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In the first chapter we present *On the relationship between employees' empowerment with competitive advantage and organizational agility mediated by organizational intelligence (Case study: employees in gas company of Hamadan)*, by SEIFOLLAHI, Saeed & SHIRAZIAN, Zahra, with adscription in the Islamic Azad University, As a next article we present, *Automated analysis of disorders of work of drivers*, by, KHUZYATOV, Shafik & GALIULLIN, Lenar, with adscription in the Kazan Federal University, as a next article we present, *International relations of Russia from the perspective of educational migration*, by KARIMOVA, Luiza, SAGITOVA, Victoria, KIRPICHNIKOVA, Anna and HOANG, Ha, with adscription in the Kazan Federal University, as the next article we present, *Students involvement into social and cultural activity: modeling and motivation*, by GUTMAN, Eugeniya, TERYTYEVA, Irina, GAIDAMASHKO, Igor and FAKHRUTDINOVA, Anastsiya, with adscription in the Kazan Federal University.

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## On the relationship between employees' empowerment with competitive advantage and organizational agility mediated by organizational intelligence (Case study: employees in gas company of Hamadan)

## Sobre la relación entre el empoderamiento de los empleados con ventaja competitiva y la agilidad organizativa mediada por la inteligencia organizacional (Caso práctico: empleados en la compañía de gas de Hamadan)

SEIFOLLAHI, Saeed† & SHIRAZIAN, Zahra\*

*Department of Management, Malayer Branch, Islamic Azad University, Malayer, Iran.*

ID 1<sup>st</sup> Author: *Saeed, Seifollahi*

ID 1<sup>st</sup> Co-author: *Zahra, Shirazian*

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### Abstract

The present study was applied in terms of research objective and descriptive-survey research in terms of data collection method. The statistical population of the study encompassed all employees of the Gas Company of Hamedan(N=400). According to Morgan's Table, the sample size was estimated to be 196. Moreover, simple random sampling method was used in the present study to select the research samples, and questionnaires were used as the research instrument to collect the required data. Content validity methods and confirmatory factor analyses were also adopted to assess the research validity. According to the findings, factor analysis is suitable to detect the structure of the factor model. Cronbach's alpha was used to measure reliability. Structural equation modeling was performed by LISREL software to analyze the data. The findings revealed a positive and significant relationship between empowerment and competitive advantage as well as a positive and significant relationship between empowerment and organizational agility, and a positive and significant relationship between empowerment and organizational intelligence among employees in the Gas Company of Hamadan. Moreover, there was a positive and significant relationship between organizational intelligence and competitive advantage, a positive and significant relationship between organizational intelligence and organizational agility, and a positive and significant relationship between competitive advantage and organizational agility among employees in the Gas Company of Hamadan.

**Empowerment, Competitive advantage, Agility, Organizational intelligence**

### Resumen

El presente estudio se aplicó en términos de investigación objetiva y descriptiva-encuesta investigación en términos de método de recopilación de datos. La población estadística del estudio abarcaba a todos los empleados de la Compañía de Gas de Hamedan(N=400). Según Morgan's Table, el tamaño de la muestra se estimó en 196. Además, en el presente estudio se utilizó un método de muestreo aleatorio simple para seleccionar las muestras de investigación, y se utilizaron cuestionarios como instrumento de investigación para recopilar los datos requeridos. También se adoptaron métodos de validez del contenido y análisis de factores confirmatorios para evaluar la validez de la investigación. Según los hallazgos, el análisis de factores es adecuado para detectar la estructura del modelo de factor. El alfa de Cronbach se utilizó para medir la fiabilidad. El modelado de ecuaciones estructurales fue realizado por el software LISREL para analizar los datos. Los hallazgos revelaron una relación positiva y significativa entre el empoderamiento y la ventaja competitiva, así como una relación positiva y significativa entre el empoderamiento y la agilidad organizacional, y una relación positiva y significativa entre el empoderamiento y la inteligencia organizacional entre los empleados de la Compañía de Gas de Hamadan. Además, hubo una relación positiva y significativa entre la inteligencia organizacional y la ventaja competitiva, una relación positiva y significativa entre la inteligencia organizacional y la agilidad organizativa, y una relación positiva y significativa entre la ventaja competitiva y la agilidad organizativa entre los empleados de la Gas Company of Hamadan.

**Empoderamiento, Ventaja competitiva, Agilidad, Inteligencia organizacional**

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\* Correspondence author: (SHIRAZIAN, Zahra, E-mail: Zahra.shirazian@gmail.com)

† Researcher contributing first author.

## Introduction

The term 'empowerment' was first introduced in the fields of political and social sciences; however, its history in management goes back to industrial democracy and employees' involvement in making organizational decisions in the form of team formation, participatory management, and total quality management. In 1998, Cango and Cango delved into the term 'empowerment', arguing that empowerment should be defined in terms of human resources' motivational processes. Organizations need to rely on their competitive advantage to succeed in today's business world. For this purpose, the organizational agility strategy is a solution allowing the organization to use other organizations' resources, facilities and expertise with no ownership. Nowadays, organizations are tackling with increasing competition caused by technological innovations and chaotic environments as well as changes in customer demands. Accordingly, organizations take different forms to survive and maintain their positions, the most novel of which is agile organizations (Roudsaz et al., 2012). Organizational intelligence is a new concept in organizational and management literature, the thematic background of which dates back to the 1990s. Organizational intelligence is underpinned by the theories of knowledge management and organizational learning; however, organizational intelligence was explicitly introduced by Matsuda (1992) in a paper entitled "Organizational Intelligence: Its significance as a process and product" at an International Conference on Economic in Tokyo (Schafer, 2009).

## Review of the Literature and Research Background

Gandz (1990) conceptualized empowerment by delegating decision-making to employees. Lee (2001) considered empowerment as a platform to promote dialogue, critical thinking, and small-group activities. He suggested that the main components of empowerment were allowing activities to move beyond sharing, dividing, and refining experiences, thinking, seeing, and talking. Empowerment refers to delegating responsibility to the lower organizational positions so that their knowledge, skills, experience, and motivation would be used to advance the organizational goals.

Competitive advantage encompasses a set of factors or capabilities constantly making an organization enable to perform better than its competitors (Burgaise, 1995). Competitive advantage refers to a factor or some factors in combination, which makes an organization much more successful than other organizations in a competitive environment. This is, however, the competitors fail to imitate such an advantage simply (Feurer & Chaharbaghi, 2006). In these two definitions and any other definition of competitive advantage, the common point is that an organization must also consider its external position and internal capabilities to achieve a competitive advantage. It is worth noting that the organization should regard internal capabilities and competitive position in the market not separately but mutually as sources to achieve competitive advantage and formulate a marketing strategy (Houly, 2003). Given that competitive advantage arises from the strategic management concepts, competitive advantage is thus the result of a dynamic and continuous process of considering the external and internal position of the organization, out of which capabilities are aroused from resources. The exploitation of such capabilities brings about competitive advantage to the organization (Feurer & Chaharbaghi, 2006).

The term 'agility' was first used in 1991 to describe the capacity required for modern production. Agility refers to an ability to respond quickly and successfully to environmental changes. In this regard, manufacturers, organizations, and other institutions have to look for agility to compete in the 21st century since modern organizations face increasing pressure to detect new ways to compete effectively in a dynamic global market (Khan & Pillania, 2008). Agility promotes the organization's potentials to deliver high quality products and services and thus becomes a prominent factor in terms of the organization's effectiveness. Many organizations turn to approaches such as virtual organization and virtual team to promote organizational agility and be developed globally. In some cases, agility may seem to be an integration of processes, members, and organizational features with advanced technologies (Khan & Pillania, 2008).

Organizational intelligence refers to a learning process containing the development of adaptive behaviors to use organizational perception and memory. Moreover, it refers to organizational potentials to make decisions under normal and unusual conditions.

### **Research Background**

Fe'li and Afrashteh (2017) carried out a case study to examine the effect of information technology on competitive advantage mediated by organizational agility in Tejarat Bank of Ahvaz. The findings revealed that information technology had a positive and significant effect on organizations' competitive advantage and agility and that organizational agility also had a positive and significant effect on competitive advantage.

Shahroudi and Sedaghat (2017) examined the impact of customer relationship management dimensions on competitive advantage mediated by customer loyalty in Rasht Keshavarzi Bank branches and found out that all customer relationship management dimensions had a significant positive effect on customer loyalty. Moreover, the positive effect of customer loyalty on competitive advantage was confirmed.

Bahadori and Habibi (2016) investigated the relationship between organizational agility, organizational self-esteem, and morale with job satisfaction in school principals. They detected a positive and significant relationship between the school principals' morale, organizational self-esteem, and organizational agility with managers' job satisfaction.

