

INNOVATION STRATEGIES OF YOUNG RUSSIAN EMPLOYEES OF ENTERPRISES FROM INDUSTRIAL REGIONS: ACTIVITY, MOTIVATION AND OBSTACLES TO INNOVATION

Yana Didkovskaya

Abstract

The implementation of innovations in production requires an appropriate quality of human capital: to what extent do managers, engineers and workers have sufficient innovative potential to effectively implement, master and even offer innovations?

To answer this question, we conducted a questionnaire survey of large industrial enterprises employees (n=1050). As long as young people are the most promising resource for innovative development, we have limited the object of study to workers under the age of 30. Respondents were divided into three groups according to their position in the enterprise: managers, engineers, skilled workers.

According to the results, skilled workers are almost not included in the process of implementation and development of innovations. As for engineers, they are little involved in the discussion of decisions on the implementation of innovations, they not participate in the development of new projects. Primarily, this remains the prerogative of managers.

We identified two types of strategies practiced by young employees of enterprises - the “adaptation strategy” (readiness to master new technologies and improve their skills) and “creative strategy” (readiness to offer and develop their projects). The creative type of strategy is found mainly among managers, the adaptation strategy is found among all categories of employees.

Key words: innovation strategies, young employees, innovation activity, industrial region

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Introduction

Today the need to expand the innovative or intellectual economy cluster is one of the main challenges for modernizing countries including Russia (Iscandarov, Mansurova, & Rudneva, 2018). According to the theory of economic development suggested by Joseph Schumpeter, human capital is the main driver for the innovative economy (Schumpeter, 1947). In other words, to implement innovations in production cycle systematically, we have to improve the quality of human capital.

However, according to a number of recent studies “most Russian employers are not interested in the improvement of their personal human capital, that’s why Russian economy moving the extensive way of development, without technological breakthrough...” (Tikhonova & Karavay, 2018).

When an employer ignores the problems of human capital improvement (its educational, intellectual, qualification components) the employees can become passive. So, in this article we raise the question: to what extent workers, engineers, managers and the head of Russian enterprises are ready and willing to effectively implement, master and, especially, offer innovations?

This question affects the problems of human capital in its micro-paradigm interpretation and the problem of formation and development of employees innovative potential in particular.

For the first time the analysis of human capital at the micro level, or at the individual and corporate level, was undertaken by the economist G. Becker who defined it as a set of knowledge, skills and abilities of the employee (Becker, 1962). A leading role in human capital Becker assigned to special education (Becker, 2011). Today, the broad interpretation of human capital includes various components related to science, innovation, and innovation potential (Denison, 1980); (Mincer, 1997); (Jones, Mincer, & Sarbanes, 1990)

Innovation potential and the problems of innovation and the social aspects of innovation are actively studied not only by economists and demographers but also within sociological science. Scholars consider social factors that affect the innovative activity of employees and innovativeness of enterprises. Thus, I. Dezhina and G. Klyucharev believe that today, while the activity with an intellectual capacity still developing, one of such factors is the continuous training of a specialist conducted in different forms like refresher training, on-the-job training, information and counseling services, self-education, forming creative environments for innovative creativity (Dezhina & Kliucharev, 2018). A. Franceschi and M.

Mariani studied the impact of labor flexibility on the company's innovation processes in the array of Italian industrial enterprises and found that temporary employment does not contribute to the innovative activity of employees (Franceschi & Mariani, 2016). C. Corradini, G. Battisti and P. Demirel examined British highly innovative companies and founded that there are important differences in the nature of the innovative search between large and small companies, with small firms benefiting from the internal recombination of knowledge accumulated in the previous stage, as opposed to large companies achieving high rates of innovation, mainly due to the scale of their innovative efforts (Corradini, Battisti, & Demirel, 2016).

N. Davidson, O. Mariev and A. Pushkarev focused on regional factors that contribute to the development of Russian enterprises innovative activity and showed in their study that the most important external factors of innovative activity of Russian companies are the state support of business and regions, economic situation of regions, institutional factors of the environment and the quality of human capital. Such conditions as political stability, tax policy and investment risks were insignificant (Davidson, Mariev, & Pushkarev, 2018).

One of the key issues, which, unfortunately, still little considered in the scientific literature – how among the various social and professional groups formed the "innovative consciousness", that is, whether there is at the level of consciousness and behavior of employees readiness to adopt, implement and create innovations. In our paper, we tried to find out how employees of Russian industrial enterprises feel the need for the implementation and use of innovations in active participation in their development in their current professional practice. In the focus of our study is the innovative potential of the most promising young employees of enterprises, by which we mean a set of abilities and characteristics, including motivational, allowing them to perceive, implement and create innovations.

