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	Authors:	Yuliia Holovnia, Ganna Kotsiurubenko, Mykola Husiatynskyi, Iryna Martyniuk, Vira Khomutenko, Antonina Cheremnova	
	Paper Title:	Methodology for Determining the Factors that Affect the Current State of Implementation of Investment Strategies in Public Administration	
	<p>Abstract: The main feature of the modern state investment policy is the creation of conditions for extending extra-budgetary sources of financing of capital investments and attraction of investments of own and foreign investors in the economy of the country based on the further improvement of the regulatory framework and state support of productive investment projects. State regulation of the investment process is carried out to implement economic, scientific and social policies. The constructed classification can be used by the heads of public administration institutes in developing business plans for investment projects, creating a model for managing an investment project, monitoring the implementation of a business plan for an investment project, developing regulatory management decisions aimed at adjusting the business plan and actions of executors of the investment project.</p> <p>Keywords: Business Plan, Influencing Factors, Investment Strategy, Public Administration.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Dobina T., Haidukevych K., Panchenko S., Petrova I., Sabadash J. Effectiveness Analysis of Entrepreneurship Model of Development Qualities of Future Managers, Journal of Entrepreneurship Education, 2019, Volume 22, Issue 3., pp.1-6 2. B. Danylyshyn, S. Bondarenko, M. Malanchuk, K. Kucherenko, V. Pylypiv, O. Usachenko. Method of Real Options in Managing Investment Projects, International Journal of Innovative Technology and Exploring Engineering, Volume-8 Issue-10, August 2019, pp. 2696-2699 3. Bashynska I., Fillypova S. et al. Risk management through systematization: Risk Management Culture, International Journal of Recent Technology and Engineering, submitted for publication. 4. Prokopenko O., Slatvinskyi M., Bikoshkurska N., Biloshkurskyi M., Omelyanenko V. Methodology of national investment and innovation security analytics, Problems and Perspectives in Management, № 17(1), 2019, pp. 380-394 5. Vibha Sharma. Public Administration, Publisher: New Academic Publishing Co. Jalandhar, India, July 2019 6. Frank Anechiarico, Race and the Study of Public Administration: Public Administration Review, Public Administration Review, 77(4), 2017 DOI: 10.1111/puar.12785 7. Božena Biolik-Stich, Competence management in public administration, Humanitas University's Research Papers Management, 2019; 20 (1), pp. 229-238 DOI: 10.5604/01.3001.0013.2433 8. Bashynska I.O. Using the method of expert evaluation in economic calculations, Actual Problems of Economics, 7 (169), 2015, pp. 408-412. 		
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	Authors:	Pallavi Thakur, Gunjan Thakur	
	Paper Title:	Ann Based Route Optimization For Device-To-Device Iot Communication Using An Spectrum Aware Energy Efficient Routing Protocol	
	<p>Abstract: In the modern era, A huge demand for Wireless mobile communication, sensors and cloud computing, the technologies of Internet of Things (IoT) been broadly used in logistics, Smart Measuring Device, Security of public, intelligent Construction and so on. IoT requires a routing mechanism that consumes less energy and Device to Device Communication. The expanding number of electronic gadgets alongside plenty of mixed media applications, for example, versatile gaming, High Definition (HD) films and video conferencing have triggered quick advances in IoT technology and services. A communication based on IoT necessitates a spectrum aware energy-efficient routing protocol (SAEER) to support the network and find the best route that consumes minimal energy. There is a limited energy resource provide to each node that is used as a communicating node but a reduction in energy occurs regularly. These phenomena create an energy hole in the IoT network, which disturbs the service to IoT applications. To overcome this problem, SAEER protocol is the key objective of routing protocols. In existing work, lots of researchers have formulated an energy-efficient routing protocol that selects the best route for end to end in the network but many of them do not detect malicious nodes in the network. In this paper,</p>		
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Methodology for Determining the Factors that Affect the Current State of Implementation of Investment Strategies in Public Administration

Yuliia Holovnia, Ganna Kotsiurubenko, Mykola Husiatynskyi, Iryna Martyniuk, Vira Khomutenko, Antonina Cheremnova

