

SMART Management of Sustainable Development of the Region in the Context of Globalization



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ABSTRACT

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The main purpose of the study is to determine the main stages of SMART management of sustainable development of the region for the countries of Eastern Europe in the context of globalization. The issue of implementing a SMART management system today is relevant and critical for the further optimal functioning of the regional management system. The process of implementing SMART management itself is complex and complex, given this, there is a real need to find new methods for systematizing this process in the regional management system. The methodology involves the application of the method of graphic representation of the functional achievement of the goal. This methodology allows you to depict the main stages of achieving the goals in the best way. Based on the results of the study, we have formed a graphically step-by-step model of effective SMART management of sustainable development of the region for the countries of Eastern Europe under the influence of globalization. As a result of the formation of this model, we have algorithmized and systematized the process of implementing SMART management of sustainable development of the region for the countries of Eastern Europe in the context of globalization. The use of this model will facilitate the adaptation of regional governance systems to a qualitatively new type of management. The study has limitations and concerns limited access to the socio-economic and sustainable development of the regions. We have taken only the regions of Eastern Europe as an example, but in the future we should expand our graphically step-by-step model of effective SMART management of sustainable development of the region for the countries of Eastern Europe under the influence of globalization for the regions of the whole world.

1. INTRODUCTION

The success of the sustainable development of any territory depends on many components, among which, first of all, the level of development of the material, technical and production spheres, the amount of accumulated human capital, the availability and sufficiency of the resource base, the quality of educational services and the competitiveness of scientific activity, natural and climatic conditions and effectiveness of regional management, the level and quality of life of the population and the volume of migration of young people and highly competent people of working age. The factor that directly affects the effectiveness of the implementation of each component of the socio-economic development of the territory is the level of innovation of decisions made at each stage of management. Based on the fact that innovations are a universal indicator of progress and competitiveness, under today's conditions the level of socio-economic development of the region cannot be increased without activating the innovation component. Therefore, without exception, all technologies,

tools, resources and methods for ensuring innovative growth at the regional level should be activated and involved. At the same time, with a protracted economic crisis that has had a negative impact on the economy throughout the entire period of independence; it is impossible, impracticable and economically dangerous to simultaneously direct efforts towards the innovative development of all components of the socio-economic growth of the country's regions without exception. Even economically developed countries focus their efforts on the development of one or two potentially innovative areas and, when the expected results are achieved, they move on to the systematic development of other activities. This approach has many benefits, from concentrating resources and effort to reducing overhead. That is why the economically developed countries of the world are guided precisely by the use of such approaches and management technologies, one of which is a fairly new, but quite effective tool - SMART management of sustainable development of the region.

The transition of most countries of the world, including the

countries of Eastern Europe, to the sixth global development requires the construction of a new society based on the wealth of law, high moral and ethical standards, historical approaches to the social management system, as well as the spread of the use of IT and Smart technologies. The distinguished stage of the evolution of products poses the problem of determining the ways of development of society before the consciousness of the citizens of the country, since today there is an urgent need to rethink the accumulated experience and verify the transformation of the management system of the region in the application of its sustainable development. The foundation of a new social structure should be the solution of the priority tasks of citizens, which will allow reaching a new level of development and increasing the number of people implementing creative innovative activities.

To date, the system of elements of regional management of international development has the following form:

1. High performance promotion and risk management.
2. High level of quality of life.
3. Mobility and susceptibility to rapidly changing conditions and infections.
4. Active participation of the population in the life and functioning of the city.
5. Environmental protection.

Such development is recognized as sustainable, in which the balance of interests of the development of the economy and society is observed while preserving the environment. As a result of calculating the estimated values of the analyzed indicators, the so-called sustainable development indices were introduced, which were obtained on the basis of indicators of indicators characterizing sustainable development, grouped in the main indicators: communal, engineering and social privacy.

