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METHOD OF STAKEHOLDERS' IDENTIFICATION BASED ON THEIR VIEWS IN STRATEGIC MANAGEMENT OF SOCIAL PROGRAMS

There has been proposed the method of stakeholders' identification in strategic management of social programs. It is designed to recognize and assess the strength of causal relationships of failure of social projects and programs. The method is based on the differentiation of stakeholders by their ideas, which is revealed in the example of inclusive educational projects. The concept of stakeholder priority number has been introduced. The matrix "risk priority number" / "stakeholder priority number" is offered. We have developed the method of stakeholders' identification based on their views in the strategic management of social programs, which consists of 7 Steps. Step 1: development of a questionnaire for the cause-and-effect relationships of the failure of inclusive educational projects according to the imagination of stakeholders of different groups. Step 2: survey of respondents with differentiation by stakeholder priority number and three groups of stakeholders: the state as a system of institutions; citizens with disabilities or their legal representatives; neurotypical visitors to institutions or their legal representatives. Step 3: investigation of stakeholders' perceptions of the cause-and-effect relationships of failure of inclusive projects according to the 6M method (Lan, Machines, Materials, Methods, Measurements, Mother-nature). Step 4: charting of Isikawa diagrams. Step 5: quantification of the strength of the identified relationships according to the Failure Mode and Effects Analysis method based on the results of a survey of respondents using the method of calculating the priority number of risk of failure mode. Step 6: ranking of the reasons for failure modes according to the "risk priority number" / "stakeholder priority number" matrix. Step 7: development of conclusions and recommendations. The analysis of the results of the poll with the identification of causal links will identify areas of disparity in the views of various stakeholders on the reasons for the failure of inclusive educational projects. Quantifying them makes it possible to identify the most important aspects that need to be addressed as a matter of priority on the part of project and program managers.

Keywords: stakeholder; strategic management; social programs; project management; program management; inclusion; socio-economic reforms.

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МЕТОД ІДЕНТИФІКАЦІЇ СТЕЙКХОЛДЕРІВ НА ОСНОВІ ЇХ УЯВЛЕНЬ У СТРАТЕГІЧНОМУ УПРАВЛІННІ СОЦІАЛЬНИМИ ПРОГРАМАМИ

Пропонується метод ідентифікації стейкхолдерів у стратегічному управлінні соціальними програмами, призначений для виявлення та оцінювання потужності причинно-наслідкових зв'язків неспішності соціальних проєктів та програм. Метод ґрунтується на диференціації різних груп стейкхолдерів за їх уявленнями, що розкривається на прикладі інклюзивних освітніх проєктів. Введено поняття пріоритетного числа стейкхолдера. Запропонована матриця «пріоритетне число ризику» / «пріоритетне число стейкхолдера». Розроблений метод ідентифікації стейкхолдерів на основі їх уявлень у стратегічному управлінні соціальними програмами, який складається з 7 етапів. Етап 1: розробка анкети щодо причинно-наслідкових зв'язків неспішності інклюзивних освітніх проєктів за уявою стейкхолдерів різних груп. Етап 2: опитування респондентів з диференціацією за пріоритетним числом стейкхолдера та трьома групами стейкхолдерів: держава як система інституцій; громадяни з інвалідністю або їх законні представники; нейротипові відвідувачі закладів/установ або їх законні представники. Етап 3: дослідження уявлень стейкхолдерів про причинно-наслідкові зв'язки неспішності інклюзивних проєктів за методом 6М (Man, Machines, Materials, Methods, Measurements, Mother-nature). Етап 4: побудова діаграм Ісікави. Етап 5: кількісна оцінка потужності виявлених зв'язків за методикою Failure Mode and Effects Analysis за результатами анкетування респондентів із застосуванням методу розрахунку пріоритетного числа ризику виникнення певної невідповідності. Етап 6: ранжування причин невідповідності за матрицею «пріоритетне число ризику» / «пріоритетне число стейкхолдера». Етап 7: розробка висновків та рекомендацій. При аналізі результатів соопитування щодо досліджуваних причинно-наслідкових зв'язків між соціально-економічними факторами будуть виявлені зони диспаритету уявлень різних стейкхолдерів про причини неспішності інклюзивних освітніх проєктів. Кількісна їх оцінка дає можливість виявити найбільш важливі аспекти, які потребують першочергового реагування з боку керівників проєктів та програм.

Ключові слова: стейкхолдер; стратегічне управління; соціальні програми; проєктний менеджмент; програмне управління; інклюзія; соціально-економічні реформи.

