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Improving management as a way to increase labour productivity

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Abstract

The article gives an overview, performs analysis and classification of successful managerial practices applied at Russian industrial enterprises in the framework of the national project “Labour productivity and employment support”. The paper emphasizes the main factors of labour productivity growth as follows: investment policy, growth of human capital, and efficient use of managerial capital of enterprise.

In order to determine the need of enterprises to increase labour productivity, the author proposes four universal criteria that signal the existing inefficiency even before the loss of competitiveness: 1) the dynamics of labour productivity in the company is not positive during a given period; 2) the company is behind competitors by labour productivity indicator; 3) the company is behind competitors by labour productivity growth rates indicator for a certain period; 4) unit production costs rise.

These criteria allow you to take into account the situation both within the enterprise and in comparison with other enterprises. Each criteria can be considered separately or in combination with the others, applied to enterprises of different industries, specialization, and scale. Criteria indicate the direction of development in which the company is experiencing difficulties at the moment, or may experience them in the future.

Key words: criterion, enterprise, human capital, investment policy, labour productivity, management, managerial capital, Russian industry

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Совершенствование менеджмента как способ повышения производительности труда

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Аннотация

Приведен обзор, выполнены анализ и классификация успешных управленческих практик, применяемых на предприятиях российской промышленности в рамках национального проекта «Производительность труда и поддержка занятости». Выделены основные факторы роста производительности труда: инвестиционная политика, рост человеческого капитала и эффективное использование организационного капитала предприятия.

С целью определения потребности предприятий в повышении производительности труда предложено четыре универсальных критерия, сигнализирующих о существующей неэффективности еще до потери конкурентоспособности: 1) динамика показателя производительности труда в компании не положительная в течение заданного периода; 2) компания отстает от конкурентов по показателю производительности труда; 3) компания отстает от конкурентов по показателю темпов роста производительности труда за определенный период; 4) растут издержки на производство единицы продукции.

Приведенные критерии позволяют учитывать ситуацию как внутри предприятия, так и в сравнении с другими предприятиями. Каждый критерий можно рассматривать отдельно либо в совокупности с остальными, применять на предприятиях разных отраслей, специализации и масштаба. Критерии указывают направление развития, в котором компания испытывает трудности в текущий момент, либо может их испытывать в будущем.

Ключевые слова: инвестиционная политика, критерий, менеджмент, организационный капитал, предприятие, производительность труда, российская промышленность, человеческий капитал

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Introduction [Введение]

Labour productivity is both an important indicator of the efficiency of manufacturing activity of enterprise and a factor of its further development. Relatively high values of labour productivity may characterize relatively higher efficiency of organizational and manufacturing activities of enterprise compared to other enterprises, thereby reflecting its competitive advantages in the short, medium, and long-term.

At the macroeconomic level, the actual problem for developed and developing countries is the slowdown in global economic growth. The reasons of the slowdown are accumulated imbalances in developing economies and structural constraints in developed ones. According to statistics for 2005–2015, the gap in the level of labour productivity between Russia and most of the countries of the European Union, OECD, and the “Big Seven” was more than twice against Russia¹. Increasing labour productivity is one of the possibilities to accelerate its economic growth and socio-economic development.

The macroeconomic problems described above signal low labour productivity at the microeconomic level. Lack of access to the results of scientific and technological progress and to external investments, low levels of human and managerial capital, lack of understanding of the need to increase labour productivity by enterprise’s management — all these factors complicate economic development of enterprise.

The purpose of this article is to classify changes in management that lead to labour productivity increase and to formulate criteria for the need to implement labour productivity improvement programs.