Improving the level and quality of human life in a certain area within the framework of the concept of sustainable development is the most important, if not the main task for regional authorities, and for its implementation in practice, all conditions must be created, all tools involved and all opportunities used. The solution to this problem depends on a significant number of factors, which include: the effectiveness of the functioning of regional authorities and the awareness of its representatives about the existing competitive advantages of the region and the possibilities for their expansion and development, the ability to identify, position, develop and use them in time in order to socially economic and sustainable growth of the region. At the same time, the implementation of such a scenario is possible only on the basis of a close mutually beneficial relationship between all areas of the region's economy and all participants in the regional economy, which can be ensured through the introduction of a new regional management tool for the world economy - SMART management. All this determines the relevance of the subject chosen by us. Thus, the study of this topic is an important aspect of the development of a qualitatively new state and type of sustainable development of the regional management system.

The main purpose of the study is to determine the main stages of SMART management of sustainable development of the region for the countries of Eastern Europe in the context of globalization. In the following sections, we will try to achieve this goal.

2. LITERATURE REVIEW

In the literature, one can quite often find statements about

the sustainable development of the region. For example, the choice of the type of economic activity underlying smart specialization should be based on a detailed professional strategic analysis of the adequacy and progress of production (production capacity of enterprises, the state of material and technical base, professional level of staff), scientific (degree of progressiveness). Research, innovation opportunities) and educational (the level of quality of educational services and the ability to provide enterprises with young innovative and highly professional specialists) bases in the region in this area, because only in the presence of equally strong development in the region these components can achieve goals [1-3].

It should be noted that for example Kryshtanovych et al. [4, 5] openly talk about the need to model any processes that are related to management at the regional level. Here we agree with them, because the region and its sustainable development are like a complex socio-economic system with its strengths and weaknesses, which must be properly depicted through a model to achieve the best results.

Bazyliuk et al. [6] and Yuan et al. [7] emphasized that sustainable development region is possible if there are innovations that need to be implemented at the same time at the technological, product, market, human resources and management levels. To this end, businesses should work closely with scientific institutions in the region and constantly update their staff in order to attract young highly competent, talented and motivated to achieve and continuous professional development professionals.

As noted by most scientists [8-10], in the procedures for the implementation of SMART management the most difficult and important task is to justify the priority area of activity, the innovative development of which should be directed to all resources and opportunities. This choice should be made on the basis of a detailed analysis of all the competitive advantages of the territory, for which you need to invite professionals from all fields represented in the region. The regional authorities have to coordinate the work on the organization of the meetings of the working groups on the substantiation and concretization of the SMART management of the region. It is also advisable to conduct interactive surveys of the population about their opinion on what they should associate the region where they live in the future, and which areas have the greatest potential for innovative growth today. At the same time, it is necessary to take into account: the accumulated scientific potential and the number of promising young scientists working in the scientific field that underlies the SMART management of the region; educational potential of the region and prospects for licensing new specialties, specialists in which will be needed in the region for the implementation of SMART management; production facilities and innovative technologies that already exist and can be introduced.

The issue of sustainable development in the context of globalization is quite relevant today. So, according to Giuliadori et al. [11], it is the globalization factor that is one of the prevailing factors in the formation of effective smart management and smart government both at the level of a separate region and throughout the country.

Some authors note that SMART management of sustainable development is a complex process that requires the formation of an extensive system of actions and mechanisms that can work effectively only if well-coordinated optimization [12]. The unfavorable and chaotic nature of the stages, mechanisms of SMART management of the system of social development

can lead to shortcomings in the implementation of this process.

We partially agree with this view, and believe that SMART management of a sustainable region is a difficult process and like any process must have its own sub-processes and stages to achieve the ultimate goal. That is why, knowing the scientific and practical achievements of many authors in the direction of research on the implementation of SMART management, we believe that it is important to form a new model of phased implementation of SMART management system for sustainable development of the region.

3. METHODOLOGY

The research methodology involves the use of leading methods of functional modelling, involving a graphical construction of a phased achievement of our goals. Since we have clearly defined our goal, we can build our graphical model from this. The graphical functional model involves several stages. The main one is the definition of the main goal and the key stages of its achievement. In our case, it will be an

effective SMART management of the sustainable development of the region. Let's denote it as A_0 . In this case, let all successive stages of achieving the set goal be designated as $A_1 \dots A_n$. It should be noted that in order to reflect the main stages of achieving the primary goal, we will apply the "Decision tree" method (Figure 1).

Each of the stages of achieving A_0 will be discussed in detail in the research results section.

