

GCPMED 2020
Global Challenges and Prospects of the Modern Economic
Development

PERSONNEL RECRUITMENT DESIGN AS A BASIS FOR
DIGITALIZATION OF CORPORATE GOVERNANCE

L. A. Ilyukhina (a)*, I. V. Bogatyreva (b)

*Corresponding author

(a) Samara State University of Economics, Soviet Army Str., 141, Samara, Russia, Laresa@inbox.ru

(b) Samara State University of Economics, Soviet Army Str., 141, Samara, Russia, scorpiony70@mail.ru

Abstract

The article is devoted to the design of the recruitment process as the basis for the implementation of digital technologies in corporate governance. This problem is relevant today, especially in the context of the introduction and development of tools for modern electronic recruitment. The lack of a developed and regulated recruiting algorithm forces organizations to spend significant time searching and assessing people. It seems to us that the development of a methodological approach to the design of the recruiting process is necessary, both from the point of view of its standardization and control, and in order to ensure high-quality implementation into practice of digital tools and digital recruiting capabilities. In the course of the study, the authors of the article solved the following tasks: using the example of statistical data of a large power supply company, an analysis of labor and personnel indicators was carried out as the basis for an audit of the selection process; in order to substantiate the reasons for the high turnover of personnel, an analysis of the material-technical and socio-economic factors of changes in labor productivity was carried out; the reasons for the instability of the labor collective were determined, one of which was the lack of an efficiently working personnel selection system; the project "Development of the recruitment process" was designed and proposed for implementation; a detailed text version of the description of the stages of recruitment, selection and recruitment of personnel is presented; recommendations are given on the regulation of the selection process.

2357-1330 © 2021 Published by European Publisher.

Keywords: Digital recruiting, digital transformation, job profile, labor performance analysis, project management



1. Introduction

The modern stage of the economy, based on digital technologies, changes the external conditions for the existence of organizations, leads to a change in internal corporate and labor processes. The use of new smart devices, the use of artificial intelligence and cloud technologies - all these scenarios are digitalization of transforming conditions and the content of processes, attitude to work and the employee (Schekoldin et al., 2020; Simonova et al., 2016). The role of HR is also changing. In the practice of people management, innovative digitalization tools are coming to the fore - digital talent hunting, BigData, analytics, cloud technologies, social HR branding, and much more. The selection of personnel has not become an exception, as one of the most widespread and significant processes for the successful operation of an HR organization. In this regard, in practice today, such a phenomenon has arisen as the latest recruiting or digital recruiting - a personnel selection format based on the use of new digitalization tools. Its goal is, first of all, to reduce labor costs for the search and assessment of personnel based on quick decisions; improving the quality of analytical data; using the possibilities of forecasting the situation for the current and strategic periods.

However, within the framework of the implementation and development of tools for modern electronic recruitment, for many companies one of the most urgent is the problem of systematization and standardization of the recruitment process. It seems to us that the development of a methodological approach to the design of the recruitment process is, in our opinion, necessary, both from the point of view of its standardization and control, and in order to ensure high-quality implementation of digital tools and digital recruiting capabilities into practice.

2. Problem Statement

The analysis of scientific research, articles and monographs on the digital development of the recruiting process, speaks of the wide awareness and practical use of digital tools in practice in the field of modern digital recruiting. However, both in domestic and foreign HR practice, the weak link is the issue of systematization of analytical search data and standardization of the process of recruiting new employees. The absence of a developed and regulated selection algorithm forces enterprises to spend considerable time searching and assessing people. And potential employees cannot quickly get suitable jobs, despite the presence of many job banks in the labor market. In general, it can be said that the lack of standardization of any process reduces its efficiency and increases the amount of work on direct supervision.

Methodological study and algorithmization of search, recruitment and evaluation work will make it possible to qualitatively improve the "output" processes, timely predict the situation in order to improve, take corrective actions and introduce new innovative recruitment tools. As a result, the terms of job search for jobseekers and the time for filling vacancies in companies will be significantly reduced.

