

Labour Productivity at Russian Enterprises Revisited

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Abstract—The problem of backwardness of Russian enterprises in their labour productivity, which, in comparison with foreign competitors is one-fourth or one-fifth as high, is practically always being solved with great difficulty despite numerous attempts of technical retooling and borrowing the paid off organizational decisions from other nations. For the Chinese economy, the problem of further increasing of labour productivity is also urgent. To what extent is this problem preconditioned by the employees' personality traits and values? The preliminary findings show that successful (i.e. leading to significant productivity growth) implementation of both the rational model of employment relations and the LEAN-production method at Russian enterprises is scarcely connected with the employees' personality traits. This may testify to the fact that labour productivity is mainly predetermined by specific social ties within small professional groups - "dyads" and "triads", rather than by the employees' personality traits typical of a certain enterprise. In this case, these are such variables as the assignment of roles and responsibilities, as well as the styles of communication and administration, that become the predictors of labour productivity.

Keywords—increasing labour productivity, psychological features of Russian employee

I. INTRODUCTION

The authors of the article proceed with the assumption that labour productivity is not purely an economic category and the problem of increasing labour productivity in Russia can be solved not only through the development of technique and equipment at enterprises. To reveal the true content of the concept labour productivity, we define it as an index of productive expedient activity of employees measured by the amount of work (goods or services) produced in a given amount of time. The definition clearly shows that the key factor is not the technique, but the individuals with their reasonable labour activity. Levels of expediency may vary considerably. As economics explains, the level of capital labour productivity (C) is measured as the aggregate of individual labour productivity (I) and organisation and techniques productivity (T) $C = I \times T$. The structure of the ratio proves that the more efforts each participant of the production process makes to carry out their duties and obligations, the higher the productivity of the enterprise is. It is worth emphasizing that *equipment upgrading contributes to productivity growth to a lesser extent.*

Several conceptions relate to the admission of this fact. They reflect the impressive changes that took place in the Asian economies in the latter half of the 20th century. In this regard, the famous businessman Taiichi Ohno pointed out that it is the improvement of work that must lead to reduction of all expenses by a half or a third itself; and if we will start with improvement of equipment, expenses will increase, but will never be reduced [1]. Thus, to study the contribution of "human performance" into the labour productivity growth is an important and crucial task. This problem is urgent to the Russian economy, which has been showing no evident signs of labour productivity growth despite the fact that the problem of labour productivity has been chosen as one of the priorities by the Russian government. What are the main reasons for that: technical backwardness of our enterprises, or the employees' mentality and drawbacks of the workplace culture? Some authors tried ask this question [2, 3, 4], however they didn't take into account interdisciplinary status of labour productivities' issue in our opinion. Also, we didn't find contemporary Russian researches focused on the employee's personal traits and focused on specifics of small professional groups as well in link with labour productivity.

From our point of view, while comparing enterprises, at which the conditions for functioning and development are similar, two basic approaches to find out social and psychological predictors of labour productivity may be adhered to, and these two approaches add to each other. On the one hand, there is an approach to focus on the employee's personal traits. On the other hand, there is an approach to focus on the groups in which the employees perform their production activities, i.e. to study professional and functional traits, as well as social and psychological traits (for instance, «superior official – official – junior official/junior»). In this research, we proceed from the first approach.

The aim of the present research is to reveal personality features of employees at enterprises and study the differences between these predictors at enterprises with a higher level of labour productivity and enterprises with a lower level of labour productivity, given that these enterprises practice different systems of motivation. Among the psychological factors that can relate to labour productivity we suggest analysing personality traits and professional motivation.

There are some works analysing Russian employees' motivation. Understanding of motivation in these studies is not limited to the category of economic «stimulation». While «stimulation» includes only use of external economic incentive to action, motivation includes both external and internal incentives, which makes an individual perform this or that activity in order to achieve a subjectively important goal [5]. It is essential to note that the term «motivation» is often interpreted as a systematic influence on the employees aiming at raising the quality of their work. As a rule, motivation is studied from the perspective of its effectiveness [6, 7], but the system of personality motivation of the employees as a potential predictor of labour productivity is practically ignored.