Also, the basic elements should be input and output data. Through the formation of a graphical diagram of the basic elements of our model, we can understand what is needed and what can be achieved in the results. Here we will help the method of "Black Box" (Figure 2).

At the entrance, we have resources and a number of organizational and technical means, which should, within the framework of the current legislation of the country of Eastern Europe, help to obtain the desired results.

So, applying a number of frontier methods, we can form the model we want for the countries of Eastern Europe through the methodology of graphical functional modelling.

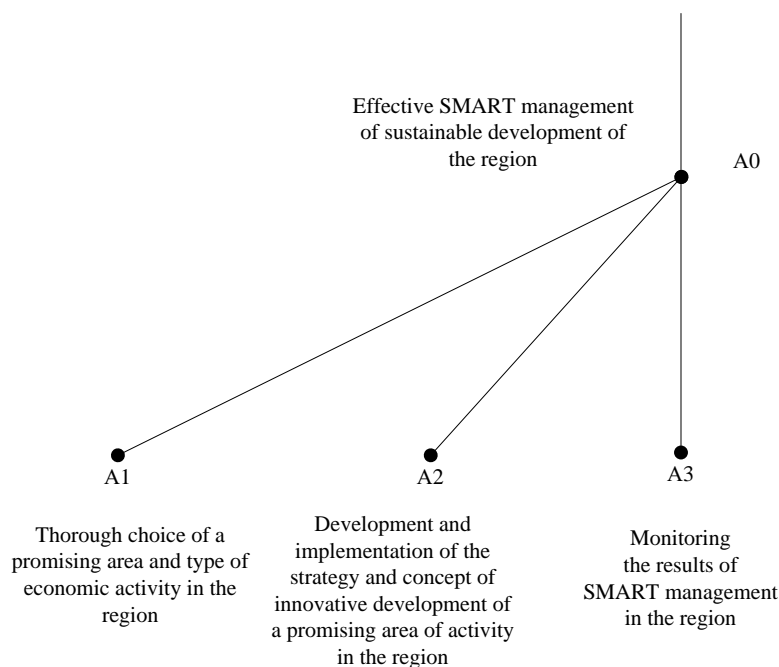


Figure 1. The main goals and stages of the model

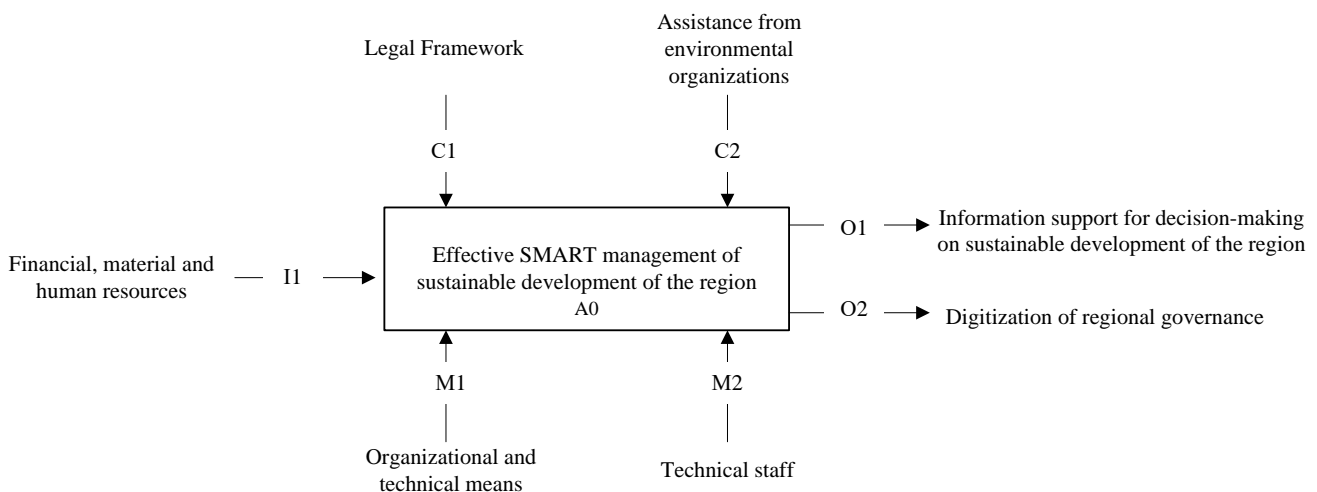


Figure 2. Diagram of basic modelling elements

In our opinion, the technique we have chosen is relevant and effective due to the fact that it has a number of advantages that can greatly facilitate the processes under study. Thus, this technique makes it easier to perceive complex and complex processes, as it demonstrates them in the form of blocks, diagrams and activity vectors. Another undoubted advantage of this graphical-functional model is that it allows you to create a multi-level process under study, which, if necessary, can detail a separate process to the level required for the user. It should also be noted that the use of this graphical-functional model makes it possible to make local changes in individual segments of the model, while its basic structure and ultimate goal will remain unchanged.

The correlation between the methodology we have chosen and the realities of functioning of the countries of Eastern Europe can be traced in such countries as Ukraine and Poland, which actively use this methodology for business processes and are familiar with its methodology and features of use.

4. RESULTS OF RESEARCH

So, to begin with, we will form our main graphical functional model of the SMART management of the sustainable development of the region. It is presented in Figure 3.

It should be noted that information about each stage and process is a detailed description of all the actions of the decisions made at a given point in time. Directives serve as control limits designed to monitor the entire process of achieving the goals and objectives.

