

Impact of Information Technologies on HR Effectiveness: A Case of Azerbaijan

Aida Guliyeva¹, Ulviyya Rzayeva²
Department of Digital Economy and ICT
Azerbaijan State University of Economics
Baku, Azerbaijan

Aygun Abdulova³
International Magistrate and Doctorate Center
Azerbaijan State University of Economics
Baku, Azerbaijan

Abstract—In the article, the impact of information technologies' (IT) implementation into the work of human resource departments for increased effectiveness is explored. Modern relations at the enterprise require the most important network-based enterprise's unit to be a strategic, flexible, cost-effective and service-oriented division of the organization. Although the influence of IT on Human Resources Management (HRM) has been a focus of scientists' attention, no empirical research has been conducted in this area in Azerbaijan. The authors use the experience and initiatives of enterprises and national banks to show the current state and results of the implementation of IT in HRM. Obtained data show that IT is not widely used in Azerbaijani organizations to perform HRM functions. The results also show that, although IT should have a certain impact on all sectors in terms of HRM, the types of IT used should vary significantly in recruitment, maintenance, and development tasks.

Keywords—HR effectiveness; recruitment needs; maintenance and development tasks; management and planning tasks; performance of enterprises and banks; human capital; return on investment

I. INTRODUCTION

Modern radical transformations, intended to modify the form of ownership, the rights of organizations to economic independence, create objective economic conditions for the development of a personnel-training system at an enterprise. At the same time, in Azerbaijan, independent training of personnel by enterprises is not carried out for several reasons. The centralized distribution system for graduates that took place in Soviet times had ceased to exist, and with it, the interactions of enterprises and universities on staff training issues weakened.

At the same time, the rapid development of IT, as well as its implementation in all spheres of human life in recent years has led to a sharp expansion of information processing methods. It is impossible today to imagine an enterprise space without IT [1].

Enterprise-wide information systems are an organizational streamlined, interconnected set of techniques, and methods used for storage, processing, and dissemination of information for the achievement of desired objectives. Such an understanding of the information system requires computer literacy of employees in the process of working with special computer engineering tools in the field of information processing [2]. The creation of an information system assumes that the basic operations of accumulating, storing and

processing information are assigned to computing equipment, while the professionals perform only a certain part of manual operations or accomplish procedures that require a creative approach in preparing management decisions [3]. At the same time, computing equipment works in close cooperation with specialists who control its actions, change the values of separate parameters in support of operational objectives, and enter input data for meeting challenges and management functions [4].

This study is devoted to the analysis of IT used in the personnel departments of organizations and several banks in Azerbaijan. The study aims to highlight several issues:

- What technologies in personnel management do enterprises and banks (national and international) in Azerbaijan use?
- Does the implementation of IT in HRM contribute to the overall performance of enterprises and banks, and how do they affect organizational indicators?

This paper focuses on the analysis of the impacts of IT in HRM using a case study of Azerbaijan. The study is prepared in four main parts. The paper first provides a review of the literature. In the second part, the methods used are described and explained. The third part is devoted to the analysis of empirical results. Finally, the fourth part provides a case study of Azerbaijan and scrutinizes the impacts of IT in HRM for increased efficiency in particular businesses. Section 5 provides discussions of the results. Section 6 concludes with some closing remarks and implications.

II. LITERATURE REVIEW

The automatic management of human resources (HR) in organizations gains objective strategic weight, and the importance of harmonized actions of HRM and elaborated business strategies is well known [5]. Many experts predict that appropriate software will become a central tool for all HR professionals [6]. It is expected that organizational efficiency grows with the increase in the use of specific methods of personnel management. Different companies may use different technological platforms, but usually, they all come together under the general title "Human Resource Information Systems (HRIS)". Such systems acquire, store, manipulate, analyze, extract, and distribute information in organizations on their human resources, staffing and organizational characteristics [7].

According to [8], HR technology has three main functional components: an input function (input of personnel information into the HR database), a processing function (adding new information and updating the database), and an output function (creating the resulting information, reports).

