

# Information systems modeling

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## CONCEPTUAL MODEL OF HUMAN CAPACITY FORMATION AND MANAGEMENT IN A MULTI-PROJECT ENVIRONMENT TO ENSURING SUSTAINABLE DEVELOPMENT OF RECOVERY PROGRAMS

**Abstract.** Effective formation and management of human potential in a multi-project environment contributes to ensuring the sustainable development of recovery programs, increasing the resilience and resilience of project teams. **The object of the study** is the processes of human potential management in a multi-project environment to ensure the sustainable development of programs. **The subject of the study** is the models, methods and processes of formation and management of human potential in a multi-project environment to ensure the sustainable development of programs. **The purpose of the study** is to develop a conceptual model of formation and management of human potential in a multi-project environment to ensure the sustainable development of programs. **The research methods** are based on the use of a data-driven approach for project-oriented, stakeholder-oriented, donor-acceptor management, systems analysis methods, project, portfolio and program management methodology. **The results of the work** are the development of a conceptual model of formation and management of human potential in a multi-project environment to ensure the sustainable development of programs, the development of a model of formation and management of human potential in a multi-project environment to ensure sustainable development. It is proposed to use metrics that describe resource potential to assess the obtained options for distributing resource provision between program projects: performer's resource potential, project resource potential, program resource potential. The process of forming and managing human potential in a multi-project environment to ensure sustainable program development was modeled. **The scientific novelty** of the proposed results lies in the development of a conceptual model of forming and managing human potential in a multi-project environment to ensure sustainable program development, designed for the systematic formation of human capital for recovery programs; effective distribution of personnel between portfolio projects and recovery programs; coordination of HR solutions with sustainable development goals; reduction of personnel risks in a multi-project environment; reduction of cyber risks associated with human resource management processes. **Conclusions:** the developed set of models of forming and managing human potential in a multi-project environment to ensure sustainable development allow for the formalization of management processes and contribute to ensuring sustainability. The proposed model involves the integration of human potential, digital technologies and sustainable development principles using a data-driven approach and analytics to support management decisions in managing recovery programs. Recommendations for the implementation of models are provided. The application of models is considered on the example, which allowed generating solutions to the problem of resource provision of program projects (reducing the cost of attracting applicants by 25%), an assessment of the resource potential of the performer, projects and programs was carried out and risks were identified and recommendations were proposed.

**Keywords:** project management; program; human resources; resources; processes; project team; configuration.

### Introduction (problem definition)

According to the Ministry of Community and Territorial Development of Ukraine, as of December 2025, 335 recovery projects are ongoing, which are consolidated into recovery programs [1]. When implementing recovery programs (in particular, in wartime and post-war times), there is a need to coordinate the efforts of state, public, and international organizations to achieve recovery results under strict time and resource constraints, which requires the transformation of personnel management processes. The simultaneous implementation of a large number of projects with changes in the conditions of project implementation caused by military actions requires making optimal management decisions in real time, which in turn creates high requirements for the competencies of personnel involved in the implementation of the recovery program.

The rapid introduction of digital technologies has revealed the limitations of models of digital human resource management in a program context, research on the integration of human resource management systems,

project and program management systems [2]. According to the United Nations Development Programmer's study "Digital capacity and data assessment for recovery & development", 81% of communities in Ukraine request support in digital tools for recovery planning and 96% of communities require specialized staff training [3]

### Analysis of recent research and publications

When implementing recovery programs, the program's human potential is considered as a dynamic resource of the program. The life cycle of human capital projects in a multi-project environment consists of the following stages: formation, distribution, development, recovery. The impact of digitalization on the efficiency of resource management will be determined by the stage of the human capital life cycle, the stage of program implementation, and the level of digital maturity of the organization implementing the program [4].

When choosing an approach to implementing information technology to support management decisions, the centralization of planning (centralized, decentralized,

hybrid), the specifics of the recovery program, the recovery industry (construction, energy, critical infrastructure, transport infrastructure, etc.), general work trends, and HR practices used in the industry are taken into account [5]. Donor requirements, investor requirements, and international programs that finance the implementation of the program have a great impact. The affiliation of programs to state-targeted, international, and sectoral programs affects the requirements for ensuring the sustainability of the team and program processes.