Abstract: *The main feature of the modern state investment policy is the creation of conditions for extending extra-budgetary sources of financing of capital investments and attraction of investments of own and foreign investors in the economy of the country based on the further improvement of the regulatory framework and state support of productive investment projects. State regulation of the investment process is carried out to implement economic, scientific and social policies. The constructed classification can be used by the heads of public administration institutes in developing business plans for investment projects, creating a model for managing an investment project, monitoring the implementation of a business plan for an investment project, developing regulatory management decisions aimed at adjusting the business plan and actions of executors of the investment project.*

Keywords : *Business Plan, Influencing Factors, Investment Strategy, Public Administration.*

I. INTRODUCTION

In scientific literature, public administration and managerial decision making are trendy topics [1-4]. The renewed focus on these issues is, first and foremost, triggered by choice of a European path of development, in which the science of public administration should have a gradual reorientation from the consideration of public administration, local self-government and civil society to their systemic vision in the context of public administration. This requires a closer look at the interplay between public administration and management decision making. The main feature of the new state investment policy is the creation of conditions for extending extra-budgetary sources of financing of capital investments and attraction of investments of own and foreign investors in the economy of the country based on the further improvement of the regulatory framework and state support of productive investment projects [5-6]. State regulation of the investment process is carried out to implement economic,

scientific and social policies.

II. PUBLIC ADMINISTRATION AS A PROCESS OF MAKING, DECISIONING AND IMPLEMENTATION OF MANAGEMENT DECISIONS

A. Governance as a defining function of public administration

The management process is a set of continuous, interrelated actions and services aimed at achieving individual goals. In public administration, it is formed as a result of the interaction of public authorities and local self-government bodies (public administration entities) with society or with each other (public administration entities). It is, first of all, the process of developing and implementing regulatory, organizing and controlling influences in all spheres and branches of society, which is the basis of the activity of public administration entities. Its characteristics and properties are directly related to the formation and development of the system of state and local government and society and reflect both their peculiarities and the peculiarities of the relevant administrative (subject-subject, subject-subject and object) - subjective relations in temporal and spatial dimension [7]. The process of public administration is a form of existence of a dynamic system of such relations.

One of the most important tasks of management activity is the planning of development goals, based on the above mentioned fundamental values, by finding the optimal set of trajectories of motion of the managed system (in the space of phase states of development of social activity), focused on the achievement of specific long-term goals in the real resource constraints. Such planning is strategic. At the same time, it should always be remembered that strategic plan does not solve the problem of the gap between strategy and capabilities. This circumstance, for example, does not allow a country in the event of its loss of significant economic potential in the short term to reach the level of development of the leading European countries. Among the known alternatives to organizational strategies are limited growth, growth, contraction, merger. For any organization, its purpose, the overall goals and strategy chosen should not impede the implementation of new ideas and solving complex problems. In Ukraine, one of the priorities of its strategy has been selected, as already noted, the innovation and investment path of economic and social development.

The strategy is inextricably linked to the policy as a means of

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its implementation. It sets the course for the allocation of scarce resources to achieve the goals set, and the policy sets out general guidelines for action and decision making that facilitate the achievement of the goals.

A strategic plan is, in fact, a management decision to implement the strategy and policies of the respective management. Operational and tactical (current) planning focuses on the implementation of strategic plans and the allocation of resources, in particular, the budget.

Investment management is based on the following principles:

- mutual responsibility of investors and the state;
- observance of fundamental rights and requirements of investors;
- legal liability of investors for violation of the legislation of Ukraine or international treaties;
- consistent decentralization of the investment process and expansion of mixed financing of investment projects;
- the attraction of foreign investments, first of all with the purpose of realization of the state priority programs;
- improvement of the legislation concerning investment activity.

The targeting of synchronization of actions of public administration entities is clearly illustrated in Fig. 1.

