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ORGANIZING LABOUR AND EMPLOYMENT IN MODERN TECHNOLOGICAL CONDITIONS: CURRENT ISSUES, MECHANISMS

Summary

The study is dedicated to identifying the urgent problems, mechanisms, and prospects for improving the systemic labour and employment management in the modern technological conditions combined with the impact of numerous socio-economic global and national challenges. The areas, directions, and tools of further systematization of the labour and employment management within the framework of HR engineering are substantiated. The said technology allows for the balanced improvement in the quality of professional and qualification potential, the level of productive employment and social protection of an business entities' personnel as the current key factors in increasing their economic efficiency and resilience, strengthening potential of sustainable development (in particular, in terms of an enterprises' profitability, competitiveness, innovativeness, the efficiency of mechanisms for regulating social aspects of labour relations, the implementation of functions of balanced civic responsibility). The tools and ways of the HR engineering and HR management influence on the relevant characteristics of business circles and local economic subsystems are determined. The methodology for implementing the systemic HR engineering that uses a range of digital technologies and tools are studied; the expected results of their application in the process for further structuring and balancing organizational, economic, innovation-stimulating, and socio-psychological aspects of the labour management in enterprises' current and strategic functioning are revealed.

Introduction

The sum of technological modes that makes up the content of neo- and post-industrial economies is characterized by increased requirements for the professional and qualification, innovative, knowledge- and rent-generating potential of human resources, as well as for the production environment of their use. This manifests itself through the increase in the requirements of business entities for the relevant qualities, abilities and skills of employees, the invigoration of competition not only among applicants on the labour market,

but also among employers for personnel with desired qualifications. Optimization of staffing, employees' professional and qualification characteristics, labour and organizational processes, ensuring productive employment have become integral factors of the sustainable development and resilience of an economic entity (viability with signs of profitability, competitiveness, innovativeness, efficiency of mechanisms for regulating social aspects of labour relations, balanced civic responsibility) in the environment of numerous socio-economic challenges of the national and global origin. On the other hand, the growing role of the workforce as a production factor of neo- and post-industrial economies strengthens the position of employees in struggling for decent working and extra-working conditions, remuneration for labour, establishing production and organizational spaces of business, as well as for constructive interaction with employers on the related issues.

While accompanying the development of technological modes and production factors, the global increase in standards of living and consumption supports the requirements of applicants on the labour market not only for its remuneration, but also for professional and creative self-realization, individualization of employment strategies. At the same time, while integrating institutions of various forms of ownership for improving the professional and qualification competitiveness of the population, recruiting and managing the personnel, the labour market should function as a complex mechanism for coordinating labour supply with demand for it, increasing the level of productive employment, ensuring effective workforce movement, systematizing services of employment and support of an individual in variable socio-labour relations. The impact of these processes on the efficiency, sustainable development and resilience of economic entities (enterprises, companies, corporations), their brunch and inter-brunch associations and clusters, regional business systems and national economies has intensified the modernization and systematization of activities and targeted measures for managing labour, employment and personnel.

It is widely estimated that by 2025, only 50% of work will be performed by humans, and the rest will be done by robots and innovative technologies, so about 40% of workers' skills on the entire planet will become obsolete and unnecessary; according to the latest forecasts from the World Economic Forum, which is held annually, in the next 5 years, approximately 90 million jobs are expected to be lost and 100 million new ones will be created (including in E-Commerce, Big Data, Cloud Technology companies), moreover, 94% of employers are confident that staff can be retrained without leaving production [1, p. 203, 206]. The combination of the contemporary technological challenges, social demands and the impacts of a number of crises (in particular, those caused by the COVID-19 consequences) has changed the views of

enterprises' heads and employers on HR processes and related circumstances: according to a number of recent WEF reports, 43% of representatives from the surveyed enterprises indicated their readiness to reduce jobs due to technological integration, 41% planned to expand the use of various contractors to perform specialized work, 34% were preparing to increase the number of personnel as a result of technological integration; a significant share of companies expected to change their location, business processes structure, and workforce contingent in the next five years due to non-technologic factors [2].

The needs of the neo- and post-industrial economies' technological modes to activate and increase the level of capitalization of the knowledge- and rent-generating properties of human resources have ensured the modernization of personnel management concepts through the transition from the effective use of economic entities' relevant assets to the formation of a complex system for interaction between workers, united by common activities and organizational space [3–5]. This approach corresponds to the understanding of an employee as the most important production resource, and not the object of management, but the main subject of any enterprise (company), which is capable to self-development; as a consequence, financial results of business are increasingly depend on his executive, creative and innovative dynamics.

Chapter 1. Regulation of the labour and employment territorial disparities

The important role in the development of coordinated hierarchical network of institutes and institutions for the employment regulation and management is played by the mechanisms of its territorial subsystems' functioning, aimed at: consistent balancing of labour demand and supply; ensuring productive employment in settlement systems, economic complexes, brunch and inter-brunch clusters; optimizing factors and processes of the population territorial mobility, effective in the context of full satisfaction of national needs in competitive labour force, diversification of employment and economic subsystems, expansion of fruitful cross-border socio-economic cooperation [6–10]. The relevance of the coordinated functioning of the network of institutes and institutions for the employment regulation and management is determined by the impact of this process on: the stability of the state and local budgets' filling; the sustainable growth in the level of wages and the share of the population's labour income; the predictability of the range of guaranteed social protection payments within the framework of mandatory insurance and regional development programs, which also have a strong reverse impact on maintaining and accelerating of the socio-economic growth rate [6; 7].