Bidokhti, Mohammad Hosseini, and Hosseinpour, (2016) tested the structural model of the relationship between organizational citizenship behaviors and organizational entrepreneurship with organizational agility mediated by organizational commitment. The findings indicated the positive and significant effect of organizational citizenship behaviors and organizational entrepreneurship on organizational commitment and the positive and significant effect of commitment on organizational agility.

Samimi (2016) examined the relationship between knowledge management capabilities and knowledge management cycle with organizational performance. The statistical population of the study encompassed the managers and employees of the Educational Research and Planning Organization.

According to the findings, there was a significant relationship between organizational culture, information technology, and leadership with knowledge management cycle and between knowledge management cycle and organizational performance.

Izadi and Mohseni (2015) conducted a study on techniques to empower the employees of Mazandaran Departments of Education and developed an appropriate model. Their findings indicated a positive and significant relationship between psychological empowerment with access to information, education, reward system, job enrichment, participation and leadership style.

Jajromi et al. (2013) conducted a study entitled "On the relationship between organizational intelligence and creativity among the staff of prisons in Fars Province.". They reported a positive and significant relationship between organizational intelligence and its components with creativity

Xueting et al. (2016) investigated the effect of team empowerment on team performance and noticed that the positive and significant effect of team empowerment on team performance.

Gabriel et al. (2015) researched the relationship between knowledge management structures and organizational agility. The results showed a positive and significant relationship between organizational agility and knowledge management processes.

Sherehiy and Karwowski (2014) studied the relationship between labor organization and labor agility in small-sized manufacturing companies and reported a positive and significant relationship between the development of agility and labor. Furthermore, independence and agility in the workplace are also main factors affecting the success of the workforce.

Nawaz (2012) conducted a case study on the relationship between women's entrepreneurship development and empowerment in Bangladesh. The results of this study showed a correlation between the development of women's entrepreneurship and empowerment.

Iravaigi (2006) conducted a study entitled "The effects of organizational intelligence on investment in information technology and organizational productivity" and confirmed the significant relationship between these variables.

### - Operational research model

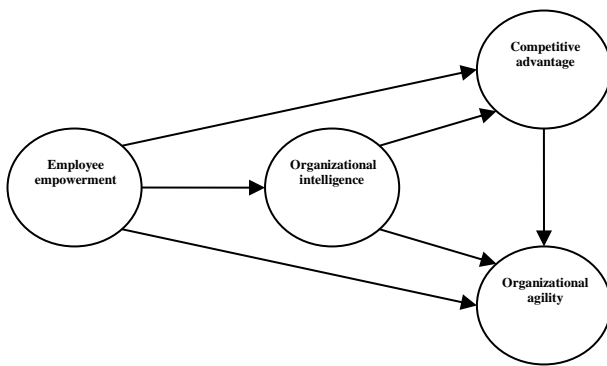


Figure 1 Operational research model

## Research Hypotheses

### Primary research hypothesis

There is a positive and significant relationship between employee empowerment with competitive advantage and organizational agility mediated by organizational intelligence among employees in the Gas Company of Hamedan.

### Secondary research hypothesis

- 1- There is a positive and significant relationship between employee empowerment and the competitive advantage among employees in the Gas Company of Hamedan.
- 2- There is a positive and significant relationship between employee empowerment and organizational agility among employees in the Gas Company of Hamedan.
- 3- There is a positive and significant relationship between employee empowerment and organizational intelligence among employees in the Gas Company of Hamedan.

- 4- There is a positive and significant relationship between organizational intelligence and competitive advantage among employees in the Gas Company of Hamedan.
- 5- There is a positive and significant relationship between organizational intelligence and organizational agility among employees in the Gas Company of Hamedan.
- 6- There is a positive and significant relationship between competitive advantage and organizational agility among employees in the Gas Company of Hamedan.

## Research Methodology

The present study was applied in terms of the research objective and a descriptive survey in terms of data collection method. Moreover, in terms of research method and nature of the study, it was a correlational and quantitative because a questionnaire was used to collect data, respectively. The statistical population of the study encompassed all employees of the Gas Company of Hamedan (N=400). According to Morgan's Table, the sample size was estimated to be 196. Moreover, simple random sampling method was used in the present study to select the research samples. In this study, standardized questionnaires were used as the research instrument to collect the required data, which encompassed Spritzer's (1996) Employee Empowerment Scale, Chen's et al. (2010) Competitive Advantage Index, Sharifi and Zhang's (2005) Agility Questionnaire, and Albrecht's (2003) Organizational Intelligence Scale.

### Questionnaire validity and reliability

The content validity of the questionnaires was examined using confirmatory factor analysis. For this purpose, KMO index and Bartlett's test were used. According to these two indices, the data are appropriate for factor analysis when the KMO index is  $> 0.6$  and close to one and the significance level of Bartlett's test is  $< 0.05$ . In this regard, the questionnaires were valid.

A questionnaire has reliability if the Cronbach's alpha coefficient is  $> 0.7$ . Accordingly, the reliability of the questionnaires was also confirmed.

**Data Analysis**

In this study, the Kolmogorov-Smirnov test was run to test the normality assumption of the research data. Since the variables were normal, parametric tests were used to test the aforementioned research hypotheses.

Variables	K-S statistics	Sig.	Results
Empowerment	0.830	0.496	Normal
Competitive advantage	0.620	0.837	Normal
Agility	0.966	0.309	Normal
Organizational intelligence	1.033	0.237	Normal

**Table 1** Kolmogorov-Smirnov test results

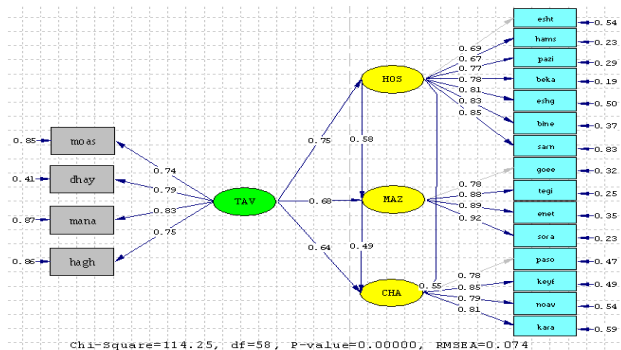
**Testing research hypotheses**

The research hypotheses were tested using structural equation modeling technique, which uses the correlations between research variables.

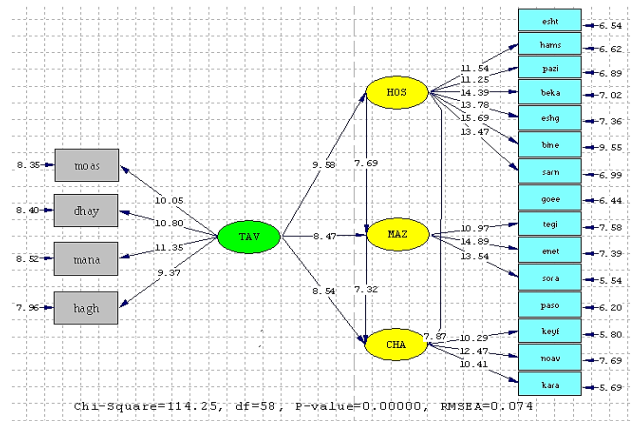
Variable	(1)	(2)	(3)	(4)
(1) Empowerment	1			
(2) Competitive advantage	**0.692	1		
(3) Agility	**0.305	**0.309	1	
(4) Organizational intelligence	**0.914	**0.571	**0.438	1
Sig.	0.000	0.000	0.000	0.000
number of samples	196	196	196	196
Correlation at $p= 0.05$ Significant correlation **				

**Table 2** Internal consistency of variables

As shown in Table (2), there is a positive and significant relationship between the research variables.



**Figure 2** Research model in estimation mode with standard coefficients



**Figure 3** Research model in significance mode (t-values)

According to Table 3, the collected data supported the hypothetical model. According to the results of the calculations of the model, the goodness of fit index of chi-squared test was 114.25 with a degree of freedom of 58 at  $P = 0.000$ . Given that chi-square is sensitive to increasing sample size and correlations between variables, this index is statistically significant in most cases; therefore, other indicators were used to test the model fit. Other fit features of the model, including root Mean Square Error of Approximation (RMSEA = 0.07), Goodness of Fit Index (GFI = 0.94), Adjusted Goodness of Fit Index (AGFI = 0.90), Normal Fit Index (NFI = 0.97), and Comparative Fit Index (CFI = 0.98), suggested that the model was well-fitted.

