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DETERMINANTS OF EMPLOYEE INNOVATIVE BEHAVIOR: DO FOREIGN AND DOMESTIC COMPANIES IN RUSSIA DIFFER?

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DETERMINANTS OF EMPLOYEE INNOVATIVE BEHAVIOR: DO FOREIGN AND DOMESTIC COMPANIES IN RUSSIA DIFFER?[4, 5]

This paper investigates employees' individual innovative behavior. Three main stages of innovative process – new ideas generation, their promotion and implementation – are examined. 623 Russian employees of domestic and foreign companies operating in Russia were surveyed. The results show high significance of individual determinants (status and self-assessment of professional competence), favorable organizational environment (managerial incentives) and types of decision-making for all three stages of innovative process. The authors' main proposition that foreign companies demonstrate higher level of individual innovative activity was not confirmed but qualitative distinctions at all three stages of innovative process were revealed.

JEL Classification: M12; O18; O32.

Keywords: innovative process, employee innovative behavior, innovative organizational environment.

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Introduction

Continuous integration of Russian economy in global world forces Russian companies to be adaptive in order to address challenges from turbulent environment. Nowadays companies have to develop and adopt new practices, strengthen their positions by improving the existing processes and find new opportunities to survive and be efficient enough. This discourse is often used as a frame for arguments about crucial role of innovations in running a business both in Russia and on global markets.

Innovations as important component of social and economic development are considered to be powerful and necessary path for business. It is stated that Russian companies considerably fall behind foreign companies in relation to the rate of innovations implemented and efficiency of innovative actions [Gurkov 2011]. According to surveys, Russian mid-level managers, CEOs and even owners clearly understand the importance of innovations for their business success. At the same time, the overall rate of innovations in Russian companies is much lower than in their Western counterparts. It was shown that Russian managers' acknowledgement of the need for innovations does not correspond to actual incentives for innovative behavior of their subordinates and promotion of innovative activities of the companies in general. The investigation of reasons of this implies consideration of a wide range of technological, economic, social and humanitarian issues as well as the context of concrete business organizations. This paper is focused on social and humanitarian aspects of innovative behavior in Russian business organizations and examines employee innovative activities and practices of human resource management in companies operating in Russia.

We aim to reveal the characteristics of innovative (in)activity of Russian business organizations by identifying main predictors for employee individual innovative behavior. Can we say that Russian employees are passive in idea creation and promotion or their innovative behaviors, are limited by organizational context, e.g., by organizational culture or managerial incentives? What individual or organizational barriers occur on various stages of innovative process? One of the possible ways to answer these questions is to compare features of innovative process and the context of innovations in domestic and foreign companies operating in Russia. We propose that foreign companies in general have favorable conditions for individual innovations so this comparison provides the variety of context dimensions for the study. Therefore, analysis of differences in employees' innovative behavior on different stages and conditions of working environment makes it possible to find out main features of Russian employees' innovative activity and its main determinants.

Literature review

Definition of innovation

Innovation as a field of theoretical and empirical research is well developed and has long history. There are different definitions and theoretical models of innovation process. For our study we aim to outline specific features of innovations and innovative behavior and use several conceptualizations of the notion. Prigozhin [2003: 770] defines innovation as a targeted change that contributes implementation of new and relatively stable elements in different areas (such as organizations, establishments, society, etc.). These elements can represent something material or social, but surely has to be something new, not existed before. That is why a creative idea can be treated as an '*innovation*' after it is successfully implemented in practice and begins making profit.

The understanding of innovation mentioned above is formalized in the *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data* as "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" [OECD and Eurostat, 2005: 46]. Basing on this definition, four different types of innovation can be identified: product, process, organizational and marketing innovations.

Three levels of innovation research

The innovation activity is examined on three different levels. The first one is *macro approach* where innovativeness is the rate of innovative products in GNP or proportions of innovation companies in total investments and the like. Within this framework, main attention is focused on the interaction between organizations and institutions involved in innovative activities on national, regional and industry levels [Castellacci and Natera, 2013; Dosi et al., 1988].

One of the models describing innovations on the macro level is the 'triple-helix' model [Etzkowitz and Leydesdorff, 2000]. It considers the history of the country and traces the interconnected activity of three key institutes of innovative economic processes: universities, business and government. One of the studies has applied this model to find out the barriers to innovations in Russia [McCarthy et al., 2014].

First, the authors of this research point out the extending role of the government that creates wide opportunities to finance and support innovations in the country. However, these opportunities are combined with the lack of legitimacy of formal institutes and lack of trust in them

from the society. Universities and research centers, as the second component of the model, are viewed as strong environmental factors but at the same time, there are significant barriers in the legislation to use the intellectual property of universities and commercialize scientific findings. Concerning business, researchers point at positive experience of innovations in foreign companies operating in Russia, but also the lack of the tax legislation for innovations and difficulties in acquiring venture capital are strong restrictions for innovations.

Second, McCarthy and colleagues [2014] came to a conclusion that the use of 'triple-helix' model is not exhaustive without the considerations of cultural characteristics. The culture that is necessary for the development of new ideas is quite different from the culture needed for the realization and implementation of these ideas. As a result, the authors state that culture in Russia is more focused on development, but not on the application of new ideas; therefore, all initiatives offered by authorities were not supported by informal cultural and cognitive institutes (such as the culture of innovations and entrepreneurship) and became insufficient for development of innovations within the country. Russian researchers confirm these conclusions, as they have shown that one of the main reasons for low innovativeness is the absence of the favorable innovative climate promoting responsiveness to new ideas by organizations and society [Yasin and Lebedeva, 2009].