3. Research Questions

In domestic and foreign scientific literature, the issues of recruiting new employees, characteristics of the stages of search, recruitment, selection and assessment are covered quite widely, including taking into account the current stage of development of the digital economy. For example, the key factors in the

development of a new era of electronic recruitment are deeply studied (Khan, & Rasheed, 2015); the practice of using multivariate statistical analysis of big data for the selection of personnel in the IT sector was introduced (Papoutsoglou et al., 2017); conducted research on the implementation of a competency model for e-recruitment and selection systems based on structuring design science; the practice of developing and implementing a BPMN model is widely represented as one of the best practices in human resource management, including in such sub-areas as recruitment and selection of personnel (Pedro & Santos, 2015).

Quite interesting studies have been carried out by scientists in terms of studying the characteristics of recruiters and their influence on decision-making on the implementation of new recruiting technologies (Oostrom et al., 2013); foreign research has been carried out and effective results have been obtained on the use of practical professional tests for employment (Campion et al., 2019); widely covered, both foreign and domestic, organizational practice of filling vacancies with new employees based on the use of social networks, which is popular today (Hitka et al., 2019; Schlachter & Pieper, 2019).

However, in our opinion, in order to actively introduce innovative technologies and tools in the field of recruitment, it is necessary, first of all, to develop a regulated recruitment system and consider it as a condition for the digitalization of corporate human resource management. It is proposed to use the design and project management methodology as a methodological basis. The lack of a unified methodological basis for the design and implementation of the recruitment process increases the time for searching and selecting new employees, reduces the reliability of analytical data and the quality of the process for selecting a new employee.

4. Purpose of the Study

The purpose of our research is to design the recruitment process as the basis for the implementation of information technology in corporate human resource management. The basis of the methodological approach to designing the recruitment process in an organization is, in our opinion, a survey of the subject area based on an audit of recruitment indicators and analysis of labor indicators associated with the search and assessment of employees; analysis of the obtained statistical data and their systematization in order to consider the problem from a specific point of view. When designing the selection process, it is proposed to go through a number of key stages:

- to analyze labor indicators for a number of years that affect the stability and stability of the team. In particular, to analyze the rate of change in labor productivity and the number of personnel, to identify their relationship, to determine the reasons for the changes;
- to analyze the material and technical factors of changes in labor productivity, namely, an assessment of the growth / decline in capital-labor ratio and capital productivity, their impact on the change in growth / decline in labor productivity;
- to calculate and analyze the indicators of personnel movement to assess the turnover of the organization's personnel;
- to analyze the socio-economic factors of changes in labor productivity, namely, an assessment of the professional level of employees by analyzing the structure of personnel by levels of education and the compliance of the level of education with the requirements of the position / workplace;

- determine, based on the organizational structure of the company, the presence, status and relationship (communication) of the personnel management service. Analyze the work of the personnel management service in the company / branch, evaluate the effectiveness of its activities;

- on the basis of the results obtained on the analysis of indicators, develop / improve an algorithm for performing work on the search, recruitment and assessment of personnel.

5. Research Methods

Scientific works, the results of domestic and foreign scientists on the research topic served as the basis for the analysis of information and the development of methodological recommendations presented in this article. The research results were also based on the analysis of the best practices of domestic companies on the development of the algorithm and regulation of the search, recruitment and evaluation of new employees.

The study used methods of statistical quantitative, qualitative and logical analysis of socio-economic and labor indicators. Within the framework of the article, the data provided by the Samara branch of one large energy sales company were analyzed. The basis for the design of the recruitment process was the audit of labor and personnel indicators. In order to identify the problems of personnel policy, the factors of changes in labor productivity were also studied. Monitoring the Russian market of professional personnel services, personnel recruiting and consulting, studying the experience of the practices of domestic companies and recruiting agencies in the development and implementation of modern recruitment technologies allowed the authors to obtain the results of the study and formulate sound conclusions.

6. Findings

6.1. Analysis of labor and personnel indicators as the basis for the design of recruitment

The recruitment process is proposed to be considered as a system of steps to attract candidates for a vacant position, which includes the process of studying the candidate from the point of view of psychological and professional qualities to determine his professional suitability for a specific position, as well as selection from the general list of the most suitable candidate with the corresponding personal qualities, with the ability for a specific nature of the activity, with the necessary qualifications, to achieve the goals of the organization (Krasnikova, 2018). In the context of the development of the digital economy, market competition, limited human resources, automation of processes, the need for constant updating of competencies and skills, organizations face the task of meeting the need for qualified personnel (Makhmudova et al., 2019; Mekhdiev, 2018). In addition to adapting to changing conditions, when designing personnel selection, top management in predicting the most favorable outcome expects to receive an increase in the efficiency of the organization, increase in labor productivity, maintain a stable position and increase the share of its business in the market, and most importantly, an increase in profits. As part of the study, we analyzed the data provided by the Samara branch of a large power supply company, which has the status of a reliable electricity supplier. To develop a consistent algorithm for the recruitment process, making adjustments and significant changes, we carried out a detailed analysis of the socio-economic

indicators of the branch's activities, studied statistical data and indicators on labor and personnel, and made reasonable conclusions.