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МЕТОД ИДЕНТИФИКАЦИИ СТЕЙКХОЛДЕРОВ НА ОСНОВЕ ИХ ПРЕДСТАВЛЕНИЙ В СТРАТЕГИЧЕСКОМ УПРАВЛЕНИИ СОЦИАЛЬНЫМИ ПРОГРАММАМИ

Предлагается метод идентификации стейкхолдеров в стратегическом управлении социальными программами, предназначенный для выявления и оценки мощности причинно-следственных связей неспешности социальных проектов и программ. Метод основан на дифференциации различных групп стейкхолдеров согласно их представлениям, что раскрывается на примере инклюзивных образовательных проектов. Введено понятие приоритетного числа стейкхолдера. Предложена матрица «приоритетное число риска»/«приоритетное число стейкхолдера». Разработан метод идентификации стейкхолдеров на основе их представлений в стратегическом управлении социальными программами, состоящий из 7 этапов. Этап 1: разработка опросника про причинно-следственные связи неспешности инклюзивных образовательных проектов согласно представлениям стейкхолдеров различных групп. Этап 2: опрос респондентов с дифференциацией по приоритетному числу стейкхолдера и трем группам стейкхолдеров: государство как система институций; особы с инвалидностью или их законные представители; нейротипичные посетители учреждений или их законные представители. Этап 3: исследование представлений стейкхолдеров о причинно-следственных связях неспешности инклюзивных проектов методом 6М (Man, Machines, Materials, Methods, Measurements, Mother-nature). Этап 4: построение диаграмм Исикавы. Этап 5: количественная оценка мощности выявленных связей по методике Failure Mode and Effects Analysis по результатам анкетирования респондентов с использованием метода расчета приоритетного числа риска возникновения определенного несоответствия. Этап 6: ранжирование причин несоответствия по матрице «приоритетное число риска»/«приоритетное число стейкхолдера». Этап 7: разработка выводов и рекомендаций. При анализе результатов соопроса по выявлению причинно-следственных связей между социально-экономическими факторами будут обнаружены зоны диспаритета представлений разных стейкхолдеров о причинах неспешности

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інклюзивних освітніх проєктів. Количесна їх оцінка дозволяє виявити найбільш важливі аспекти, що потребують первоочередного реагування з боку керівників проєктів і програм.

Ключеві слова: стейкхолдер; стратегічне управління; соціальні програми; проєктний менеджмент; програмне управління; інклюзія; соціально-економічні реформи.

Introduction. In recent years, Ukraine has been paying more and more attention to social programs. There are several socio-economic reforms. In particular, an inclusive society is being formed, which is essentially a reengineering of the social order based on the principles of equal rights of all citizens (persons with disabilities in particular) to be included in all spheres of life and create appropriate opportunities for these rights [1]. There is some state support for inclusive projects and programs that are initiated and implemented at various levels. This mainly applies to education. And although inclusive secondary education was regulated at the legislative level more than 10 years ago, in fact only in 2017 children with

disabilities were given the opportunity for inclusive education in secondary schools. In Kharkiv in the 2019-20 academic year there were 118 inclusive classes, where 181 students with special education needs (SEN) were studying. This is despite the fact that the city has almost 2,500 such children, ie just only 7%. In the 2021-22 academic year in this city there are 201 inclusive classes, where 318 students with special needs are getting an education, ie about 12,5%.

In Ukraine, there have been in average about 100,000 school-age children with disabilities these years, and only 27% of them studied in inclusion. It is 6 times more by quantity than 5 years ago (Fig. 1) [2].