Labour productivity in scientific literature [Производительность труда в научной литературе]

For the purpose of further research, it seems appropriate to define labour productivity. Researchers [Samuelson and Nordhaus, 2009] define labour productivity as total output divided by operating inputs. In [Huselid, 1995], labour productivity is calculated as logarithm of the ratio of sales to total number of employees. It is shown that the aforementioned calculation method is convenient, since it is a single index that allows us to compare the performance of enterprises and evaluate monetary value of the return on investments of high-performance working methods. In the work², labour productivity is defined as gross revenue per hour of labour input. Researchers [El-Gohary

and Aziz, 2014] consider labour productivity as the ratio of output to labour hours.

In this article, labour productivity is defined as the ratio of production volume of enterprise in monetary terms to labour costs expressed in person-hours involved in creating of this production volume.

Various works demonstrate the relationship between labour productivity and management of enterprise. The work [Jergeras, 2009] shows that there are four factors potentially increasing labour productivity: management system, labour force, technologies, and new techniques. However, in [Rojas and Aramvareekul, 2003] it is demonstrated that the use of new techniques and technologies may be necessary but not enough, so the improvement of labour productivity is the task of management. The study [Schein, 2008] shows that strong organizational culture is capable to replace formal management by informal relationships in enterprise. P. A. Mikhnenko [2018] explores types of organizational structure of enterprise and existing organizational culture. He demonstrates how the change in labour force attitude to certain processes may lead to the formation of new values within enterprise: an increase in the control of supervisory personnel may be perceived by employees as an increase in bureaucratization of business processes and a transition to hierarchical type of organizational culture.

In [Díaz-Chao et al, 2015], innovative sources of labour productivity for small enterprises of Girona are studied. The results show that the main factor determining labour productivity is the size of wages. In addition, in [Bogatyreva and Ilyukhina, 2020] it is shown that the increase in wages outstrips the growth of labour productivity also at inter-country level. Correlation between the level of competition and labour productivity in the retail sector is studied in [Amin, 2015], and the author econometrically proves strong positive impact of pro-competitive reforms on the level of labour productivity of retail enterprises.

Based on the above literature, we can state that the system of management significantly affect labour productivity at enterprise. Let us turn to the consideration of measures implemented at Russian industrial enterprises, which contributed to the growth of labour productivity.

Successful measures to increase labour productivity at Russian industrial enterprises [Успешные меры повышения производительности труда на предприятиях российской промышленности]

Based on the data of the implementation of the national project “Labour productivity and employment support”³, a list of companies, implementing measures

¹ “Labour productivity in the Russian Federation” (2017), Analytical Center for the Government of the Russian Federation, Social Bulletin, no. 9, 44 p.

² OECD (2001), Measuring productivity: Measurement of aggregate and industry-level productivity growth: OECD Manual, Organization for Economic Co-operation and Development.

³ All-Russian award “Labour productivity: Russian industry leaders — 2019”. Available at: http://www.up-pro.ru/imgs/specprojects/lidery-promyshlennosti/2019/Productivity_2019.pdf (accessed 20.08.2020).

