtaposition of the achieved data with the volume of expenditure planned for 2008 allows to determine such areas where considerable changes in the scope of volumes of expenditure are postulated. The obtained results are presented in Chart 26.

[249]The notion of optimum undisclosed development trajectory was defined in subsection 3.1, p. 60 and further.

Chart 26. Compilation of volumes of budget expenditures in 2008 with volumes stipulated for 2009 in individual development areas.



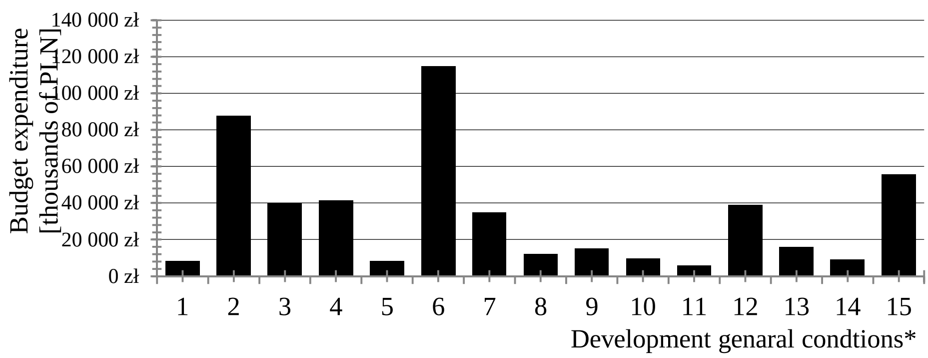
*See the list on page 153

Source. Own work.

Comparison of the volumes of expenditure shows slight deviations in areas 2, 6, 12, 13, 14 and 15. With respect to the remaining development general conditions it is suggested to keep the volumes of expenditure on the current level.

As the result of feeding the data obtained thanks to the questionnaire into the optimization model based on non-linear programming, it was possible to obtain stipulated structure of expenditure for 2010 (see Chart 27).

Chart 27. Stipulated expenditure for 2010.

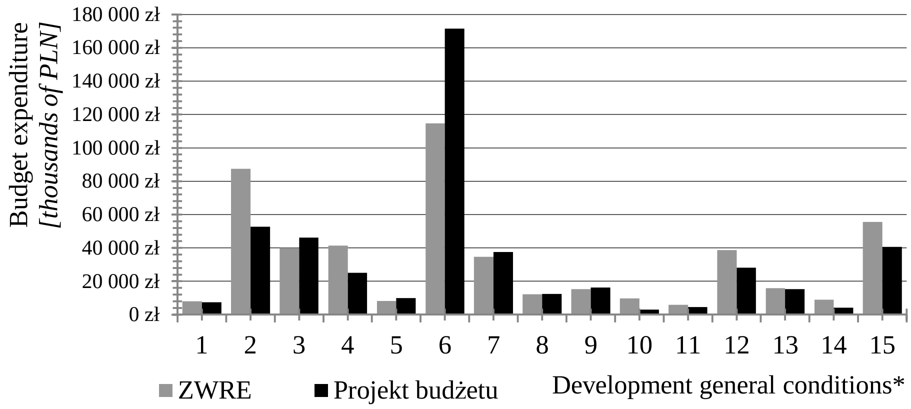


*See the list on page 153

Source. Own work.

Juxtaposition of the achieved data with the volumes of expenditure planned in budget for 2010, allows to determine such areas where considerable changes in the scope of volumes of expenditure are postulated. Such compilation is presented in Chart 28.

Chart 28. Compilation of volumes of budget expenditure for 2010 in individual development areas stipulated for the 2010



*See the list on page 153

Source. Own work.

Comparison of volumes of expenditure shows significant differences in the volumes of expenditure which result from application of IRGEP and the plan of budget for areas 2, 4, 6, 12 and 15. It should be noticed that in the previous year there were seven areas where significant differences were observed. With respect to the scope of remaining development general conditions, it is suggested to keep the level of expenditure on the current level.

CONCLUSIONS

Creating the best possible framework conditions for operation of entities in a given territory constitutes the basis of the development policy. Modifications within these conditions may take place only by providing broadly defined public goods, adequate in quantity and type. It should be noted that creating the local development policy cannot be conducted by provision of public goods that directly satisfy consumption or investment needs of private entities because it could lead to overprotection of the authorities towards citizens. The goods have to meet the needs in terms of evolution of the framework operating conditions – the conditions that determine the development. Moreover, modifications of operating conditions towards results other than those preferred by units operating in a given area is non-effective by definition because the newly created conditions will not be completely used for the sake of development or they even might restrict it. Therefore, the informative function of the integrated ratio of growth (IRGEP) was repeatedly highlighted. Periodical analyses of preference structure and studies of relative changes of particular framework development conditions allow to adjust the planned actions to the preferences of residents on one hand, and on the other, prepare an appropriate information policy which will focus on adjusting preferences of residents and directions of development chosen by the local authorities on the basis of a comprehensive and objective analysis of the commune potential and its development opportunities.