Herewith, the important areas of activity of both central and local authorities are recognized as: expansion and diversification of the employment sphere; stimulation of decent remuneration; legalization and reduction of undeclared

work; improvement of the social dialogue mechanisms within institutions for triple cooperation between workers (trade unions), employers and the state; improvement of conditions, increasing the efficiency of professional and territorial mobility of the working-age population; regulation of cross-border labour migration; fulfilment of the long-term national priorities for reproducing and improving professional and qualification parameters of the workforce capable to work effectively in the conditions of modern technological modes; implementation of a system of levers, tools, factors for optimizing the socio-demographic parameters of territorial communities, which affect the indicators of staffing and the specialization of economic subsystems.

For a long time, the development of a wide range of territorial labour markets in Ukraine has been characterized by a number of destructive trends [7–9], among which the following should be noted:

- anticipatory rates of the labour force reduction in comparison to the rates of permanent population reduction; aging of highly qualified workers' contingent employed in Ukraine on the permanent basis; the increase in the number of both registered unemployed and persons employed without proper declaration among the population of rural settlements and small towns; acceleration of illegal (including irreversible cross-border) labour migration;

- significant structural unemployment caused by the stagnation of the employment sectoral structure and numerous cases of the acute imbalance between the supply of labour and the legal demand for it in territorial communities, including those cases related to employers' (monopolists and external stakeholders) underestimation of the cost of competitive workforce reproduction in modern socio-economic conditions, weak economic expediency of the proposed jobs (especially in the regions of predominant resource-extractive, agricultural, agro-processing specialization);

- high average annual staff turnover in the regions and in a number of sectors, a consistent increase in the need for the low-skilled labour and service workers of the simplest professions, caused by the significant changes in Ukraine's specialization in the foreign markets over the past three and a half decades, when preference was given to the resource extraction industries, primary processing of raw materials (including agricultural), transit of minerals and energy resources, production of semi-finished products and components for the foreign and transnational corporations;

- high rates of the undeclared labour among persons with vocational and general secondary education, low qualifications, representatives of the simplest professions, formally and informally employed in agriculture, forestry, fisheries, construction, wholesale and retail trade, vehicle repair and maintenance, industry, transport, warehousing, postal and courier activities, temporary accommodation and catering activities, as well as among the rural

residents, which were identified by ILO specialists, Ukrainian researchers and the State Labour Service of Ukraine. In particular, according to the results of a number of long-term studies [10, p. 56, 58], the income of residents of small towns and villages in the western border regions of Ukraine from illegal shuttle trade, purchases, and seasonal work in the neighbouring countries significantly exceeds their declared basic earnings (at the same time, shuttle trade and purchases can carry retail, small-wholesale and large-wholesale nature);

- the instability of the state strategy for promoting small and medium-sized businesses in Ukraine, the inconsistency of guidelines and priorities for their development both in the regions and in the economic sectors and clusters (service, extractive, processing, high-tech, transport and logistics), reinforced by the urgent needs of the state intervention and centralization of measures for organizing the military resistance and the military industry, eliminating the consequences of large-scale military operations;

- the decrease in the level of small and medium-sized businesses' activities due to the socio-economic problems of the recent years (2019–2021 – the Covid-19 pandemic and nationwide sanitary and anti-epidemic measures, 2022–2024 – the large-scale military actions in Ukraine), which caused the shortage of the working capital, impoverishment and stoppage of the wide range of business entities, including individual entrepreneurs, forced dismissal and unemployment of their hired personnel, destruction of the established economic and logistical connections and specialization of sectoral and territorial economic subsystems;

- the gradual decrease in the comprehensive, professional and qualification level of youth and working-age population due to the integrated influence of such factors, as: the obsolescence of the national economy's sectoral structure and the narrowing of its specialization; the destruction of the mechanism for meeting its needs in qualified labour and technical staff; the unsatisfactory quality of specialized programs for the professional education and practice in many higher educational institutions; the inability of the rural territorial communities to compete equally with the urban ones in the level of general secondary education; increasing negative effects from the spread of undeclared labour, which provokes subjective and financial limitations of the individual strategies for improving the professional and qualification level of persons involved in it and their family members;

- the ineffectiveness of programs and other targeted proposals for advanced training and retraining, employment of unoccupied and registered unemployed persons, which are offered by the territorial bodies of the State employment service.

The urgency of the issues of labour markets' effective regulation in both border regions (western and south-western), as well as in central and northern

regions with the developed production base, extensive transport and energy infrastructure is growing rapidly in the context of the implementation of Ukraine's European integration aspirations, the pace of which the authorities are trying to maintain even in the period of martial law. The Association Agreement with the EU contains the wide range of requirements for unifying national labour legislation and mechanisms of the employment sphere functioning (in particular, in the areas of social protection, working conditions, labour mobility of the workforce), which are directly related to the implementing priorities and mechanisms for the territorial labour markets' balancing and diversifying.