Since human potential management occurs under the influence of external (social, economic, political, security) and internal (organizational, managerial, technological) factors that lead to changes in the conditions of program implementation, the task arises of ensuring the sustainable productivity of recovery programs and the possibility of its implementation under the adverse influence of an aggressive BANI environment [6]. Features of the formation and management of human potential in a multi-project environment are given in Table 1.

*Table 1 – Features of the formation and management of human potential in a multi-project environment*

Specifics	Essence	Implementation mechanisms	Source
Portfolio approach to human potential	People are a common strategic resource of the entire system, not a separate project.	Centralized planning, a single competency base, project resource redistribution, talent portfolio management	[7]
Adaptability and resilience	Correction of personnel decisions in accordance with changes	Resource redistribution, scenario planning of resource provision, operational rotation of teams, reserve of critical specialists	[8]
Orientation towards sustainable development	Focus on ensuring the sustainability of human capital	Development of local human resources in communities, training and reskilling programs, inclusive human resources policy, employment support in recovery regions	[9]
Digitalization of management	Use of digital platforms	PPM systems, HRIS, People Analytics, digital twins, real-time staff workload monitoring	[10]
Balancing productivity and staff well-being	Recovery efficiency is combined with protecting the mental and physical health of workers	Workload management, mental health support programs, burnout prevention policies	[11]
Critical knowledge management	Knowledge management as a strategic resource	Knowledge bases, critical competency management	[12]
Resilience to crises and turbulence	Ensuring the functioning of the personnel management system in conditions of war and post-war reconstruction	Crisis management, formation of functionally redundant teams, development of continuous operation scenarios	[13]
Coordination and integration	Taking into account the requirements of stakeholders, interaction with the state, community, business and donors, investors	Stakeholder-oriented management, communications management, coordination mechanisms, intersectoral interaction, common human resources platforms	[14]
Cybersecurity and risk management	Reducing the negative impact of risks, ensuring cybersecurity	Program risk management, ensuring cybersecurity and cyber resilience, cybersecurity regulatory compliance, change management	[15, 16]

Digitalization of human resource management processes, the use of AI creates additional requirements for cybersecurity and cyber resilience of personnel management processes, especially in wartime.

Orientation to sustainable development involves ensuring the sustainability of human resource management processes. In recovery programs, human potential is considered not as a resource of a separate project, but as a common strategic resource of the recovery program, an integrated resource of the entire recovery system.

To ensure the sustainability of management processes, it should be noted that when considering resources as common, the following limitations should be taken into account:

- territorial distribution of resources [17];
- inability to physically move in order to involve resources in projects in another location;
- restrictions on the level of access;
- restrictions on project stakeholders;
- personnel restrictions;
- restrictions on redundancy;
- technological limitations.

### **Identification of previously unsolved parts of the general problem. Purpose of the work, tasks**

Digital human resource management in a multi-project environment of recovery program implementation is considered as an information and analytical process supporting management decision-making both at the project and program levels, which provides planning, distribution, training and development, control and adaptation of human resources between program projects based on digital data, analytics and optimization models.

The object of the study is the processes of human resource management in a multi-project environment to ensure sustainable program development.

The subject of the study is the models, methods and processes of forming and managing human resource in a multi-project environment to ensure sustainable program development.

The purpose of the study is to develop a conceptual model of forming and managing human resource in a multi-project environment to ensure sustainable program development.

The article solves the following tasks:

- to develop a conceptual model of forming and managing human resource in a multi-project environment to ensure sustainable program development.
- to develop a model of forming and managing human resource in a multi-project environment to ensure sustainable development;
- to conduct modeling of the process of forming and managing human potential in a multi-project environment to ensure sustainable development of programs.

The research methods are based on the use of a data-driven approach for project-oriented, stakeholder-oriented, donor-acceptor management, systems analysis methods, project, portfolio and program management methodologies.

**Research results**

The advantages of using a program approach to resource allocation are:

- inter-project reallocation of personnel taking into account the donor-acceptor approach;
- centralized planning of resource needs;

- a single base of competencies;
- portfolio/program management of human potential;
- talent management of projects in a multi-project environment.

Prompt response to changes in resource requirements can be achieved by using configuration resource management [18].