Trait theory offered by G.W. Allport [8] has found support with many researchers. At the present moment, M.C. Ashton and K. Lee are actively elaborating a six-dimensional model of traits [9], including the five factors traditionally considered by the five-dimensional model: Emotionality, Extraversion, Openness to Experience, Agreeableness and Conscientiousness, and besides, Honesty as a factor which steadily manifests in various studies irrespective of the specificity of a language [10]. In terms of the trait theory, these are dispositions that present a personality model that, on the one hand, can explain and predict the behaviour of a certain person and, on the other hand, is universal and applicable to all individuals.

The general hypothesis of the research is the following: the employees' personality traits influence the productivity of the whole enterprise. The general hypothesis is specified and a more specific hypothesis is formulated: the employees at enterprises with higher levels of labour productivity, where the rational model of employment relations is implemented, have higher levels of Conscientiousness, relatively low levels of Openness to Experience and a higher degree of Extrinsic motivation: external and identified.

II. SAMPLING

The research was done in the period from July to September 2018 at two enterprises in Perm Krai. The first enterprise (henceforward Enterprise 1) has 302 employees and produces metal and synthetic gauzes for both Russian and foreign consumers; they successfully employ methods of «LEAN production» [11], and the rational model of employment relations. The model aims at creating an effective system of management and motivation on the basis of a variety of open forms of stimulating the employees. It is premised on the assumption that the system of stimulation must comprise all forms of stimulation, i.e. the employees act according to a set of rules which regulate all their duties and responsibilities. Breaking the rules is followed by sanctions, either positive or negative [12].

The efforts lead to an impressive and stable rise in labour productivity: having more than twice as low gross profit per employee compared to the second enterprise in 2009, Enterprise 1 outperformed, and in 2017, its gross profit per employee was 1.6 times higher than that of the second enterprise, on the whole, demonstrating 3.4 times growth.

The second enterprise (henceforward Enterprise 2) has 224 employees and specializes in metal working and production of

metal constructions of various applications. Despite the administration's attempts to employ the model of «lean production», Enterprise 2, in comparison with Enterprise 1, has a lower and less stable level of productivity.

As a part of the study, the employees at both the enterprises were offered paper forms of the questionnaire, while the administration staff received an online link to the questionnaire in the OnlineTestPad system. The sample was made up of 173 people: 123 respondents were the employees of Enterprise 1 (76.5% female) aged 19–62 ($M = 41.8$; $SD = 10.08$), and 50 respondents were the employees of Enterprise 2 (24% female) aged 19–61 ($M = 38.9$; $SD = 12.58$).

It is necessary to explain the difference in the number of respondents from Enterprise 1 and Enterprise 2. There were initially 120 paper forms of the questionnaire offered to Enterprise 2 and 100 paper forms of the questionnaire offered to Enterprise 1. Later on, when it turned out that the employees of Enterprise 1 were reluctant to fill in the questionnaire, to solve the problem, 47 more paper forms were sent there. Nevertheless, even after that, the employees of Enterprise 1 filled in and handed in to the research group only 43 paper forms (i.e. 29% of the total amount offered), and 8 respondents filled in the questionnaire online. As for the employees of Enterprise 2, they filled in and handed in 86 paper forms (i.e. 72%), and 36 respondents filled in the questionnaire online.

In our opinion, the above mentioned fact is rather interesting. It demonstrates a considerably higher level of performance discipline at Enterprise 2. Let us underline the fact that strict obedience to their direct line manager shown by each employee, as well as strict discipline and order, are the essential conditions for the implementation of the rational model of employment relations.