As can be seen in the graph (Figure 1) for the selected period of time, the average number and labor productivity per employee are growing. However, despite the positive dynamics of both indicators, their growth rates differ. On average, over 4 years, the average value of the growth rate of the number is 107.61%, which is 5.25% more than the average value of the growth rate of labor productivity. In 2017, the growth rate of employees was 12.07%, which in absolute terms is 21 people, while labor productivity increased by only 2.64% or 418 rubles. This indicates that despite a significant increase in the average number of employees, labor productivity is growing at too low rates, which, in our opinion, can be caused, in our opinion, by several reasons - constantly updating the staff in the team due to high staff turnover or insufficient qualifications of working employees.

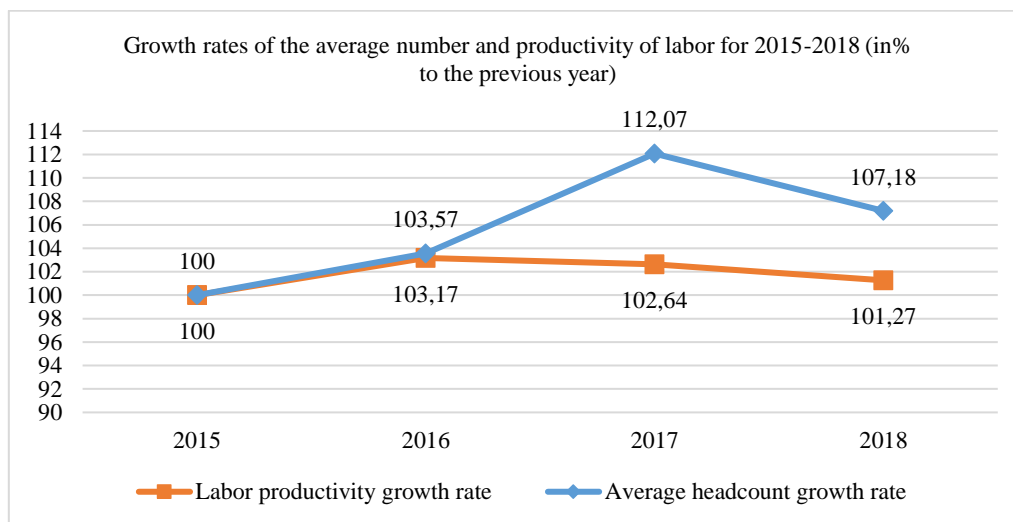


Figure 1. Growth rate of the average headcount and labor productivity for 2015-2018 (in% compared to the previous year)

Source: authors.

6.2. Analysis of factors of change in labor productivity as the basis for the design of recruitment

For a deeper study of the reasons for the low rate of change in labor productivity, we analyzed in detail the material and technical and socio-economic factors. To analyze the influence of material and technical factors on the change in labor productivity, indicators such as capital-labor ratio and capital productivity were considered, since the action of this group of factors, as a rule, is associated with additional investments in fixed assets. In this regard, an increase in the technical level of production is reflected in the growth of the capital-labor ratio. However, the criterion for the effectiveness of the material and technical group of factors is the dynamics of the rate of return on assets. As can be seen in the graph (Figure 2) capital-labor ratio for 2015-2018 has a positive trend, with an average growth rate of 4%. This suggests that the company invests every year in technical re-equipment, which is due to the automation of production processes. However, at the same time, the rate of return on assets has a negative trend, which may indicate an insufficient return on funds invested in re-equipment.