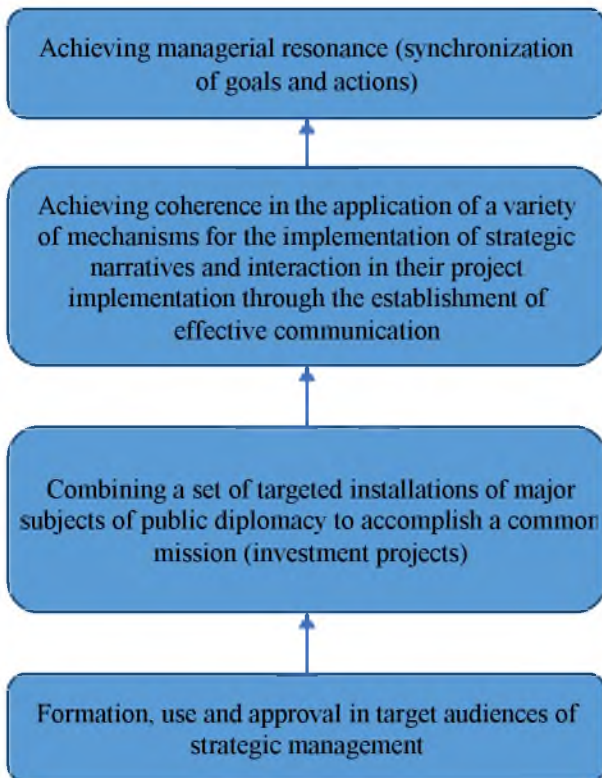


Fig. 1. Targeting the synchronization of public administration activities.

III. METHODOLOGY FOR DETERMINING THE FACTORS THAT AFFECT THE INVESTMENT STRATEGIES IN PUBLIC ADMINISTRATION

A. Regulators of the investment process

Investing is a complex, multifaceted process that is influenced by factors of scientific and practical importance. It should be noted that there is a correlation between investment

attractiveness and investment efficiency, as investment efficiency increases and vice versa as the level of investment attractiveness increases. The investment attractiveness of the state is determined by the factors that stimulate the development of the national economy.

The factors should be considered from the standpoint of different classifications, including concerning the environment of the enterprise, in terms of the strength and nature of the impact on the object being investigated, the relationships between factors and more. In the table. 2.7 the classification of the factors that influence the current state of the implementation of investment strategies by enterprises. Using the method of expert evaluation [8] in the management environment was collecting data on the factors, which are highlighted in Table. 1, in particular, information on their relative importance was obtained. As a result of the processing of the primary expert information, an initial data matrix (Table 2) was constructed, which contained the average, rounded values of the points that the experts assigned to the factors.

Table- I: Classification of factors that influence the current state of implementation of investment strategies by enterprises.

Classification signs	Types of factors
By content	<ul style="list-style-type: none"> ▪ level of qualification and practical experience of the entities that formulate and implement investment strategies; ▪ the progressiveness of business owners and managers towards a willingness to innovate; ▪ the potential of the investor enterprise to accumulate investment resources; ▪ participation of the investor company in contractual and associative associations; state of the investment climate in the region where investment strategies are being implemented and so on.
Concerning the environment of the enterprise	<ul style="list-style-type: none"> ▪ internal factors; ▪ external factors.
By the impact on the object under study	<ul style="list-style-type: none"> ▪ factors that significantly affect the effectiveness of implementing investment strategies; ▪ factors that do not significantly affect the efficiency of implementing investment strategies
By the nature of the impact on the object under study	<ul style="list-style-type: none"> ▪ factors that positively influence the effectiveness of implementing investment strategies; ▪ factors that do not adversely affect the efficiency of implementing investment strategies/
By connections	<ul style="list-style-type: none"> ▪ factually related linearly; ▪ non-linear elements; ▪ unrelated factors

We have distinguished the factors that influence the current state of implementation of investment strategies (Table 2):

- the level of qualification and practical experience of the entities that formulate and implement the investment strategies;
- the progressiveness of business owners and managers towards a willingness to innovate;
- the potential of the investor company to accumulate investment resources;
- participation of the investor company in contractual and associative



associations;

- state of the investment climate in the region where investment strategies are being implemented and so on.