One of the potential positive effects of introducing IT in the enterprise is that it allows creating an IT-based workplace. This leads to the activation of basic managerial competencies, namely, responding to new challenges that require a restructuring of professional activities [9]. The chain of revolutionary changes in IT makes it possible to solve many of HRM problems, such as attracting, retaining and motivating employees, organizing the personnel functions under the company's strategy and managing the "human factor". IT in the department of human resources can automate routine tasks such as payroll processing, compiling reports, conducting questionnaires and processing results, developing and comparing different motivational schemes, so that HR specialists can focus on more strategic issues related to identifying and implementing priorities of economic, scientific, technical and personnel policy [10]. Progressive companies already have a stake in HR tech and actively use applications and digital systems in their work. Author in [11] especially emphasizes the fact that technologies like shared databases, expert systems, telecommunication networks, decision-making tools, high-performance computers, etc. can radically change the methodological, informational and technological components of management processes and carry out them at a qualitatively new, more efficient level. However, in Azerbaijan, most HR departments continue to use the tools of the "old school" and are still not ready to integrate digital HR into their work [12]. Currently, there is an increasing power of New Information Technologies (NIT) on all management decisions. However, there are several objective factors that have a restraining effect on the pace of their implementation in Azerbaijan, which include, for example, the following: economic instability, gaps in the legislative framework, lack of formal education of managerial skills in IT, insufficient government funding for research and development related to NIT, clearly demonstrated lag relative to the West in the field of human resources development, computer equipment, and communications.

Not all HR professionals are ready to use modern technologies in their operations-and there are several explanations for this. First, people, by nature, tend to resist modification and do not want to change their usual way of working. The second reason is that HR technologies are developing so rapidly that specialists simply do not have time to keep track of all the software and mobile applications that appear on the market. The third reason is connected with the second factor - the level of user experience cannot cope with complex technological solutions [13].

However, observations show that in the existing literature the effect of the implementation of IT on personnel management in various organizations has not yet been systematically studied [14-16]. Although there is a large number of researches on information technologies and many articles are devoted to IT management, but they poorly cover the use of technologies in HRM [17, 18].

The implementation of IT can bring to many modifications and improvements in the work of enterprises, for example, reducing administrative costs, increasing productivity, reducing response time. According to [19], IT is actively involved in the process of preparing management decisions. The nature of the IT used varies depending on the specific information needs of an organization [20].

Nevertheless, the integration of developing Azerbaijan into the world information space cannot but contribute to the introduction of automation into all management processes, including HRM [21, 22]. Many problems, which no domestic enterprise is ready to fully resolve currently, accompanies the modern level of development of automation in the management sphere.

III. MATERIALS AND METHODS

The objectives of the study are to determine the changes after the introduction of IT in the human resources department of an organization, the impact of ICT on the organization's performance and the degree of participation of modern information technologies in the effective functioning of organizations in Azerbaijan. The authors also find out how various IT models support the activities of staff and increase their professional qualifications, study the impact of technology on the acquisition of professional knowledge in the workplace, the development of planning and organization skills using software products.

The work is based on a combination of methods of qualitative and quantitative analysis (multi-methodology). Research analytics is formed from data obtained as a result of observations, questionnaires, surveys, and the collection of necessary primary documentation. The questions of the questionnaire are focused on studying the current situation in enterprises in terms of the IT used in departments. A set of issues deals with identifying the intensity of software used. The questionnaire also includes questions to which answers can serve as confirmation or refutation of the hypotheses put forward. One-way analysis of variance (ANOVA) was used to process the results, implying that the averages of the total populations are equal. In other words, they all refer to the same population and the differences are random. For the purpose of testing the F-distribution is used, which accepts only positive or zero values.

Besides, the change in the productivity of personnel at enterprises and the efficiency of banks in the application of IT is described by calculating well-known indicators of the economic efficiency of the personnel service. Also indicators of the quality of personnel management, the cost of human capital and the effectiveness of banks are calculated. All the necessary data are taken from the official websites of the respective banks or during the interview with the responsible persons.