Chi-squared	df	$x^2/df$	RMSEA	GFI	AGFI	NFI	CFI
114.25	58	1.96	0.07	0.94	0.90	0.97	0.98

**Table 3** GFI of final model

Model result	Required	Fit
1.96	<3	$x^2/df$
0.07	< 0.08	RMSEA
0.94	>0.90	GFI
0.90	>0.90	AGFI
0.97	>0.90	NFI
0.98	>0.90	CFI

**Table 4** Fit indices of research model

Result	T-value	Path coefficient (β)	Path To	Path from
Confirmed	8.47	0.68	Competitive advantage	Empowerment
Confirmed	8.54	0.64	Organizational agility	Empowerment
Confirmed	9.58	0.75	Organizational intelligence	Empowerment
Confirmed	7.69	0.58	Competitive advantage	Organizational intelligence
Confirmed	7.87	0.55	Organizational agility	Organizational intelligence
Confirmed	7.32	0.49	Organizational agility	Competitive advantage

**Table 5** Results of research hypotheses

### Conclusions and Recommendations for Further Research

Regarding the testing result of the first hypothesis, employee empowerment could justify 68% of variation in the competitive advantage of employees in the Gas Company of Hamadan; hence, the first hypothesis was confirmed. In other words, a positive and significant relationship exists between empowerment and the competitive advantage among employees in the Gas Company of Hamadan. This finding was in line with the findings of some other studies (e.g., Fe'li & Afrashteh, 2017; Shahrudi & Sedaghat, 2017; Samimi, 2016; Izadi & Mohseni, 2015; Xueting et al., 2016; Nawaz, 2012). Accordingly, the following suggestions are made:

Gas companies should prioritize employee empowerment in their training and development programs. They should also use formal and informal training to promote cognitive skills and employee empowerment to improve and promote their competitive advantage in turn.

Considering the path coefficient (0.64) estimated for the research second hypothesis, there is a significant relationship between empowerment and organizational agility among the employees in the concerned Gas Company. In this study, the value of t-statistic between employee empowerment and organizational agility is 8.54 ( $>1.96$ ), suggesting that the relationship between empowerment and organizational agility among the employees in the Gas Company of Hamadan is significant at the confidence level of 95%. The finding supported the findings of other researchers, including Bahadori and Habibi (2016), Bidokhti et al. (2016), Samimi (2016), Izadi and Mohseni (2015), Xueting et al. (2016), and Nawaz (2012). Accordingly, the managers and authorities of the gas companies are recommended to maintain and promote their employees' empowerment by providing the grounds for improving agility in the gas company so that employees will be more satisfied with their jobs.

The third hypothesis testing result (path coefficient=0.75) also indicated a significant relationship between empowerment and organizational intelligence among the employees in the Gas Company of Hamadan.

The finding was in line with those reported by Samimi (2016), Izadi and Mohseni (2015), Jajromi et al. (2013), Xueting et al. (2016), Nawaz (2012), and Iravaigi (2006). It is suggested that this dimension of employees' organizational intelligence, which includes behavioral flexibility to meet the needs of a specific cultural situation, is considered in the organizational environment by establishing and using simulation and playing a role in the real organizational environment.

The analysis results of the fourth research hypothesis confirmed a positive and significant relationship between organizational intelligence and competitive advantage among the employees in the Gas Company of Hamedan. It was noticed that organizational intelligence could explain 58% of variation in the competitive advantage in the employees of the Gas Company of Hamedan. The result of this hypothesis was in a similar vein with those of some other studies (e.g., Jajromi et al., 2013; Xueting et al., 2016; Sherehiy & Karwowski, 2014; Iravaigi, 2006). To develop and expand organizational intelligence, the gas company should achieve this goal by creating its seven basic components, and thereby provide the necessary grounds for moving towards collective intelligence and promoting competitive advantage. The organization's operations should constantly be growing and adapting to changes in the organizational environment by studying the organizational environment.

The fifth hypothesis testing result (path coefficient= 0.55) confirmed a significant relationship between organizational intelligence and organizational agility in the employees of the Gas Company of Hamedan. The research finding confirmed the findings by Bahadori and Habibi (2016), Bidokhti et al. (2015), Jajromi et al. (2013), Gabriel et al. (2015), Sherehiy and Karwowski (2014), and Iravaigi (2006). Necessary mechanisms (e.g., product development teams, comment system, etc.) should be adopted to support innovation in the Gas Company. A reward system should also be adopted in the Gas Company to provide creative suggestions and better solutions in organizational processes.

The analysis results of the sixth hypothesis indicated the significant relationship between competitive advantage and organizational agility in the employees of the Gas Company of Hamedan at the confidence level of 95%. Given that the t-value obtained for the sixth hypothesis ( $t=7.32$ ) is beyond the range of  $\pm 1.96$ , the sixth research hypothesis is confirmed. In other words, the competitive advantage can explain 49% of variation in the employees of the Gas Company of Hamedan. This finding was consistent with the findings reported by Fe'li and Afrashteh (2017), Shahrودي and Sedaghat (2017), Gabriel et al. (2015), and Sherehiy and Karwowski (2014). Here are some relevant recommendations:

- Having updated topics on agility, examining the significance of this issue as a management strategy in today's competitive arena, and promoting and raising this issue academically among individuals by holding applied-analytical courses in theory and practice.
- The Bank Mellat branches in Hamedan are recommended to adopt other indicators in addition to the existing marketing indicators to compete in the market, keep their competitive advantage, and promote their agility.
- Future researchers are suggested to carry out studies on the relationship between organizational intelligence and competitive advantage mediated by agility in other private and public organizations and analyze and compare the findings with those of the present study.
- Future researchers are recommended to examine the relationship between empowerment and other organizational variables such as cultural intelligence.

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## Automated analysis of disorders of work of drivers

### Análisis automatizado de trastornos del trabajo de los conductores

KHUZYATOV, Shafik<sup>†\*</sup> & GALIULLIN, Lenar<sup>''</sup>

*Kazan Federal University, Russia.*

ID 1<sup>st</sup> Author: *Shafik, Khuzyatov* / **ID Scopus:** 6507556341

ID 1<sup>st</sup> Co-author: *Lenar, Galiullin* / **ID Scopus:** 39361435200

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#### Abstract

A system was designed to detect possible violations of the operating rules of the enterprise without changing the behavior of the entire system as a whole, as well as to automatically start the assembly of the simulated behavior of a real application using unit and functional testing technologies. In the work, an analysis was made of the subject area of the work process of drivers, managers and operators. It was found that the time to find possible violations exceeds the permissible value. The audit department engaged in verification had problems with the quick unloading of potential violators. The department made unloading and manual search, which led to a longer identification of violations both from the side of drivers and managers. It is possible to solve this problem and increase the efficiency of the process by developing an automatic analysis system. An analysis of the management process was carried out. Based on the analysis, a model of system use cases was developed, from which user and functional requirements were defined and formed. A functional model of the system was introduced. The basic algorithms are described. Connections between system entities were revealed, analysis classes and detailed UML diagrams were compiled. Thus, when performing the work, all the features and nuances of the design of information systems were taken into account, then according to the presented models, you can develop an information system and implement it in various organizational structures.

#### Resumen

Se diseñó un sistema para detectar posibles violaciones de las reglas de operación de la empresa sin cambiar el comportamiento de todo el sistema en su conjunto, así como para iniciar automáticamente el ensamblaje del comportamiento simulado de una aplicación real mediante pruebas unitarias y funcionales. En el trabajo se realizó un análisis del área temática del proceso de trabajo de conductores, gerentes y operadores. Se encontró que el tiempo para encontrar posibles violaciones excede el valor permitido. El departamento de auditoría dedicado a la verificación tuvo problemas con la descarga rápida de posibles infractores. El departamento realizó la descarga y la búsqueda manual, lo que llevó a una identificación más prolongada de las infracciones tanto por parte de los conductores como de los gerentes. Es posible solucionar este problema y aumentar la eficiencia del proceso mediante el desarrollo de un sistema de análisis automático. Se realizó un análisis del proceso de gestión. A partir del análisis, se desarrolló un modelo de casos de uso del sistema, a partir del cual se definieron y formaron los requisitos funcionales y de usuario. Se introdujo un modelo funcional del sistema. Se describen los algoritmos básicos. Se revelaron las conexiones entre las entidades del sistema, se compilieron clases de análisis y diagramas UML detallados. Por lo tanto, al realizar el trabajo, se tuvieron en cuenta todas las características y matices del diseño de los sistemas de información, luego, de acuerdo con los modelos presentados, puede desarrollar un sistema de información e implementarlo en varias estructuras organizacionales.

**Drivers, Automation, Network, Logistic, System**

**Conductores, Automatización, Red, Logístico, Sistema**

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\* Correspondence author: (E-mail: mohammad.ghani13spt@gmail.com)

† Researcher contributing first author.