The significant socio-economic and educational factors of the formation of the said destructive tendencies in the functioning of territorial labour markets in Ukraine, in particular, include:

- the imbalance in the structure of specialists' training in the system of higher and vocational education, when the share of humanitarian and technical specialties, oriented to the supply of personnel for the managerial, financial and economic, service sectors, prevails over production specialties. This trend has been reinforced for a long time by the processes for autonomy, primarily, of higher educational institutions, aimed at finding sources of profitability by expanding the list of specialties through non-specialized ones in accordance with the university education format;

- the contradiction between the mass focus on the broad profile of a specialist and the needs of reproducing and improving the competitive workforce for innovative high-tech cluster industries;

- the imperfection of the state migration policy, in particular, its unsystematic nature in the issues for preventing the qualified personnel outflow through the measures to motivate and reward productive work, standardize labour conditions and decent remuneration level, especially in sectors of national economic specialization.

The critical summarization of the current problems of managing the workforce, employment and territorial labour markets in Ukraine has revealed growing economic and public needs for improving the mechanisms and instruments of their settlement in the context of achieving productive employment of the national competitive workforce as the integral component of the long-term strategy for restoring and increasing the competitiveness of the national economy based on its diversification and sustainable development of staffing processes.

Chapter 2. Systematization of HR management

HR management is the activity aimed at attracting personnel whose knowledge, qualifications, skills and abilities ensure the fulfilment of the

production duties assigned to him, as well as at organizing his optimal use, stimulation and reimbursement of labour costs [1; 4; 11–13].

The main directions of modern labour management include: talent management (their search, development, application), the so-called internal marketing as a function that fundamentally affects the paradigm of HR managers and HR departments activities, and therefore the organizational structure of labour management; the human-centric approach in the organization of business processes in order to stimulate the initiative and responsibility of personnel for the results and synergistic effects of an enterprise (company) functioning; the urgent need for continuous improvement of staff qualifications and competence; strengthening the role of a clear management strategy, which involves the substantiation of multi-variant perspectives of entrepreneurship and labour activity itself (in particular, through a combination of economic, administrative, socio-psychological methods of influencing and interacting with personnel); shifting the epicentre of management efforts from automatic processes to productive ones (that is, from automating the spectrum of management processes in the areas of payroll, personnel accounting, creating systems for its selection, training, evaluation, etc. to increasing labour productivity, improving organizational and process models of enterprises and labour conditions, structuring and uniting work teams in the course of implementing business development strategies); the spread of holacracy management structures (i.e. systems of organizing management where power and decision-making are not carried out hierarchically, but are distributed functionally between self-organizing teams); digitalization of the spectrum of the specified processes [2; 4, p. 126–127; 11, p. 131–132; 12, p. 104, 106; 14].

The systemic integration of the highlighted areas of labour management in response to the needs of correcting turbulent external and national socio-economic conditions at the meso- and micro-levels of economic organization and functioning caused the modernization of the methodology and practice of managing the employment and labour market, as well as HR management of an enterprise (company), which has been called HR engineering. HR engineering and HR management, which is carried out on its basis, is a relatively new methodology for Ukraine, but a relevant and widespread one in the European macro-region and developed countries of the world, both effective for recruiting at the request of economic entities and corporate business networks, and for optimizing the set of their production processes and increasing profitability due to the balancing the labour potential, motivations and working capacity of employees [2–5; 11]. On the other hand, while meeting the needs of economic entities in personnel, optimizing their labour processes and labour productivity, HR engineering and corresponding HR management ensure the most complete implementation of the professional and qualification

characteristics and worldview orientations of each employee, harmonize the mechanisms and practices of his career growth in work team, as well as the working and extra-production interests of work teams themselves (in particular, through the mechanisms of decent material, moral and ethical motivation of personnel for coordinated productive work) [1; 12; 13; 15].

Important aspects and components of the systemic HR engineering and corresponding HR management are revealed in papers where:

- their methodology is substantiated as a systemic activity in the organization of human resources management based on the technologies of recruiting, business engineering, management and marketing, information and PR-support, social psychology, etc. [1; 3; 4; 12];

- HR-engineering and HR-management toolkit for economic entities' management is developed and systematized [2; 4; 5; 11; 14; 15]; HR engineering technologies for assessing and improving the professional and qualification properties and abilities of applicants, as well as already hired personnel are elaborated [1; 2; 12–15];

- the potential of HR engineering in overcoming a range of socio-economic challenges and force majeure events (for example, restrictions in targeted national, regional, local measures to suppress sanitary and epidemic threats, consequences of the natural and man-made disasters, military actions, etc.) at the micro- and meso-levels (of a certain enterprise, company and branch, sector, business cluster, territorial economic subsystem, respectively) are studied [1; 3; 5; 11–13; 15]. The permanent significant area of the HR engineering responsibility in turbulent socio-economic conditions is the adjustment of business strategy, optimization of specialized business economics, staff, wages and practices of personnel recruitment [3–5; 11].

Therefore, the practice of labour management based on HR engineering involves the implementation of both traditional and a number of innovative functions in the field of managing employment, human resources and their human capital [1; 4; 11–13]. Among the traditional functions of HR management are economic (calculation of wages, material incentives, penalties), organizational and administrative (establishment, implementation, regulatory and documentary support of the staffing list, office work and correspondence in a range of core and auxiliary areas of the enterprise's functioning, control over the implementation of work and vacation schedules, maintenance of discipline), socio-psychological (moral encouragement, documentation and justification of information regarding socially vulnerable employees and their needs to the administration). The highlighted traditional HR management functions are enhanced by multifaceted activities for tracking the level of capitalization and improvement of personal talents, skills and abilities, team building, optimizing cooperation and mechanisms of interaction

between hired personnel and company heads, stimulating career growth, implementing social initiatives of an economic business entity regarding its own personnel and the external environment (target audience, territorial community, etc.), based on modern information and analytical, financial and accounting, recruiting and educational technologies. As a result, the systemic nature of HR management is ensured by combining its current business functions with strategic, innovative and social ones [3, p. 61].