Conclusions are also presented by qualitative and quantitative results. One and a half hundred state, public and private organizations, including four banks, were taken as an object of study.

In meeting the challenges outlined in the work, the methods and techniques of economic and statistical analysis are applied.

On the one hand, the study involves conducting formalized interviews with representatives of human resources departments of organizations on a common questionnaire for all respondents. The empirical basis of the study is the combined answers to the questionnaire. On the other hand, financial and economic indicators, statistical and analytical materials of the studied banks, as well as data published in industry and periodicals and electronic media were also taken into account.

The scientific novelty of the results consists of solving the urgent task of developing the non-oil sector of Azerbaijan, in particular ICT, in terms of assessing the current situation and prospects for the implementation of information technologies in the activities of the organization's human resources department.

IV. INFORMATION TECHNOLOGIES IN REACHING HR EFFECTIVENESS

Increasing the Efficiency in an Organization

The use of HR technologies may depend on various factors: the size and age of the enterprise, managerial diligence to personnel and innovations, the qualifications and experience of the personnel director, etc.

Depending on the complexity of the organizational structure of the enterprise, researchers allocate organizational-technological and other resources that are integrated by using computer networks.

To close the gap, the software used shall be analyzed, and in the paper for this purpose, two groups of hypotheses are presented:

- 1) The impact of information technologies on the activities of an organization's units;
- 2) The impact of types of information technologies on the activities of an organization's units

First, we provide the hypotheses of the first group.

Some companies in Azerbaijan use various information technologies for candidates' search, accepting applications, analyzing applications, using the reserve base. Nevertheless, of course, most organizations do not use IT at all, or the introduction of information technology is limited only to office applications. On the technological side of the above tasks, the authors highlight ethical methods (posting ads on the Internet, posting vacancy announcements on the company's website, attracting recruiting agencies, searching for candidates directly in educational institutions, notifying employment centers of open vacancies, participating in job fairs, etc.) and unethical ones (draining human resources away from a competitor company, illegal acquisition of a database, etc.). From the foregoing, the first hypothesis follows:

H1A. Depending on the specific requirements for hiring personnel in a particular enterprise, information technology should have different service models.

Modern research shows that the competence of personnel has a huge impact on the efficiency of the enterprise and the level of profit. Before selecting a candidate for a vacant position, it is necessary to describe his profile - a list of requirements for a nominee in this profession, specialty, and

post. In compiling a complete set of personal data, methods of profession graph are used – based, for example, on fuzzy logic information technology of studying the requirements of the profession for personal qualities and psychophysiological characteristics, socio-psychological indicators, natural abilities, business qualities, professional knowledge and skills, and health. Therefore, the authors propose a second hypothesis:

H1B. Depending on the specifics of the maintenance and development tasks of a particular enterprise, information technologies should have different service models.

Organization staff is the most complex management object. Modern concepts of management and planning of the company's activities are based on the recognition of the growing importance of the employee's personality, the study of his motivations, the ability to correctly form them and adjust them in accordance with the strategic tasks facing the company. In modern companies focused on long-term success, information technologies for the selection of personnel based on business and personal qualities, as well as the official and professional promotion of employees based on the use of reasonable criteria for evaluating their activities, are developing. Thus, we put forward the third hypothesis:

H1C. Depending on the specific tasks of management and planning of a particular enterprise, information technologies should have different service models.

The hypotheses of the second group logically follow from these statements.

Modern information technologies concerning the tasks of personnel selection of different organizations can be used in:

- Practical activities of personnel services and personnel departments of organizations, recruitment agencies in the development of personnel selection technologies; when choosing special software; during certification and assessment of personnel of organizations; when searching, selecting and selecting candidates for the post.
- Practical activities of consulting agencies with preliminary, targeted and complete diagnostics of personnel; consulting on personnel's management problems; advising on staff development issues.
- Teaching in the preparation of textbooks and guidelines for university students and colleges; in the process of lecturing and conducting seminars and workshops.
- The work of employment services, training, and educational centers for the retraining of specialists and professional development as diagnostic and self-diagnosis methods of professional training; as a practical toolkit illustrating recruitment opportunities, etc.