## Introduction

The global problem of the Russian segment of the economy was the use of foreign products and means to solve their problems, but in view of the instability of price relations with our market, organizations are trying to reduce risks and increase the predictability of their segment (Valiev, et al., 2020; Díaz Iglesias, 2021). The most important thing for every organization is the reliability and flexibility of the tools used (Lenar, et al. 2019). During the review, problems were found in the field of data use and the difficulty of using third-party modules, as well as the difficulty of using and introducing new developments necessary for the tasks of the organization in question (Petrov, et al. 2019; Estupiñán Báez & Lozano, 2021).

A taxi service company provides services to drivers and passengers (Mustafina, et al. 2019). The main advantage of the company is a fully automated interaction of drivers and customer passengers. The company also provides cargo transportation services (Zubkov, Galiullin, 2019; Romero Sueiro, 2021). There is a hardware and software complex, thanks to which deep analytics and business process management using IT technologies are implemented.

The service serves a huge number of cities, so the number of orders produced daily amounts to hundreds of thousands. Which requires fully automated fault tolerant software.

Due to the large number of software implementations of business processes, the problem arose of the slow operation of part of the logic, and also part of the logic requires a review of the implementation of existing implementations in order to optimize and accelerate the overall operation of the system.

The most problematic place is the work of the department that deals with the identification of irregularities in the work of other company employees: drivers, operators, other managers related to the progress of the execution of orders.

Thus, the relevance of the work is due to the need of managers in an automated analysis system to detect violations of regulations.

## Methods

The goal of any business is to make a profit. Business owners are interested in the fact that the company not only showed a positive balance of costs and revenues, but also showed annual revenue growth. Thus, any commercial organization is interested in scaling up its business.

The problem area of the company is the interaction with the database of company employees, primarily managers and developers (Kolesnikov, et al., 2016). Many business processes occur in manual mode, which greatly slows down employee productivity (Zubkov, 2016). There are many operations performed by managers, but in the implementation, there is only raw data and the search for what is needed for the manager is done directly on the raw data and finding problem places becomes very difficult and time-consuming process. And the search for problems must be done as soon as possible, and reflection requires an instant reaction. A manager can spend up to 4 hours searching for a problem driver.

The list of identified types of fraud committed by drivers is quite large and checking for each type of check becomes unacceptable both in time and in the quality of the search for problematic company employees (Ilyukhin, Zubkov, 2015; Estupiñán Báez & Lozano, 2021). Often, due to fatigue and a large amount of data, an employee overlooks problematic orders, and sometimes employees who did not commit unlawful actions, but were on the list of those, can be punished.

All this greatly affects the reputation of the company as a whole (Khafizov, et al. 2019; Romero Sueiro, 2021). Unacceptable quality can be critical and may cause the client or a bona fide employee to leave for another supplier.

To meet the aim of the current study, data storage was carried out in databases, which are of several types, suitable for our organization can be identified as follows:

- A hierarchical data model, where the data representation is presented in the form of a tree structure.

- Relational Database Management System (RDBMS); An RDBMS is a DBMS designed specifically for relational databases. Therefore, RDBMSes are a subset of DBMSes. A relational database refers to a database that stores data in a structured format, using rows and columns. This makes it easy to locate and access specific values within the database.
- Object-oriented database: An object-oriented database (OODBMS) or object database management system (ODBMS) is a database that is based on object-oriented programming (OOP). The data is represented and stored in the form of objects. OODBMS are also called object databases or object-oriented database management systems.
- Functional database. A functional database brings together data from multiple disparate sources and ties the disparate data sets into coherent consumable models. It also brings data scattered over multiple spreadsheets under control.

The main reason for this was that after the transition to the new database management system, the difficulty of writing a test due to the lack of marking functions was used in the Microsoft system.

## Results and Discussion

Since it is supposed to automate the company's processes, we highlight the main business processes. To compile the business process, the most informative BPMN notation was chosen.

The general outline of the order process is presented (Katasonov, et al. 2018). After the user logs in, he is given a choice of settings and order parameters, such as a seven-seater car, payment method, route, fare, gratuity and others. After that, a request is sent to the taximaxim service information system, where an order is created in the system based on the parameters passed.

A request for creating an order can be carried out in several ways:

- 1) Make a call to the taxi order service, where the necessary parameters will be collected by a specific operator.

- 2) Enter the application "maxim" enter all the necessary parameters manually.

Not all parameters are entered manually when creating a request; some parameters are collected in automatic mode, for example, the current position.

Based on the collected data, a record is made in the operational database, and information about the new order is transferred to the general order stack. Managers, drivers, and operators can view the general list of orders. All drivers who are subscribed to notifications in the zone of which the order is created receive an appropriate notification.

The driver appointment process takes place in two stages. After receiving a notification, drivers can pick up an order for execution. But after a certain time, no driver can take it, then the system begins to select the contractor itself. The wait timer for the start of an auto destination can be different. The main factor in this problem is the congestion of zones. And before choosing a driver, the system makes sure that there can potentially be a free driver.

The auto-assignment process can be repeated several times. Auto designated contractor may refuse to complete the order. The driver who refused to fulfill the order will not be re-assigned, but at the same time, it remains possible for him to take this order for execution from the general list of orders. The driver, even after taking the order, can refuse it, while indicating the reason for the refusal. For example, a flat tire or other failure occurred.

Due to the fact that most violations occur during the execution of the order, it is necessary to select it in a separate diagram. After the driver is appointed and the contractor is ready to start work, the system draws up a route in the application for the driver, by which he can get to the customer's place. The driver can get to the place not on the specified route, but at the same time his traffic map will still be recorded in the database.

Upon reaching the arrival point, the driver sets the status of his arrival, on the basis of which a notification is automatically sent to the user, after which the waiting time begins. After this, the passenger lands, at the end of which the driver becomes the contractor.

Next, a route is constructed in the internal system by which the driver must deliver the passenger. The route is advisory in nature, and following a different route is not prohibited, but deviations from the route should have a reason, for example, roads are being repaired along the constructed route, and not the driver needs to call in some institution along the way. The entire driver's path is saved so that you can map a route along it.

At the end of the route, the driver notes that the order has been completed, and if the end point of the route corresponds to the desired point, then payment is calculated between the customer and the contractor.

In parallel with this, documents are being prepared for placing an order. After a complete settlement has been made between the driver and the company, as well as between the driver and the customer and other participants, all data is structured and stored in the taximaxim information system.

At the end of the main processes, verifiers are included in the work. On a special platform, special employees check for suspicious orders. Now there are checks on which violators of the regulations are found. But there are still intruders in the company, and they are searched by selecting all orders. After unloading the list of orders, a search is made for the criteria by which the violation can take place, and if a suspicious order is found, it is sent to the general audit with an indication of the type by which it fits the violation. Next is an investigation into the violation. The actions and reasons of the participants are clarified. At the end of the investigation, the inspector establishes a violation on the order and enters the reason, later a memo is written with a description of the violation. The decision on the following actions is transferred to the responsible manager, and he already decides what actions to take, either re-conduct the investigation, or draw up a reprimand act, or enforce the punishment provided for by the type of violation, or completely refuse further cooperation with the violator.

### Summary

In the analysis of requirements for the development of an information system for a taxi company, the general structure of the company was considered. The main business processes in the company were reviewed and compiled.

It was found a lot of labor during the preparation and conduct of inspections. An employee of the inspection department, when allocating problematic operations, spent a large amount of time compiling a list of potentially problematic employees. The main problem of this turned out to be a huge amount of the total number of orders, and orientation was only on complaints from customers.

Thus, were compiled:

- Business requirements for the system.
- User requirements based on use case diagrams.
- Functional system requirements.
- Precedent specifications.

This data allows you to make a complete solution and is sufficient for the design of an information system.

### Conclusions

Overall, the chief purpose of the study was to investigate the automated analysis of disorders of work of drivers. To that end, an analysis of the management process was performed. Given the analysis, a model of system use cases was developed, from which user and functional requirements were defined and formed. Initially, after the contractor performs an operation on his order, the system prepares a series of documents, according to which a series of operations for the distribution of funds between its participants are prepared: directly by the contractor, the employer organization and the main organization. After all the documents are prepared, the system checks the possibility of conducting cash transactions. Since payment provides for cash and non-cash payments, the system does not always have the ability to carry out cash allocation operations, and therefore the system has difficulties in this regard. Therefore, if there was a payment transaction by bank transfer, the system performs all operations with personal accounts of participants. At the end of the main actions in the system, the processing of the received data for the determination of suspicious orders begins. All suspicious orders go into the status of "suspicious" and on their basis a general list is compiled indicating the type of check. For each type of check, certain groups of people are assigned, who are signed up for notifications of new suspicious orders.