The analysis of the applied methods of planning the budget expenditure conducted in the monograph, led to the conclusion that those methods do not meet the requirement of consistency of the directions of undertaken actions and the resulting preferences of entities operating in the social and economic territory. Commonly applied tools for planning the structure of expenditure subordinate the planned structure of expenditure to the same structure applied in the previous period. Therefore, there is no reference of the plan to the level of satisfaction of development needs of residents, and also the dynamics of the level at which the needs are satisfied. This also will not be provided by democratic elections to local authorities.

Detailing the structure of expenditure into tasks selected for execution, as presented above, is frequently based on the programme and performance budgeting. This method improves the efficiency of the expenditure made as it embraces the totality of the commune operation with high level of detailing. Moreover, to some extent this method allows to define the efficiency of expenditure. However, it is not a satisfactory level due to the lack of a tool for measurement of the obtained effects on the basis of the perception of residents. Effective utilization of public funds requires an assessment of the impact on the commune expenditure on the dynamics of the obtained increase of the effects considered as public goods. However, the measurement of the efficiency of the actions taken in favour of the local community cannot take place regardless of its opinion. The problem also refers, or perhaps even primarily, to the purposefulness of those actions. In this case there cannot be any other method used than the analysis of the perception of those actions by local entities. Due to the reasons mentioned above, the applied methods of planning the current budget expenditure structure do not guarantee the best possible framework conditions for the economic potential development of the commune. Therefore, there is a need for a tool that will provide consistency of the directions of the commune's activities with preferences of residents and also consider the dynamics of increase of the effects. Furthermore, such a tool should enable evaluation of the impact of expenditure on the dynamics of the effects' increase, considered as public goods, what should be the basis of evaluation of expenditure efficiency.

The effects brought about by the incurred expenditure have to be measurable. It is the condition that determines the process of efficiency measurement with respect to undertaken actions. Due to the fact that the declared objective of the commune authorities is the increase in the living standard of inhabitants, there is a need for application of methods presented in literature and already in use to measure the standard of living. However, the conducted analysis confirmed that those methods cannot be sufficiently used for commune finance management. A range of disqualifying factors was reported and the most important is the failure to recognise the scope of the local authorities competence during the selection of factors determining the standard of living, also the lack of possibility to determine the preference structure of particular areas that have impact on the operating conditions of social and economic entities residing in a given territory, the lack of reference of the obtained research results to the level of satisfying the needs for changes in those areas reported by the residents and entrepreneurs which may result in wrong interpretation of the obtained research data and as a consequence – taking wrong decisions. Moreover, in the analysed methods the assessment of the living standard is not referred to actions or measures by which this standard was obtained. In this case there is no possibility to use the results and methodology of examining the living standard known from literature for planning budget expenditure. This disadvantage is the result of inability to disaggregate the applied measure to the level of the particular areas, the development of which is subject to financing from the budget. Therefore, there is no formalised way to use the research data which is the effect of application of the analysed methods measuring the living standard in planning the structure of current expenditure in the following year.

The conducted literature overview allowed to formulate the criteria that the ratio should meet so that it is possible to apply it for the commune finance management purposes. Such a tool should allow the recognition of needs for changes in terms of the analysed factors or the areas setting the framework for functioning of the entities active in a given social and economic space. Only the reference of the research assessment of the condition of a given phenomenon in a certain commune to the needs reported by entities operating within this commune, may offer useful information for the selection of objectives for the following period. Needs satisfaction causes a change in their priority structure. Due to this fact the ratio should allow to update dynamically this priority evaluation in order to provide consistency of supporting the decisions shaping the development and evolving characteristics of a given area. Providing the universality of the ratio, considered as a possibility to apply it in research of areas of different characteristics is also very important. The construction of the integrated ratio of growth in economic potential (IRGEP planning tool) meets the requirements.