Table- II: The output data matrix

Experts	Factors					In average
	1	2	3	4	5	
1	10	5	8	4	1	5,6
2	7	6	4	3	2	4,4
3	8	5	4	2	1	4
4	1	2	6	4	9	4,4
5	3	10	9	8	5	7
6	2	10	5	6	7	6
7	8	2	5	4	1	4
8	4	3	6	7	10	6
9	5	6	10	8	1	6
10	4	8	1	6	2	4,2
11	10	7	3	5	3	5,6
12	7	4	8	6	1	5,2
13	6	5	8	2	3	4,8
14	9	6	3	4	8	6
15	10	2	6	1	5	4,8
In average	6,27	5,40	5,73	4,67	3,93	x

An isomorphic analysis is intended to establish a similarity between two or more objects from finding similarities between their structure (structure). In selected factors, such a structure is their essential features. In isomorphic analysis, the similarity between factors is measured by isomorphic distances. The smaller these distances, the closer the objects under study are (factors).

It is advisable to use the cluster analysis toolkit to identify relationships between factors. For this table. 2 is used as the output data matrix. By constructing an isomorphic distances matrix using the `clast_izomorf_trec` operator (Table 3), we determine the minimum distances between the factors, and later set the largest of them.

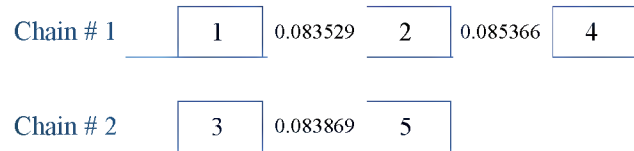
Table- III: Matrix of isomorphic distances^a

Objects	1	2	3	4	5
1	0	0,083529	0,037526	0,04612	0,081827
2	0,083529	0	0,058952	0,085366	0,174667
3	0,037526	0,058952	0	0,054669	0,083869
4	0,04612	0,085366	0,054669	0	0,069431
5	0,081827	0,174667	0,083869	0,069431	0

^a Used the `Clast_izomorf_trec` toolkit of Microsoft Office Excel application suite.

Analyzing the data of the given matrix of isomorphic distances (Fig. 2) showed that the smallest are the distances between the following objects: first and third (0,03612), second and third (0,068952), third and first (0,047526), fifth and the fourth (0,069431). Information on the smallest isomorphic distances between factors is necessary to establish the critical distance between the elements.

Chains of related factors



Matrix of inter-chain distances

	Chain # 1	Chain # 2
Chain # 1	0 (0; 0)	0,037526 (1; 3)
Chain # 2	0,037526 (1; 3)	0 (0; 0)
The minimum distance between chains	0,037526 (1; 2)	0,037526 (2; 1)

Fig. 2. The results of processing the original data matrix.

Critical is the maximum distance from the minimum. In this case, the distance between the fifth and fourth factors is 0.0669431. This distance divides the total set of factors into two groups. As a result, two clusters were formed. The first included the first, second and third factors, the second - the fourth and fifth (Fig. 3). Information about clusters formed must be taken into account so that, by influencing one of the factors, one can predict the nature of changes that occur with other factors that go with it in one cluster.

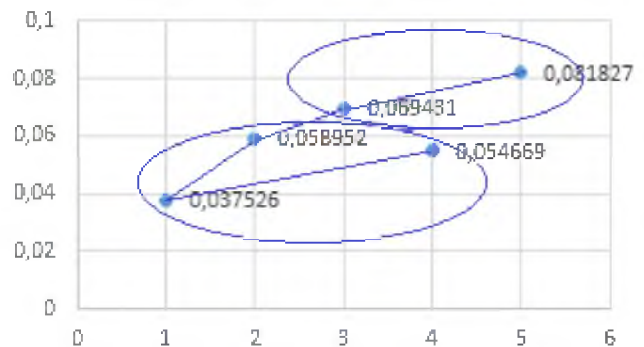


Fig. 3. Factor clusters.

Fig. 2 also shows the factors that most closely relate to each other and form so-called isomorphic chains, as well as the matrix of inter-chain distances. This information specifies which of the factors are closest to each other in terms of their structure, both within and outside the clusters built. The formed chains between elements indicate that any management decision that is made regarding one of the factors of a particular string will inevitably affect other factors of the same chain. Other factors in the same cluster will also be affected, but they will not be as strong as those of a single string.