Factors that initiate personnel changes can be: changes in the priorities of the elements of the recovery program (for example, the implementation of recovery programs primarily in a certain area that most needs recovery as a result of shelling);

- changes in donor requirements;
- risks;
- personnel losses;
- results of the implementation of program projects;
- results of post-project/post-phase analysis of recovery program projects.

Mechanisms for ensuring proactive risk-based management are given in Table 2.

*Table 2 – Mechanisms for ensuring proactive risk-based human resources management*

Personnel risks	Mechanisms
Shortage of critical specialists	Human resource reserve, mentoring, staff development
Outflow of personnel abroad	Personnel reserve, motivational work on staff retention, mentoring
Overload of key specialists	Staffing reserve; role duplication; adaptive resource allocation
Loss of knowledge when dismissing key specialists	Development and implementation of a critical competency management system; knowledge documentation; offboarding procedures
Cyber risks of HR processes	Cyber risk management, ensuring cyber resilience of human resource management processes; cyber resilient HR systems
Employment instability in the war/post-war period	Resource pooling; career planning; onboarding and offboarding

Human resource development is also considered from the perspective of long-term sustainability of recovery, which involves increasing the social resilience of communities, developing local personnel, ensuring inclusiveness, gender equality, preserving human capital in the country, and ensuring the transfer of knowledge between generations of specialists.

Purpose of the proposed approach:

- systematic formation of human capital for recovery programs;
- effective distribution of personnel between portfolio projects and recovery programs;
- alignment of HR solutions with sustainable development goals;
- reduction of personnel risks in a multi-project environment;
- reduction of cyber risks associated with human resource management processes.

Fig. 1 shows a conceptual model of formation and management of human resources in a multi-project environment to ensure sustainable development of programs.

The formation and management of human potential in a multi-project environment to ensure sustainable development is based on a combination of project-oriented, stakeholder-oriented, donor-acceptor approaches and methodologies of project, portfolio and program management. The proposed model involves the integration of human potential, digital technologies and

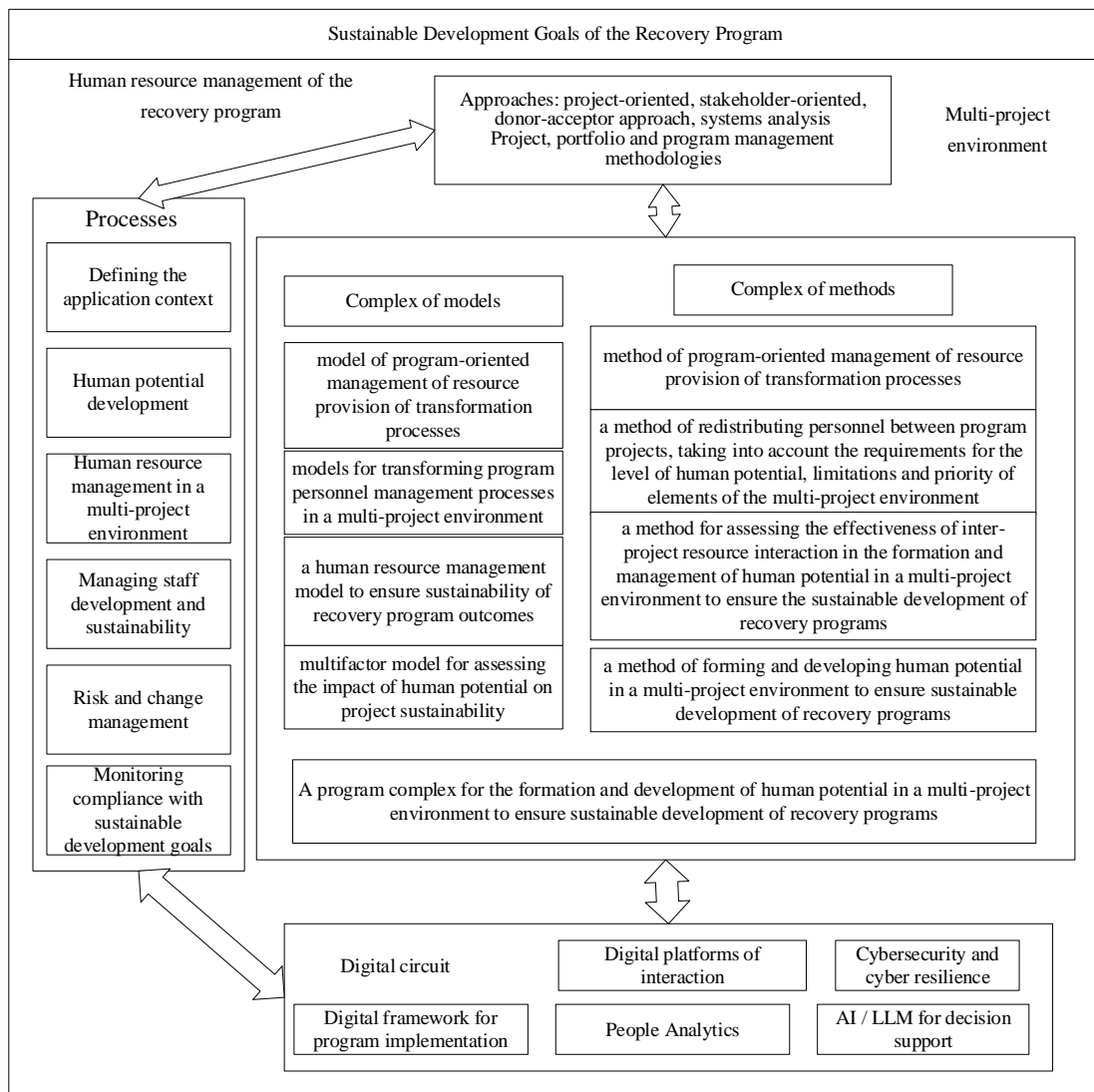
sustainable development principles using a data-driven approach and analytics to support management decisions in managing recovery programs.