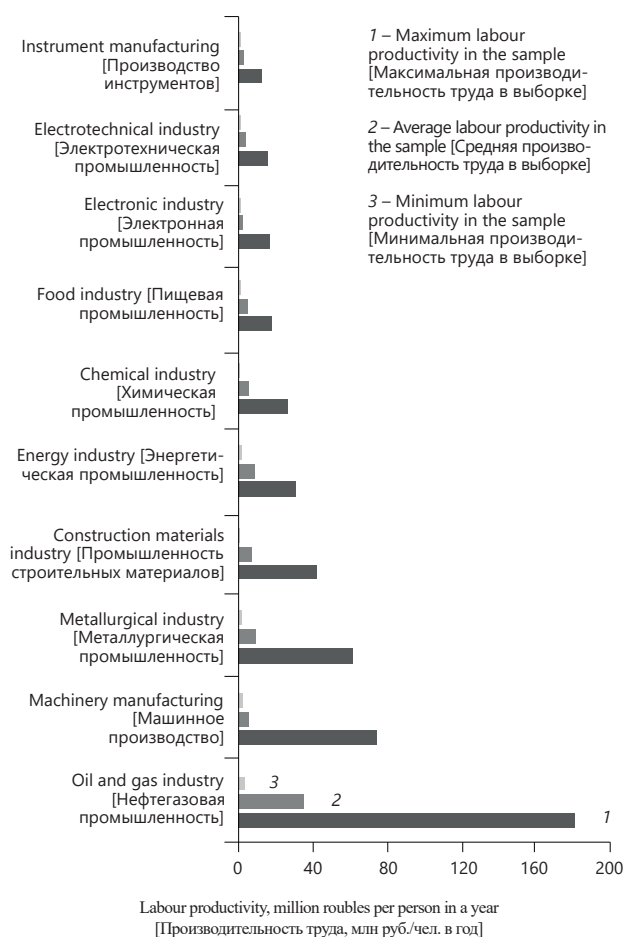
proposed by the project to increase labour productivity and showing positive results at this point of time, was compiled. Figure 1 shows data on the labour productivity of leading enterprises of Russian industries according to the information for 2018 taken from the list above. Each industry is represented by three columns: maximum labour productivity in the sample; average labour productivity in the sample, calculated as a ratio of labour productivity of all presented enterprises to their quantity; minimum labour productivity in the sample. Industry samples consist of limited number of enterprises (the number of them is indicated below in brackets), demonstrating the highest intra-industry values of labour productivity at the time of the compilation of the list. The list includes oil and gas industry (25 enterprises), machinery manufacturing (100), metallurgical industry (70), construction materials industry (50), energy industry (50), chemical industry (70), food industry (100), electronic industry (50), electrotechnical industry (30), instrument manufacture (30).

The analysis of Figure 1⁴ makes it possible to state that there are significant differences in labour productivity both between enterprises from different industries and within each industry examined. A total of 575 leading enterprises are in the sample, while more than 5 000 Russian enterprises with total revenue of more than 51 % of yearly Russian gross domestic product and the number of employees more than 5.5 million people were examined during its compilation. It indicates that remaining enterprises in each industry, not included in the number of leaders, show lower labour productivity than the minimum values in Figure 1.

According to the analytical calculations in the work⁵, among the reasons of changes leading to labour productivity increase, the implementation of the principles of lean production is noted. It includes the following components:

- diagnostics of the activities of enterprise in order to identify the least efficient stages of production process using mapping tools, Yamazumi chart, and “spaghetti diagrams”;
- identification and elimination of losses including: overproduction, overstock, excessive processing, unnecessary transportation, unnecessary movements of employees, inefficient distribution of working hours, manufacturing defects;
- automation of production processes through the implementation of digital and robotic technologies;
- purchase of equipment that allows to produce larger quantum of output of stable quality within a fixed period of time;

- reorganization of workspace with the use of the 5S Method;
- work on organizational skills of personnel according to goal-setting principles: correct goal setting, explanation of the contribution of every employee to the common goal, problem-oriented approach to the distribution of tasks;
- creation of educational ecosystem through cooperation with research centres and higher educational institutions in order to train highly qualified personnel and develop high-tech solutions to improve operational efficiency;
- focus on long-term sustainable development;
- creation of information centres to improve monitoring quality through visualization of management: demonstration of goals, interim results, and status of task execution;
- implementation of systemic improvements through analysis of problems using Ishikawa diagram, brainstorming, decision-tree building;
- increase of brand premium that represents the possibility of the augmentation of product price due to better brand recognition by customers and their locality to it.



Source: [All-Russian Award “Labour Productivity: Russian Industry Leaders – 2019”] / Источник: [Всероссийская премия «Производительность труда: Лидеры промышленности России – 2019»]

Fig. 1. Leaders of labour productivity in Russian industries, 2018

Рис. 1. Лидеры по производительности труда в отраслях промышленности России по данным 2018 г.

⁴ Ibid.