In our study, this macro level of analysis is presented by comparison of domestic and foreign companies operating in Russia. Some researches state that multinational companies operating in Russia fostered research and development activities and promote establishment of new technology initiatives [McCarthy et al., 2014]. Convergence of Russian and Western economic institutes and managerial practices can boost innovation activities and expansion of foreign capital in Russian markets and activities of branches of MNCs facilitate this convergence [Alexashin and Blenkinsopp, 2005; McCarthy, Puffer and Darda, 2010]. Moreover, foreign companies have positive experience of successful innovations implemented in Western environment so they are expected to replicate it in Russian context. So we can propose that foreign companies provide better environment for innovations as they are holders of another culture.

Second approach to studies on innovation processes is focused on company level. It is often treated as a rate of innovative suggestions implemented within the company or a number of innovative products developed. Empirical studies often distinguish companies depending on the type of innovative behavior: science-based, production intensive and supplier dominated [Pavitt, 1984]. Besides the content of innovations adopted in organizations, one of the most interesting questions is about the organizational environment for innovations and company's experience in

search and implementation of innovative ideas. Our study does not allow revealing this level thoroughly but it is possible to include determinants of organizational level like use of incentives for employees to encourage their initiatives or practices of involvement in decision-making process to facilitate generation and promotion of new ideas.

The third level reflects *individual innovative behavior* of employees. Main research questions are about employees' ability to be creative, motivation to initiatives and suggestions, participation in innovations implementation. Individual innovative activity is the core subject of our further analysis so main directions within this approach should be considered in details.

Individual innovative behavior

Innovative behavior is a part of organizational behavior and it is considered as proactive, based on full understanding of one's duties and responsibilities in the work-place and caused by intrinsic motives. Key feature of this mode of behavior is that it is voluntary, extra-role activity, and it is not prescribed so employees can't be directly enforced to be innovative.

There are several classifications of individual innovative behavior used in empirical studies. Drucker [1985] describes four steps for innovative activity: 1) to perceive the problems connected with work and create ideas on how to overcome them, 2) to search for the support from colleagues and/or from managers in order to implement the idea, 3) to create a prototype or a model, 4) to transform the prototype into norm or standard. Amabile and other representatives of 'Harvard school' don't make basic distinction between 'creative' and 'innovative' behavior of employee and give four basic stages of this process: 1) understanding of a problem, 2) preparation, 3) responsive generation of ideas, 4) validation and communication [Amabile, 1997]. It can be noticed that if 'creativity' and 'innovation' are treated as synonyms, promotion of idea and also participation in its implementation are not considered to be innovative behavior. The classification of stages of innovative behavior offered by representatives of the 'school of innovative behavior research' emphasizes the nature of interaction of the employee with his environment and includes four stages: 1) finding new opportunity, 2) generation of a new idea, 3) promotion of a new idea, 4) introduction of an innovative solution in organizational life [Janssen, 2004].

This model of stages for individual innovative activity offered by Janssen seems to be the most appropriate for the aims of our research. However, the empirical indicators for the first two stages – 'finding an opportunity' and 'generation of idea' – are hard to differentiate. For this reason, the model of innovative activity used within our further analysis includes three sequential stages: generation of idea, its promotion and implementation (e.g. Scott and Bruce offered the

similar process [Scott and Bruce, 1994]). Besides, the analysis of empirical studies allows proposing that different stages of individual innovative activity are determined by different groups of factors on individual, organizational and societal levels.

Generation of new ideas is the basis for any model of innovative behavior. It is often stimulated by certain difficulty or challenging situation. The basic criterion to define new idea as innovative is that the latter is aimed at the solution of specific problems of a department or a company in general.

At this stage, features of the relations between various participants, such as employee relationship with the head and colleagues, social and psychological characteristics of organizational culture become significant. According to Amabile, a creative employee must have passion, interest and commitment to what he/she is doing in a company. In this case, creative abilities consist of readiness for changes, tolerance to uncertainty, self-discipline and persistence. Therefore, developing favorable 'innovative climate' in the organization (in this climate a person feels free and supported by people around) is of a great importance [Amabile et al., 1996; Madjar, Oldham and Pratt, 2002]. Such a situation assumes existence of a set of conditions, e.g. positive emotional background, high level of credibility, mutual assistance, orientation on values of professional competence, providing greater autonomy to employees and opportunities to solve difficult and challenging tasks, decentralization of decision-making system. The complexity of practical implementation of these principles is obvious. The above-mentioned principles are essential component of 'management shift' – the philosophy of employment relations highly different from classical philosophy. Within this framework managers become a 'service staff' and they are obliged to create favorable conditions for employee creativity.

According to the results of empirical studies, the distinctive features of 'innovators' for the Russian companies' employees were the higher education, high perceived value of their profession, high confidence in own abilities and high demand on labor market [Klimova, Galitskaya and Galitsky, 2010]. This idea of individual resources for creativity describes variations in employee's readiness to generate any propositions about improvements on the work place.