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## International relations of Russia from the perspective of educational migration

### Relaciones internacionales de Rusia desde la perspectiva de la migración educativa

KARIMOVA, Luiza†\*, SAGITOVA, Victoria'', KIRPICHNIKOVA, Anna''' and HOANG, Ha''''

*\*Candidate of Historical Sciences, Associate Professor, Department of Regional Studies and Eurasian Studies, Institute of International Relations, Kazan Federal University, Russia.*

*''Candidate of psychological Sciences, Associate Professor, Department of Altaic studies and Chinese studies, Institute of International relations, Kazan Federal University, Russia.*

*'''PhD in Philology, senior lecturer, Department of Foreign Languages, Institute of International Relations, Kazan Federal University, Russia.*

*''''PhD, Faculty of Psychology and Education, The University of Danang - University of Science and Education, Danang, Vietnam.*

ID 1<sup>st</sup> Author: *Luiza, Karimova* / ORC ID: 0000-0002-0353-8493, ID Scopus: 56684902700

ID 1<sup>st</sup> Co-author: *Victoria, Sagitova* / ORC ID: 0000-0001-7002-4719, ID Scopus: 57211500425

ID 2<sup>nd</sup> Co-author: *Anna, Kirpichnikova* / ORC ID: 0000-0003-4261-8004, ID Scopus: 57201644544

ID 3<sup>rd</sup> Co-author: *Ha, Hoang* / ORC ID: 0000-0002-2964-5879

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#### Abstract

Educational migration being a part of social and intellectual migration is one of the most serious factors of the development of countries taking part in this process. Perspectivity and relevance of studying the dynamics of international relations of the Russian Federation from the perspective of educational migration are determined by opportunities to analyze the dynamics of the social structure of the society and mobility of different groups and communities under the influence of migration. The article using general scientific methods (analysis, synthesis, comparison, classification, etc.) and methods of applied statistics consider (on the basis of official statistical data) the dynamics of the group of foreign students and graduates studied in Russian institutions of higher education, their distribution across the country, trying to find out the regions for which Russian education is more attractive. Authors draw conclusions that for foreign students Russian Federation is getting more attractive that is proven by the increase in their amount from the early 2000-s.

**International processes, Educational migration, Russian Federation, International migration**

#### Resumen

La migración educativa como parte de la migración social e intelectual es uno de los factores más graves para el desarrollo de los países que participan en este proceso. La perspectiva y la relevancia del estudio de la dinámica de las relaciones internacionales de la Federación de Rusia desde la perspectiva de la migración educativa están determinadas por las oportunidades para analizar la dinámica de la estructura social de la sociedad y la movilidad de diferentes grupos y comunidades bajo la influencia de la migración. El artículo que utiliza métodos científicos generales (análisis, síntesis, comparación, clasificación, etc.) y métodos de estadística aplicada considera (sobre la base de datos estadísticos oficiales) la dinámica del grupo de estudiantes y graduados extranjeros estudiados en instituciones rusas de educación superior, su distribución en todo el país, tratando de descubrir las regiones para las que la educación rusa es más atractiva. Los autores llegan a la conclusión de que para los estudiantes extranjeros la Federación de Rusia se está volviendo más atractiva, como lo demuestra el aumento de su cantidad desde principios de los 2000.

**Procesos internacionales, Migración educativa, Federación de Rusia, Migración internacional**

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\* Correspondence to Author (E-mail: LU\_KA\_S@rambler.ru)

† Researcher contributing first author.



## Introduction

The relevance of the topic is determined by the processes occurring in many countries, such as overcrowding, “demographic pitfalls.” (Kea, 2020). One of the solutions to the problems is educational migration, which allows increasing the amount of able-bodied population and proportion of highly professional specialists in the labor market that promotes the development of business industry in the sphere of support of academic activities (Holmes, 2006; Qiu, 2020).

The perspective of studying the dynamics of different countries’ international relations, in particular Russia, by means of educational migration is determined by the opportunities to analyze the dynamics of the social structure of the society and mobility of different groups and communities under the influence of migration. According to some data, educational migration can be considered as an integral part of social migration (Grunin *et al.*, 2015). According to another one, it can be included in intellectual migration (Ivakhnyuk, 2006; Alekseeva, 2012; Belov, 2020).

Educational migration can be considered from different points of view:

1. As “a part of social migration whose object is the social interaction of individuals involved in social and geographical moving in order to get education and subject is dynamics of changes in objective and subjective aspects of individuals’ social relations within previous and new society” (Samofalova, 2020).
2. As “migration aiming to get or continue education (educational and study migration are synonyms in this case)” (Zamotin, 2016; Aucejo, 2021).
3. As “soft power” of impact on other countries, their population and politics without the military and heavy-handed methods.

Educational migration contains student migration (getting the education and raising the level of qualification), different internships, additional education, courses, and other forms, which allow increasing the level of qualification (moving of pupils, students at secondary specialized colleges and institutions of higher education, PhD. students, doctorate students, interns, specialists, increasing the level of qualification in different educational institutions, departments, and companies).

Metelev (2016) distinguishes two types of moving in the structure of educational migration:

1. Relocation.
2. Scientific and educational migration (migration of students and interns between countries in order to obtain new skills and to be included in international labor nets, research nets, and communicative relations) (Metelev, 2016).

Effects of educational migration can be different such as social, political, demographical, and economic. Among the advantages there are:

1. High level of migrant’s mobility and tolerance owing to age characteristics.
2. Opportunity to have an impact on the reproductive intensions of a recipient country.
3. Spending money on household needs while living.
4. Due to study graduates with the necessary set of skills and competences enters the labor market.
5. The process of migrant’s adaptation – competence in the language of the recipient country; understanding other country’s customs and stereotypes.
6. If the student stays in the country after graduation, he/she sides with the economics of the country. If he/she goes back, he becomes an influence agent in the territory of his / her own country (Study migration from the CIS and Baltic countries: potential and prospects for Russia, 2012).

Among the disadvantages of educational migration, there are:

1. Foreigners fill state-financed openings.
2. There are additional strains on social systems and utility infrastructures.
3. Expenses on migrant's adaptation and integration.
4. Expenses on recruiting abroad and branding of the institute's program.
5. Risk of decrease in quality of student groups' work because of foreigners.
6. Low initial level of students recruited leads to a decrease in knowledge level and devaluation of study, consequently, to the formation of non-professional graduates and specialists.

It is proven by the results of the research (2007-2008) of foreign students and Ph.D. students who studied in Russia (Moscow, Stavropol, Ivanovo, Belgorod, Voronezh, and Novosibirsk) (Zamotin, 2016; Volokh & Grishaeva, 2017; Iakovleva, *et al.*, 2021).

## Methods

As mentioned earlier, in this paper, it was aimed to investigate the international relations of Russia from the perspective of educational migration. because of educational migration being a part of social and intellectual migration is one of the most serious factors of the development of countries taking part in this process. Perspectivity and relevance of studying the dynamics of international relations of the Russian Federation from the perspective of educational migration are determined by opportunities to analyze the dynamics of the social structure of the society and mobility of different groups and communities under the influence of migration. The article using general scientific methods (analysis, synthesis, comparison, classification, etc.) and methods of applied statistics consider (on the basis of official statistical data) the dynamics of the group of foreign students and graduates studied in Russian institutions of higher education, their distribution across the country, trying to find out the regions for which Russian education is more attractive.

The study uses general scientific theoretical methods such as analysis, synthesis, comparison, classification, etc., and special methods such as methods of applied statistics as well.

The method of classification allows dividing studied social categories of educational migrants into well-organized and classified groups on the basis of different factors (nationality, level of education, etc.). Owing to applied statistics methods it was possible to count the number of people included in each category, their proportion, and dynamics.

## Results and Discussion

Migration is still a highly topical issue for Russian scientists (Ilikova & Venidiktova, 2019) and for foreigners as well (Sakaev, 2018). Particular attention is given to processes of migration in general (global migration processes, cultural chasms, risks related to migration processes, etc.) and different aspects of educational migration as well ("brain drain," internationalization of higher education, integration of migrants via educational institutions, adaptation of foreign students, etc.)

Analyzing statistical data available to the public, one can notice some tendencies, which allow forecasting and drawing conclusions about the quality of international educational migration, increase in the proportion of foreign students in Russian higher education institutions, development of international relations of Russian Federation with certain countries.

The national tendency of demographical changes is rising year-by-year (tab. 1). An increase in the population at the age of 11 – 17 (18) allows the understanding of how possible migration moving is and the dynamics of these processes.