Mechanisms for digital human resource management form a digital circuit. Integrated information systems involve combining the functions of project management and HR systems. Among the systems used, PPM (project portfolio management systems); HRIS personnel information systems; People Analytics (systems for human capital analytics); the use of AI/LLM tools to support management decision-making.

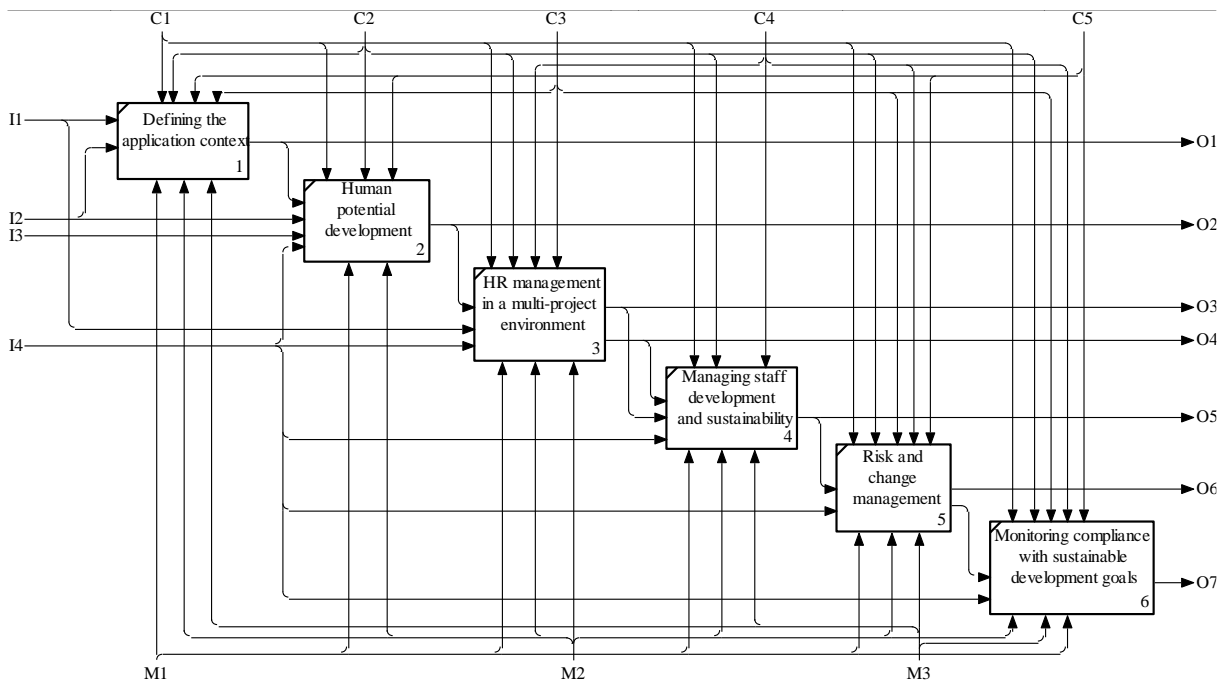
A model of the process of forming and managing human resource in a multi-project environment to ensure sustainable development has been developed (Fig. 2).