Thus, we put forward our first hypothesis of the second group.

H2A. Depending on the employment requirements, at a particular enterprise-specific information technologies should be used.

Modern information technologies have a significant impact on the organizational structure and its main characteristics: configuration, complexity, level of formalization and centralization, coordination and control mechanisms, requiring managers to analyze the technologies used and planned for implementation to design an organizational structure for efficient service and enterprise development. Also the development of the organization creates standard problems, such as information asymmetry, information uncertainty, data multiplicity, data fuzziness, and data errors. Specific information technologies in these cases reduce or eliminate negative information factors.

The authors put forward the second hypothesis of the second group:

H2B. Depending on the tasks of service and development, at a particular enterprise-specific information technologies should be used.

Modern conditions of activity of most organizations require a goal-oriented, prompt staff selection when recruiting personnel. Not only specific job duties and requirements of the workplace should be taken into account, but also the tactical and strategic goals of the organization, ensuring the technologically competent implementation of the managerial and planned activities of the organization.

From the foregoing, the third hypothesis of the second group follows:

H2C. Depending on the managerial and planned tasks, at a particular enterprise specific information technologies should be used.

The above hypotheses are based on a thorough study of foreign literature in this field [23]. Further, the authors answer the question of how these hypotheses are applicable in a developing country, which is still lagging behind global trends in the use of ICT in various areas of economic life.

In the study, the data given below represents the result of a survey based on the questionnaire. A semi-formalized interview was conducted based on a questionnaire containing pre-prepared clear wording of questions and thought-out models of answers to them. Verbal responses were recorded in full, verbatim, with simultaneous primary coding on the attached scales. At the suggestion of the respondents, interviews were usually conducted on the territory of the enterprise itself. An obvious advantage was that the respondent, in this case, did not underestimate his role as the leader of the organization, was fully familiar with the problems raised during the interview.

The heads of 150 IT departments of state, public and private organizations (among them there are four large banks of Azerbaijan: international bank VTB, the state-owned International Bank of Azerbaijan (IBA) and the private banks Kapital Bank and Bank Respublika) acted as respondents. Since 2016, these companies have been participating in the Anniversary Azerbaijan International Telecommunications, Innovations and High Technologies Exhibition [24]. Filled out questionnaires were received from 89 companies, representing 59% of the total.

Through a thorough review of the available expert forms [25, 26], questionnaire points were formulated in Table I. This questionnaire contains seven questions that include seven variables to achieve the objectives of this study. The subsequent statistical adjustment procedure involves weighting the data, redefining the variables, and converting the scale. In the weighing procedure, a weighting coefficient reflecting the degree of its significance in comparison with other observations or respondents was assigned to each observation or respondent in the database. The procedure for redefining the variables was to transform the data to create new variables or modify existing ones. The purpose of this procedure was to create variables that best meet the main objectives of the study. The manipulation of the values of the scale (converting the scale) was carried out to be able to compare it with other scales, converting the data and making them suitable for analysis. The questionnaire is structured and does not contain open questions. Questions 3-6 list the answers from which the respondent must choose one or more alternatives. Except for the first question, all the rest are focused on HRM tasks.

TABLE I. QUESTIONNAIRE POINTS

Areas	Question	Range of values
Sector	What sector does your company belong to?	Government, public, private
IT use	Do IT operations depend on your HRM routine?	Yes/No
IT tools	What software tools are used to perform HR functions?	<ul style="list-style-type: none">• Application software (DBMS, spreadsheets);• Data Mining tools (ERP, expert systems);• Information and communication technologies (LAN/WAN/ neural network, Internet/Intranet/Extranet, interactive services);• Others.
Recruitment	For which HR tasks does your company use IT?	<ul style="list-style-type: none">• Monitoring of vacancies;• Search and selection of personnel using Internet resources;• Others.
Maintenance and development	For which maintenance and development tasks does your company use IT?	<ul style="list-style-type: none">• Effective staff engagement;• High-quality and efficient selection;• Effective and targeted training, followed by measuring its effectiveness;• Retaining key specialists in the company;• Creating a comfortable microclimate;• Others.
Management and planning	For which management and planning tasks does your company use IT?	<ul style="list-style-type: none">• Efficient use and development of the company's human resources and workforce planning;• Definition, creation, maximization, and support of benefits;• Identification and provision of a new generation of employees through mentoring and training;• Others
Restructure	Does your company require improved IT personnel management?	Yes/No