So, let's take a closer look at each process of achieving the goal (A_0):

A_1 - Thorough choice of a promising area and type of economic activity in the region. Based on a thorough qualified

assessment of the available resources (material and intangible) and the competitive advantages of the territory fixed in practice and public opinion, a professional justification is made for choosing the sphere of economic activity, the purposeful implementation of which will allow, with minimal effort and cost, to achieve a rapid pace of increasing competitiveness of the region. In the future, it is with this area of activity that the region should be associated both at the national and international levels.

A_2 - Development and implementation of the strategy and concept of innovative development of a promising area of activity in the region. Development of a strategy and concept for innovative development of a selected promising area of economic activity in the region, providing opportunities for redistribution and combination of available resources and, on this basis, obtaining a synergistic effect. Introduction of the region's SMART specialization into the priority area of state financing and comprehensive support. Filling this strategy with effective tools, activities and approaches to its implementation and putting the whole range of activities into practice in order to create signs of SMART management and their further distribution to other areas of the region.

A_3 - Monitoring the results of SMART management in the region. Monitoring the results of the implementation of SMART management for the sustainable development of the region, introducing, if necessary, corrective measures for the direction and volume of investment flows from different sources, attracting a sufficient number of highly qualified specialists from various fields of activity, providing all technological processes of the chosen specialization with the necessary types and volumes of resources. Based on the results of monitoring, conclusions should be drawn on the degree of implementation of the goals set before the start of the implementation of SMART management, and if they are fully achieved, a new cycle of SMART management should begin.