⁵ Ibid.

The above-mentioned changes are mostly related to the management of enterprises. On the one hand, it indicates the importance of managerial changes while increasing labour productivity. On the other hand, it suggests that labour productivity acts as an indicator of the efficiency of management of enterprise.

Classification of changes in management that lead to labour productivity increase
[Классификация организационных изменений, которые ведут к повышению производительности труда]

The literature review presented below shows that the increase in labour productivity could be characterized as a result of building an effective production system of enterprise. In [Kononova, 2006], production system is understood as a way to organize production processes that covers all the stages of production and product marketing activities. Efficient production system is characterized by high level of labour productivity, which helps to increase the competitiveness of enterprise. In more detail, an increase in labour productivity may be the result of:

1. Investment policy of enterprise.

In [Prosvirina et al, 2016] labour productivity is considered as one of five main indicators of the efficiency of investment policy of enterprise and reflects the efficiency of use of labour force. At the same time, it is shown that total labour efficiency depends to the greatest extent on investments in fixed assets, degree of investments in personnel training, and level of labour productivity. Such investments can be aimed at full or partial replacement of enterprise's technologies, the use of innovative inventions of science and technology, focused on efficient and resource-saving production.

2. Augmentation of the human capital of enterprise.

Researchers Delsen and Schonewille [1999] substantiate that factors, such as the rise of level of education and training at workplace, positively affect the level of human capital and labour productivity. In [Rukumnuaykit and Pholphirul, 2016] it is proved that employees of manufacturing companies with higher level of education, having completed additional training courses, and demonstrating higher level of qualification within the framework of cognitive (namely, in the field of information technologies) and non-cognitive (leadership, time management, and effective communication) skills, contribute to the increase of labour productivity at an enterprise.

3. Efficient use of managerial capital of enterprise, which consists of three elements: management of labour, management of production, management of arrangements. The article [Belkin et al, 2016] emphasizes that the reason of economic problems of a large number of enterprises is not the lack of external financing or fixed assets, but

the imperfection of management of labour relations within enterprise. The article [Simonenko, 2016] demonstrates that efficient system of labour motivation and remuneration contributes to the growth of labour productivity, which leads to the increase of competitiveness of enterprise and the achievement of strategic objectives.

In the research [Gagarinskaya et al, 2019] conducted on a sample of enterprises in Russian and Canadian oil and gas industry, labour productivity is significantly ahead than its values in other industries. It seems possible to conclude that an increase in labour productivity is possible if one changes wage system, implying its division into basic remuneration and variable remuneration. The variable remuneration depends on the nature of employee's activity and employee's effectiveness based on key performance indicators.

The article [Kuznetsova and Ugol'nikova, 2019] shows that efficient management of organizational knowledge of enterprise, considered as the result of synergetic effect of the exchange of knowledge between employees during the production and economic activity, contributes to the growth of labour productivity, the improvement of product quality, and the strengthening of competitive advantages of enterprise. The paper [Bishin, 2017] states that the development of intellectual capital of enterprise, which includes managerial capital, contributes to the growth of labour productivity through the formation of creative thinking among employees and the increase of their professional adaptability to changing conditions.

Criteria for the need to implement labour productivity improvement programs
[Критерии необходимости внедрения программ повышения производительности труда]

The above-mentioned management decisions can increase labour productivity through reorganization of productive and business processes of enterprise. The question arises as to what enterprises one needs to implement labour productivity improvement programs.

The following offers criteria that signal the need to implement programs of labour productivity increase at enterprises. The criteria are universal, that is, they are suitable for enterprises of different industries, specialization, and scale. The criteria are as follows:

1. Dynamics of labour productivity at enterprise is not positive for a given period.

This criterion indicates two possible scenarios: labour productivity does not change, or it decreases.

Constant labour productivity indicates stable use of available resources. The problem is that in this case there is no qualitative improvement of production processes. This may not be a warning signal in the short-term; however, it can lead to the reduction of competitiveness of enterprise in the medium and long-term.