At the first stage of innovative process, which is connected with emergence of new non-standard idea, the activity of employee is defined by his/her intrinsic motivation, value orientations concerning the role of employee in innovative process, professional motivation, individual and personal traits, such as education level and professional qualification, features of job position and its place in the company. There are also several less significant determinants such features as organizational climate, organizational environment, relations between employees and managers.

The second stage, *the promotion of an idea*, is characterized by decrease of significance of personal qualities, while the determinants of organizational and management level become more important: organizational climate and practices of 'external' motivation and incentives for innovative behavior. If employee has generated an idea for some improvement, he/she has to overcome the inertness of organizational practices and persuade the manager that the changes are necessary and beneficial for the department of the company. For employee it is a risk to take the responsibility for suggestion and often it is combined with the situation when initiator is obligated to work on implementation of the initiative. On the other side, it is an opportunity for employee to present him/her-self as competent and active and to get positive experience and success on his work place. Based on this, it becomes clear that organizational environment can facilitate the process of idea promotion and open the ways for desirable behavior in the case of idea about improvement. As it was stated above Russian environment is often perceived as unfavorable for idea promotion and further implementation so we can propose that employees who have some initiatives don't want to take any actions to promote them. Our proposition here is that foreign companies have better innovative environment and employees are encouraged to share their suggestions.

The implementation of an idea means that organizational practices are changed and new way of doing becomes stable and repetitive practice, i.e. the norm. This process involves different groups of participants and couldn't be limited to individual efforts of initiator, because other people should agree with new situation. Therefore, we propose that the success of the third stage of innovative process doesn't depend on individual and personal characteristics of the initiator of innovative process, and is entirely determined by factors of organizational and management level.

The present study implies the research of all three stages of innovation process and analysis of determinants that are significant on each of them. Main groups of determinants are structured according to three level of analysis: cultural, organizational and individual.

Methodology

Sample

Our analysis is based on data collected by from 623 professionals and mid-level and first-line managers surveyed in 17 private organizations in Moscow, Nizhny Novgorod and Rostov-

on-Don in 2012. The sample was formed in order to provide proportional representation of organizations from Moscow and regions; Russian domestic (Russian owners have full control or more than 50% of assets) and foreign-owned companies (US or German owners have full control or more than 50% of assets); companies from rather prestigious, high-salary industries (finance and insurance, IT and service sector) and not prestigious, relatively low-salary industries (such as manufacturing of food production). Thus, six subsamples were formed. Their structure and size are presented in *Table 1*. Besides, the companies chosen present the full range of sizes of business, from small companies (50-100 employees) to large companies (with more than 1000 employees).

Table 1. Sample *(number of respondents)*

Characteristics	**Location**		**Capital**		**Industry**		**Companies' size** (*number of employees*)		
Subsample names	Moscow	Regions	Domestic	Foreign	Prestigious	Non - prestigious	50 – 300	301 – 2500	2501 – 10000
Subsample size	323	300	322	301	382	241	180	201	242
Total	**623**		**623**		**623**		**623**		

Measurements

Innovative behavior

The main framework of three stages of innovation process was taken as the basis for measures development. *The generation of innovative ideas*, which is similar to 'creative behavior' presented by Amabile, was formed by one-item measure about the emergence of a new original idea connected with work at least once within the last year.

The indicator for the stage of *promotion of innovative idea* was strongly connected with the fact of whether the innovative idea was presented in the form of specific proposal, and whether it was 'voiced' and communicated within the organization.

Thus, the indicators of the two initial stages of innovative behavior were measures for the questions of 'real practices', accomplished facts. In order to capture the third stage (*implementation of innovative ideas*) we used indicators based on employee's evaluations and perceptions. The summary of items included in our questionnaire is given in *Table 2*.

Antecedents of innovative behavior

Variables that were supposed to predict the three stages of individual innovative behavior were classified into three groups.

Table 2. Indicators of individual innovative behavior

Questions and groups of indicators	Answer options, scales
1. Generation of innovative ideas	
Have you had a new / original / innovative idea connected with your work within last year? (for example, an idea related to updated technology, a control system, business process, developing or launching of a new product, etc.)	Binary (0 = "no", 1 = "yes")
2. Promotion of innovative ideas	
Have you suggested an improvement or took the initiative on the basis of this idea?	Binary (0 = "no", 1 = "yes")
3. Efficiency of innovative behavior, the extent of realization of innovative ideas	
To what extent each of your suggested ideas have been used or implemented? (6 types of suggestions were evaluated)	5 - point Likert scale (1 = "*the suggestion/idea has not even been listened*…" 5 = "*the suggestion / idea has been fully realized*") for each suggestion
Overall index of innovative behavior efficiency	Mean for evaluations of productivity for all suggestions made
Maximum possible Index value	5

The group of *individual and personal characteristics* was composed by such variables as gender, age, job position of the employee, education level, the compliance of the education to present profile of the work. Subjective evaluation of the level of the professional knowledge and skills was measured by one question *"How your knowledge and level of education (background/experience) correspond to your working tasks, to your professional and career growth?"* (variable: *Self-evaluation of competence*, 5-point scale: 1 "I constantly experience serious difficulties and have to learn a lot" … 5 "the level of my knowledge is higher, than it is needed on my working place/position"). Perceived personal role of employee and his manager in innovative process was measured by the statement *"Innovations are good, but managers, not ordinary employees, have to be engaged in them"* (variable: *Perception of role in innovations*, 5-point scale: 1 "strongly disagree" … 5 "strongly agree"). Then, a question about employees' perception of their roles and significance for the organization was also included in this group: "*How do you evaluate your role in the company": "a small screw which is easy to replace", "just an employee hired for job", "a partner who can influence the success of business", "a unique employee: I can do the job that nobody can"* (variable: *Perception of role in a company*). This item reflects intrinsic labor motivation, level of self-esteem and self-efficiency taken from studies of individual innovative behavior. Three items of intentions to stay on the current working place were also

used to measure organizational commitment: "*I intend to continue working in the organization within the next year / within the next 3-5 years / till the end of my working life*" (variable: *Intention to stay for one year / 3-5 years / till end of work*, 5-point scale: 1 "definitely no" … 5 "definitely yes").