Source: Authors

In this research, indicators of recruitment, development, and maintenance, as well as management and planning are selected as independent variables, since they play an important role in shaping employee behavior [27, 28]. Besides, almost the entire system of personnel management software provides functions that correspond to these variables for the success of an organization. Existing studies do not represent a comparative analysis of software used for functions of various departments, including HR [29]. Nevertheless, these studies do not consider the relationships between types of software and the internal operations of an enterprise.

In this paper, the data were studied using ANOVA, a method in mathematical statistics aimed at finding dependencies in experimental data by examining the significance of differences in average values [30]. This method makes it possible to compare the mean values of three or more groups.

The results of the hypotheses of the first group (the influence of information technologies) are given below (Table II).

An analysis of the p-values in Table II showed that there was insufficient evidence to accept the hypotheses H1A or H1B. As in the case of H1A and H1B, if $p > 0.05$, then the arguments presented are not enough to reject the null hypothesis. Without rejecting the null hypothesis, it can be stated that the results in this case are not significant. This means that IT does not significantly affect the hiring of employees, their support and development. The p-value for H1C is 0.02 and this hypothesis shall be accepted, that is, IT has a significant impact on management and planning tasks.

The results of the hypotheses of the second group (the influence of types of information technologies) are given below (Table III).

The last column of the table shows that, except for the H2C hypothesis, the results were significant at the level of 4-8 percent in this category. This means that the type of IT tool used for hiring, maintenance and development functions varies depending on the type of enterprise itself. The critical value of statistics in the first and third cases is 2.4 for a given level of significance. In both cases, regression is considered significant at a given level of significance. In the first and third cases, the p-value is 0.08, and in the second 0.98. Thus, in the second case, the confidence in the significance of the regression is significantly lower (the probability of error is significantly greater if the model is recognized as significant). On the other hand, the p-value for H2C indicates that there is not enough evidence to accept the hypothesis that the type of IT tool used affects management and planning functions.

TABLE II. RESULTS OF THE HYPOTHESES RELATED TO THE INFLUENCE OF INFORMATION TECHNOLOGIES

Test variables	Hypothesis	F-value	d.f.	p-value
Recruitment	H1A	1.9	2/9	0.2
Maintenance and development	H1B	0.78	2/9	0.48
Managing and planning	H1C	6.06	2/9	0.02

Source: Authors' calculations

TABLE III. RESULTS OF THE HYPOTHESES RELATED TO THE INFLUENCE OF TYPES OF INFORMATION TECHNOLOGIES

Test variables	Hypothesis	F-value	d.f.	p-value
Recruitment	H2B	2.4	3/32	0.08
Maintenance and development	H2C	0.06	3/32	0.98
Managing and planning	H2B	2.4	3/32	0.08

Source: Authors' calculations

A. Impact of IT in HRM on the Example of International and Local Banks

Further in the article, the influence of automation of information processes in the human resources department on increasing human capital in relation to banking is considered. Obviously, in modern conditions of fierce competition among banking organizations, modern information technologies are of great importance, which, albeit indirectly, is determined by the level of human capital of bank employees. By human capital, we will mean all non-monetary and intangible resources that are fully or partially controlled by the organization and are involved in creating value.

As authors have already noted, information technologies expand management capabilities when working with personnel; the banking sector is not an exception.

It is also expected that IT in HRM affect the efficiency of personnel management, which positively correlates with the organizational results of banks. To test this hypothesis, it is necessary to compare the results of the organizational activities of selected Azerbaijani banks. There are many different studies on the impact of IT on HRM on bank performance [31]. Our research is focused on HR analytics of selected banks and the comparison of results.