Decreasing labour productivity signals a decline in the efficiency of production processes and indicates technological or managerial problems of enterprise. In this case, in the absence of changes, an enterprise may begin to lose competitiveness in the short-term.

2. *Enterprise lags behind competitors in terms of labour productivity.*

This criterion signals existing technological or managerial backwardness of enterprise from competitors. This is reflected in the fact of higher cost of production per unit and higher ultimate price. Such backwardness can lead to full or partial loss of the market by enterprise due to its relative uncompetitiveness in the medium and long-term.

3. *Enterprise lags behind competitors in terms of growth rates of labour productivity for a given period.*

This criterion indicates the presence of technological or managerial advantages among competitors, which gradually increase their competitive strengths. It can lead to full or partial loss of competitiveness of enterprise in the medium and long-term.

4. *Increase in the cost of production per unit of output.*

The growth of labour productivity, calculated as the ratio of output to the number of labour force, may occur because of the fact that the cost of production per unit is growing. This moves the ultimate price up. With constant production volume, its cost will be higher. However, the increase in price caused by rising costs can provoke a reduction in demand in the short, medium, and long-term.

The above-mentioned criteria are used to determine the need for implementation of technological and managerial changes at enterprise. They signal existing relative inefficiencies of enterprise even before it loses competitiveness. Further research can be aimed at the

development of a system of indicators focused on more detailed diagnosis of problems of enterprise. Namely, the recognition of technological and managerial factors that can lead to inefficiencies.

Conclusion [Заключение]

Thus, it is shown that labour productivity acts as an indicator of the effectiveness of enterprise management system. The article shows that management of enterprise can significantly affect labour productivity. The paper demonstrates that the increase in labour productivity may be the result of:

- investment policy of enterprise;
- augmentation of the human capital of enterprise;
- efficient use of managerial capital of enterprise.

The paper describes criteria signalling the need to implement programs to increase labour productivity at enterprises. They are:

- dynamics of labour productivity in enterprise is not positive for a given period;
- enterprise lags behind competitors in terms of labour productivity;
- enterprise lags behind competitors in terms of growth rates of labour productivity for a given period;
- increase in the cost of production per unit of output.

These criteria are essential signals of existing technological and managerial inefficiencies at enterprise. The use of these criteria subsequently can help to prevent the loss of competitiveness of enterprise in the short, medium, and long-term.

Список литературы

Белкин В.Н., Белкина Н.А., Антонова О.А. (2016). Организационный капитал предприятия // Экономика региона. Т. 12. № 3. С. 826–838. DOI: 10.17059/2016-3-18.

Бишин А.С. (2017). Интеллектуальный капитал как фактор роста производительности труда // Вестник Южно-Уральского государственного университета. Серия: экономика и менеджмент. Т. 11. № 4. С. 126–132. DOI: 10.14529/em170417.

Богатырева И.В., Илюхина Л.А. (2020). Соотношение производительности труда и заработной платы в экономике отдельных стран: оценка и механизм управления // Экономика труда. Т. 7. № 2. С. 115–126. DOI: 10.18 3 34 /et.7.2.100572.

Гагаринская Г.П., Гагаринский А.В., Кузнецова И.Г., Васильчиков А.В., Шмидт А.В. (2019). Управление производительностью и эффективностью труда персонала на основе

References

Amin M. (2015), "Competition and labour productivity in India's retail stores", *Journal of Asian Economics*, vol. 41, issue C, pp. 57–68. DOI: 101016/j.asieco.2015.10.003. ISBN:1049-0078.

Belkin V.N., Belkina N.A. and Antonova O.A. (2016), "Organizational capital of the enterprise", *Economy of region*, vol. 12, no. 3, pp. 826–838. (In Russ.). DOI: 10.17059/2016-3-18.