In other words, to increase labor productivity, it is necessary not only to increase the technical level of production, to increase the capital-labor ratio, but also to improve the use of production assets, which is largely associated with the action of socio-economic and organizational factors. Since, in our case, the capital productivity has a negative trend since 2016 compared to the growing capital-labor ratio, it can be concluded that the personnel have insufficient qualifications to work on new equipment, which also confirms the lagging growth rate of labor productivity from the growth rate of capital-labor ratio.

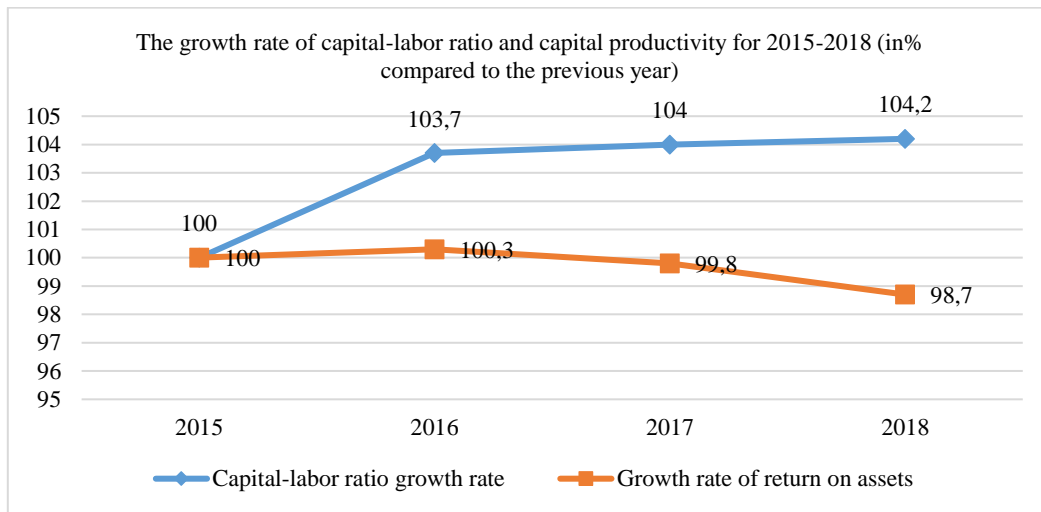


Figure 2. The growth rate of capital-labor ratio and capital productivity for 2015-2018. (in% compared to the previous year)

Source: authors.

To analyze the socio-economic factors of growth in labor productivity and assess the current situation with personnel in the branch, we calculated and analyzed the indicators of personnel movement (Table 1). 2015 to 2018 the average number of employees increased by almost 20%. Total turnover ratio from 2015 to 2016 grew by 8.9%, and the next two years is the same high value. If we consider the absolute values, then on average in 2016-2018. in total turnover there are more than 60 people, in 2015 - 42 people. The staff permanence ratio during the entire study period is steadily decreasing by 2-3% from year to year. 2015-2016 the turnover ratio for admission increased by 8.7% and in 2016-2018 the average is 20.22%. The turnover ratio for admission exceeds the turnover ratio for disposal by an average of 7%. Thus, all of the above may indicate a level of staff turnover above the norm, which may be, among other things, a consequence of the lack of an effective recruitment system.

Table 1. Analysis of personnel movement for 2015-2018

Idicators	2015	2016	2017	2018
Average headcount, people	168	174	195	209
Accepted, peole	24	40	38	38
Eliminated, people.	18	19	24	27
Reception turnover ratio	14,29	22,99	19,49	18,18
Disposal turnover ratio	10,71	10,92	12,31	12,92
Total turnover ratio	25	33,91	31,79	31,1
Personnel persistence ratio	69,88	66,09	64,62	61,83

Source: authors.

As you can see in the diagram (Figure 3), more than 65% of the branch employees have secondary specialized education. Moreover, engineers who are direct executors of the main work of the branch have a share of 83.2% in the total personnel structure. Only 23% of all employees are qualified for their position. Thus, we can conclude that employees have insufficient qualifications, and therefore there is no renewal of competencies and labor productivity is growing at too low rates with a simultaneous increase in the average headcount.