Country	The number of students in general academic schools on a country-by-country basis (millions of people)				
	2012	2014	2015	2016	2017
Russia	20,8	6,2	6,4	6,7	7,0
Great Britain	31,5	4,6	4,5	4,6	4,7
Germany	18,0	2,9	2,9	2,9	2,9
Italy	25,7	2,9	2,9	2,9	2,8
Canada	31,3	2,2	2,2	2,3	2,3
USA	30,9	24,4	24,5	24,8	25,0
Sweden	28,7	0,7	0,8	0,8	0,8
Japan	32,8	6,8	6,7	6,6	6,6

**Table 1** Quantitative indicators of the dynamics of students in general academic schools on a country-by-country basis  
Source: (Shakirova, 2019)

According to the Ministry of Education of the Russian Federation, the number of foreign students who were studying at Russian universities on the basis of public education grants or on the contract base was 59.9 thousand people in 1998. After the decrease by 9 % in 2000 (54.5 thousand people), it increased dramatically: in 2002 – 60.9 thousand people (Aupetit, 2006), in 2010 – 153.8 thousand people, in 2017 – 260.1 thousand people (Belot & Ederveen, 2012; Iakovleva, *et al.*, 2021). Data of 2010 and 2017 took into account students who studied in undergraduate, specialist, and graduate programs at universities and research organizations in Russia. Thus, during the last 20 years, the number of foreign students in Russia has increased more than fourfold.

During the period from 1998 to 2002 in Russian universities, there was an increase in the number of students from Baltic countries (from 3 thousand people (5% of total) to 4.2 thousand people (6.7 % of total)), Asia (from 30.7 thousand people (51.3 % of total) to 33.4 thousand people (54.8 % of total)), the USA (from 1.6 thousand people (2.7 % of total) to 2.2 thousand people (3.6% of total)), Canada (from 0.1 thousand people (0.2% of total) to 0.3 thousand people (0.5% of total)), Africa, excluding Northern Africa (from 4.8 thousand people (8% of total) to 5.6 thousand people (9.2% of total)), Australia and New Zealand (from 0 to 0.3 thousand people (0.5 % of total)). There was no change in the number of students from Latin America (1.6 thousand people (from 2.7 % to 2.6 %)), and there was a decrease in the number of students from Europe (7.2 thousand people (12%) to 5.5 thousand people (9%)), from the Middle East and Northern Africa (from 11.5 thousand people (19.2%) to 7.8 thousand people (12.8 %)) (Aupetit, 2006). The most significant increase was in the number of students from Asia.

Over time from 210-2011 academic year to 2017-2018 academic year, the number of foreign students enrolled at universities and graduated from them increased from 37.3 thousand people (24.3 % of the total amount of foreign students) to 86.0 thousand people (33 %), and the proportion of foreign graduates from Russian universities and scientific organizations decreased from 64.6 % (24.1 thousand people) to 47.7 % (41.1 thousand people) (Belot & Ederveen, 2012).

It can be explained by many factors: problems of adaptation of foreign students at universities and regions, insufficient proficiency (especially, language proficiency), educational programs are not adaptable enough to be taught to foreign students, students' financial problems, etc.

There was an increase in the amount and proportion of students from European countries: from 1.3 thousand people (0.8 % of the total amount of foreign students) to 2.7 thousand people (1 % of the total amount of foreign students). At the same time while the number of students enrolled at universities and graduates was growing (from 0.3 thousand people to 1.0 thousand people and from 0.3 thousand people to 0.5 thousand people respectively), their proportion decreased dramatically (from 8% to 1.2 % and from 12.4 % to 1.2 % respectively) (Belot & Ederveen, 2012; Iakovleva, *et al.*, 2021).

Despite the significant increase in the number of Chinese students in Russian universities and scientific organizations in general, including students who enrolled at universities and graduated from them (from 28.1 thousand people to 47.4 thousand people), their proportion even went down (from 18.3 % to 18.2 %). However, in 2010-2017 among Asian countries, China was a leader in the total amount of students studying in Russia (enrolled at Russian universities and graduated from them). Then, in 2010, it was followed by India (annual increase), Malaysia (annual decrease), Vietnam, Mongolia, the Syrian Arab Republic, the Republic of Korea, Democratic People's Republic of Korea (Northern Korea) in decreasing order. In 2017, their positions were a little bit different: India, Vietnam, Mongolia, the Syrian Arab Republic, the Republic of Korea, Democratic People's Republic of Korea (Northern Korea) (Belot & Ederveen, 2012; Aucejo, 2021).

The number of students from Asian countries who enrolled at Russian universities increased from 7.3 thousand people in 2010 to 18.3 thousand people in 2017, and their proportion went up as well – from 19.6 % of the total amount of foreign students to 21.2 % of the total amount of foreign students. The greatest number of Asian students was from China. In 2010, it was followed by Vietnam, India (annual increase), Malaysia (annual decrease), Mongolia, the Syrian Arab Republic, the Republic of Korea, Democratic People's Republic of Korea (Northern Korea) in decreasing order.

By 2017, the situation had changed: China was followed by India, Vietnam, Mongolia, the Syrian Arab Republic, Malaysia, and the Republic of Korea. In the 2016/2017 academic year among people enrolled at Russian universities. There were no people from the Democratic People's Republic of Korea (Northern Korea), and there were no people from this country who graduated from Russian universities during the period under consideration (Belot & Ederveen, 2012; Iakovleva, et al., 2021).

The number of graduates from Asian countries increased from 6.8 thousand people to 8.3 thousand people, but their proportion of the total amount of foreign students decreased from 28.2 % to 20.2 %. In 2010, China was followed by India, Vietnam, Malaysia, Mongolia, the Syrian Arab Republic, the Republic of Korea in decreasing order. In 2017 – Vietnam, India, Malaysia, Mongolia, the Syrian Arab Republic, the Republic of Korea. Among graduates from Russian universities, there were no people from the Democratic People's Republic of Korea (Northern Korea) during the period under consideration (Belot & Ederveen, 2012).

The total amount of students from Central and Southern Africa and their proportion in the number of all foreign students decreased from 0.9 thousand people (0.6 %) to 0.8 thousand people (0.3 %). At the same time, the number of people enrolled at universities and the number of graduates increased: from 0.2 thousand people to 0.8 thousand people (0.5 % to 0.9%) and from 0.1 thousand people to 0.3 thousand people (0.4% to 0.7 %) respectively (Belot & Ederveen, 2012).

Despite the increase in the amount and proportion of students from Northern America (the USA and Canada) from 0.1 thousand people to 0.2 thousand people (from 0.06 % to 0.07%), the number of people from the USA and Canada enrolled at Russian universities stayed at the same level (0.1 thousand people) and the proportion in the amount of all foreign students even decreased from 0.3 % to 0.1%. The graduates from these countries were only in 2015 and 2016 (0.1 thousand people a year) (Belot & Ederveen, 2012).

The total amount of African students increased from 6.7 thousand people (4.4%) to 15.0 thousand people (5.8%) during the period under consideration.

According to the growth rate, students from Morocco were first in the line, followed by Nigeria, Zambia, Kameron, and Kenya. The number of African people enrolled at Russian universities rose from 1.4 to 5.2 thousand people (from 3.8 % to 6%), graduates – from 1.0 to 2.0 thousand people (from 0.4 to 0.5%). Among foreigners from African countries who won admission to Russian universities, students from Morocco and Nigeria were first with the same amount of people enrolled at universities, followed by Zambia and Kameron. By 2017, people from Morocco were first, leading by a significant margin and followed by Nigeria, Kameron, and Zambia. Among graduates in 2010, leading positions were taken by Morocco, Nigeria, Zambia, in 2017 – Nigeria, Morocco, Zambia, Kenya (Belot & Ederveen, 2012; Aucejo, 2021).

### Summary

Migration processes create new educational needs of recipient country at the international level, and at the same time, the choice of a country for educational migration is related to increasing the prestige of the donor-country and giving more opportunities to educational migrant in the country of living and in the country of studying as well. At the level of the state, it solves social, political problems and economical as well.

The Russian Federation is getting more and more attractive for foreign students that are proven by positive dynamics of their amount from the early 2000-s.

During the period from 2010 to 2017, owing to educational migration, Russia strengthened international relations with European countries, the USA and Canada, countries of Central and Southern America, although the proportion of the representatives from these countries decreased that happened because of more intensive educational migration processes from Asian and African countries.

### Conclusions

Assessing migration processes within the framework of international educational migration, one can say that prestige of education in the Russian Federation is gradually increasing for countries of Africa and Asia region, and that is determined by state policy connected with these countries as well as opportunities to study culture and language of the countries comprising this region in order to improve international relations.