The core of adaptation of the integrated ratio for the purpose of this monograph is the assessment of the values of relative changes in the analysed period, relating to the operating framework conditions of the active entities in the commune, regarding the evolution of preferences of the changes made. The sum of the obtained products is corrected by the standard deviation index of the structure of parameters concerning the extent to which the needs are met, as the measure of the balance of the development path. The update of parameters of IRGEP and adapting the research to the characteristics of the areas was obtained through the survey of the active entities in a given commune. The value of ratio in its integrated form enables evaluation of the totality of the local authorities operation in the analysed period. The resulting value of the ratio above 1 confirms the consistency of the directions of the actions taken and the preference structure of residents, the value equal to 1 – the lack of changes, and the value of IRGEP below 1 means changes in progress in the directions which are inconsistent with preferences of the entities operating in a given area. According to the specified criteria, the value of IRGEP can be disaggregated into particular areas of activity of local authorities. It offers a wide scope of opportunities, both in terms of applying the ratio in the process of planning current expenditure structure and also for the assessment of the efficiency of undertaken actions.

The application of the integrated ratio of growth in economic potential of a region in the process of commune finance management requires defining key areas of the active entities in the commune, for the stimulation of the local development. According to the concept of sustainable development, there were 15 key areas of the active entities operation, in 3 basic development sectors: economic, social and environmental. Particular attention was paid to a possibility for the local authorities to impact the framework conditions of development included in those areas. The conducted analysis confirmed that such possibilities exist in every mentioned area. The impact of the local authorities on the framework conditions of entities functioning in a given area takes place by providing broadly defined public goods in a proper amount and form. Those goods are financed from the local budget. The optimised structure of expenditure should lead to the balanced structure of needs satisfaction in terms of the change in framework conditions at the end of the budget period, with the concurrent maximisation of the achieved effects in the particular areas. To make the planning of this structure possible, there had to be measures of impact of the budget expenditure on the modification of the values. It was achieved by setting the factor of transferring the expenditure into the value of the achieved relative change of the operating condition in the given area ($R_{Qi(t)}$) and the index of transferring the achieved relative change into the dynamics of the parameter determining the importance of changes in this area ($R_{ai(t)}$). Assuming that the value of those transfers is stable in a short term, it was possible to create a model that optimises the structure of current expenditure. This model uses the method of nonlinear programming. The optimisation criterion is the function of the objective considering maximisation of the sum of the projected products, on the basis of the transfer value ($R_{Qi(t)}$), relative changes of the assessments of the operating conditions of the entities and factors adequate to those areas, which determine the importance of those changes at the end of the analysed period. Additionally, some restrictions were implemented whereby the equality of all factors of the importance of changes in all the areas is guaranteed and this equality sets an undisclosed optimal trajectory of development and limited amount of budget expenditure. The perception of importance of changes in terms of particular framework conditions of development is unique for every local community and results from numerous factors, both objective and subjective, therefore, it is extremely important to recognise the preference structure of the commune residents and to adjust the planned development actions accordingly. The obtained information is supportive for the process of planning the structure of current expenditure in the commune. To some extent it may be effective if the local authorities take actions aimed at redefining the preference structure of the local community into the structure consistent to the development directions of the commune set by the local authorities. An effective solution used when formulating the development strategy may be setting the development directions in consultation with the local community. Then, one may arrive at a mutual identification with the set objectives or development directions, which makes the undertaken actions.

The key factor determining the application of the method to support the evaluation of the efficiency of the incurred expenditure is disaggregativity. The knowledge of the values of the obtained transfer factors - ($R_{Qi(t)}$) and ($R_{ai(t)}$) - is the basis for further detailed cause and effect analyses and comparative analyses, which result in the ability to indicate the areas where the efficiency of budget expenditure can be improved. A very important function of the presented method is the support of the evaluation of purposefulness of expenditure incurred in certain directions. The assessment of allocation directions of the funds in terms of this criterion is made intuitively by the commune authorities. There are no formalized tools to apply in such an analysis. The IRGEP planning tool fills this gap.

The monograph proposes various ways in which the IRGEP planning tool may be applied by local authorities of a commune/municipality. However, even the most advanced tool will be useless if the possibilities of its implementation into the management process in the commune remain unknown. The developed structure of the modules that provide the following stages of preparing the supportive information for the planning process and the evaluation of efficiency of expenditure allows to claim that it is really feasible to implement the presented solution into the structure of every office in the commune, regardless of its organization arrangement. There is a significant elasticity of the presented module that allows to adjust the competence (assigned to the specified modules) to the already acquired skills of particular employees, or to proper organisational units in the Municipal/Commune Office.

The integrated ratio of growth in economic potential of a region (IRGEP) is a universal tool in terms of application opportunities in every commune, both for methodology and organisational purposes. It enables collection of supportive information for the planning of the structure of expenditure and it may be the basis for the analysis of efficiency evaluation and the purposefulness of the expenditure. It seems that the application of the information resulting from data processing, obtained on the basis of the questionnaire, will contribute to the improvement of quality of undertaken activities and to creation of the best possible conditions of development for entities living and working in the commune. The outcome will be the improvement in the living standard of the residents, which is consistent with the declared mission of local authorities.