The basic technology of HR engineering, which primarily implements the economic, organizational and administrative functions of HR management, is quantitative assessments of employees' abilities to labour in order to establish an individual workload, which a certain employee, under certain organizational and technical production conditions, is able to perform systematically within a set time in exchange for wages; the aforementioned quantitative assessments objectify the formation of the value of labour as a phenomenal market commodity [13, p. 39]. At the same time, the systematization of quantitative assessments of workers and applicants abilities allows to form the portraits (models) of the competencies of the company's personnel [2].

As a result, the potential of the sustainable development and resilience of an economic entity in turbulent and adverse socio-economic conditions is enhanced through the effective combination of material and moral incentives for work, optimization of career growth mechanisms, formal and informal organizational and production interactions, stimulation of professional development and increase in labour productivity on the basis of formal and informal education and self-education (with and without separation from production), cohesion and improvement of the moral climate in the work team, expansion of opportunities for capitalizing corporate reputation acquired through balanced social responsibility to the company's personnel and the community.

Thus, HR engineering is a methodology for optimizing and systematizing activities of personnel management, ensuring productive employment, increasing the business profitability according to the criteria of its sustainable development and resilience, which have a social and individual value widely recognized by employees, institutions of civil society, and government structures.

Currently, researchers used to interpret HR engineering as the methodology and practice of systematic organization of human resources management, which integrates the needs and capabilities of an individual (employee or job seeker), corporate tasks, goals and architecture, as well as the range of technologies used by business structures (including within the framework of automated enterprise management systems functioning), subjects of recruitment itself, provision of other services for employment and support in the labour market, so as professional education (including the achievements of

business engineering, management and marketing, technologies in PR and a number of social psychology areas) [1–5; 11–15].

Modern methodology of business economics characterize HR engineering as the set of management tasks for building and improving an effective personnel management system (including procedures for personnel planning, analysis and assessment of jobs and employees' professional qualities, personnel selection, management of adaptation and professional orientation of new employees, management of working discipline, labour motivation, certification and remuneration, training and professional development of personnel) [2].

The main goals of HR engineering combine: the implementation of the well-founded strategy for selecting, developing, assessing and maintaining staff, integrated into the business strategy of productive functioning; the effective team building within the framework of mechanisms for using the potential of professional, leadership, communication abilities and skills of employees, their improvement and development; the fulfilment of the business economics tasks related to the personnel and career in the areas of resource management, marketing, profitability increase and company's logistics through the means for effective recruitment and capitalization of an employees' professional and qualification, comprehensive, worldview potential.

The range of main goals, as well as objectives and technologies of modern HR engineering requires the appropriate HR management, balanced in the context of its socio-economic efficiency (increase of the profitability, as well as the level of capitalization of employees' executive and innovative qualities, on the one hand, creation of conditions for the complete reproduction and development of their labour and creative potential, on the other). The relevant functions of personnel management include: selection and staffing of the enterprise structural divisions with personnel, whose professional and qualification characteristics, personal potential for their self-realization and improvement should satisfy current and strategic business goals and needs; constructive material and moral motivation for productive labour activity in the team and according to corporate standards; organizational and process-based provision of the most complete disclosure of an employee's executive and creative abilities along with stimulation of his professional education and innovative activity throughout working life; promotion of personal self-realization, in particular, in the areas of career growth, related community and civic initiatives.

The intra-corporate architecture of HR engineering and labour management depends on the organizational structure of an economic entity and, along with its HR, accounting and finance departments, can be formed by the planning and analytical, advertising and marketing, PR units of the enterprise itself, the corresponding separate structures of a corporate level (including in the

stakeholders' status), as well as by external consulting, auditing, and recruiting organizations.

Chapter 3. Labour environment and management digitalization

The rapid proliferation of electronic equipment, gadgets, resources and databases has contributed to the development the labour environment, working conditions, as well as to the acceleration and systematization of the labour management activities (in particular, in the aspects of personnel recruitment, management of economic entities' human resources and their wages, formation of corporate systems for recognizing qualifications and justifying labour remuneration) on the basis of digitalization.

The most widespread processes of digitizing the labor environment and management are currently manifested in [16, p. 95–96; 17; 18, p. 21–22, 25, 28; 19; 20, p. 141–142]:

- the searching and communicating with applicants, adapting new employees (due to the systems of their search and assessment, including through the development of a personal cognitive interface, as well as marketing on job sites, platforms, social networks, conducting online open days, corporate chat-bots, video interviews, gamification of recruiting and adaptation, etc.);
- advanced training for applicants and employees in a number of large companies specializing in IT, software, various electronic gadgets;
- routine operations in personnel management and procedures for analyzing the results of both management and labour activities, including within the framework of monitoring and adjusting business processes, corporate accounting, online decision-making, evaluating personnel work according to certain indices and qualitative indicators, forming thematic reports;
- creating virtual workplaces (for remote, part-time employees and freelancers); organizing machine and other forms of e-learning for personnel;
- development and self-service of employees according to their production and extra-production needs (through thematic information and recommendation systems, automation of applications – for internships, advanced training, obtaining relevant benefits);
- designing templates of reports with the features of simplicity, clarity, accountability, comparison (through dashboards, benchmarking, etc.), as well as activities for storing personal data and protecting information (for example, in cloud resources);
- improving cooperation technologies (thanks to the organization of the working environment, place and process, official meetings, feedback, etc., for example, for regular remote work, collective brainstorming sessions with a wide range of remote specialists, periodic reporting);

- strategic and personnel planning, HR branding (through corporate websites and platforms, using Big Data);
- monitoring moods in the work team, assessing employees' motivations, identifying sources of the discomfort in the workplace, including potential ones (through surveys, questionnaires, etc.).