During the last decade owing to educational migration, the international relations of Russia with European countries, the USA and Canada, Central and South America are growing strong, although the general number of the students from these countries dropped because of the intensive processes of educational migration from Asian and African countries.

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## Students involvement into social and cultural activity: modeling and motivation

### Participación de los estudiantes en la actividad social y cultural: modelado y motivación

GUTMAN, Eugeniya\*†, TERYTYEVA, Irina, GAIDAMASHKO, Igor and FAKHRUTDINOVA, Anastsiya

*Kazan Federal University, Russia.*

ID 1<sup>st</sup> Author: *Eugeniya, Gutman*

ID 1<sup>st</sup> Co-author: *Irina, Terentyeva*

ID 2<sup>nd</sup> Co-author: *Igor, Gaidamashko*

ID 3<sup>rd</sup> Co-author: *Anastsiya, Fakhrutdinova*

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#### Abstract

At present, higher education is undergoing major changes related to the implementation of the Bologna process ideas, education informatization, integrative processes in society, increasing competition, and globalization. In this regard, the problem of student involvement formation acquires exceptional importance in the university educational activity. The focus on student involvement formation in higher education's social and cultural activity process is conditioned by the necessity to improve professional personality development and raise social competencies. We consider the social activity as a person's integral quality which is realized in various types of self-activity, in the process of which the personality self-realization occurs, conditioned by objective and subjective factors. Also, the structure of motives for young people's social activity is considered. Students' involvement is seen as a person's property, which externalizes in activity and shows the person's attitude to its various spheres. Particular importance is paid to the research of the students' extracurricular organization. It is shown that the students free time is needed to organize in the process of educational activity to create conditions for self-realization and self-actualization of the student's personality. The submissions of the article can be useful for Faculty and Administration of higher education institutions.

#### Resumen

En la actualidad la educación superior está experimentando importantes cambios relacionados con la implementación de las ideas del proceso de Bolonia, la informatización de la educación, los procesos integradores en la sociedad, la creciente competencia y la globalización. En este sentido, el problema de la formación de la participación de los estudiantes adquiere una importancia excepcional en la actividad educativa universitaria. El foco en la problemática de la formación del involucramiento del estudiante en el proceso de actividad social y cultural en la educación superior está condicionado por la necesidad de mejorar el desarrollo profesional de la personalidad y el aumento de las competencias sociales. Consideramos la actividad social como una cualidad integral de la persona que se realiza en diversos tipos de autoactividad, en cuyo proceso se produce la autorrealización de la personalidad, condicionada por factores objetivos y subjetivos. Asimismo, se considera la estructura de motivos de la actividad social de los jóvenes. La participación de los estudiantes se ve como una propiedad de una persona, que se exterioriza en la actividad y muestra la actitud de la persona hacia sus diversas esferas. Se le da especial importancia a la investigación de la organización extraescolar de los estudiantes, donde se demuestra que el tiempo libre de los estudiantes es necesario para organizar en el proceso de la actividad educativa con el propósito de crear condiciones para la autorrealización y la autorrealización de la personalidad. Las presentaciones del artículo pueden ser útiles para el profesorado y la administración de instituciones de educación superior.

**Higher education, Motivation, Social communication, Structure of motives, University**

**Educación superior, Motivación, Comunicación social, Estructura de motivos, Universidad**

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\* Correspondence to Author (Email: egutman@rambler.ru)

† Researcher contributing first author.

## Introduction

University graduates' competitive recovery is one of the most recent problems of modern education, on which the future of individual universities and the educational systems of various countries, their position in the world educational services market, largely depends (Yudkevich, 2014). In the conditions of civil society reform, education, especially higher education, is seen as the main, leading factor of social and economic progress. The reason for this attention lies in the understanding that the most important value and the main capital of modern society is a person capable of finding, deepening knowledge, and adopting non-standard solutions (García Padilla, 2021).

Students should be prepared for a fast-changing labor market and environment, set clear goals and development priorities, and achieve their implementation. Quick, mobile response to ongoing changes in the conditions of individual and socio-economic development, the participation in the society and the state life, the realization of various social needs and interests lead to the willingness to learn new approaches in the content of professional activities, volunteerism and other forms of involvement (Fletcher et al., 2018; José Sá, 2020). The dynamic development of modern society puts the individual in a situation where he not only needs to adapt to society but also makes decisions that extract his personal abilities from the surrounding reality, so one of the main goals and important outcome of education should not be only the scope of knowledge is acquired, but also the development of motivation, voluntary characteristics, the formation of a value system (Levina et al., 2015; Hurtado et al., 2021).

In this regard, the problem of student involvement formation acquires exceptional importance in the university educational activity. Special importance in the formation of this inclusiveness is acquired by educational work aimed at cultural and recreational activities organizing in a modern university. Its specificity is "taking into account the characteristic features of university students thinking who have a specific attitude toward professional activity, so social and cultural activities are closely related to the student's educational activities" (Maslennikova et al., 2010).

It is not only the education quality indicator, but also creates the conditions for self-fulfillment, and also complements and widens the horizons of the university educational process, helps the student to spend his free time with benefit for his development and needs (Loginova, 2006; Quevedo Sánchez, 2021).

The focus on the formation of student participation in the process of social and cultural activities in higher education depends on the need to improve the efficiency of professional development and intensify its social functions. The process of social and cultural activities in the field of education modernization should have human characteristics, flexibility, non-violent and "non-interfering" educational process that can be tailored to the needs and interests of its members (Sibgatova et al., 2015; Sakhieva et al., 2015; Gutman, 2013; García Padilla, 2021).

The framework of the article does not allow us to consider all available approaches to the analysis of the concept of "social activity". We mean a social activity as a person's integral quality realized in various types of self-activity, in the process of which the personality self-realization occurs, conditioned by objective and subjective factors. Such a definition, in our opinion, allows: first, to point out the need to consider social activity in two ways: as a personal social quality and as a specific characteristic of one's activity - self-activity, individual voluntary activity, as the unity of the personal and the public; and secondly, self-actualization and self-realization in some social spheres take place. In our article, we consider the student positive social activity - the person state and integrative property, expressed in one's readiness and ability to be a subject of social interaction in the process of obtaining higher education, to transform oneself and the environment for the benefit of society to achieve personal and socially oriented goals. We focus on this since foreign, and home sociologists especially note the fact when characterizing social and cultural activity process, we should not let go of the phenomenon of anticulture from the field of view - various types of subcultural movements, deviant behavior: criminal activity, offenses. Only when we consider the whole range of activities can we reproduce the complete picture of the social and cultural activity process (Loginova, 2006; Tough, 2007; Quevedo Sánchez, 2021).



## Literature Review

Today, the scientists' interest in the formation of students' social activity in the cultural activity process is associated with the high relevance of this problem in education globalization and internationalization. The state of instability, transitivity, the crisis of social development changes the forms and mechanisms of the social activity formation among young people, determines the study of its characteristics, factors, contradictions. The scientific literature has gathered theoretical foundations to determine the goals and solve the problems of students' involvement in the process of cultural and social activities (Yusof et al., 2020). The personality social activity is studied at different levels: its methodological aspect is being developed (for example Mashanov et al., 2014; Onufrieva et al., 2016); social aspect (for example, Popovych, 2016; Shamionov, 2018); psychological aspect (Romanova et al., 2018); pedagogical aspect (Maslennikova et al., 2010; Slastenin, 2004), the foreign experience of its development (Arnold & Ducate, 2006; García Padilla, 2021).

Particular importance is attached to the study of the students' free time organization. It is shown that the student's free time is needed to organize in the process of an educational activity to create conditions for self-realization and self-actualization of the student's personality. Fakhrutdinova et al. (2019) consider the student's free time as a kind of a certain integrative activity, allowing the person to actively show one's worth, build relationships with the surrounding world.

Problems of formation, development, and stimulation of youth activity, identification of features of the motivating needs of a socially active person, including in the process of cultural activity, were considered by sociologists, pedagogues, and psychologists during all periods of the Russian state existence. However, in different periods the ideas about the active personality formed in society differed significantly. In comparative pedagogical studies of different years, attempts were made, on the one hand, to analyze the content of the concept of social activity, on the other hand, to identify the motives which direct and realize a human activity in significant social activity (Quevedo Sánchez, 2021).

According to researchers of youth movements in the 90-ies XX century, the motivation of social activity was the desire of the individual to meet the needs for self-realization, in social intercourse, in communication, the desire for individuality and independence. From their point of view, social activity is the sphere of personal strengths and abilities application, enriching the life content, filling it with a new meaning.