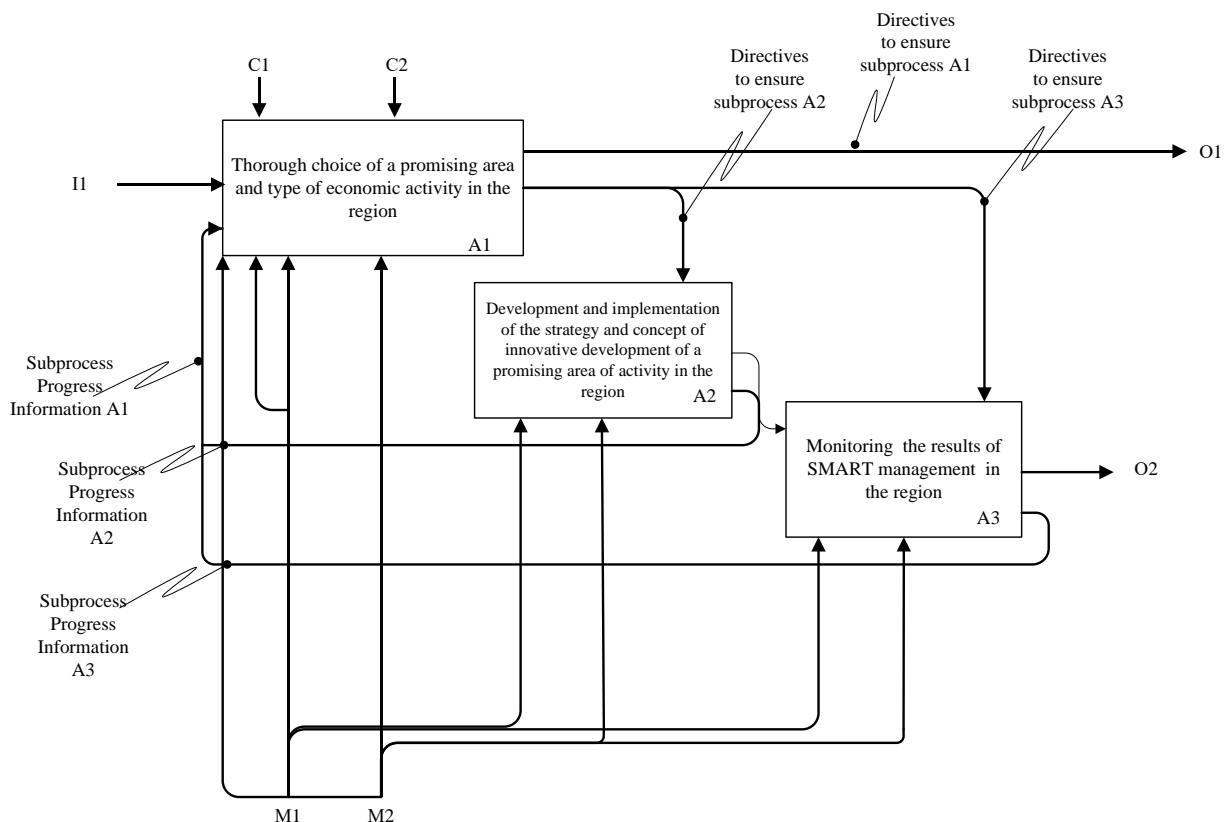


Figure 3. The main graphical functional model of the SMART management of the sustainable development of the region

It should be noted that each of the stages presented in the main model has its own sub-processes, which at the micro level perform important functions to achieve the main goal. That is why, we will build a graphical functional model of achieving A₁. Consider the main sub-processes to achieve A₁:

A₁₁ - Reasonable use of the resource potential of a particular region. Strengths, weaknesses, advantages and problematic aspects of the region should be clearly defined, on the basis of which a portfolio of economic growth directions is formulated, the implementation of which will provide a solution to the main social and economic problems. SMART management is based on the assets, technologies and resources at the disposal of the region, which should be used to the maximum extent possible to solve specific socio-economic problems of the region.

A₁₂ - A strategic approach to the choice of areas for investment and focus in the region. Those areas of economic growth that have a high innovative potential and investments

in which will pay off in the shortest possible time should be reasonably chosen. Focusing management and investment attention on the competitive advantages and real growth potentials of the territory, which has an innovative component and is provided with a critical mass of tangible and intangible resources.

A₁₃ - Involvement of stakeholders in strategic decision making. All decisions must be made collectively, which will ensure the interest and responsibility of each stakeholder in the result. The main criterion is the innovative capacity of the direction. The decision-making process for choosing a direction of activity or an object for the direction of investment volumes should become inclusive and interactive through the involvement of all interested parties, and innovation should become a key criterion here (Figure 4).

Similarly, a graphical functional model of achieving A₂ should be formed.

Consider the main sub-processes to achieve A₂ (Figure 5).