Bishin A.S. (2017), "Intellectual capital as a factor of growth of labour productivity", *Bulletin of the South Ural State University. Series: Economics and Management*, vol. 11, no. 4, pp. 126–132. (In Russ.). DOI: 10.14529/em170417.

Bogatyreva I.V. and Ilyukhina L.A. (2020), "Labour productivity-to-wages ratio in the economy of individual countries: assessment and management mechanism", *Russian Journal of Labour Economics*, vol. 7, no. 2, pp. 115–126. (In Russ.). DOI: 10.18 3 34 /et.7.2.100572.

мотивации труда на предприятиях нефтегазового комплекса // Известия Кыргызского государственного технического университета им. И. Раззакова. № 1 (49). С. 63–74.

Кононова В.Ю. (2006). Модернизация производственных систем на российских промышленных предприятиях: современное состояние и перспективы // Российский журнал менеджмента. Т. 4. № 4. С. 119–132.

Кузнецова Н.В., Угольников Н.А. (2019). Управление организационным знанием как условие повышения производительности труда // Современный менеджмент: теория и практика. Материалы IV Всероссийской научно-практической конференции. К 85-летию Магнитогорского государственного технического университета им. Г.И. Носова. Под общей редакцией Н.В. Кузнецовой. Магнитогорск, 22–23 апреля 2019 г. С. 160–166.

Михненко П.А. (2018). Диагностика координационно-культурного профиля предприятия // Инновации в менеджменте. № 1. С. 26–35.

Просвирина И.И., Резепин Ю.Ю., Ташев А.К. (2016). Производительность труда в системе управления инвестиционной политикой предприятия // Вестник Южно-Уральского государственного университета. Серия: Экономика и менеджмент. Т. 10. № 4. С. 42–46. DOI: 10.14529/em160407.

Симоненко Е.С. (2016). Совершенствование системы стимулирования труда как условие повышения уровня кадрового менеджмента организации // Интернет-журнал «Науковедение». Т. 8. № 2. DOI: 10.15862/01EVN216.

Шейн Э. (2008). Организационная культура и лидерство / пер. с англ. СПб.: Питер. 336 с.

Amin M. (2015). Competition and labour productivity in India's retail stores // Journal of Asian Economics. V. 41. Issue C. Pp. 57–68. DOI: 10.1016/j.asieco.2015.10.003. ISBN:1049-0078.

Delsen L., Schonewille M. (1999). Human capital and labour productivity. Integration of Institutions and endogenous growth // Paper for the EALE Conference in Regensburg. 21 p.

Díaz-Chao Á., Sainz-González J., Torrent-Sellens J. (2015). ICT, innovation, and firm productivity: New evidence from small local firms // Journal of Business Research. V. 68. No. 7. Pp. 1439–1444. DOI: 10.1016/j.jbusres.2015.01.030. ISBN:0148-2963.

El-Gohary K., Aziz R. (2014). Factors influencing construction labour productivity in Egypt // Journal of Management in Engineering. V. 30. No. 1. Pp. 1–9. DOI: 10.1061/(ASCE)ME.194.

Huselid M.A. (1995). The impact of human resource management practices on turnover, productivity and corporate financial performance // Academy of Management Journal. V. 38. No. 3. Pp. 635–672. DOI: 10.5465/256741. ISBN:0001-4273.

Jergeas G. (2009). Improving construction productivity on Alberta Oil and Gas capital projects. Alberta Finance and Enterprise. 56 p.

Rojas E., Aramvareekul P. (2003). Labour productivity drivers and opportunities in the construction industry // Journal of Management in Engineering. V. 19. No. 2. Pp. 78–82. DOI: 10.1061/(ASCE)0742-597x (2003) 19:2(78). ISBN:0742-597x.

Rukumnuaykit P., Pholphirul P. (2016). Human capital linkages to labour productivity: implications from Thai manufacturers // Journal of Education and Work. V. 29. No. 8. Pp. 922–955. DOI: 10.1080/13639080.2015.1104658.