The analysis of educational and psychological research shows the significant attention of scientists to the problems of personal, social, and occupational development of specialists during the university years and by determining the subject's personal destiny, identifying the benefits of society and itself. The study stage at the university is considered the central period in the formation of future competitive specialist social and professional activity. The beginning of "economic activity" is connected with this period, by which demographers understand the inclusion of a person in independent, productive activity, the beginning of a labor biography and the creation of their own family. The most important students' personal attainment of this age is the ability to draw up life plans, seek means for their implementation, and develop social and moral ideals that testify to self-awareness. In the current study, as a novel strategy, it was tried to present the recent problem of engaging, stimulating, and developing the social and cultural communication and activity of university students. The article also contains conceptual ideas and principles of the model construction for the student's social activity formation; generalized results of the students' survey on the motives for their participation in this type of activity are presented. The article deals with modern interpretations of the concepts of students in the social and cultural activity process in the university.

## Methods

The word "participation" literally means "gathering and gathering" for a specific purpose. There has been a lot of discussion about its idiomatic meaning, but in general, its main essence can be considered as conflict, activity, and influence. From a lexical point of view, the concept of partnership is different from cooperation, collaboration, and otherness. In some texts, however, these words are used interchangeably. The concept of participation has been interpreted several times. The variety of interpretations has led some to liken it to a bag of luck that some tend to take out of it whatever they want.

Experts and experts' perceptions of the concept of partnership are different but close to each other. Most definitions of partnership emphasize the issue of participation in decision-making as an essential element, but there is no consensus on other aspects. In sum, the definitions, nature, and content of unity participation are not taken into account. As many authors believe, it is impossible to provide a universal definition of participation. A review of the definitions of participation can help us to define the community. Due to the fact that there is no single theory that can explain the discussion of social participation and the factors affecting it, in the present study, a combined theoretical framework using independent research variables has been used to explain the relationship between these variables and social participation.

Learning is a social process, and learning activities are critical to reaching the stage of producing ideas and information. Teachers in schools are faced with three educational situations; in most cases, they choose one of them. In each class, teachers may organize lessons in such a way that students are forced to strive to win. They also allow students to learn as they wish, and in some cases, teachers organize students to learn in groups with the help of each other. But in most cases, it is seen that the student works alone in the classrooms. Each student is told to do your own thing. The advantage of student participatory methods is that students actively participate in teaching-learning activities and take responsibility for learning. During discussions with people in their group and with other groups, they learn how to express their thoughts, insights, and opinions to others, how to defend them, or how to politely accept the opinions of others. This method is very effective in strengthening students' communication skills.

## Results and Discussions

Today, the development of higher education depends on the following factors: the formation of a knowledge-based society; Advances in information communication; The process of globalization and integration from there, we can see significant changes in the role, goals and conditions of higher education, which operates as a social institution. The educational procedure should consider the psychological patterns related to the age of human development.

At the same time, it should be noted that the issues of the formation of the student's socio-professional activity using cultural activity in the conditions of a higher professional school have not been studied enough. Meanwhile, it is social and cultural activity as a purposeful process of creating conditions for the motivated choice of the substantive work by the individual. This substantive work is determined by the presented opportunities and interests, contributes to the formation of social activity that provides effectiveness in professional training (Shakirova, 2018; Hurtado et al., 2021; Quevedo Sánchez, 2021). It also helps to unite the student's collective, allows forming personal qualities such as initiative, consciousness, responsibility, etc.

The adopting of content, ideals, meanings, and value orientations occurs through various forms and methods of subject-forming social and cultural activities that ensure personal self-realization. The process of formation of social activity in this regard can be represented as the interaction of two trends: socialization and individualization. Suppose the first consists in the appropriation by an individual of his social essence. In that case, the second is in developing an individual way of life, thanks to which a person gets the opportunity to develop oneself according to own natural inclinations and social needs.

### *Structural model of the university student's social activity formation*

In the course of our research, the structural model of the university student's social activity formation in the process of cultural activity is built on the basis of integrity, completeness, coherence, interdependence, and mutual subordination of its components: goals, objectives, pedagogical conditions, principles, stages, levels and criteria for the social activity formation (Alavi *et al.*, 2005). One of the purposes of forming social activities is for students to become active leaders and organizers of activities. It is necessary to provide a number of conditions: provide a variety of activities at the university that provide an opportunity to choose the type of promotion. Maintain a certain level of teacher training and engagement based on the unity of goals and values. Student self-government and social activities are a special form of initiative, independent, responsible activities aimed at the solution of important questions of activity of students' youth, development of its social activity, support of social initiatives, and the formation of common cultural competencies (Terentyeva, 2017).

At the heart of the developed model lie the following conceptual ideas:

- Cultural activity should cover a wide range of forms that contribute to the social activity formation.
- For each student's year, cultural activity should be planned in such a way that it contributes to the motives for social activity formation.
- Every kind of cultural activity should solve the task of developing motives and real possibilities of a socially active person.
- Every kind of cultural activity should create prerequisites for the transfer of motives and real opportunities to other types of students' social and professional activities.

With the help of surveys, observations, and conversations, the qualitative characteristics of student social activity were revealed: the display of initiative, diligence, consciousness, responsibility in various types of social and cultural activities.

The process of forming student participation is carried out in a variety of important social and useful activities. We are very important for stimulating student participation: clubs, creative associations, studios, actors and business events, role-playing in various fields. The most basic structural model of promoting the student from the goal of educational activities to the subject of social activity is of educational importance that assumes the independent activity and experience of students in extracurricular time (Shakirova, 2018). This trend in higher education is achieved through extracurricular activities, student associations (volunteer centers, scientific associations), holding social events that encourage students to participate in important social activities. Participation in social projects (festivals, volunteer work) under the guidance of the Youth Committee; All projects implemented in the University Press Center are covered. In practice, students had the opportunity to participate in all administrative processes: assessing the situation and identifying problems. Resource evaluation; Set goals and tasks. Planning; Personnel affairs; Decision making; Monitoring and Evaluation Work Organization; Conclusion; Analysis (Holden, 2002).

*The Students Survey "Your motives for participating in social activity."*

The motives of students' participation in social and cultural activities according to the results of our research conducted in 2017-2019 have the following dates: to be socially useful - 19%, contribute to changes in society - 10%, self-realization - 26%, a sense of duty - 19%, interesting spending of leisure time - 15%, solve their own problems - 11%.

We can divide these motives into 3 groups:

- The desire to solve own problems of various natures; to determine own capabilities, interests, strengths and weaknesses.
- Satisfying the need to be needed.
- Pragmatic motives - career growth, prospects, and interesting leisure.

Research has shown that leisure and sports have become the most attractive destination for students, among other types of volunteering. This may be justified by a large number of world-class competitions and entertainment held in Kazan.

## Conclusions

As mentioned earlier, the current study presents the recent problem of engaging, stimulating, and developing university students' social and cultural communication and activity. The article also contains conceptual ideas and principles of the model construction for the student's social activity formation; generalized results of the students' survey on the motives for their participation in this type of activity are presented.

Thus, based on the conducted research, it can be concluded that the personality social activity is a dynamic property, which reflects social and professional orientation and expresses the readiness to be included in various types of life activities, including those related to the future profession. Further study of the problem of improving social activity can be continued in the direction of the formation of student social and professional activity in integrating educational social and cultural activities in a university in the context of the formation of a Common Education Space.

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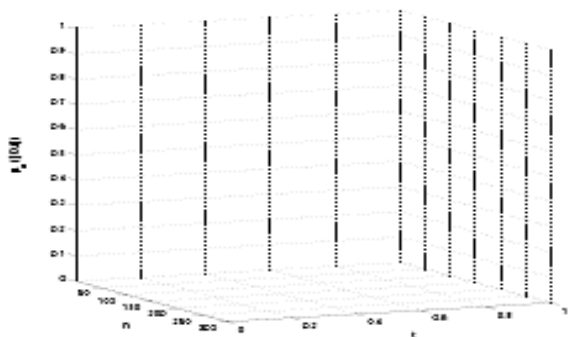
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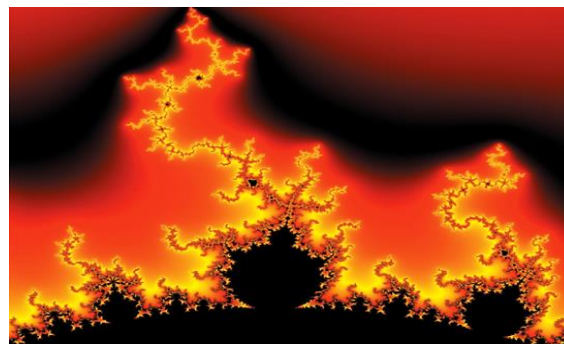
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