In general, the digitalization of the labour environment and management allows for the significant increase in the efficiency of the production process for both personnel and the enterprise's heads in three key dimensions – monitoring, informing administration, and tracking problem areas [16, p. 97].

Promising areas for the digitalization of systemic labour management (along with the digital workplace – that is, creation of the working environment that ensures high labour productivity, abilities to collect information on performing tasks through supporting access to the numerous electronic databases, platforms, applications, modern means of communication and feedback with employees, as well as digital HR) are considered to be the formation and development of the so-called digital workforce (personnel with an innovative way of thinking, thorough digital skills, motivation and access to the resources for continuous improvement of knowledge, abilities, professional and qualification potential as a whole with the help of modern technologies) [17].

At the same time, the consistent digital transformation of the labour environment and management is focused not only on the use of digital technologies to improve ongoing business processes and HR activities, but also on the optimization of business strategies and business transformations in general [19], since the digital model of the labour environment and management better corresponds to the complex and largely uncertain conditions of enterprises' functioning and is more adapted for online and remotely work in such conditions [20, p. 142].

Along with the methods of business engineering, management and marketing of enterprises, technologies for labour standardization and organization, assessment and correction of personal and team competence levels, social psychology, PR, the methodological basis of digital HR engineering and its results in the form of systemic labour management and productive employment covers tools and means for automating relevant processes and databases, optimizing their structure and analysis, as well as software for business modelling and efficiency management in a range of economic specializations [1; 2; 12–15].

The main tasks of the digitalized HR engineering in the context of setting up, maintaining and optimizing the effective labour management consistently cover:

- the development of the organizational and process (functional) model of the enterprise, which structures its organization, practices of business and

personnel work activities. In this case: a hierarchical list of business processes and functions for structural units and positions is developed and agreed; the matrices of powers' distribution in the hierarchical organizational structure are described; job responsibilities and models of personnel skills and competencies are approved; the system of labour remuneration and motivation to increase its productivity is formed; key strategic indicators of the economic efficiency for structural units and employees by positions are developed;

- the calculation of costs and corporate labour standards, as well as staffing needs, formation of HR transformations' budget. In this case: quantitative and qualitative indicators of performing business processes and functions by structural units and positions are determined; time and costs (labour, financial) for performing business processes and functions in the context of the enterprise's business guidelines are monitoring and assessing; models and ways for optimizing the work schedule, as well as ensuring flexible employment and personnel replacement on the basis of functional responsibilities' integration and organizational structure's improvement are substantiated;

- the control, investigation, analysis of the processes and the level of implementation of the specified job and competency instructions, as well as the key strategic indicators of the economic efficiency of the structural units and employees by positions. In this case: the variable components of job and competency instructions, as well as the possibilities of their integration within the framework of the specialized business economy's optimizing are determined; the templates of reports by the positions and organizational units are developed; the system for recording personnel, drawing up and implementing the staffing tables and work schedules is created and periodically checked; the effectiveness of measures to reduce labour costs is assessed;

- the design of approaches to enhancing the organizational structure, increasing the labour productivity and personnel assignments. In this case: the search for job and functional imbalances and areas of irresponsibility is periodically conducted; approaches and ways to reduce the organizational fragmentation of the specialized business economy through optimizing the hierarchical management levels, eliminating duplication and centralizing similar business processes and functions, equalizing the workload of personnel in similar positions are substantiated; the mechanisms for using the results of monitoring the key strategic indicators of the economic efficiency of the structural units and employees by positions in order to improve the system of labour remuneration and motivation are implemented.

The basic digitalized technologies in the labour management based on the HR engineering are:

- the development and monitoring of the system of an enterprise's (company's) strategic goals and key indicators, creation of the labour motivation and remuneration system based on them;

- the construction of the functional system for assessing the professional and qualification characteristics of an applicants and already hired employees, as well as the level of fulfilment of a range of job and competency instructions (including measuring the effectiveness of the personnel planning and recruiting, in particular, on the outsourcing basis);

- the functional and cost analysis of the organizational structuring process, as well as a set of business processes (including calculation of the labour costs and corresponding corporate standards, the number and labour productivity of personnel);

- the analysis of the remuneration system efficiency (including by comparing the profitability and costs, measuring the effectiveness of a corporate strategy of material incentives, bonuses, compensations and benefits);

- the comparative study of business results (in particular, the labour productivity by divisions, positions, workers' categories), shifts in the organizational and process structure, results of using assets of intellectual potential, leadership and career growth stimulation;

- the development and study of the effectiveness of a corporate strategy for relations with employees (including assessment of: the volume and causes of staff turnover, labour discipline violations; the quality of socio-labour relations from the perspective of their participants; programs for orientation and adaptation in the workplace, related counselling and mentoring; mechanisms and the level of implementation of employees' business ideas; the moral climate in a work team);

- the assessment of the effectiveness of system for formal and informal education and self-education with and without separation from production (including in the aspects of: the effectiveness of education and knowledge management in a work team, in particular, through the costs for relevant electronic tools and programs; the costs and benefits achieved through the distance and self-education promoting; the dynamics and efficiency of an intellectual assets' using);

- the implementation of procedures for the productive communication between owners, administration, and personnel of an enterprise on the list of the mentioned issues.