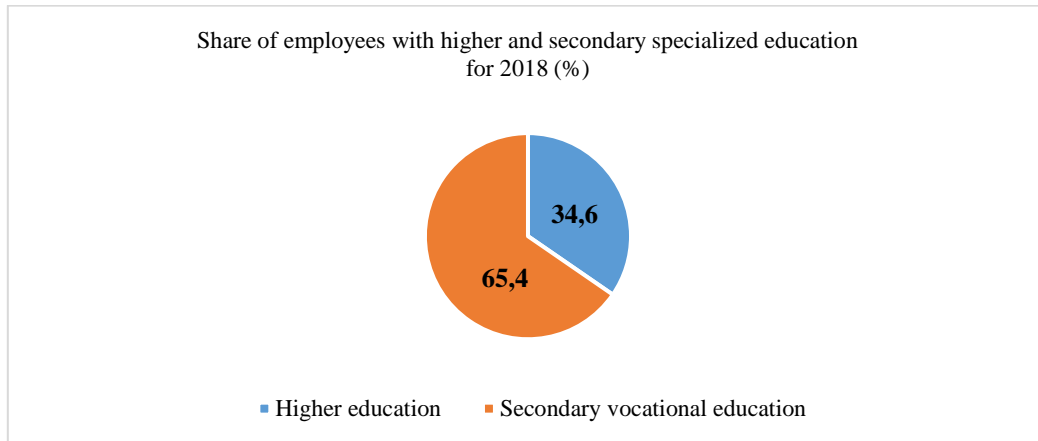


Figure 3. Share of employees with higher and secondary specialized education in 2018 (%)

Source: authors.

So, with the help of the analysis of the provided data and labor indicators, such problems were identified as insufficient qualifications of employees to work on new modern equipment, a high level of staff turnover, and a mismatch between the level of education and job requirements in most jobs. One of the justified reasons for the current situation is the lack of an efficiently functioning regulated recruitment system. As a result, the task was set to design a system of processes for the search, recruitment and assessment of personnel, the purpose of which should be a meaningful description of positions and jobs, an increase in the quality level of selection of candidates, and training of heads of departments in conversation techniques. The solution to this complex task will ultimately help to reduce staff turnover, increase the stability of the team, and, consequently, will lead to an increase in labor productivity.

6.3. Structure of the work of the project "Development of the recruitment process"

Below in the table (Table 2), based on the structuring of project management work, it is developed for the implementation of the personnel selection process, which includes three main stages: recruitment, selection and recruitment of personnel (level 1). At the 2nd level, a package of work performed at each stage is developed.

Table 2. The structure of the project "Development of the recruitment process"

Levels		Project work
1	2	
X		Recruitment
	X	Sending an application for recruiting personnel to departments
	X	Analysis of completed applications
	X	Compilation of a job profile based on job descriptions, professionograms
	X	Determination of recruitment methods
	X	Creation of a vacancy announcement based on the job profile and its publication
X		Staff selection
	X	Receiving and primary processing of information about candidates, analysis of responding candidates for compliance with the criteria stated in the announcement
	X	Formation of a list of candidates for further evaluation
	X	Conducting a preliminary telephone interview to determine compliance with the key requirements of the position
	X	Formation of a list of applicants who meet the requirements of a vacant position at this stage for an individual interview
	X	Identifying assessment tools to determine the candidate's level of compliance with the job profile requirements
	X	Filling in of the application forms by the applicant
	X	Candidate passing professional and psychological testing
	X	Determination of factors that need detailed study and sources of information
	X	Conducting an individual interview (recruiter, head of a structural unit)
	X	Analysis of the results of the assessment of the individual interview. Determination of the candidate most suitable for the job requirements
X		Hiring
	X	Checking the candidate by the security service
	X	Referral for medical examination
	X	Familiarization of the employee with working conditions, schedule, safety precautions
	X	Filling out personal documents of the candidate. Drawing up an order for employment
	X	Registration of an employment contract
	X	Making an entry in a work book, personal card and other documents
	X	Orientation program for a beginner

Source: authors.

Recruitment begins with identifying the need for personnel: the recruiter sends the developed and approved application form for recruitment to the departments. After receiving the completed applications, the specialist analyzes them to see if all the fields are filled in, whether the requirements for the candidate are indicated correctly, whether this job is really necessary in the department, the presence of this vacant position in the staffing table is checked. After analyzing the application, the specialist checks the presence of the position profile, in case of its absence, the profile is developed with the involvement of the head of the structural unit on the basis of the completed application for selection, professional standard, job description, job description, professionogram. These documents are analyzed, key competencies are

highlighted, working conditions are specified with the head of the structural unit. It is the presence of a job profile that makes it possible to present to the candidate those requirements that are necessary to fill the position and perform high-quality work, which will help to increase the quality level of the organization's labor potential.