Samuelson P.A., Nordhaus W.D. (2009). Economics. 19th ed. McGraw-Hill. 744 p.

Delsen L. and Schonewille M. (1999), “Human capital and labour productivity, Integration of Institutions and endogenous growth”. *Paper for the EALE Conference in Regensburg*.

Díaz-Chao Á., Sainz-González J. and Torrent-Sellens J. (2015), “ICT, innovation, and firm productivity: New evidence from small local firms”, *Journal of Business Research*, 2015, vol. 68, no. 7, pp. 1439–1444. . DOI: 10.1016/j.jbusres.2015.01.030. ISBN:0148-2963.

El-Gohary K. and Aziz R. (2014), “Factors influencing construction labour productivity in Egypt”, *Journal of Management in Engineering*, vol. 30, no.1, pp. 1–9. DOI: 10.1061/(ASCE)ME.194.

Gagarinskaya G.P., Gagarinskii A.V., Kuznetsova I.G., Vasil'chikov A.V. and Shmidt A.V. (2019), “Management of labour productivity and efficiency of personnel at the enterprises of oil and gas complex”, *Journal of the Kyrgyz State Technical University named after I. Razzakov*, no. 1 (49), pp. 63–74. (In Russ.).

Huselid M.A. (1995), “The impact of human resource management practices on turnover, productivity and corporate financial performance”, *Academy of Management Journal*, vol. 38, no. 3, pp. 635–672. DOI: 10.5465/256741. ISBN:0001-4273.

Jergeas G. (2009), *Improving construction productivity on Alberta Oil and Gas capital projects*, Alberta Finance and Enterprise.

Kononova V.Yu. (2006), “Modernization of production systems at Russian industrial enterprises: current status and prospects”, *Russian Management Journal*, vol. 4, no. 4, pp. 119–132. (In Russ.).

Kuznetsova N.V. and Ugol'nikova N.A. (2019), “Organizational knowledge management as a condition to increase labour productivity”, *Modern management: theory and practice. Proceedings of the IV All-Russian scientific and practical conference to the 85th anniversary of the Nosov Magnitogorsk State Technical University*. Under general supervision of N.V. Kuznetsova. Magnitogorsk, April 22–23, 2019, pp. 160–166. (In Russ.).

Mikhnenko P.A. (2018), “Diagnostics of coordination-cultural profile of enterprise”, *Innovations in management*, no. 1, pp. 26–35. (In Russ.).

Prosvirina I.I., Rezepin Yu.Yu. and Tashev A.K. (2016), “Labour productivity in the company investment policy management system”, *Bulletin of the South Ural State University. Series: Economics and Management*, vol. 10, no. 4, pp. 42–46. (In Russ.). DOI: 10.14529/em160407.

Rojas E. and Aramvareekul P. (2003), “Labour productivity drivers and opportunities in the construction industry”, *Journal of Management in Engineering*, vol. 19, no. 2, pp. 78–82. DOI: 10.1061/(ASCE)0742-597x (2003) 19:2(78). ISBN:0742-597x.

Rukumnuaykit P. and Pholphirul P. (2016), “Human capital linkages to labour productivity: implications from Thai manufacturers”, *Journal of Education and Work*, vol. 29, no. 8, pp. 922–955. DOI: 10.1080/13639080.2015.1104658.

Samuelson P.A. and Nordhaus W.D. (2009), *Economics*, 19th ed., McGraw-Hill.

Shein E. (2008), *Organizational culture and leadership*, translated from English, Piter, St. Petersburg, Russia. (In Russ.).

Simonenko E.S. (2016), “Improving the system of incentives as a condition for raising the level of personnel management organization”, *Internet-journal “Naukovedenie”*, vol. 8, no. 2. (In Russ.). DOI: 10.15862/01EVN216.