Innovative digitalized HR engineering on the competency-based approach to the processes of recruitment, professional and career growth of personnel without separation from production involves the creative combination of the methods, such as [1, p. 204–205; 2; 14]: training (teaching effective models of

work behaviour with verification of their application); coaching and mentoring (assistance of the qualified and experienced trainer in revealing the employee's abilities and skills through solving certain tasks), including by means of neuro-linguistic programming; secondment (internal business trip, i.e. rotation of the employee for a certain period within the enterprise's organizational structure with subsequent return to the main duties); e-learning (distance learning using electronic network resources, technologies of artificial intelligence and augmented reality, performing tasks and exercises on the computer equipment offline); basket method (identifying the basic skills and abilities required by a potential employee for a certain position by simulating "management activity" situations); case studies (analysing real situations of the labour practice, identifying and discussing options for their solution); self-study (independent decision-making, stimulated by the use of various educational materials); arrangement of interviews, training, and workplace adaptation programs using the potential of social networks, mobile applications, corporate chat-bots, feedback surveys, etc.

The set of the HR engineering methods and technologies ensures the balancing of an enterprise's human resources by the most demanded professional competencies in the ratio of hard, soft and digital skills (i.e. general, professional, digital competencies) [2], as a result, contributing consistently to the improvement of the personnel number and job descriptions, adjustment of labour remuneration.

Chapter 4. Approaches to identifying social inequality caused by undeclared work

The practice of undeclared work is based on the legislative (official, including manipulative), as well as purely shadowy mechanisms of its emergence and functioning in the legal and shadowy segments of the economy (the latter combines conditionally legal types of activities that are outside the legal field, in particular, as "shadow" entrepreneurs declare, due to the unbearable tax burden and their efforts to overcome various administrative barriers) [21, p. 110]. In the broad sense, in addition to the actual criminal sector of the economy (that is, criminal economic activity with the use of capital of both criminal and non-criminal origin), the sectors of the economy where undeclared work operates include: the household sector (the sector of natural self-sufficiency); the informal sector (represented by small production, services, trade); the "hidden" sector of legitimate economic activities [22]. Undeclared work also can function in two of the three main blocks of the shadow economy according to its other classification (in: informal economic activity represented by legal (unregulated by the state) production of goods and services; hidden economy based on violations within the limits of permitted economic activities) [22].

Peculiarities of the organization of socio-labour relations within undeclared work, the problems of numerous forms of non-standard labour relations, loan work, hidden and shadow employment outline their main consequences for the level and quality of life, social protection of persons employed both informally and without proper declaration (including persons whose labour income is hidden at the initiative of the employee or employer). These consequences are:

- conjuncturely positive for the level of monetary incomes of the spectrum of strata, the equalization of the property differentiation of their middle and low-income segments (including the trend of increasing monetary incomes of the most qualified employees, their equalization in relation to the average values for persons with the least competitive education and qualifications), as well as for formal access to the social protection programs (except state mandatory and cumulative pension insurance), primarily in the field of subsidizing housing and communal services, financial and material assistance to vulnerable population groups;

- strategically negative – for the access to the legislative mechanisms of social protection with the onset of retirement age and cases of labour incapacity (temporary, total, as a result of occupational or general illness, disability), as well as for individual strategies of reproduction of the professional and qualification potential and the life quality of households, whose able-bodied members work mostly informally, receive salaries “in envelopes” under the temporary employment conditions, and are characterized by enlarged professional and territorial mobility.

In general, the phenomenon of undeclared work has a contradictory effect on the current situation and dynamics of income inequality of the population in Ukraine, contributing both to the smoothing of the corresponding stratification among the poorest groups, as well as among the spectrum of low-income and middle-income strata, and to the deepening of the financial and property stratification of all compatriots’ strata (primarily, with the lowest and highest incomes).

Considering the significant number of the undeclared workers among persons with vocational and general secondary education, low qualifications, older working age groups who are less competitive on the labour market, representatives of the simplest professions, informally employed in agriculture, forestry, fisheries, construction, wholesale and retail trade, repair and maintenance of vehicles, industry, transport, warehousing, postal and courier activities, temporary accommodation and catering activities, as well as among the residents of rural areas [23; 24], employment non-declaration contributes to increasing the levels of their economic activity and monetary income, including in relation to the corresponding average indicators in the country (region) and types of activities.