The main method of data collection for this section of the study is semi-structured interviews with HR directors of selected national and international banks. These interviews made it possible to collect information about personnel technologies in banks and the level of IT development in HRM. Return on investment in the staff of each bank is calculated to count the effectiveness of personnel [32].

Next, an overview of HR technologies in selected banks is presented below.

The authors interviewed the responsible persons of the international bank VTB, the state-owned International Bank of Azerbaijan (IBA) and the private banks Kapital Bank and Bank Respublika.

According to interviews with the heads of personnel departments, in all HR departments of the above-named banks, there is a payroll division, a division for development, promotion, and release of employees, a division for relations with trade unions and public organizations. Kapital Bank also has a personnel analysis division. In the Bank Respublika, there is an unspoken rule under which whatever the reason for dismissal (staff reduction due to production automation, desire for professional growth, or just wanting to change of scenery), an employee who left his place is not accepted back. According to the results of the study, the authors concluded that only the

Human Resources Management Department of Kapital Bank is involved in marketing and in building financial budget and strategy as a whole. This department supports line manager staff and employees and interacts with managers as business consultants. In the remaining banks, HR representatives are responsible for operational processes in the field of personnel management and do not act as strategic business partners. In all these banks, candidates can apply online to the bank's website. The Bank Respublika is an exception, where 10% of applications come at the email address of the HR department.

The functionality of modern personnel services is constantly changing, along with their names, reflecting the specificity and level of penetration into the internal affairs of an enterprise. The interviewees of all organizations confirm the impact of HRM on all processes of the enterprise. The ramified structure of VTB's HR department is responsible for communication with managers, regulates the human resources of the bank, for example, graduate recruitment, hiring experienced employees, relations with employees, their training and development, etc. HR managers communicate directly with managers of other departments, provide their personnel requirements and consult based on discussions with expert centers.

Many HR functions are automated by software solutions. As the interlocutors noted, in most cases each HR area is supported by a specific technological platform. In Kapital Bank, the Learning and Educational System administer the training and development; Graduate Recruitment System supports the recruitment, the remuneration of employees is also controlled by the automated system. In addition to the mentioned information technologies systems, the International Bank of Azerbaijan has a database that covers all records of employees from their recruitment upon retirement. These data cover personal information, qualifications, employee performance figures, vacation reports, salary information, etc.

Still, the main areas covered by the personnel departments of the banks under survey are personnel documentation and administration tasks under developing Azerbaijani legislation, and hiring and benefits management. It also shows poorly developed information systems in the field of personnel management in Azerbaijani banks.

Further, based on the formulas, the relationship between HR efficiency and performance of banks upon application of IT will be described; indicators of personnel management excellence, cost of human capital and efficiency of banks will be calculated. All necessary data were collected on the websites of the respective banks or in the process of interviews with responsible persons.

Now a few words about the general indicators of the economic efficiency of personnel service [33]. The HC ROI (Human Capital Return on Investment) indicator in various HR spheres demonstrates the effectiveness of investments, calculates the results of return on investments in personnel. This indicator is calculated by the formula:

$$\text{HC ROI} = (\text{Revenue} - (\text{Expenses} - \text{Compensations})) / \text{Compensations}$$

This method of evaluation is quite time-consuming. In the calculations, it is necessary to take into account not only the cost of a specific event, but also indirect costs associated with it, but the most difficult is a calculation of income from the event held in the field of personnel management. As indicated by [34], HC ROI is equal to the value-added of investments in an organization's human assets. The numerator in this metric is the profit adjusted for the cost of people. The higher the HC ROI, the more effective is the personnel management in the bank [35].

The main indicator of employee productivity is human capital income (HCRF – Human Capital Revenue Factor) - the ratio of the total income by an indicator of employees working full-time (FTE – Full-time Equivalent):

$$\text{HCRF} = \text{Income} / \text{FTE}$$

It should be noted that this indicator is rapidly becoming obsolete.