Indicators that describe organizational climate and organizational culture were named as group of *organizational and management level*. This group of predictors of innovative activity consisted of indicators of the 'decision-making mode' in department and in organization in general. The respondents were asked to define the style of decision-making to one of four types: individual decision-making by the head of the department; decision-making involving 'narrow' circle of the persons which are quite close to the head of the department; decision-making by the head of the department with taking into account opinions given by subordinates; extensive discussion and collective nature of making the decisions (variable: *Decision-making mode*, values: individual decision-making, decision-making involving 'narrow' circle, decision-making with taking into account opinions of subordinates, extensive discussion). Thus, these items give evaluation of the nature of communication processes in the organizations, the 'power distance' between heads and subordinates. These determinants were often named to be significant for innovation activity and define the extent to which organizational environment is favorable for innovative behavior of employees.

The instrument used has one limitation in part of evaluation of motives and consequences of innovative behavior and support of others' initiatives. These indicators can't be used as predictors of innovative activity as only those employees, who have given an affirmative answer about the earlier innovative behavior, were asked about it. Therefore, in our further analysis the variables that reflect intrinsic motivation or 'external' incentives for innovative behavior play descriptive role only. Binary variable about domestic or foreign ownership of the employer allows assessing the significance of determinants of the macro level.

Analysis and results

Stage of Generation of new ideas

Table 3 gives descriptive features of 'creative' employees who reported that they had some new ideas concerning their work. It is important to mention that higher education and compliance of education to the work profile don't differentiate workers significantly. However, the second higher education or/and MBA sharply increase the probability to be included in 'creative'

group. It also emphasizes the importance of internal motivation and readiness to make extra efforts for the professional development as prerequisites of generating innovative ideas.

Table 3. Characteristics of respondents who have generated new ideas connected with work within the last year and those who had not, %%

Groups of indicators	Sample parameters	Variable	'creative' employees (N=217)		'non-creative' employees (N=406)	
Individual and personal	Gender***	Female	29		71	
		Male	46		54	
	Education level***	Professional secondary education	31		69	
		Higher education (including unfinished)	36		64	
		Second higher education and/or MBA	63		37	
	Compliance of the education to a present profile of the work	Doesn't correspond	34		66	
		Corresponds	35		65	
	Job position***	Professionals	27		73	
		Managers	51		49	
	Perception of role in a company ***	"a small screw which is easy to replace"	27		73	
		"just an employee hired for a job "	24		76	
		"a partner who can influence the success of business "	44		56	
		"a unique employee: I can do the job that nobody can "	55		45	
Organizational and managerial	Decision-making mode		*a*	*b***	*a*	*b***
		individual decision-making	26	25	74	75
		decision-making involving 'narrow' circle	38	39	62	61
		decision-making with taking into account opinions of subordinates	37	45	63	55
		extensive discussion	38	31	62	69
Cultural and institutional	Type of the capital ownership	Domestic	35		65	
		Foreign	35		65	

Significance level * p<0.05; **p< 0.01; ***p< 0.001
a. In a division b. In a company

The results show that authoritative and individual decision-making by the head of department create the unfavorable 'background' for emergence of innovative ideas both in the department and in the organization in general. It is quite representative that the distribution of the

shares of ‘creative’ employees on four ‘political regimes’ within an organization has nonlinear character – the lowest shares have appeared at extreme points - in rigidly authoritative and in the rather ‘democratic’ organizations. The highest share of ‘creative’ workers has appeared in those companies where a large number of employees played a ‘consultative’ role, while decision-making is guided by the head.

As for the factor of sociocultural level which is associated with the type of the ownership, at the stage of generation, the differences between domestic and foreign companies seems to be insignificant. This fact confirms our assumption that individual and personal factors play leading role at the first stage of innovative process.

Table 4 presents comparisons of ‘creative’ employees and those who had no ideas, the significant differences are marked. ‘Creative’ employees are slightly less committed in comparison with those who had no new ideas, they have lower rate of tenure and tend to have less long-term plans of employment within the company. This finding also confirms the idea that in general creative employees are more independent, mobile and committed to a profession [Klimova, Galitskaya and Galitsky, 2010].

Table 4. Means among ‘creative’ and ‘non – creative’ employees, *N=623*

Variables	**‘creative’ employees (N=217)**	**‘non-creative’ employees (N=406)**
Age, years	34,7	33,8
Professional experience, years	7,3	7,2
Tenure, years*	6,5	4,9
Self-evaluation of competence ***	3,3	3,7
Perception of role in innovations ***	3,0	2,5
Intention to stay for one year	4,0	4,2
Intention to stay for 3-5 years	3,8	3,6
Intention to stay until termination of work *	3,1	2,9

Significance level * p<0.05; **p< 0.01; ***p< 0.001

To make the final conclusion about the most significant factors for the generation of innovative ideas by employees the regression analysis was made. Due to a large number of potential predictors the model of logistic regression was build using forward stepwise selection: FSTEP (LR) method of the LOGISTIC procedure in IBM SPSS Regression module. This approach avoided the problems of a multicollinearity and emergence of unstable estimations in a big set of predictors.