- The processes considered are
- defining the program context (F1);
  - forming human resource (F2);
  - managing human resource in a multi-project environment (F3);
  - managing personnel development and sustainability (F4);
  - managing risks and changes (F5);
  - assessing compliance with sustainable development goals (F6).

The governing elements are the regulatory framework for the implementation of recovery programs, the Digital Framework for the implementation of the program, the information interaction system, the cybersecurity and cyber resilience system.



**Fig. 1.** A conceptual model for the formation and management of human potential in a multi-project environment to ensure sustainable program development



**Fig. 2.** Model of human potential formation and management in a multi-project environment to ensure sustainable development

The ICOM code for the elements of the IDEF0 model for the formation and management of human potential in a multi-project environment to ensure sustainable development is given in Table 3.

Table 3 – ICOM model element code

ICOM code	Name
<i>Input</i>	
I1	Project information (PPM data)
I2	HRIS data
I3	Human resource requirements
I4	Digitalization requirements
<i>Control</i>	
C1	Regulatory and legal framework
C2	Digital framework for program implementation
C3	Digital platforms of interaction
C4	Cybersecurity and Cyber resilience system
C5	PMO Regulations
<i>Output</i>	
O1	Context of program implementation
O2	Assessment of human resources potential
O3	Human resource management plan in a multi-project environment
O4	Critical Knowledge Management Plan
O5	Human Resource Development and Sustainability Management Plan
O6	Risk management plan
O7	Assessment of compliance with sustainable development goals
<i>Mechanism</i>	
M1	HR-manager
M2	PMO
M3	cybersecurity specialist

The basis of human resource management in a multi-project environment is configuration management, which is based on the formal transformations proposed in [19].

This allows for resource management in a multi-project environment, satisfying the qualitative and quantitative requirements specified by the characteristics (C (cost, quality, etc.), reservation coefficients).

A system of metrics can be used to evaluate configurations, which takes into account performance criteria (orientation on achieving recovery goals), resource criteria, process criteria, etc.

For the obtained options for distributing resource provision between program projects, we will consider the application of the proposed resource criterion - assessment of the resource potential of the performer:

$$POT_{q_i} = \sum_{j=1}^m pot_{i,j},$$

where  $POT_{q_i}$  - resource potential of the  $i$ -th performer;  $n$  – number of performers;  $m$  – number of projects;  $pot_{i,j}$  – number of options for involving the  $i$ -th performer in the  $j$ -th project,  $i = \{1, \dots, n\}, j = \{1, \dots, m\}$ .

Resource potential of the  $j$ -th project:

$$POT_{p_j} = \sum_{i=1}^n a_{i,j} * pot_{i,j},$$

where  $a_{ij}$  – criticality coefficients of the  $i$ -th performer for the  $j$ -th project,  $i = \{1, \dots, n\}, j = \{1, \dots, m\}$ .

Total resource potential of the program:

$$POT = \sum_{j=1}^m \sum_{i=1}^n a_{i,j} * pot_{i,j}.$$

Let us consider the advantages of using the proposed model on an example.

A matrix of attracting performers to the program projects is given, where  $Q = \{q_1, \dots, q_{15}\}$  are potential candidates who meet the specified quality requirements,  $P = \{p_1, \dots, p_8\}$  are projects included in the recovery program. The elements of the matrix are equal to the cost of attracting a candidate for the project (Table 4).