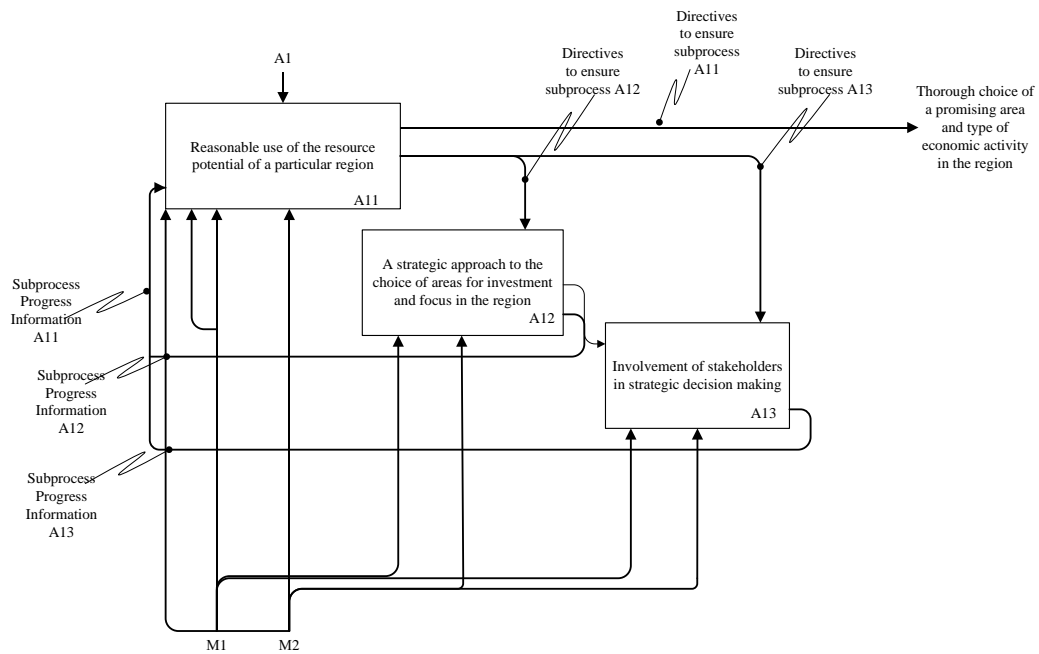


Figure 4. The graphical functional model of achieving A₁

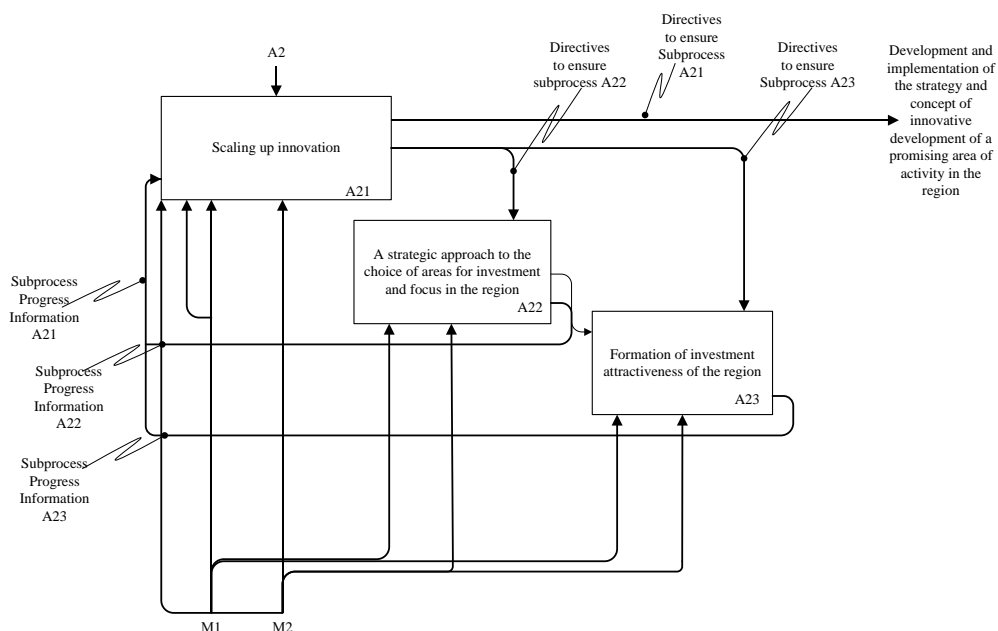


Figure 5. The graphical functional model of achieving A₂

A₂₁ – Scaling up innovation. Achieving the expected results from SMART management will be possible only if the innovative development of all components of the regional economy in a key activity. The strategy should simultaneously be based on the introduction of all types of innovations, without exception, from technical and technological to social, which should be based on the unique socio-economic conditions for the functioning of the region and its development potential.