Thus, three models presented in *Table 5* (one for the whole sample and two separately for domestic and foreign companies) have only those predictors which were found to be significant for generation of innovative ideas by employees. For each predictor in the final model the coefficient of logistic regression (Log) is reported. For continuous predictor it corresponds to a logarithm of change in odds ratio (likelihood of the modeling outcome) when increasing predictor of 1 unit. For categorical predictors the coefficient for category corresponds to a logarithm of change in odds ratio upon the presence of this category compared to absence of it, other things being equal.

Table 5. Regression models for emergence of the new idea connected with work as a dependent variable, *Log-coefficients*

Variables	Sample (N=623)	Employees of the domestic companies (N=322)	Employees of the foreign companies (N=301)
Gender	-,656**	-,535*	-,670*
Second higher education or/and MBA	,897**	–	1,079**
Education corresponds to current work profile	–	–	-1,412*
Self-evaluation of competence	,547***	,379*	,896***
Tenure, years	–	–	-,150**
Position (1 = "professionals", 2 = "manager")	,681**	,671*	,847**
Perception of role in a company " just an employee hired for a job"	-,601**	-,642*	–
Intention to stay for one year	–	,496*	–
Intention to stay for 3-5 years	–	-,512**	–
Perception of role in innovations***	-,256	-,436**	–
Decision-making mode: individual decision-making	–	-,769*	–
Decision-making mode: decision-making involving 'narrow' circle	,440*	–	–
Decision-making mode: decision-making with taking into account opinions of subordinates	,873**	1,087*	–
Decision-making mode: extensive discussion	–	-,836*	–
Pseudo-R2 Nagelkerke	**,238**	**,297**	**,295**

Significance level * p<0.05; **p< 0.01; ***p< 0.001
The symbol '–'means that a predictor is not significant in this model

We can conclude that male gender, senior position and high level of appreciation of the professional knowledge and competences are the 'universal' predictors of having innovative ideas in both domestic and foreign companies. At the same time, having the same rate of 'creative' employees in the domestic and foreign companies (a little more than a third of respondents) antecedents of emergence of new ideas differ significantly. 'Creativity' of employees in domestic

companies is strongly attached to the conditions of an organizational environment – the perception of the role within the company, the idea about who is responsible for innovations and also the perception of the 'political' mode in the organization.

As demonstrated in the tables above, both highly authoritative and highly democratic styles of decision making are negatively connected with the probability of emergence of new ideas. However, the existence of 'deliberative vote' in situation when the final decision remains the responsibility of the manager creates a favorable climate for generation of innovative ideas by employees.

The regression model for foreign companies presents significantly different set of 'creativity' conditions. It can be noticed, that none of the organizational environmental factors became significant, and the emergence of new ideas is caused exclusively by internal motives and professional characteristics of the initiator of innovations (senior position, high level of appreciation of the professional knowledge and competences, second higher education, and also high mobility and adaptability which are expressed in low tenure and formal discrepancy of the education to the present work profile).

Thus, our assumption that at the first stage of innovative process the innovative behavior is defined mostly by intrinsic professional motivation and by individual and personal qualities is fully confirmed on the sample of employees of foreign capital companies. Unlike them, innovative behavior of employees from domestic companies seems to be more 'externally caused' at the initial stage of innovative process.

Stage of Promotion of innovative idea

Data given in *Tables 6* and *7* present a 'social portrait' of employees who made some suggestions basing on their new ideas.

Unlike the first stage of innovative process, at the 'promotion' stage there are no significant differences between 'innovators' and 'not – innovators' in gender, education level, perception of decision-making and the role in innovative process, and organizational commitment. It is possible to say that the employees who took the initiative can be described as: managers, senior employees with long professional experience, embedded in the organization and highly appreciating the professional competence of their own.

Thus, we can assume that organizational climate is less significant for the promotion of innovative ideas rather than confidence of employees that their ideas are going to be 'listened'.

This confidence is supported with both formally higher (managerial) status, and an appreciation of the professional competence.

Table 6. Characteristics of employees who took an initiative on the basis of innovative idea and those who did not, %% *(entry criterion: having an innovative idea connected with work within a year, N = 217)*

Groups of indicators	Sample parameters	Variables	Employees who took an initiative (N=171)	Employees who didn't take an initiative (N=46)
Individual and personal	Position**	Professionals	72	28
		Managers	86	14
	Compliance of the education to a present profile of the work	Doesn't correspond	85	15
		Corresponds	78	22
Cultural and institutional	Type of the capital ownership	Domestic	78	22
		Foreign	80	20

Significance level * p<0.05; **p< 0.01; ***p< 0.001

Table 7. Means among employees who took an initiative on the basis of innovative idea and those who did not, *N = 217*

Variables	Employees who took an initiative (N=171)	Employees who didn't take an initiative (N=46)
Age, years*	30,9	34,6
Professional experience, years **	4,9	7,8
Tenure, years	3,1	5,4
Self-evaluation of competence ***	3,3	3,8

Significance level * p<0.05; **p< 0.01; ***p< 0.001

The regression models given in *Table 8* present the most significant conditions for innovative suggestions based on new ideas. As well as for the previous stage, we used the procedure of step-by-step regression analysis FSTEP (LR) automatically selecting only significant predictors for the greatest possible R^2 value. Three models contain only those predictors which were significant for making suggestions with innovative ideas.