Table 4 – Project Cost Matrix

Q/P	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>	P <sub>5</sub>	P <sub>6</sub>	P <sub>7</sub>	P <sub>8</sub>
q <sub>1</sub>	5	8	9	0	0	0	0	5
q <sub>2</sub>	0	0	5	4	0	6	0	0
q <sub>3</sub>	0	7	0	8	6	0	5	0
q <sub>4</sub>	3	0	0	5	0	8	0	7
q <sub>5</sub>	6	0	5	4	0	6	0	0
q <sub>6</sub>	5	0	9	0	0	0	0	7
q <sub>7</sub>	0	5	0	0	4	0	0	0
q <sub>8</sub>	3	0	8	5	0	0	7	6
q <sub>9</sub>	0	0	0	0	6	5	0	5
q <sub>10</sub>	6	0	7	0	0	7	0	0
q <sub>11</sub>	5	4	0	0	0	6	0	0
q <sub>12</sub>	8	0	5	0	0	4	0	0
q <sub>13</sub>	4	0	6	5	0	0	7	6
q <sub>14</sub>	0	4	5	0	4	0	0	0
q <sub>15</sub>	8	0	0	0	5	0	6	4

Requirements for reservation in projects:  $T = \{3, 2, 1, 2, 1, 2, 1, 1\}$ .

As a result of applying the methods described in [18, 19], the following solution options were obtained (Table 5). Based on the analysis of the requirements for the characteristic C (in the example, the cost of involvement in the project), we select the options that have the minimum value of the characteristic C=55 (a cost reduction of 25% compared to the maximum value).

The number of options for involving the  $i$ -th performer in the  $j$ -th project and the assessment of the resource potential of performers, projects ( $a_{ij} = 1$ ) and the program are given in Table 6. The conducted analysis of the resource potential of the program showed that the total resource potential of the program is 637.

The resource potential of performers is from 22 to 49, the resource potential of projects is from 49 to 147. With equal values of criticality indicators, we have an advantage over performers with higher resource potential, since it reflects the number of potential options for forming project teams. That is, according to the criterion of the performer's resource potential, the most promising for redistribution are  $q_2, q_3, q_4, q_5, q_9$ . Performer  $q_1, q_4$  can be involved in only one project, which indicates the risk of losing performers when the project is closed, performer  $q_{13}$  can be involved in four projects, which increases its resilience at the program level. The obtained values of resource potential can be taken into account when creating functionally reserved adapted teams to increase their resilience.