According to the assessment of social well-being and the most significant needs for the average individual according to the monitoring methodology of the Institute of Sociology of Ukraine, there were identified 5 most important factors, which describe 53% of the total variance [25, p. 318–319]. The first of these factors (29.3% of the specified variance) integrates the needs of individuals in the areas of the ability to work with full commitment, to have additional income, suitable work, to full-fledged leisure-time and vacation spending, to show initiative and independence when solving life problems, to eat according to individual tastes, to provide children with quality education and to receive legal assistance for protecting their rights and interests. The next factor (7.3% of the total variance) is formed by the needs for social security – for compliance with the laws forced in the country, order in the society, availability of savings in cases of serious illness, unemployment, property damages, for confidence in one’s own future. The factor of material and household needs (6.5% of the variance) includes such social values as necessary furniture, clothing, and good housing. The factor of personal information needs (5.2% of the variance) combines the possession of modern political and economic knowledge, decisiveness in achieving goals, and confidence in one’s abilities. The fifth factor (4.6% of the variance) includes the needs for physical well-being – health, the availability of necessary medical care, the ability to buy necessary products, the ability to live in current social conditions.

Therefore, the possibility of receiving the decent salary, additional earnings and savings, the formation and realization of an individual resource for one’s own socio-economic stability, competitiveness, survival and manoeuvring in the turbulent social conditions are the basis of the identified factors of at least satisfactory and good social well-being.

Taking into account the greater availability of hired jobs and conditions for self-employment organizing, the positive assessment of the prospects for more autonomous and flexible labour and entrepreneurial activity by individuals, territorial disparities in the development of the formal economy and labour markets, the informal sector and undeclared work remain equally popular in the cases of:

- the search for income and employment for the range of marginalized and discriminated groups (youth, women, pensioners, residents of the rural areas and small towns, the disabled, illegal migrant workers), for whom an access to the formal labour market may be complicated by certain institutional requirements, including in the situations when the formal economic sector is too weak to generate the significant demand for the labour;
- the conscious voluntary choice of entrepreneurs and certain individuals, including those who are already officially employed, with the sufficiently high

professional and qualification status, in favour of shadowing their own economic activity (main, additional) and implementing strategies for its partial or complete withdrawal from the supervision of administrative, fiscal and law enforcement structures.

The function of undeclared work in the field of promoting income growth and overcoming social rejection of the poorest strata and strata that assess themselves as poor is always socially significant. According to the concept of relative deprivation, the poor do not suffer just because of funds' lack – they are unable to fulfil their social obligations, norms and rules of the social behaviour, that is, they fall into the social isolation. In this context, undeclared work is the important mechanism that the poor households use to overcome the social isolation and improve their financial and property status.

According to the widely recognized conclusions of a number of long-term studies, people are forced to look for jobs (including part-time and additional ones) in the informal economy primarily due to the financial hardship. According to M. Tryfonov, the majority of those who are employed in the informal sector of Ukraine assess the material situation of their households as poor (49%) and medial (46%); according to C. Williams, J. Round, P. Rodgers, representatives of the lowest income quartile of the households make up more than half (53%) of those who are working in the informal sector for hire and a third (35%) of the self-employed [26; 27].

Informal employment and undeclared work contribute to the preservation of the labour potential, the reproduction of professional and qualification level, the obtaining and replenishment of income, including in the cases of acute problems of livelihood and even basic survival for certain categories of the population and their family members. The consequences for the real, consumer, and financial sectors of both the large-scale institutional transformations of the early 1990s and the national financial and economic crisis of 2014–2015 contributed to the dissemination of the public opinion that the undeclared work and the shadow economy, while being the results and main economic basis of the corruption, on the other hand, serve as the compensator of economic and financial shocks for the broad population strata, small and medium-sized businesses [28].

At the same time, the main bonus of the informal economy – expectations and prospects of income growth, freedom and unaccountability of economic activity – has a negative impact on the other critical dimensions of social inequality of the population engaged in the undeclared work, which are manifested in:

- the restriction of the access to the range of types of social protection (pension provision, including in the cases of temporary or complete disability, guaranteed medical care, free preschool and secondary education, educational services of vocational and higher institutions within the framework of the state

and regional personnel training order, government support of the household and socio-cultural infrastructure of local communities, etc.) in the current period and for a long term;

- the lack of guarantees and mechanisms for the effective influence on the labour conditions, including those related to the regularity of payment, duration of working hours, quality of the production environment, opportunities for rest;
- the socio-behavioural features of the life strategies of individuals working without declaration and their family members, when the priorities of situational non-regulated labour activities direct them to a tighter accumulation of resources for the security survival in the periods of unemployment, limit the planning of the free time and leisure, narrow the possibilities and prospects for the reproducing qualification level, personal and professional development.

The restrictions imposed by the objective deficit of public funds (pension, the range of types of the compulsory insurance), state and local budgets, which is reproduced due to the consistent failure in receiving funds from the social contributions and taxes of the employees and business entities, reinforce the specified forms and manifestations of the social inequality, complicate the state-wide and territorial measures to mitigate the social protection problems for a long term.

According to the Ministry of Economy of Ukraine, the profitability of the informal sector and undeclared work is compensated by a number of systemic social problems, the most important of which are: the negative impact of the significant number of the informally employed population on the national economic development, including as the result of the violation of the fair competition principle, limitations in the legal labour market functioning; deprivation of the employees, whose labour relations are not formalized with the procedure established by the law, from the protection of their labour rights and social guarantees [29].

In comparison with the full-time employees of the enterprises, those who are employed informally or without the proper declaration are often sent to jobs with worse labour conditions, unstable work regime and lower wages, which don't compensate for the forced (on the employer initiative) downtime, overtime work, and production environment dangers. They are often not granted the vacation, including additional vacations, due to the harmful working conditions.