The cost of human capital (HCCF – Human Capital Cost Factor) shows the proportion of staff costs in circulation and is calculated by the formula:

$$\text{HCCF} = \text{Total Staff Costs} / \text{Turnover}$$

The profitability of the "average" employee of the organization shows the indicator of HCVA (Human Capital Value Added):

$$\text{HCVA} = \text{Income} - (\text{Costs} - \text{Salaries and Bonuses}) / \text{FTE}$$

The results of the calculations, as well as a summary of interviews with the personnel directors of four banks, are presented in Table IV.

The data for calculations are collected on the official website of respective banks.

To assess the effectiveness of investment in human capital, many criteria and indicators can be used. We have focused on those that are used by organizations to evaluate their investments in personnel or are proposed by researchers for these purposes. The data presented in the table demonstrate that the international bank VTB has a higher return on human capital from investments. The HC ROI indicator shows how much each monetary unit invested in a specific activity brings. HC ROI, equal to 14.6, means that one monetary unit invested in the human capital of the bank returns 14.6 monetary units. Indicators of Azerbaijani banks demonstrate somewhat lower efficiency. Profit per employee of the bank is a mechanism for overall measuring the cost-effectiveness of all bank personnel. The ratio of income and expenses of employees shows that an international bank spends more money on its employees as compared to national banks. Since the level of development of HR technologies at the international bank is higher, and the efficiency of personnel management, as well as performance indicators, is better, a correlation between IT HR and personnel management efficiency can be observed.

TABLE IV. RESULTS OF THE CALCULATIONS RELATED TO EMPLOYEE PRODUCTIVITY*

	Loc.priv. Kapital Bank	Local state IBA	Local private BR	Int Bank VTB
Num.of Empl.	2700	1800	1050	300
HR Tech.	SAP	Spec. HR tech.app.developed by other bank headquarter	Spec. HR tech.app.developed by other bank headquarter	Spec. HR tech.app.developed by other bank headquarter
Num. of HR Prof.	20	20	11	9
HC ROI	5.824151	1.107982	3.1184105	14.68444
Empl. Exp. /Headcount	48641.071	96123.33	1076.1904	9894.033
Rev./ Headcount	188584.52	112402.2	22780	41493.66
HCRF	56452.380	447780	12739.047	24416.66
HCCF	0.153824	1.341210	0.0315648	0.005221
HCVA	168952.38	167033.8	22422.857	31816.3

Source: Authors' calculations

Thus, an increase in the bank's corporate human capital takes place when investing in information technologies, which put forward fundamentally new requirements for the employee, and the individual's ability to generate new knowledge and apply it to increase the efficiency of the bank.

V. SUGGESTIONS AND DISCUSSION

Continuous ICT education contributes to the formation of a professional basis for the human resources potential of the modern economy. Given the continuous changes in the technological environment, staffing for the development of the state economy should be based on continuing education in the field of information technology. The essence of the new technological revolution coming in the global business and banking system is to increase the yield of business due to its knowledge, qualification of personnel and technology. The banking system is being improved and every year becomes more complex and multifaceted. The results obtained show that the introduction and use of relevant information technologies can not only simplify the work of all branches of the bank but also make it more coherent.

The article analyzes the role of information technology in the formation of competitive advantage of an enterprise. This role is considered for optimizing information business processes when implementing IT in the organizational structure of the personnel department. Analysis of the impact of information technology on key organizational variables is based on questionnaires and interviews. Their role in diagnosing the state of the enterprise is also substantiated.

The article also analyzes the use of information technologies in banking management. The study shows the importance of information models and technologies in management reveals the features of information management in the banking sector.

The theoretical approaches to the definition of human capital differ in the interpretation of modern economists, but for banks, the very essence of the use and development of intellectual resources is a priority. New forms of organizing the activities of banks are based on modern approaches to determining the essence of capital, not only financial but also human since new business projects require a balanced approach to the abilities of personnel and modern developments in information technology.