A₂₂ – A strategic approach to the choice of areas for investment and focus in the region. Those areas of economic growth that have a high innovative potential and investments in which will pay off in the shortest possible time should be reasonably chosen. Focusing management and investment attention on the competitive advantages and real growth potentials of the territory, which has an innovative component and is provided with a critical mass of tangible and intangible resources.

A₂₃ – Formation of investment attractiveness of the region. Formation in the region of a favorable microclimate for the creation, accumulation and dissemination of the latest knowledge, turning them into innovations. Particular attention should be paid to these processes in priority areas for the innovative development of the region.

Let's form a graphical functional model of achieving A₃ (Figure 6). Consider the main sub-processes to achieve A₃.

A₃₁ – Effective performance monitoring system. SMART management procedures should be based on a mechanism for effective continuous evaluation, analysis and understanding of

the feasibility of making corrective decisions regarding the effectiveness of the chosen strategy. SMART management should be based on an effective system for monitoring the results achieved and timely detection of deviations from the approved plan, which will allow, at the optimal time for this, to adjust and make the necessary changes to the SMART management strategy and implementation plan.

A₃₂ – Monitoring the implementation of the main functions of SMART management. Monitoring the implementation of the main functions will allow regions that plan to move to the implementation of SMART management projects to get a basis for the prompt adoption of sound management decisions by regional authorities and other stakeholders aimed at achieving the proclaimed goals of SMART management of the region.

A₃₃ – Monitoring of the main indicators of sustainable development of the region. Monitoring the values of the selected indicators over time will make it possible to determine the degree of development of the potential of the territory's innovative activity, to establish the level of implementation of scientific and innovative cooperation with the real sector of the regional economy and to assess the degree of implementation in practice of SMART management initiatives and projects within a particular region. At the same time, it is quite important to monitor the level of real state and regional support for the innovative activities of business entities that belong to a promising area for the development of the region within the framework of the proclaimed concept of SMART management.