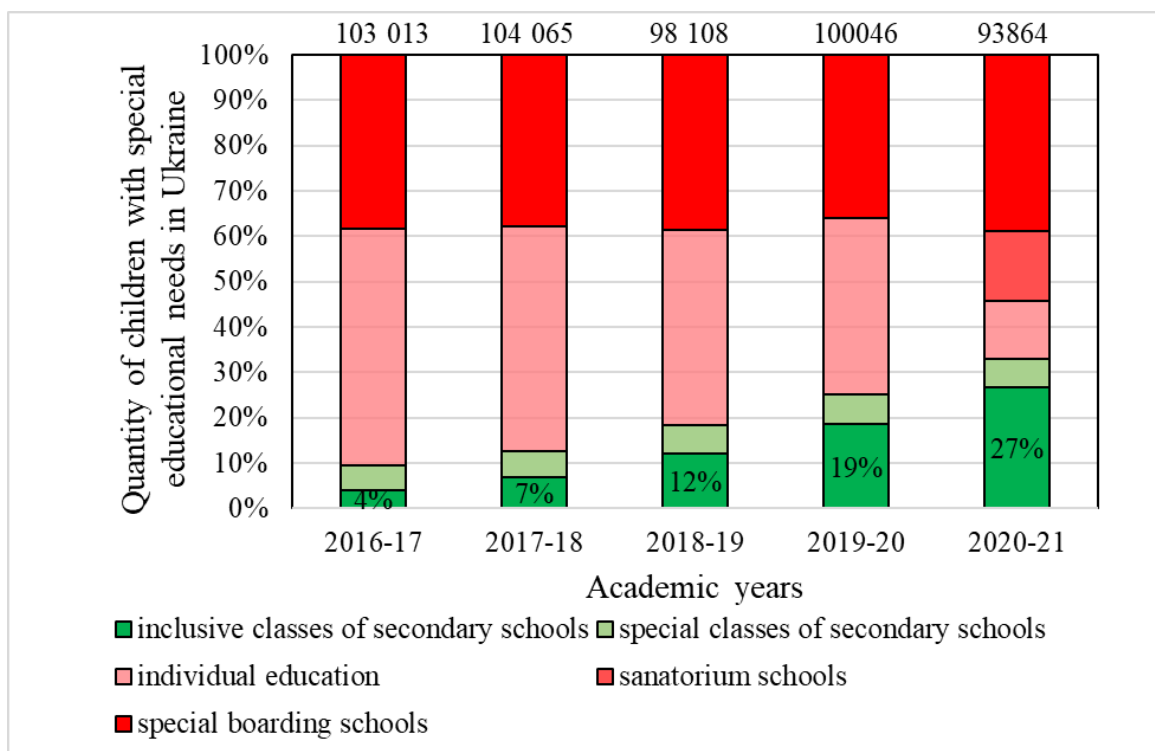


Fig. 1. Quantity of children with special educational needs for different organizational forms of education in Ukraine in 2016-2021

These dynamics indicate the following:

- reform of the education system concerning the introduction of inclusion is carried out with a constant positive dynamic;
- the level of students with SEN who receive inclusive education is still far from the level of educational systems of developed countries;
- more than 25,000 students with SEN in inclusive education today and five years of experience in implementing inclusion in education provide a sufficient number of stakeholders for inclusive education of inclusive educational projects.

At the same time, in Ukraine there is a problem of social isolation of people with disabilities. This is the case historically and the average citizen has no experience of communicating with a person with a disability. The process of including children with disabilities in society is

socially acute, complex, and controversial, so there is no doubt that not all stakeholders correctly understand it. We believe that because of that not all inclusive educational projects are successfully implemented. Therefore, we believe that it is interesting from both scientific and practical points of view to identify where the disparity of ideas of different stakeholders arises, to quantify the identified causal relationships, which will provide informational support for developing management decisions to managers of various levels of inclusive educational projects. According to the classification proposed in the article [3], they belong to the category 11 "Social projects" subcategory 11.2 "Socially-forming projects".

The field of knowledge of project stakeholder management is gaining of paramount importance in this context, as the processes of inclusion programs are

complex, socially acute, and contradictory. Along with the reform of the social sphere of Ukraine, methods of project and program management are also being developed [4, 5].

The purpose of the article is to expand the tools for managing social programs to improve the efficiency of reforming the social sphere of life of the community.

The methodological base of the research is:

- a survey of stakeholders conducted by modern online tools with the interpretation of results according to the author's classification of stakeholders of inclusive educational projects;

- a study of the cause-and-effect relationships of failure of inclusive educational projects was performed using the 6M method (Man, Machines, Materials, Methods, Measurements, Mother-nature) with the charting of Ishikawa diagrams

- quantitative assessment of the strength of the identified relations was carried out according to the method of FMEA (Failure Mode and Effects Analysis) based on the results of surveys of respondents using the method of calculating the priority number of risk of failure mode (RPN).

The main results of the research. According to the PMBoK [6], the management of project's stakeholders has

four processes, each of them has certain features in the management of inclusive projects:

1) stakeholder identification is the process of regularly identifying project stakeholders, as well as analyzing and documenting relevant information about their interests, involvement, interdependence, impact and potential impact on project success;

stakeholder engagement planning is the process of developing approaches to involving project stakeholders based on their needs, expectations, interests and potential impact on the project;

stakeholder engagement management is the process of communicating and working with stakeholders in order to meet their expectations, respond to problems and facilitate the appropriate involvement of stakeholders;

monitoring of stakeholder involvement - is the process of monitoring the relationship of project stakeholders and adapting strategies to attract stakeholders by modifying strategies and plans for involvement.