III. METHODS

The diagnostic test instrument selected according to the goal and tasks of the present study aimed at measuring dimensions of personality structure. The HEXACO-PI-R questionnaire is designed to diagnose six dispositional personality factors identical to the Big Five personality traits: Emotionality, Extraversion, Agreeableness, Conscientiousness and Openness to Experience and Honesty (Humility) [10].

In the course of study, for statistical processing of the obtained results, methods of descriptive and comparative statistics were used, in particular the non-parametric Mann–Whitney U test.

IV. RESULTS

To compare the employees of Enterprise 1 and the employees of Enterprise 2, the Mann–Whitney U test was used. The data obtained show no significant difference between the employees of the more productive enterprise and employees of the less productive one. There are also no differences in Conscientiousness, Emotionality, Honesty (Humility) or Agreeableness. The only factor that makes a clear distinction between the employees of the two enterprises is Openness to Experience (Fig. 1).

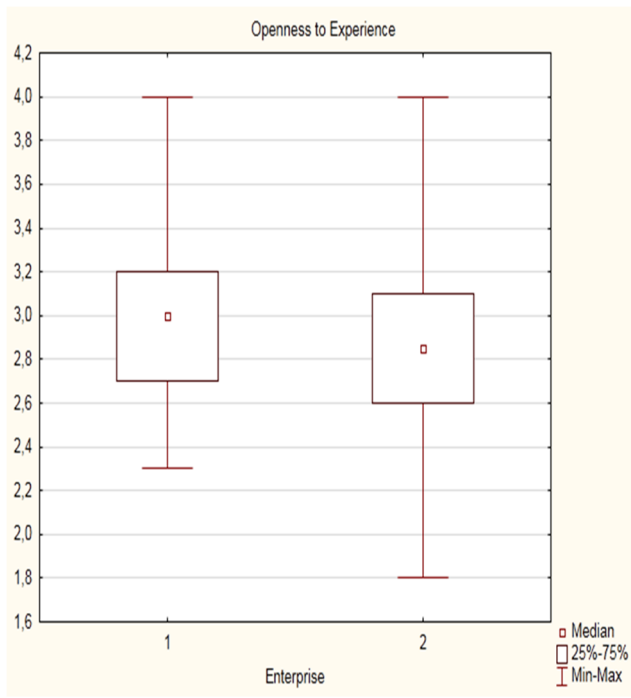


Fig. 1. The box plot of the factor Openness to Experience with the employees of Enterprise 1 and Enterprise 2.

Since this trait testifies to curiosity and involvement in creative activities, we can conclude that the employees of Enterprise 1 are more prone to use their creative abilities and think about new, non-conventional ways of solving tasks. These personality traits of the employees of Enterprise 1 correlate with the nature of the production process at the enterprise. Indeed, short-run production characterised by constantly renewed lists of metal constructions to be produced and frequent changes in operations and goals for the employees is more peculiar to Enterprise 1 than to Enterprise 2.

The following preliminary conclusions can be drawn from our research so far:

- There are practically no significant differences between the personality traits of the employees who work at the enterprises, the levels of labour productivity at which are truly different;
- The only exception is the factor Openness to Experience that makes a distinction between the employees of Enterprise 1 and Enterprise 2, which might be attributed to specificity of the production processes at these two plants;
- Lack of significant differences between the personality traits of the employees of the enterprises may speak for the fact that labour productivity is mainly predetermined by specific social ties within small professional groups -

"dyads" and "triads", according to V.A. Tolochek [13], rather than by the employees' personality traits typical for a certain enterprise. Then, these are such variables as the assignment of roles and responsibilities and the styles of communication and administration that become the predictors of labour productivity.

Let us mention that Enterprise 2, which implements the rational model of employment relations effectively, has introduced the system of assessing labour productivity via awarding "ranks" to the employees every month and paying according to these "ranks". These indicators can be used in our further research work to reveal the interrelation of the employees' personal economic effectiveness estimated through the tools of the rational model of employment relations and the motivation variables.

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