ANNEX 1. The survey

Dear Sir/Madam,

Bearing in mind the fact that development of the commune you live in is in your direct interest, we are asking for your opinion on the preferred directions of development.

We would like you to give us your opinion on the level of importance of activities undertaken in 15 key areas of your commune's development and the changes that, in your view, took place in those areas in the last year. Your opinion will allow us to take more effective measures towards improvement of the living standards and conditions of conducting business activities for local entrepreneurs.

Thank you for your participation in the study.

1. How important to you is *__creating further facilitations__* in finding employment in your commune?

Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement? What %?
0	....	80	90	100	110	120	130	....

2. How important to you is *__further improvement of availability__* of sales and service outlets in the territory of the commune?

Totally unimport ant	Unimport ant	Not really important	Rather unimport ant	Moderate ly important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration? What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

3. How important to you is *__further improvement of operations__* of institutions providing assistance in case of income loss?

Totally unimport ant	Unimport ant	Not really important	Rather unimport ant	Moderate ly important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

4. How important to you is *implementation of further facilitation* in finding accommodation in the territory of the commune?

Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

5. How important to you is *further improvement in the access* to basic health care services and units associated (e.g. pharmacies) located in the territory of the commune?

Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year in terms of accessibility to basic medical services?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

6. To what extent did the situation change in the last year in terms of *the quality* of the basic medical services?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

7. How important to you is *further improvement* in the access to educational services developed in the territory of the commune?								
Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year in terms of *the access* to basic educational services in the territory of the commune?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

To what extent did the situation change in the last year in terms of *the quality* of the basic educational services provided in the territory of the commune?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

8. How important to you is *further improvement* of the conditions of using the common communal facilities (parks, playgrounds, bicycle paths etc.) for recreational purposes?								
Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

9. How important to you is *__undertaking further actions__* aimed at improvement in environment protection (air, water and soil quality) in the territory of the commune?

Totally unimport ant	Unimport ant	Not really important	Rather unimport ant	Moderate ly important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

10. How important to you is *__undertaking further actions__* aimed at improvement of the security level of people and property in the territory of the commune?

Totally unimport ant	Unimport ant	Not really important	Rather unimport ant	Moderate ly important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

11. What is your opinion on the extent of bureaucratic formalities associated with starting a business activity in the territory of the commune?

Complete ly non-bureaucra tic	Non-bureaucra tic	Not really bureaucra tic	Rather Non-bureaucra tic	Averagel y bureaucra tic	Rather bureaucra tic	Quite bureaucra tic	Bureaucr atic	Very bureaucra tic
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

12. How important to you is ***improvement*** in the quality of the administrative and legal service and support in the development of enterprises?								
Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8
To what extent did the situation change in the last year?								
Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

13. How important to you is ***improvement*** in the road and railway infrastructure in the commune?								
Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8
To what extent did the situation change in the last year?								
Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

14. [*]**How important to you is *improvement* in the possibilities to find the right employees?**								
Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8
To what extent did the situation change in the last year?								
Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

[*] to be filled in by entrepreneurs

15. *How important to you is the possibility to use the commune property (e.g. through leasing) for production purposes?

Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

16. How important to you is *improvement* in the access to utilities and waste disposal?

Totally unimportant	Unimportant	Not really important	Rather unimportant	Moderately important	Rather important	Quite important	Important	Very important
0	1	2	3	4	5	6	7	8

To what extent did the situation change in the last year?

Complete deterioration	Considerable deterioration What %?	Deterioration by 20%	Deterioration by 10%	Unchanged	Improvement by 10%	Improvement by 20%	Improvement by 30%	Considerable improvement What %?
0	....	80	90	100	110	120	130	....

* to be filled in by entrepreneurs

METRICS:

1. **Place of residence (region, district, housing estate)**

……………………………………………………………………………………………………

2. **Place of business (region, district, housing estate)**

……………………………………………………………………………………………………

3. **Type of business**

……………………………………………………………………………………………………

4. **Form of learning income**

☐ Entrepreneur ☐ Employed ☐ Others

……………………………………………………………………………………………………

5. **Date of completing the questionnaire..**
6. **Period of residence/running a business in the territory of the commune**

……………………………………………………………………………………………………

7. **Would you like to change the place of residence for another commune?**

☐ YES ☐ NO

8. **If 'yes', why?**

……………………………………………………………………………………………………

……………………………………………………………………………………………………

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