The next step is to select the sources and methods of attracting and finding candidates suitable for this category of personnel. For an effective search, possible resources and their effectiveness are analyzed. After selecting resources, familiarizing with the profile of the position, based on the detailed description of the vacancy, the specialist develops a vacancy announcement. When compiling a correct ad, the following criteria are used:

- the exact title of the position in accordance with the staffing table;
- requirements for qualifications and work experience;
- the functionality of a specialist within the framework of the position held;
- a brief description of the necessary personal qualities;
- working day schedule;
- wage level;
- other working conditions;
- information about the company;
- contact details of the selection specialist.

The compiled ad is submitted to the selected sources and resources of search and recruitment. The selection process begins with an analysis of the responding candidates for compliance with the criteria stated in the ad. A list of candidates is formed for further evaluation. Further, the initial stage of selection takes place through a preliminary telephone conversation. This type of interview allows you to assess the degree of preparation of a potential employee, his communication skills and personal qualities. Qualified recruiters should be well aware of and promote their company, its business processes, the peculiarities of corporate culture, the conditions and nature of the job offered, and be able to apply in practice a variety of conversation techniques. The recruiter then needs to draw up a list of criteria by which the candidate will be evaluated, and a list of questions to determine if these criteria are present. Upon completion of the preliminary selection, a list of applicants is formed who, at this stage, meet the requirements of the vacant position for the subsequent individual interview.

For a face-to-face interview, the recruiter must identify the tools and assessment methods that will most closely match the candidate's knowledge, skills and abilities to the stated requirements in the job profile. It is important to approach this issue with great responsibility, since the assessment of the candidate is a key aspect of the selection process. At this stage, the applicant fills in the application forms and applications. The survey will help in identifying less suitable applicants for the vacant position. The questionnaire should be clear and easy to fill out, while informative and capacious for a specialist. Further, the analysis of the data provided by the applicant is carried out and their correlation with the job requirements. It is also necessary to determine the factors requiring detailed study and sources of information.

The next stage of an individual interview is an interview with the obligatory presence of the head of the structural unit. During the interview, the recruiter must concretize and clarify the information obtained

as a result of the questionnaire, make sure of its reliability, and also provide the potential employee with the opportunity to get answers to all his questions about the job responsibilities of the future place of work, work schedule, rules of conduct and values of the organization. At the same time, it is necessary to make notes on the criteria for the candidate's compliance with the requirements described in the job profile. It is important to note that the candidate should be assessed strictly objectively and not show personal sympathy. A psychological survey or testing of an employee is also encouraged to identify personal qualities that will contribute to the achievement of a high quality of work performed in the future.

Further, the qualifications of the candidate are assessed. Questionnaires, interviews, personal qualities assessment are tools that provide a large amount of information about a candidate, however, this information is not valid enough. Professional tests, cases, practical tasks are more reliable, as they are designed to identify the knowledge, skills, abilities and competencies of the applicant, which are closely necessary to perform official duties within the framework of a vacant workplace. For example, in an energy sales company for the position of an energy engineer, it is proposed to assess the ability to conduct an energy survey, prepare notifications for limiting electricity consumption, conduct prompt negotiations with consumers and network organizations, monitor the quality of electricity metering, keep records, replace, install and reprogram metering devices, and so on.

After conducting individual interviews, it is necessary to summarize: analyze the results of the questionnaire, interview, psychological survey, professional testing and determine the potential employee who is most suitable for the vacant position. At this stage, you should also study the recommendations and characteristics of the candidate, determine the adaptation program for the beginner. After choosing a candidate for a vacant position, you must inform him in any convenient way. If a candidate agrees to get a job, then he is sent to undergo a medical examination, and his documents and personal data are checked by the security service. After a successful check, the employee gets acquainted with the package of necessary documents: internal labor regulations, job descriptions, collective agreement, working conditions. Next, the employee writes an application addressed to the head of the organization for employment, after signing, an order for employment is issued and on its basis an employment contract is concluded. The final step is making an entry in the work book. If the applicant has refused employment, then it is necessary to find out the reason for the refusal and offer a compromise, if possible. Otherwise, it is necessary to reconsider the existing candidates or resume the search. The term for closing a vacancy, namely the period from the day of sending applications for recruitment to departments until the closing of a vacancy, depends on the complexity of the vacancy and their number. For specialists and engineers of an energy sales company, the vacancy period is 2-2.5 months. For a more visual detailing of the execution of each task, sub-task and package of work performed in the selection process, it is necessary to introduce clear regulations on terms and responsible persons.