Table 5 – Options for engaging in the program

C	C/Cmin	C/Cmax	Number of options	Option to join the program
73	1,33	1,00	1	{1,3,2,1,1,8,2,4,5,6,6,0,4,0,7}
71	1,29	0,97	1	{1,3,2,1,1,8,2,4,5,6,6,0,6,4,0,7}
70	1,27	0,96	2	{1,3,2,1,1,8,2,4,5,0,6,6,4,0,7}, {1,3,2,1,1,8,2,4,6,6,0,0,4,5,7}
69	1,25	0,95	1	{1,3,2,1,1,8,2,4,6,0,6,0,4,5,7}
67	1,22	0,92	2	{1,3,2,1,1,8,2,4,6,0,0,6,4,5,7}, {1,3,2,1,1,0,2,4,8,6,0,6,4,5,7}
66	1,20	0,90	10	{1,3,2,1,1,0,2,4,8,0,6,6,4,5,7}, {1,4,2,1,1,0,2,4,6,3,0,6,7,5,8}, {1,4,2,1,1,0,2,7,6,3,0,6,4,5,8}, {1,4,2,1,1,0,2,4,6,0,6,3,7,5,8}, {1,4,2,1,1,0,2,7,6,0,6,3,4,5,8}, {1,4,2,1,1,0,2,4,8,0,6,6,3,5,7}, {1,3,2,1,1,8,5,4,6,0,2,6,4,0,7}, {1,3,2,1,1,0,5,4,8,6,2,6,4,0,7}, {1,3,2,1,1,8,0,4,6,0,2,6,4,5,7}, {1,3,2,1,1,0,0,4,8,6,2,6,4,5,7}
65	1,18	0,89	4	{1,4,2,1,1,0,5,4,6,3,2,6,7,0,8}, {1,4,2,1,1,0,0,4,6,3,2,6,7,5,8}, {1,4,2,1,1,0,5,7,6,3,2,6,4,0,8}, {1,4,2,1,1,0,0,7,6,3,2,6,4,5,8}
63	1,15	0,86	4	{1,4,2,1,1,0,5,4,6,0,2,6,7,3,8}, {1,4,2,1,1,0,5,7,6,0,2,6,4,3,8}, {1,3,7,1,1,0,2,4,6,6,2,0,4,5,8}, {1,3,7,1,1,8,2,4,6,0,2,6,4,5,0}
60	1,09	0,82	2	{1,3,7,1,1,0,2,4,6,0,2,6,4,5,8}, {1,4,7,1,1,0,2,4,6,0,2,6,3,5,8}
59	1,07	0,81	2	{1,3,7,1,1,0,5,4,6,0,2,6,4,2,8}, {1,4,7,1,1,0,5,4,6,0,2,6,3,2,8}
58	1,05	0,79	5	{1,3,7,1,4,1,2,4,6,0,2,6,0,5,8}, {1,3,7,1,4,1,2,0,6,0,2,6,4,5,8}, {1,4,7,1,3,1,2,4,6,0,2,6,0,5,8}, {1,4,7,1,3,1,2,0,6,0,2,6,4,5,8}, {1,4,7,1,4,1,2,0,6,0,2,6,3,5,8}
57	1,04	0,78	5	{1,3,7,1,4,1,5,4,6,0,2,6,0,2,8}, {1,3,7,1,4,1,5,0,6,0,2,6,4,2,8}, {1,4,7,1,3,1,5,4,6,0,2,6,0,2,8}, {1,4,7,1,3,1,5,0,6,0,2,6,4,2,8}, {1,4,7,1,4,1,5,0,6,0,2,6,3,2,8}
56	1,02	0,77	3	{1,3,7,1,4,0,2,1,6,0,2,6,4,5,8}, {1,4,7,1,3,0,2,1,6,0,2,6,4,5,8}, {1,4,7,1,4,0,2,1,6,0,2,6,3,5,8}
55	1,00	0,75	7	{1,3,7,1,4,0,5,1,6,0,2,6,4,2,8}, {1,4,7,1,3,0,5,1,6,0,2,6,4,2,8}, {1,4,7,1,4,0,5,1,6,0,2,6,3,2,8}, {0,3,7,1,4,1,5,1,6,0,2,6,4,2,8}, {0,4,7,1,3,1,5,1,6,0,2,6,4,2,8}, {0,4,7,1,4,1,5,1,6,0,2,6,3,2,8}, {0,4,7,1,4,0,5,1,6,3,2,6,1,2,8}

Table 6 – Assessment of resource potential

Projects	q <sub>1</sub>	q <sub>2</sub>	q <sub>3</sub>	q <sub>4</sub>	q <sub>5</sub>	q <sub>6</sub>	q <sub>7</sub>	q <sub>8</sub>	q <sub>9</sub>	q <sub>10</sub>	q <sub>11</sub>	q <sub>12</sub>	q <sub>13</sub>	q <sub>14</sub>	q <sub>15</sub>	POTp <sub>i</sub>
1	45	0	0	49	29	13	0	10	0	0	0	0	1		0	147
2	0	0	23	0	0	0	25	0	0	0	36	0	0	14	0	98
3	0	23	0	0	7	0	0	0	0	7	0	2	8	2	0	49
4	0	26	0	0	13	0	0	28	0	0	0	0	31	0	0	98
5	0	0	0	0	0	0	20	0	3	0	0	0	0	26	0	49
6	0	0	0	0	0	0	0	0	41	7	7	43	0	0	0	98
7	0	0	26	0	0	0	0	5	0	0	0	0	5	0	13	49
8	0	0	0	0	0	9	0	0	5	0	0	0	0	0	35	49
POTq <sub>i</sub>	45	49	49	49	49	22	45	43	49	14	43	45	45	42	48	637

### Conclusions and prospects for further development

The results of the work are the development of a conceptual model for the formation and management of human potential in a multi-project environment to ensure sustainable development of programs, the development of a model for the formation and management of human potential in a multi-project environment to ensure sustainable development.

The use of metrics describing resource potential is proposed to assess the obtained options for the distribution of resource provision between program projects:

- resource potential of the performer;
- resource potential of the project;
- resource potential of the program.

The process of forming and managing human potential in a multi-project environment to ensure sustainable development of programs is simulated.