Conclusions

Considering the acuteness of the problems of preserving and improving the labour force of the national economy, its professional and qualification potential, which has been dramatically increased by the loss of the workers as the result of the large-scale military operations (the increase in their mortality and disability; the loss of the job places and up-to-date professional skills;

the irreversible migration of the working-age persons together with their families), the urgent priorities for improving the effectiveness of the mechanisms for managing the labour, employment and territorial labour markets in Ukraine, in particular, include:

- balancing the system of regulatory, administrative, financial and fiscal regulation of the employment and its territorial subsystems both within the hierarchical network of the relevant state institutes and institutions, as well as with regard to the long-term priorities of socio-economic recovery, modernization and diversification of the regional economic complexes;

- strengthening the control over the compliance with the standards of remuneration and decent working conditions of hired personnel of economic entities of all forms of ownership, improving relevant norms and standards at the legislative level along with establishing proper quantitative and time benchmarks;

- standardizing the mechanisms for involving the branch and sectoral associations of employers to the discussion and implementation of measures to promote the economic recovery and sustainable development of territorial communities;

- expanding the practice of the tracking and identifying cases of the undeclared labour in the range of branches and sectors, developing the methodological foundations for such activities on the basis of the ILO relevant studies in the EU countries;

- optimizing the activities to increase the level of taxation of the small and medium-sized business entities in the context of guidelines for preserving the structure of economic specialization and the demographic potential of territorial communities; developing mechanisms to facilitate the participation of the small and medium-sized businesses in the programs of cross-border cooperation and targeted foreign investments;

- developing state-licensed programs for the training, professional development and retraining of persons of older working age and retirement age, which can be implemented both directly by the institutions of higher and vocational education within the state and regional segments of the personnel training order, as well as through the mediation of the territorial bodies of the State Employment Service;

- further improving (including in the terms of transparency) of the programs and means for informing applicants on the labour market, their interacting with the territorial bodies of the State Employment Service and non-state recruitment agencies.

HR-engineering has developed in response to the requests of the global business environment and civil society regarding increasing the role of human resources as the production factor, the stimulus and the consumer of the

scientific and technical progress results, as well as individualizing strategies for the professional self-realization, formation, reproduction and improvement of the aggregate labour and qualification potential. Digitalized HR engineering and HR management, carried out within the framework of its technologies, are recognized as the methodology for systemic labour management, capable to balance the needs and goals of an average employee, a work team, enterprise's owners and a corporate environment of a specialized economic sector in general through implementing the consistent business strategy for the effective capitalization of the workforce professional and qualification characteristics along with improving both the relevant personnel potential, organizational and production conditions and incentives for the productive employment.

The transition from a technocratic to a humanistic approach in the field of the labour management (i.e. from the recruitment and management of personnel as one of an enterprise's resources to the HR management aimed not only at the effective capitalization of the professional and qualification potential, but also at its development and improvement of production and extra-production conditions of the workforce reproduction), which continues with the spread of the digitalized HR engineering methods and technologies, stimulates the socially oriented transformation of a corporate environment, when a set of formal and informal organizational and production, social and psychological interactions between owners, administration, personnel, as well as within a work team expands employees' participation in ensuring an enterprise's sustainable growth and resilience through developing opportunities for their professional and personal well-being and growth.

The systemic nature of the HR engineering and the corresponding labour management is achieved primarily through: balancing an enterprise's organizational and process structure, the administrative, operational and strategic contours of its management, as well as formal and informal interactions within a work team and between employees, administration and owners (in particular, on issues of compliance with socio-labour and human rights, guarantees of the decent working conditions); using an up-to-date package of organizational and administrative documentation and software tools for assessing the professional and qualification qualities of applicants and personnel, the level and quality of performing job and competency instructions; harmonizing approaches to an employees' selection, assessment, stimulation and development, substantiated by the current and strategic guidelines for the socio-economic efficiency of competitive economic activity. Ensuring the productive employment and increasing the labour productivity within a framework of mechanisms for administrative and operational management of an enterprise and its human resources should focus on effective recruitment and improvement of employees' competencies, justification and dynamics of personnel appointments, systemic material and moral incentives recognized in

a work team. At the same time, the achievement of business economy's prospective goals within a framework of strategic planning relies on objective assessments of the level of competitiveness, professional and qualification, creative and innovative potential of personnel, as well as resources, intra-corporate and external environment of its development.

Ensuring the competitive properties of an enterprise's organizational structure and management system in the conditions of the rapid development of electronic technologies, information and accounting systems, first of all, requires: the automation of the processes for personnel records, performing staff tables and work schedules, as well as structural units reporting on the fulfilment of economic tasks, job descriptions and instructions; implementation of software products for specialized business modelling and efficiency management.

Therefore, in turbulent and adverse socio-economic conditions, improving the potential of resilience and sustainable development of an economic entity (viability in the terms of profitability, competitiveness, innovativeness, effectiveness of mechanisms for regulating social aspects of labour relations, balanced responsibility towards personnel and territorial community) is ensured by combining the material and moral incentives for the productive employment, encouraging and optimizing an individual career strategies, creative and innovative activity, increasing the efficiency of the formal and informal organizational and production interactions, uniting a work team on the basis of the recognized production and civic goals and values, as well as by expanding external opportunities for capitalizing the potential of corporate reputation.

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