The results confirm our idea that subjective self-evaluation of employee professional competence is foreground for the promotion of innovative ideas. This factor is the only significant one, suppressing all other factors for the employees from the foreign companies. The compliance of the education to a current work profile, tenure and feeling of 'partnership' are also significant for innovative behavior for the domestic companies' employees. At the same time the readiness

of ‘creative’ employees from domestic companies to perform with innovations decreases if the decision-making happens ‘in a narrow circle’ within the company.

Table 8. Regression models for the fact of the promotion of innovative ideas as dependent variable, *Log-coefficients*

Variables	All employees with innovative ideas (N=217)	Employees of the domestic companies (N=111)	Employees of the foreign companies (N=106)
Self-evaluation of competence	,927***	1,151**	,955**
Education corresponds to current work profile	–	2,222**	–
Professional experience, years **	–	,252**	–
Tenure, years	,114*	–	–
Perception of role in a company "a partner who can influence the success of business"	1,194**	2,156**	–
Decision-making mode: decision-making involving ‘narrow’ circle	–	-1,848*	–
Pseudo -R^2 Nagelkerke	**,223**	**,462**	**,131**

Significance level * p<0.05; **p< 0.01; ***p< 0.001
The symbol ‘–‘means that a predictor is not significant in this model

Table 9. Factor analysis results and frequencies of answers to the question on motivation of taking the initiative *(among those who reported taking the initiative, N = 171)*

Factor loadings of variables, *explained variation - 67%*				**Share of the respondents by the type of a company, % on a column**	
“What have induced you to take the initiative in these cases?"	Professional	Social and prestigious	rationalistic (rational) and utilitarian	Domestic	Foreign
“I am interested in the process of promotion / introduction of innovations itself”	,823			36	44
“By participating in development of innovations, I prove the level of my qualification and demonstrate professional skills to the people around me”	,763			36	24
“I think my knowledge and abilities can help and be useful to solve some of the business problems”	,691			84	85
“It promotes the respect for me from my colleagues”		,852		31	19
“It promotes the respect, recognition, favorable attitude towards me from my immediate superior”		,793		36	17
“In our company such kind of activity is rewarded: bonuses, pay rise etc.”			,823	7	15

"In our company such kind of activity is appreciated: the active position in innovative process promotes the career growth"			,688	4	14

As well as at the stage of emergence of innovative ideas, differences in the rates of 'innovators' among employees of domestic and foreign companies are not found. However, *Table 9* which presents the structure of motives inducing employees to perform with an initiative demonstrates various degrees of expressiveness of these motives among the staff of domestic and foreign companies.

According to the factor analysis results, there is an absolute prevalence of intrinsic professional motivation of innovative behavior. Two compared groups of respondents differ significantly in the structure of 'the second order' motivation. Among employees from the domestic companies 'social and prestigious' motives (respect, recognition, favorable attitude from immediate superior) are much stronger than the other ones, while employees from foreign companies mention 2-3 times more often utilitarian and rationalistic motives. It is important to notice that utilitarian and rationalistic motives hold the last places in both groups; in this case the difference is that the foreign companies, judging by the answers of respondents, use at least the minimum measures of direct stimulation of innovative behavior while the domestic companies don't practice it at all.

Stage of Realization of innovative ideas

Results from *Table 10* give an idea of employees' innovative activity within concrete spheres of their working life and extent of implementation of each type of ideas. There are no significant differences between domestic and foreign companies in the realization degree of different types of ideas.

Table 10. Distribution of the answers about types of ideas and average rate of implementation of these ideas *(among those who took an initiative on the basis of a new idea) (N = 171)*

"What type of innovative ideas have you promoted within the last year?"	**Rate of those who came up with an innovative suggestion,** *%*	**Assessment of the implementation degree** *(5-point scale)*
"Improvement of technologies in my own work"	73	3,82
"Improvement of technologies in work of the department or the company"	68	3,76
"Idea of production of a new product / service, of development of a new brand, etc."	42	3,23
"Ideas of improvement of system of training, retraining, professional development of employees"	37	3,09
"Ideas of improvement of forms and mechanisms of compensation in the company"	37	2,69

"Ideas of improvement of work of social services, labor unions, etc."	28	2,66

Tables 11 and *12* present means of a cumulative Index of implementation of innovative ideas for the groups of respondents and correlation coefficients of the Index with the variables measured in ordinal and absolute scales.

The results presented in *Tables 11* and *12* allow assuming that innovative ideas from the employees on managerial positions and highly evaluating the level of their professional competence are the most productive at the realization stage. As well as for the two previous stages, there are no significant differences between employees from domestic and foreign companies neither in a cumulative Index of implementation of innovative ideas, nor in implementation degree of six different idea types.