Let's consider the first of the stakeholder management processes - they are identified in the context of inclusive project management. To do this, we highlight the following sets and subsets of stakeholders of inclusive projects (Table 1).

Table 1 – Identification of inclusive project stakeholders

subset of stakeholders	subset of stakeholders	Definition	Interdependence	
			causes impact	is affected
1	2	3	4	5
A		the state as a system of institutions:	→B →C	
	AA	government agencies;	→→AB →AC	
	AB	local governments;	→→AC	AA→→
	AC	management and staff of institutions:	→B →C	AB→→ B→ C→
	ACA	management and staff of institutions;	→→C	BD→→ BA→
	ACB	management and staff of institutions;	→→BE →→BB	
	ACC	management and staff of institutions;		
B		persons with disabilities or their legal representatives:		A→ C→→
	BA	persons with disabilities seeking inclusion;	→BD →BA →C	BD→→ C→→
	BB	persons with disabilities seeking segregation;	→BE →→ACB	BE→→ C→→
	BC	persons with disabilities seeking isolation;	→BF	BF→→ C→→
	BD	legal representatives of persons with disabilities seeking inclusion;	→→BA →→ACA →C	BA→ C→→
	BE	legal representatives of persons with disabilities seeking segregation;	→→BB →→ACB	BB→ C→→
	BF	legal representatives of persons with disabilities seeking isolation;	→→BC	BC→ C→→
C		neurotypical visitors to institutions or their legal representatives:	→AC →→B	AC→ ACA→→ B→

The end Table 1

1	2	3	4	5
	CA	preschool children;		CEA→→ CF→→ CG→→
	CB	primary school student;		CEA→→ CF→→ CG→→
	CC	middle school student;		CD→
	CD	high school student;	→CC	
	CE	young people;		CF→
	CEA	young parents	→→CA →CEB	
	CEB	childless young people;		CEA→
	CF	middle-aged persons;	→→CA →CF	
	CG	elderly persons;	→→CA	

where →□ – affects the stakeholder □;
 →→□ – causes a strong impact on the stakeholder □;
 □→ – is affected by the stakeholder □;
 □→→ – is strongly influenced by the stakeholder □.

To prepare for the second of the stakeholder management processes - stakeholder involvement planning - we need to differentiate selected stakeholder groups according to the priority of management work with them. To do that, it is proposed to supplement the well-known Power Interest Matrix with quantitative estimates of stakeholders in each quadrant of the matrix through the method of calculating the priority number of the stakeholder:

- 1) assess the probable ease of changing their beliefs T_μ on a 10-point scale
- 2) assess the frequency of occurrence of the situation for the manifestation of the attitude of stakeholders of the μ -th group to the inclusion of K_μ on a 10-point scale;
- 3) evaluate the frequency of the H_μ ratio on a 10-point scale
- 4) quantify identified stakeholders by calculating the stakeholder priority number (SPN):

$$SPN_\mu = T_\mu K_\mu H_\mu, SPN = (1 \div 1000),$$

where T_μ is the probable ease of changing the belief of stakeholders of μ -th group regarding inclusion; $T_\mu = (1 \div 10)$;

K_μ – frequency of occurrence of the situation for the manifestation of the attitude of stakeholders of the μ -th group to inclusion; $K_\mu = (1 \div 10)$;

H_μ – the frequency of the manifestation of the stakeholder's attitude of the μ th group to inclusion; $H_\mu = (1 \div 10)$.

Each quadrant of the Power Interest Matrix, in addition to the SPN, will assess stakeholders' level of significance of the possible impact of μ -th group of stakeholders on the success of the P_μ project (ie "Power")

on a 10-point scale, for example, as in the article [7]; and an assessment of the level of interest I_μ on the same scale (ie "Interest").

The results of the calculation of the SPN for all identified groups of stakeholders are proposed to supplement the method described in the article [7] to determine the expectations of stakeholders and adjust them.

The investigation of the cause-and-effect relationships of the failure of inclusive educational projects was conducted using the 6M method in terms of different groups of stakeholders with the charting of the Isikawa diagram, namely:

- man* – a group of causes related to the human factor;
- machines* – reasons related to equipment (technical support);
- materials* – reasons related to materials;
- methods* – the reasons connected with technology, and processes organization;
- measurements* – the reasons connected with methods of measurement, and control of quality;
- mother-nature* – the environment in the manufacturing (including availability, sound absorption and sound insulation, brightness, lighting, which will affect the focal stakeholders).