1 Data and method

The paper is based on the results of a study of employees of large industrial enterprises in 6 industrial regions of Russia (N=1050). We believe that young people are the most promising resource for innovative development, that is why we have limited the object of study to young workers under the age of 30.

We used the questionnaire survey method in the study and the target quota sample, where quota signs were the region, the employment industry and the position of the employee at the enterprise.

Respondents were divided into three groups according to their position at the enterprise: managers, engineers, skilled workers. Our hypothesis suggested that employees with different job status in the enterprise adhere to different behavioral strategies associated with innovation in the workplace.

2 Results

First of all, we studied various types of employees activity that are directly or indirectly related to the implementation of innovative potential. According to the results, the majority of young employees of enterprises were actively engaged in those activities that are aimed at the development of ready-made innovations. It is typical for all categories of workers, regardless of their status in the enterprise (Tab. 1).

Tab. 1: Types of activity of young employees of enterprises related to their innovative behavior, %

Mark from the activities listed below those in which You have been engaged in the last 3 years	Position		
	Manager	Specialist	Skilled worker
Offered the project (idea) on the solution of a production problem to the management	44,2	20,7	9,2
Raised the level of education in the educational organization	39,4	39,6	37,8
Decided or participated in the decision to introduce innovations in the production process	33,7	14,3	10,1
Engaged in self-education on own or related profession	65,4	58,5	48,4
Engaged in professional training	43,3	40,7	30,0
Mastered new technology / new equipment / new methods of work	47,1	33,4	32,3
Created or improved devices, technical means for personal consumption	21,2	14,3	11,5
Created software products	8,7	8,1	1,4
Developed a business plan and offered it for consideration in the bank	4,8	2,8	1,4
Made presentations at conferences or seminars	21,2	14,3	5,1
Participated in the development of a creative project related to professional activities	32,7	15,8	5,5
Registered patents for inventions	8,7	3,1	1,8
Participated in professional competitions, competitions for grants, scholarships	13,5	8,5	6,5
None of the above	5,8	9,5	16,6

Source: author's calculation

At the same time, the activities associated with the development and proposal of own ideas and projects such as discussing the possibility of innovation in the activities of the

enterprise, the development of software products, business plans, the development of creative projects) are specific only for employees with managerial status, and to some extent – for engineers, and practically not specific for skilled workers.

From the results in Table 1, we see that skilled workers are practically not included in the process of introduction and development of innovations, and engineers are little involved in the discussion of decisions on adoption and implementation of innovations, to participate in the development of new projects related to their professional and official activities. This remains the prerogative of employees in the managerial position of the enterprise. Meanwhile, as we can see from Table 2, not only managers but also specialists and skilled workers have ideas that according to the respondents' opinion can be implemented in various sectors of the economy (Table 3).

Tab. 2: Employees of enterprises have their own ideas, plans, projects (based on self-assessment of respondents), %

Do You have any creative idea, a plan or a project that You would like to implement at the moment?	Position		
	Manager	Specialist	Skilled worker
Yes	68,3	53,1	48,4
No	31,7	46,9	51,6
TOTAL:	100,0	100,0	100,0

Source: author's calculation

Tab. 3: Possible areas of implementation of creative ideas and projects in the evaluation of young workers, %

In what sphere (s) could this creative idea, a plan or a project be implemented?	Position		
	Manager	Specialist	Skilled worker
Industrial production, engineering	60,0	41,1	47,3
Business	23,7	19,6	17,8
Services, trade	12,5	24,2	19,4
Management	23,7	13,8	17,1
Education	17,5	9,4	15,5
IT	11,3	17,1	6,2
Medicine, healthcare	7,5	4,3	6,2
Communications	6,3	3,1	3,1
Security, law enforcement	5,0	2,6	4,7
Space technologies	3,7	3,8	2,3
Chemistry, biotechnology	5,0	2,6	3,1

Source: author's calculation

The priority area of implementation of their ideas for young people is the sphere of industrial production and engineering (from 47% to 60% of all ideas), which is quite natural, as this category is the sphere of the main professional employment for our respondents, and they are familiar with its problems and needs better than with all of the others. However, many respondents also have chosen business and management (primarily, executives - 23,7%) and trade and services (primarily, skilled workers and specialists - 19.4 % and 24.2%) as areas of a possible implementation of the idea or project.

Using the method of correlation analysis, we found a relationship between the types of activity of young employees of enterprises associated with their innovative behavior, and self-assessment of the presence of their own ideas and projects (Kramer coefficient $V=0.210$, with an error probability of 0.000, that is, below the permissible 0.050, which means that there is a connection between the variables).

Employees who have any creative ideas and ideas, often practice activities such as software products development, business planning, presentations at conferences or seminars, participation in the development of a professional creative project, inventive activity, participation in various professional competitions, competitions for grants and scholarships. We specify this behavior as a "creative strategy", which is expressed in the willingness to offer and develop own projects.