The scientific novelty of the proposed results lies in the development of a conceptual model for the formation and management of human potential in a multi-project environment to ensure sustainable development of programs, designed for the systematic formation of human capital for recovery programs; effective distribution of personnel between portfolio projects and the recovery program; coordination of HR solutions with sustainable development goals; reduction of personnel risks in a multi-project environment; reducing cyber risks associated with human resource management processes.

The developed set of models for the formation and management of human potential in a multi-project environment to ensure sustainable development allows for the formalization of management processes and contributes to ensuring sustainability. The proposed model involves the integration of human potential, digital technologies and principles of sustainable development using data-driven approach and analytics to support management decisions in managing recovery programs.

Recommendations for the implementation of models are provided. The application of models is considered on the example, which allowed generating solutions to the problem of resource provision of program projects (reducing the cost of attracting applicants by 25%), an assessment of the resource potential of the performer, projects and programs was carried out and risks and recommendations were proposed. A promising direction is the development of a multifactor model for assessing the impact of human potential on the sustainability of projects.

### Conflicts of interest

The authors declare that they have no conflicts of interest in relation to the current study, including financial,

personal, authorship, or any other, that could affect the study, as well as the results reported in this paper.

### Use of artificial intelligence

The authors confirm that they did not use artificial intelligence technologies when creating the current work.

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#### **Концептуальна модель формування та управління людським потенціалом у мультипроектному середовищі для забезпечення сталого розвитку програм відновлення**

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**Анотація.** Ефективне формування та управління людським потенціалом у мультипроектному середовищі сприяє забезпеченню сталого розвитку програм відновлення, підвищенню скійкості і резельсентності команд проєктів. **Об'єктом дослідження** є процеси управління людським потенціалом у мультипроектному середовищі для забезпечення сталого розвитку програм. **Предметом дослідження** є моделі, методи та процеси формування та управління людським потенціалом у мультипроектному середовищі для забезпечення сталого розвитку програм. **Метою дослідження** є розробка концептуальної моделі формування та управління людським потенціалом у мультипроектному середовищі для забезпечення сталого розвитку програм. **Методи** дослідження ґрунтуються на використанні data-driven підходу для проєктно-орієнтованого, стейкхолдер-орієнтованого, донорно-акцепторного управління, методів системного аналізу, методології проєктного, портфельного та програмного управління. **Результатами роботи** є розробка концептуальної моделі формування та управління людським потенціалом у мультипроектному середовищі для забезпечення сталого розвитку програм, розробка моделі формування та управління людським потенціалом у мультипроектному середовищі для забезпечення сталого розвитку. Запропоновано використання метрик, що описують ресурсний потенціал для оцінки отриманих варіантів розподілу ресурсного забезпечення між проєктами програми: ресурсний потенціал виконавця, ресурсний потенціал проєкту, ресурсний потенціал програми. Проведено моделювання процесу формування та управління людським потенціалом у мультипроектному середовищі для забезпечення сталого розвитку програм. **Наукова новизна** запропонованих результатів полягає у розробці концептуальної моделі формування та управління людським потенціалом у мультипроектному середовищі для забезпечення сталого розвитку програм, призначеної для системного формування людського капіталу для програм відновлення; ефективного розподілу кадрів між проєктами портфелю та програми відновлення; узгодження HR-рішень з цілями сталого розвитку; зниження кадрових ризиків у мультипроектному середовищі; зниження кіберризиків, пов'язаних з процесами управління людськими ресурсами. **Висновки:** розроблений комплекс моделей формування та управління людським потенціалом у мультипроектному середовищі для забезпечення сталого розвитку дозволяють формалізувати процеси управління, та сприяють забезпеченню сталості. Запропонована модель передбачає інтеграцію людського потенціалу, цифрових технологій та принципів сталого розвитку з використанням data-driven підходу та аналітики для підтримки управлінських рішень при управлінні програмами відновлення. Наведено рекомендації щодо впровадження моделей. На прикладі розглянуто застосування моделей, що дозволило згенерувати рішення задачі ресурсного забезпечення проєктів програми (зниження вартості залучення претендентів на 25%), проведено оцінку ресурсного потенціалу виконавця, проєктів та програми та запропоновані, визначені ризики та запропоновані рекомендації.

**Ключові слова:** управління проєктами; програма; людський потенціал; ресурси; процеси; команда проєкту; конфігурація.