Fig. 3 shows that one of the chains goes beyond the cluster. This means that when deciding on factors that belong to different clusters, one cannot ignore the relationships between them since many of the factors of the first cluster

have factors (the first) that are structurally close to the factor representing the second set. Using the formed chains and the matrix of inter-chain distances, we construct a dendrite (Fig. 4).

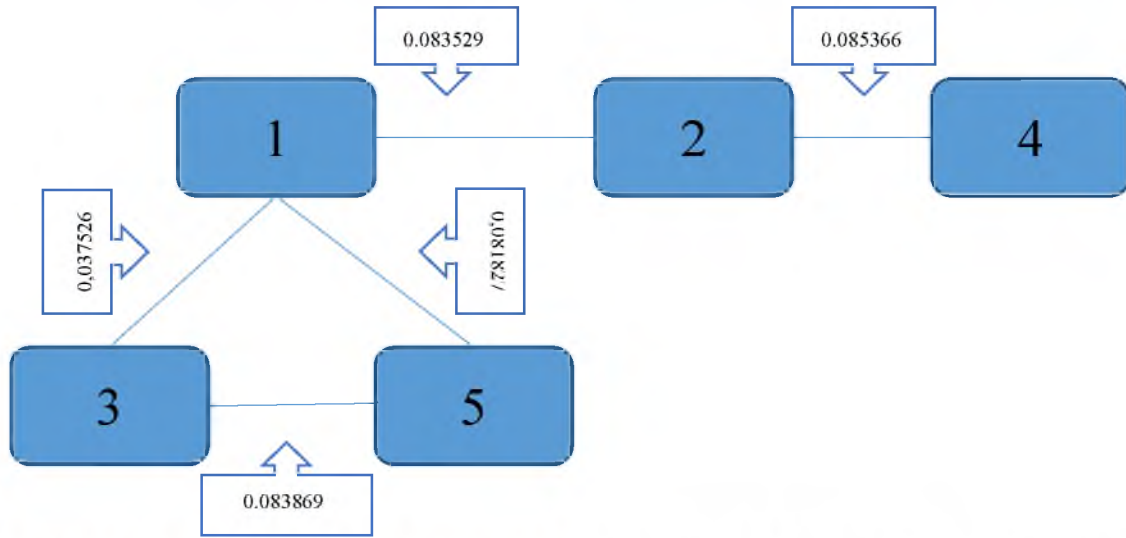


Fig. 4. Dendrite for determining the factors that affect the investment strategies in public administration.

Dendrite is a tree of connections between factors. The constructed dendrites indicate that the two chains of factors analyzed are linked only by the isomorphic similarity of the first (*skill level and practical experience of management entities that form and implement investment strategies*) and the third (*potential of the investor enterprise to accumulate investment resources*) factors. Next, we apply the ranking method to determine the quantitative parameters and indicators of the expert survey. Perform these tasks. Using built-in dendrites to automate the process of managerial decision-making within decision support systems, it is possible to reduce the impact of subjectivism on the business planning process of enterprise innovation projects.

of the conducted expert study are entirely objective.

V. CONCLUSION

The constructed classification can be used by the heads of public administration institutes in developing business plans for investment projects, creating a model for managing an investment project, monitoring the implementation of a business plan for an investment project, developing regulatory management decisions aimed at adjusting the business plan and actions of executors of the investment project.

IV. RESULT AND DISCUSSION

Judging by the magnitude of the assessments made by the respondents, as well as the level of activity of the experts, the results of the conducted expert study are quite objective (Table 4).

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Table- IV: Justification of the objectivity of the conducted expert research

Sequence numbers of factors	Maximum score values	Minimum scores	Number of experts who evaluated the i-th factor	The total number of experts	The range of expert estimates	Activity of experts
1	10	1	15	15	9	1
2	10	2	15	15	8	1
3	10	1	15	15	9	1
4	8	1	15	15	7	1
5	10	1	15	15	9	1

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Judging by the magnitude of the assessments made by the respondents and the level of activity of the experts, the results