As the respondents are considered with differentiation into three groups of stakeholders (described above), charting of the Ishikawa diagram is performed for each of the groups:

- 1) A - the state as a system of institutions: public administration; local governments; management and staff of institutions / institutions (management and staff of inclusive institutions / institutions; management and staff of segregation institutions / institutions; management and staff of other non-inclusive institutions / institutions);

- 2) B - persons with disabilities or their legal representatives: persons with disabilities seeking inclusion; persons with disabilities seeking segregation; persons with disabilities seeking isolation; legal representatives of persons with disabilities seeking inclusion; legal representatives of persons with disabilities seeking segregation; legal representatives of persons with disabilities seeking isolation;

3) C - neurotypical visitors to institutions or their legal representatives: preschool children; primary school students; middle school students; high school students; young people; young parents; childless young people; middle-aged persons; elderly persons.

The failure of inclusive education projects is presented as a function

$$g = g(Cat_{\eta}),$$

where Cat_{η} – η -th category of causes of the problem.

In this case $\eta = (1 \div 6)$:

$$Cat_{\eta} = \begin{cases} \text{"man" at } \eta = 1; \\ \text{"machines" at } \eta = 2; \\ \text{"materials" at } \eta = 3; \\ \text{"methods" at } \eta = 4; \\ \text{"measurements" at } \eta = 5; \\ \text{"mother – nature" at } \eta = 6. \end{cases}$$

The reasons are denoted by $\Theta_{\eta_{\mu}}$ – the reasons caused by the μ -th failure mode in the η -th category of reasons that lead to the problem of failure of inclusive educational projects, where μ is the counter of failure modes. To visualize the cause-and-effect relationships of the investigated factors according to the above classification, the Isikawa diagram is used, which is a graphical arrangement of factors influencing the object of analysis on the principle of cause and effect. Today there are a number of powerful automation tools for researching [8 - 10]. For instance, Business Studio can be used. This business modeling system, which allows you to create a comprehensive consistent business process model of strategic management in accordance with the methodology of structural analysis and design SADT, provides responsibility for the main results of this activity, maintains a balanced scorecard, goal tree visualization and cause-and-effect relationships (Fishbone Diagram). Business Studio supports FMEA (Failure Mode and Effects Analysis) [11, 12] by the RPN method (Risk Priority Number):

1) determine the level of significance of the possible consequences of each of the μ -th failure mode Z_{μ} on a 10-point scale;

2) assess the frequency of their occurrence F_{μ} on a 10-point scale;

3) evaluate the complexity of their detection of D_{μ} on a 10-point scale;

4) quantify the complex risk of failure mode through the calculation of the priority number of risk (RPN):

$$RPN_{\mu} = Z_{\mu} F_{\mu} D_{\mu}, \quad RPN = (1, \dots, 1000),$$

where Z_{μ} is the level of significance of the possible consequences of each of the μ -th failure mode; $Z_{\mu} = (1 \div 10)$;

F_{μ} is the frequency of occurrence of each of the μ -th failure mode; $F_{\mu} = (1 \div 10)$;

D_{μ} is the difficulty of detecting each of the μ -th failure mode; $D_{\mu} = (1 \div 10)$.

Thus, we have developed the method of stakeholders' identification based on their views in the strategic management of social programs, which consists of 7 Steps:

Step 1: development of a questionnaire for the cause-and-effect relationships of the failure of inclusive educational projects according to the imagination of stakeholders of different groups

Step 2: survey of respondents with differentiation by SPN (stakeholder priority number) and three groups of stakeholders: A - the state as a system of institutions; B - citizens with disabilities or their legal representatives; C - neurotypical visitors to institutions or their legal representatives;

Step 3: investigation of stakeholders' perceptions of the cause-and-effect relationships of failure of inclusive projects according to the 6M method (Lan, Machines, Materials, Methods, Measurements, Mother-nature);

Step 4: charting of Isikawa diagrams;

Step 5: quantification of the strength of the identified relationships according to the FMEA (Failure Mode and Effects Analysis) based on the results of a survey of respondents using the method of calculating the priority number of risk of failure mode (RPN);

Step 6: ranking of the reasons for failure modes according to the RPN / SPN matrix;

Step 7: development of conclusions and recommendations.

Conclusions and prospects for further research.

The analysis of the results of the poll with the identification of causal links will identify areas of disparity in the views of various stakeholders on the reasons for the failure of inclusive educational projects. Quantifying them makes it possible to identify the most important aspects that need to be addressed as a matter of priority on the part of project managers.

Therefore, we suggest that the proposed method is interesting as scientific as practical points of view, which allows to identify exactly where the disparity of ideas of different stakeholders, as well as to quantify the identified causal relationships, it provides informational support for the development of appropriate management decisions to leaders of inclusive educational projects at various levels.

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