Table 11. Means of cumulative Index of implementation of innovative ideas for the groups of respondents *(among those who took an initiative on the basis of a new idea), N = 171*

Groups of indicators	**Sample parameters**	**Variables**	**Assessment of the realization degree (5-point scale)**	
Individual and personal	Position**	Professionals	3,23	
		Managers	3,85	
	Compliance of the education to a present profile of the work	Doesn't correspond	3,75	
		Corresponds	3,56	
Organizational and managerial	Decision-making mode		*In a division**	*In a company**
		individual decision-making	3,09	3,21
		decision-making involving 'narrow' circle	3,74	3,82
		decision-making with taking into account opinions of subordinates	3,67	3,34
		extensive discussion	3,46	3,55
	Existence of direct incentives of innovative behavior	In our company such kind of activity is recognized: the active position in innovative process promotes the career growth *	Yes	No
			3,52	4,06
		In our company such kind of activity is rewarded: bonuses, pay rise etc.***	3,46	4,23
Cultural and institutional	Type of the capital ownership	Domestic	3,52	
		Foreign	3,62	

Significance level * p<0.05;

It is important to draw attention to the variable that reflects agreement with the leading role of managers in innovative process: while the creativity of employees (the first stage of

innovative process) rises with disagreement with this statement, the implementation rate (the final stage) has significant positive correlation with support of leading role of manager and detachment of ordinary employees. Probably it can be explained by the fact that the 'final' stage is generally reached by managers who recognize and take personal responsibility for innovative process.

Moreover, direct incentives for innovative behavior in the form of rewards and career promotion considerably increases the effectiveness of employees' innovative activity. This finding emphasizes the necessity in complex policy of innovations support in such organizations, while just a set of occasional measures don't provide favorable environment for individual initiatives.

Table 12. Correlation coefficients of the Index of implementation of innovative ideas *(among those who took an initiative on the basis of a new idea), N = 171*

Self-evaluation of competence	,246**
Perception of role in innovations	,165*
The number of groups of innovative ideas an employee took an initiative	-,325***

Significance level * p<0.05; **p< 0.01; ***p< 0.001

The regression models presented in *Table 13* show the most important conditions of high implementation degree of individual innovative ideas. As well as for the stages of generation and promotion of ideas, the Table gives only significant variables as predictors for Index of implementation of innovative ideas.

Both for domestic and foreign companies, high values of the Index of implementation of innovative ideas are predicted by the focused character of innovative ideas and direct incentives for innovative behavior in the form of material rewards and career promotion. The peculiarity of domestic companies is that the implementation of employees' ideas depends also on non-material incentives (official recognition). On the contrary, informal appreciation from colleagues negatively relates to initiatives implementation. Besides, in domestic companies higher effectiveness of initiatives is obtained from employees with higher education and relatively low tenure. In foreign companies high degree of innovative ideas realization is predicted by senior position and high self-assessment of professional competence of employees making suggestions.

Thus, our proposition that the success of the third stage of innovative process (implementation of innovative ideas) doesn't depend on individual and personal characteristics of the initiator of innovative process wasn't confirmed. Characteristics of organizational and management level (direct stimulation of innovative activity of employees) become really

important, however, the affiliation factor about who makes the suggestion still is quite significant at this stage too.

Table 13. Regression models, the Index of implementation of innovative ideas as a dependent variable, *the standardized β-coefficients*

Variables	All who came up with an innovative suggestion (N=171)	Employees of the domestic companies (N=86)	Employees of the foreign companies (N=85)
Position (1 = «professionals», 2 = «manager»)	,182*	–	,227*
Age, years	,208*	,380**	–
Higher education	–	,252**	–
Self-evaluation of competence	–	–	,272**
Tenure, years	-,309**	-,687***	–
Decision-making mode: decision-making involving 'narrow' circle	,133*	–	–
The number of groups of innovative ideas an employee took an initiative	-,266***	-,561****	-,294**
In the company such kind of activity is recognized: the active position in innovative process promotes the career growth	,149*	,158*	,217*
"I got a reward material reward for idea proposed"	,223**	,220**	,182*
"I got an official recognition for the innovative ideas from my immediate superior"	–	,295***	–
"I got an informal appreciation for the innovative ideas from my colleagues"	–	-,236**	–
The standardized R^2	**,309*** **	**,593*** **	**,278*** **

Significance level * p<0.05; **p< 0.01; ***p< 0.001
The symbol '–'means that a predictor is not significant in this model

Discussion

Basing on the analysis, we can draw the following conclusions. In general, the results don't confirm the proposition that throughout all three sequential stages of individual innovative activity (from generation of innovative idea, then its promotion and implementation) the importance of the individual and personal determinants is decreasing while factors of organizational level become more significant. It was found that higher innovative activity throughout all three stages is typical for employees with higher status within the organization and with higher self-assessment of professional competence. The importance of this group of factors is the highest at the implementation stage. It probably can be explained by considerable risks for 'voicing out'. Our data correspond with the results of other studies about the crucial

importance of intrinsic professional motivation of employees as the initiators of innovations. This study doesn't reveal the sources of high self-assessment and intrinsic motivation of innovative employees. It also ignores the regularity of innovative activity as only one fact of idea generation and its promotion was studied without considering how often employees take their initiatives.