7. Conclusion

Thus, the study of the experience of Russian practice in the implementation of personnel selection allowed us to develop and describe the rules for the processes of searching, recruiting and evaluating new employees. The use of regulations and a textual version of the description of the process in practice will ensure a high quality of the result of the process at the "exit", free the management from the need for

constant coordination of employees in the process of performing individual sub-processes based on manual control. Most importantly, the use of such a regulation will contribute to the introduction of new innovative recruiting tools for individual sub-processes, which will reduce the labor intensity of finding and selecting new employees. As a result, the amount of direct supervision work and the number of hiring managers should be reduced. The efficiency of regulated process control will increase. For this company, recruitment standardization will ultimately help to reduce staff turnover, increase the stability of the team, and, therefore, will lead to an increase in labor productivity. As a result, the company will increase production efficiency and, consequently, its competitiveness.

References

- Campion, M. C., Campion, E. D., & Campion, M. A. (2019). Using practice employment tests to improve recruitment and personnel selection outcomes for organizations and job seekers. *Journal of Applied Psychology, 104*(9), 1089-1102.
- Hitka, M., Lorincová, S., & Ližbetinová, L. (2019). Comparison of using social networks for seeking employment in Italy and Slovakia. In *Proceedings of the 30th International Business Information Management Association Conference, IBIMA 2017 - Vision 2020: Sustainable Economic development, Innovation Management, and Global Growth* (pp. 1579-1586). IBIMA.
- Khan, A. S., & Rasheed, F. (2015). Human resource management practices and project success, a moderating role of Islamic work ethics in Pakistani project-based organizations. *International Journal of Project Management, 33*(2), 435-445.
- Krasnikova, Ya. V. (2018). Personnel selection: Modern technologies of personnel search and selection. *Professional Orientation, 2*, 137-139.
- Makhmudova, I. N., Ilyukhina, L. A., & Bogatyreva, I. V. (2019). Personnel safety in the system of economic security and personnel management. *The European Proceedings of Social & Behavioural Sciences, 57*, 1859-1865.
- Mekhdiev, Sh. Z. (2018). Assessment of the quality and efficiency of HR management and enterprise. *The Eurasian Scientific Journal, 10*(6). <https://esj.today/PDF/17ECVN618.pdf>
- Oostrom, J. K., Van Der Linden, D., Born, M. P., & Van Der Molen, H. T. (2013). New technology in personnel selection: How recruiter characteristics affect the adoption of new selection technology. *Computers in Human Behavior, 29*(6), 2404-2415.
- Papoutsoglou, M., Mittas, N., & Angelis, L. (2017). Mining people analytics from stack overflow job advertisements. In E. Schoitsch & R. Grosu (Eds.), *Proceedings of the 43rd Euromicro Conference on Software Engineering and Advanced Applications* (pp. 108-115). IEEE.
- Pedro, S. R., & Santos, V. (2015). Modeling of human resource management processes. *Atas da Conferencia da Associacao Portuguesa de Sistemas de Informacao, 15*, 243-250.
- Schekoldin, V. A., Bogatyreva, I. V., & Ilyukhina, L. A. (2020). Digitalization of labor regulation management: New forms and content. In S. Ashmarina, M. Vochozka, & V. Mantulenko (Eds.), *Digital Age: Chances, Challenges and Future. Lecture Notes in Networks and Systems, 84* (pp. 137-143). Springer.
- Schlachter, S. D., & Pieper, J. R. (2019). Employee referral hiring in organizations: An integrative conceptual review, model, and agenda for future research. *Journal of Applied Psychology, 104*(11), 1325-1346.
- Simonova, M. V., Ilyukhina, L. A., Bogatyreva, I. V., Vagin, S. G., & Nikolaeva, K. S. (2016). Conceptual approaches to forecast recruitment needs at the regional level. *International Review of Management and Marketing, 6*(S5), 265-273.