Employees who note that they do not have any ideas, plans or projects are more likely to practice improving their education and skills, mastering new technologies, new equipment or methods of work. We specify this strategy as an "adaptive type". The creative type of strategy is found mainly among managers, and the adaptive strategy is found among all categories of employees.

We created the next question to find out the motivation of employees to innovative forms of behavior in the enterprise. The survey results show a wide range of different motivations among young workers (Table 4). The main motive for innovation for managers is the economic benefit from the implementation of the innovation and competitive advantages, for engineers – the presence of significant advantages of the innovation (its best technical characteristics), for workers – improvement of working conditions in the enterprise and the environmental effect after the implementation (Table 4).

Young employees of enterprises assessed the most likely obstacles to the implementation of innovative ideas. We have not revealed any significant differences in the assessment of existing obstacles to innovation in enterprises (table 5).

Tab. 4: Motivation for innovation in the enterprise, %

Imagine that You decide whether implement innovations at the company where You work or not. What reasons can encourage You to make a positive decision?	Position		
	Manager	Specialist	Skilled worker
You will receive a bonus (cash reward) as a result of the implementation	20,2	21,0	26,3
Data of scientific expertise that the innovation has significant advantages (better technical characteristics)	25,0	33,1	31,8
The products of the enterprise will meet higher quality standards after the introduction of innovation	47,1	38,0	38,7
The clear and quick economic benefit from the implementation of the innovation	45,2	39,9	38,7
Direct order from executive of enterprise to implement the innovation	21,2	23,1	18,0
The implementation of this innovation by competitors	3,8	6,2	7,4
The innovation will give you (the company) a competitive advantage in the future (in 2-3 years)	46,2	41,5	18,4
The innovation will increase production safety	25,0	27,2	43,3
The innovation will improve the environmental situation in the region	13,5	18,6	23,0
Your enterprise will be fined if you do not implement the innovation	7,7	4,3	4,1

Source: author's calculation

Tab. 5: What obstacles do you see for young people to propose and implement innovative ideas? %

Obstacles	Position			
	Manager	Specialist	Skilled worker	Total
Lack / shortage of government programmes to support youth initiatives	36,5	33,2	36,4	35,2
Laws, regulations inhibiting the initiative of young people	10,6	12,9	19,4	14,0
Economic crisis	26,0	22,8	26,3	23,8
Lack of interest in innovation from business and production, the pursuit of short-term profit	42,3	37,1	29,5	35,8
Reluctance, fear or indifference from youth	41,3	39,4	35,9	39,1
No incentive system for the development and implementation of innovations in enterprises	23,1	24,4	18,9	22,8
Nothing of mentioned above	12,5	10,6	15,2	11,2
Lack of strategic thinking in management	5,8	8,7	12,9	9,2
Low level of professional and managerial training of those who make decisions on implementation	21,2	21,0	18,9	20,3

Source: author's calculation

All categories of employees share the same opinion that the main problem is, on the one hand, institutional obstacles - orientation of business and production to quick profits, lack of interest in innovation as such (35%), lack of government programs to support youth initiatives (35%), on the other hand, motivational obstacles - unwillingness to learn and fear of innovation of employees (39%).

Conclusion

Summarizing the results of the study, we can conclude that our hypothesis on the impact of the employee's official status on the behavioral strategies associated with innovation in the workplace, mainly confirmed.

Only employees in management positions involved in the process of implementation and development of innovations at surveyed enterprises. The "creative" strategy of behavior which involves active work on the promotion of their ideas, development and implementation of their own projects, practiced mainly among this category of employees. The dominant motive of innovation activity for enterprises managers is the economic benefits and competitive advantages in the future.

Engineers and especially workers, in particular, are not involved in the discussion of decisions on the adoption and implementation of innovations, they do not participate in the development of new projects related to their professional activities.

Skilled workers are almost not included in the process of implementation and assimilation of innovations. Engineers and skilled workers, in general, turn to "adaptive" strategies associated not with the creation and promotion of their own ideas and projects, but with the mastering of ready-made innovations and improving their skills and education.

The main motive for innovation for engineers is the significant technical advantages of innovation, for workers – improving working conditions in the enterprise and the environmental impact of the implementation of innovations.

Assessing the obstacles to the implementation of young people's ideas and projects, we can say that all categories of enterprise personnel believe that the main problem is, on the one hand, the orientation of business and production to quick profits, lack of interest in innovation as such, on the other hand, the reluctance to learn and fear of innovation of ordinary employees.

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Contact

Yana Didkovskaya

Ural Federal University

Institute of Public Administration and Entrepreneurship

Mira str., 19, Yekatherinburg, Russia, 620002

diyanadiyana@icloud.com

I.V.Didkovskaia@urfu.ru