The question for further research is about methodological aspect of how 'qualification' characteristics of respondents can be captured within the standardized survey with high reliability. It was found that the strong differentiating factor in the context of innovative activity is the existence of second higher education or/and MBA. This emphasizes the value for the organizations of the employees who have continued their education after higher education and are studying during the entire professional career. Compliance of the education to a current profile of the work was significant only once – at the stage of promotion of innovative ideas by employees in domestic companies. In other cases this indicator was insignificant or even negatively connected with emergence of innovative ideas in foreign companies. There is a point for discussion: whether the 'compliance to a work profile' is more demanded in the conditions of sustainable development of the organizations while it loses its value when ability to acquire knowledge and necessary skills quickly becomes crucial so employees' mobility, adaptability, learning abilities are required. The contradiction between high level of general education and mismatch of professional education and current position of Russian employees has been mentioned earlier [e.g. Efendiev, Balabanova and Gogoleva, 2010].

Except the priority of employee intrinsic motivation, direct and indirect, formal and informal managerial incentives of innovative behavior are very important at all three stages. According to the 'Harvard school' ideas, favorable organizational environment provides the 'synergy effect' which is essential for individual innovative behavior of employees.

It was outlined that the two types of decision-making are more favorable for innovation process: when the decisions are made in a 'narrow' circle or by taking into account the subordinates' opinions. In all cases the modes of fully authoritative and collective democratic decision-making made the discouraging impact on emergence, promotion and realization of new ideas. In our opinion, in both cases it is explained by the employee's sense of 'depersonalization' within the organization. 'Depersonalization' is incompatible with employee high self-assessment that is necessary for individual innovative behavior. Besides this, low value of 'democratic' forms of decision-making can be explained by the dominating type of political consciousness of Russian employees [Efendiev and Balabanova, 2012]. Typically, employees prefer situations

when the decisive word and responsibility in decision-making is taken by their superiors. Being accepted to a narrow in-group of their bosses is more valuable than having wide access to participation in decision-making in Russian organizations.

It also should be emphasized that the decision-making mode at the level of the whole company is more significant than at the department level. It seems evident that everyday interactions with immediate superior make stronger impact on employee's values and behavior. However, the results show that employees' perceptions about the situation within the company is more influential determinant which causes employee understandings about their role in organizations, possible risks and rewards connected with innovative behavior. Besides, there is also ‘cascade effect’ when top management practices and styles ‘come down’ to lower levels of organizational hierarchies.

At the implementation stage of innovative ideas, productivity of employee's initiatives increases considerably when there are direct managerial incentives in the form of tangible rewards and career promotions. In addition to the individual and organizational factors, it was founded that characteristics of innovative initiatives also influence the realization. Accurately focused and specified suggestions oriented on ‘processes’ are the most effective from the point of view of their practical implementation. Unlike them, ‘organizational’ innovative ideas which concern a wide range of questions less frequently reach the realization stage.

One of our propositions was that foreign companies which provide ‘Western culture’ favorable for the innovations demonstrate higher level of individual innovative activity of employees. This proposition wasn't confirmed from the point of the rate of ‘creative’ employees, as the rates of those who took an initiative on the basis of new idea and a degree of implementation of these ideas were similar in companies with domestic and foreign capital. ‘Nationality’ of capital was insignificant for innovative activity at all three stages. Nevertheless, the analysis of two subsamples revealed substantial distinctions in the characteristics of all three stages of innovative process in domestic and foreign companies.

Innovative activity of domestic companies' employees is much more determined by external factors – organizational environment, perception of employee role in organization, and decision-making modes – than in foreign companies. The ‘social and prestigious’ motivation of innovative activity connected with existence of indirect, informal rewards in the form of favorable attitude of the management and respect from the colleagues is clearly defined for domestic companies.

As for foreign companies' employees, we can see that emergence, promotion and implementation of innovative ideas are mainly intrinsically-driven. The main border distinguishing ‘innovators’ from ‘not – innovators’ in foreign companies is personal and professional qualities of respondents. In these companies intrinsic professional and ‘rationalistic and utilitarian’ motives of innovative activity are brightly expressed. In our opinion, the strength of the professional motives is explained by higher value of meritocratic orientations, when elements of organizational culture are more focused on the competition and it is also embodied in employment system and promotion criteria. Development of the second group of ‘rationalistic and utilitarian’ motives is connected primarily with the existence of system of direct incentives for employee innovative behavior in the form of direct, ‘tangible’ rewards and career growth for successful innovative ideas.

Still there is an open question about why there are no ‘quantitative’ distinctions in rates of ‘innovators’ and extent of initiatives implementation between domestic and foreign companies while the foreign companies are more aimed at stimulation of innovative activity. Firstly, it is important to remember that the rate of those who have pointed the existence of direct stimulation of innovations is anyway very small. Secondly, the fact that ‘external’ motivation is not capable to create motivation of innovative behavior ’from scratch’ emphasizes the statements of foreign researchers about the priority importance of intrinsic motives of innovative activity.

Conclusion

The research question of the paper was about key determinants of generation of innovations and their implementation. The theoretical foundation for the study was developed taking into consideration three stages of individual innovation behavior and three groups of possible determinants: personal traits, organizational features and culture.

Several authors have found the gap between positive attitudes of Russian managers toward innovations and low rate of innovations in Russian companies. The current study provides some explanation of this situation. The results show that significant role in innovation process is played by organizational environment; and in general there is low level of managerial practices that encourage employee activity in generating and suggesting initiatives. It seems that managers don’t expect this activity from employees. It was stated that level of mutual trust in Russian society is a strong obstacle for innovations on all levels. The same problem exists within organizations and to build the social environment beneficial for innovations require great efforts and systematic approach.

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