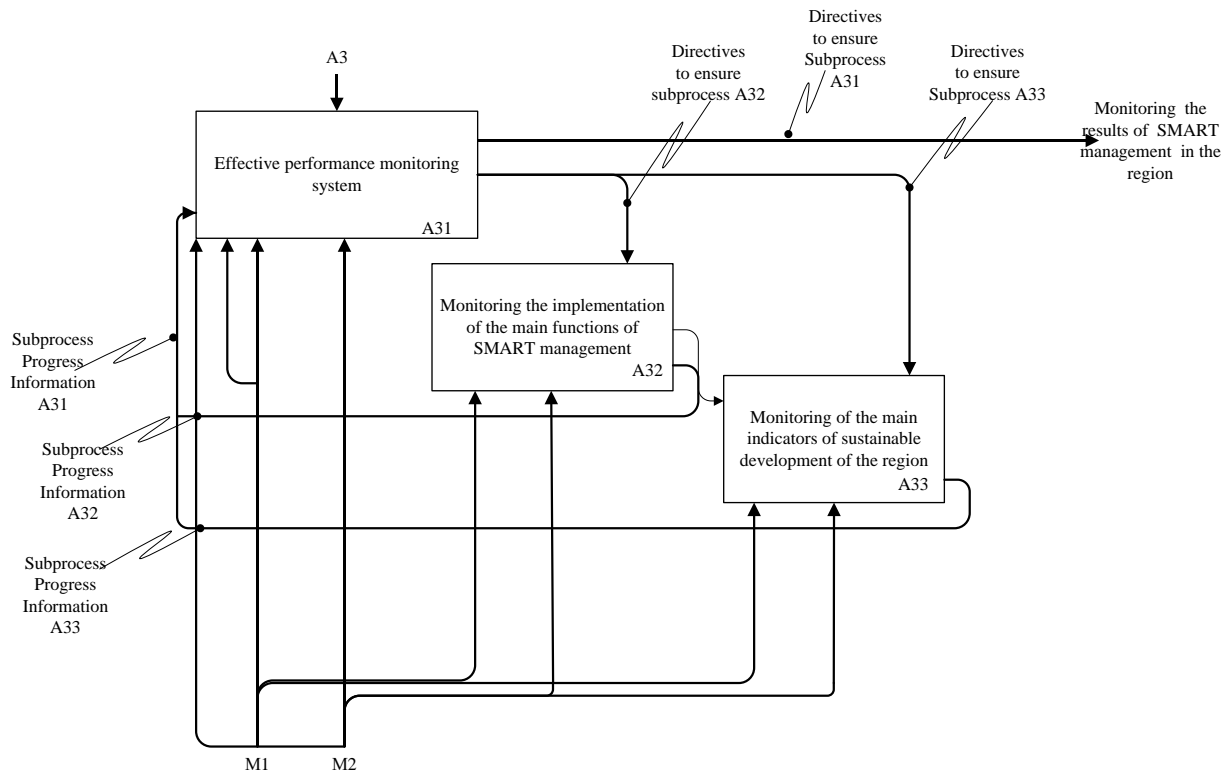


Figure 6. The graphical functional model of achieving A₃

5. DISCUSSIONS

Discussing the results of our study, it should be emphasized that there is a significant amount of work in this area. Take even the research of Nazarczuk et al. [13], and Dziembała and Talar [14], which considered SMART specialization of the

region as part of SMART management. SMART specialization covers a layer of work related to the reasonable choice of the type of economic activity that in modern conditions is the most promising for the region, as it has the greatest resource and innovation potential, the implementation of which will increase the competitiveness of the territory and

significantly improve the level and quality of life of the population. However, the achievement of these goals in practice should be based on the implementation of certain requirements and features of the SMART specialization of the region. But our study concerns SMART management.

In the works of Lee [15], de Sousa Jabbour et al. [16], and Kryshchanovych et al. [17] the specifics of the SMART management system were considered but we focused on how SMART management can contribute it is sustainable development.

The graphical functional model presented by us assumes such a modeling technique that is flexible and adaptive to any phenomena, including the realities of globalization.

Globalization is a broad concept and covers all areas of socio-economic activity. Each region of this or that country of Eastern Europe must, using the modeling technique presented by us, must change this or that stage according to the peculiarities of the influence of globalization processes on its region.

It should be noted that our study has a number of differences from existing ones. This is certainly not a matter of fundamental changes for the sustainable development of the region, but will contribute to a better understanding of the SMART management system in the region. Our study has a certain level of originality, which is associated with the formation of a graphical functional model of effective SMART management of sustainable development of the region for Eastern European countries, which have some lags in this area.

6. CONCLUSIONS

Summing up, it can be argued that the goal of SMART management can be determined by the optimal use of the region's innovative potential by maximizing the adaptation of possible directions for the development of science and education to their existing socio-economic conditions. Therefore, it is necessary to direct state and regional support to those initiatives, events and projects that allow increasing the level of reasonable specialization of the region, developing and introducing new technologies and high value-added products into production.

Based on the results of the study, we have formed a graphically step-by-step model of effective SMART management of sustainable development of the region for the countries of Eastern Europe under the influence of globalization.

Summing up, it should be noted that the model proposed by us can provide an effective result only if a number of requirements are met by the region. The first requirement concerns the presence in the region of a powerful educational sphere capable of meeting the needs of the regional labor market in highly qualified professional personnel capable of generating innovations. The second requirement is related to the presence in the region of a competitive branch scientific sphere, the results of which is guided by world scientific achievements and are directed to the innovative growth of economic entities in the industry. The third requirement concerns the existence of an innovatively open business environment in the region. The fourth requirement concerns the sufficiency of investment and funding for the educational and scientific activities of the region. The generalization of the results of the implementation of substantiated conditions at the

regional level made it possible to classify the regions of Ukraine according to the degree of favourable conditions for the implementation of SMART management.

Our study demonstrates that the proposed modeling technique can work on the issues we have chosen - the use of SMART management in the regional management system in the context of globalization. The results obtained in the course of the study allow us to detail the stages of achieving the ultimate goal - the implementation of effective SMART management of sustainable development of the region; and to clarify how, in general, the main ways and stages of solving the problem should be proposed in a new way.

The study has limitations and concerns limited access to the socio-economic and sustainable development of the regions. We have taken only the regions of Eastern Europe as an example, but in the future we should expand our graphically step-by-step model of effective SMART management of sustainable development of the region for the countries of Eastern Europe under the influence of globalization for the regions of the whole world.

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