However, an objective approach compels us to point out some contradictory trends, the emergence of stagnation and crisis processes, and the growth of problems in modern recruitment practices in Azerbaijan. Some existing approaches, techniques, procedures, and technologies for staff recruitment, including using information technology, adversely affect the effectiveness of organizations. The main problems of staff recruitment using traditional methods and techniques (for example, a document contest, and interview) are the disproportionality of the requirements and subjectivity in the assessments of applicants for vacancies and significant resource costs (especially for mass recruitment). The most acute and difficult to solve problems of staff recruitment using information technology are caused by other reasons.

Firstly, the provision of information and technology services by specialized firms does not always correspond to the modern requirements of personnel selection entities, and personnel management specialists are not typically focused on modern information and technological innovations.

Secondly, both personnel management and information technology are among the rapidly developing areas of professional activity. Therefore, specialists, loaded with their main professional activity, do not have enough motivation to track innovations in related fields. These results to a kind of stagnation manifested both in the use of outdated and inefficient information technologies, as well as outdated or unprofessionally developed personnel selection tools. These trends ultimately lead to a decrease in the quality of selection.

Thirdly, the capabilities of modern information resources are not fully used in organizations due to the lack of technologies for their use in the selection process.

Fourth, there is a rather complicated problem of creating the necessary and sufficient conditions for the effective use of information technology in the selection process.

VI. CONCLUSION

A breakthrough in the development of information technologies has greatly simplified the work of commercial institutions, making the internal structure and relationship system more convenient for employees; enterprises themselves are more accessible and more comfortable for customers. In the commercial sphere, information technologies are used in various forms, as in any organization. The most necessary of

them are technologies for internal interaction of personnel and management. In modern conditions, the pace of technology development necessitates the constant updating of professional knowledge, skills, and competencies, as well as improving ICT skills of personnel.

The article substantiates the relevance of the use of information technology in personnel management systems as a key factor in ensuring sustainable growth and competitiveness of enterprises. A comparative analysis of approaches to understanding the economic essence and content of information technology in personnel management based on the hypotheses put forward is carried out. The circumstances that directly or indirectly determine the increasing demand of organizations on information technologies for personnel management are identified.

The article has examined the impact of information technologies personnel management as a set of software and IT, analyzed how the use of software products in personnel management can improve the efficiency of enterprises.

The introduction of modern information technologies, even with a wide supply in this market and regular price reductions, remains an expensive project. Nevertheless, the ultimate goal - to strengthen the market position of the enterprise - justifies the funds in the framework of a thoughtful and economically reasoned development strategy. Today, a versatile and multi-skilled manager will not engage in the project of implementing an information system without calculating the direct benefits of its operation, which is impossible without a thorough analysis and determination of its economic necessity, effectiveness, and expediency.

This article analyzes the prospects for implementing IT in a key area of organization management - the human resources department to achieve a competitive advantage. The authors analyzed the current situation in many Azerbaijani organizations and found that modern enterprises and industries are taking appropriate steps to introduce IT in the field of personnel management. However, there is a big gap in approaches to solving this problem between foreign and national organizations, which was demonstrated based on quantitative indicators of national and one international bank in Azerbaijan.

The authors have built a model for using IT tools to perform various functions of personnel management in enterprises and the banking sector. Based on the survey data, the results, firstly, showed that IT has a significant impact on all sectors in terms of management and planning tasks, and, secondly, the type of IT used varies considerably for recruitment tasks, as well as by functions of staff support and development. However, there is no standardization in integrating computer software into the core activities of HRM; there are no information systems in Azerbaijan that alone could cover the needs of a modern enterprise. Medium and large organizations usually operate at least a dozen multi-user systems. It can be explained by the gap between job requirements and the ability of employees to perform personnel management tasks. There are still problems with personnel in terms of elementary computer illiteracy. The survey shows that

not all enterprises have special HR software. Most likely, it is expected that this situation will continue soon.

In future empirical research, the possibilities of introducing NIT into personnel management processes should be explored to improve HRM in the direction of optimizing personnel costs and to strengthen the efficiency of enterprise management as a whole through the rational use of its intellectual potential. Even though in Azerbaijan there is an acute need for the use of modern personnel management systems, insufficient attention is paid to the issues of staff case administrating by IT means on the part of supervisors.

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