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Bioscience Research

Print ISSN: 1811-9506 Online ISSN: 2218-3973

Journal by Innovative Scientific Information & Services Network

RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2020 17(4): 4131-4135. **OPEN ACCESS**

Influence of using mercury app on efficiency of veterinary specialist's working time

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The article presents assessing the efficiency of using a veterinary specialist's working time to prepare veterinary accompanying documents in the App "Mercury" at enterprises of various activities: processing enterprises, wholesale, and wholesale and retail enterprises. For the study, we used general statistical methods for assessing the efficiency of using working time. The calculation base for research was obtained by timing the working time by veterinary specialists at wholesale, wholesale, and retail trade and processing enterprises. Based on obtained results can conclude that with an increase in the mechanization of a veterinarian's work and a decrease in the time spent on other types of work and preparatory and final types of work, the productivity of veterinarian increases, regardless of the type of enterprise served. Considering the specifics of the activities of different types of enterprises, it is reasonable to apply a gradation to their types: processing enterprises, wholesale enterprises, wholesale and retail enterprises.

Keywords: performance, timetable, timing, paperwork, documentation

INTRODUCTION

Evaluation of the efficiency of using working time is directly related to the assessment of labor productivity and the planning of any enterprise's labor resources. The problems of assessing the effectiveness of personnel management and the personnel's effectiveness are also relevant when introducing such currently popular tools for increasing the business's efficiency as a whole. Russia ranks 36th in the ranking of countries in terms of labor productivity 1. According to the Organization for Economic Cooperation and Development, labor productivity in Russia in 2019 was $ 26.5 per hour. This indicator reflects the volume of GDP generated by each working Russian citizen per hour of work (in current prices). Compared to the previous year, productivity in Russia increased by 7% and returned to 2016. In 2017 and 2018, this figure was $ 24.7 (Akmullin, 2004).

There are several reasons for this low indicator: 1) depreciation of fixed assets (up to 50%), i.e., technical and technological backwardness; 2) ineffective labor organization, organization of processes in enterprises, which leads to large losses of working time. Managing personnel management performance requires constant monitoring, which requires methods of its implementation and indicative criteria. Performance diagnostics is required in a situation where it is necessary to develop a different strategy for personnel management, identify the most acute problems, and develop an action plan to solve them. Situations when diagnostics are appropriate: 1) the need to improve business performance; 2) during the implementation of anti-

crisis management measures; 3) prepare for the merger of companies; 4) during business restructuring. Suppose the enterprise's management has doubts about the effectiveness of the organization of labor and dissatisfaction with the low productivity of employees. In that case, they turn to various assessment tools, including an independent organizational and personnel audit, with independent experts' involvement. A continuous audit, covering all functional structures and processes of an enterprise, and a selective one, when the task is to assess the performance of only one structural unit of the organization, is carried out (Shekshuyeva, 2019). With strong local management, the emergence of such problems with the organization of employees' working time for a long time is impossible since the head's effectiveness is primarily assessed by the results of the unit's activities under his control. Suppose a business owner doubts one of the company's divisions' acceptable performance or the effectiveness of several divisions involved in the primary production process. In that case, it is advisable to involve external experts to assess the situation objectively. Loss of working time among staff, according to various experts, is from 10 to 50% of working time. Such indicators allow us to talk about hidden 1 Russia lagged behind Ireland by 3.8 times in labor productivity (Aliev, 2018). Internal reserves of organizations and enterprises to increase labor productivity and reduce costs even without additional fees for technical re-equipment or restructuring of fundamental processes.

The activities of a veterinary specialist at enterprises engaged in the production, storage, and sale of food products using the information system "Mercury" in their work is associated with a complex of identical work processes that occupy the primary working time of a veterinarian (Pomerantsev, 2017). The automated information system "Mercury" is intended for electronic certification and ensures the traceability of goods supervised by the state veterinary supervision during their production, circulation, and movement across the Russian Federation's territory to create a unified information environment veterinary medicine, improve biological and food safety.

Labor processes of veterinary specialists using the App "Mercury" are divided into preliminary and final results, operational time, and organizational and technical maintenance of the workplace (Pomerantsev, 2018).

MATERIALS AND METHODS

The work was at the Federal State Budgetary Institution of Higher Education "St. Petersburg State University of Veterinary Medicine" at the Department of Organization, Economics, and Management of Veterinary Affairs from 2015 to 2019. The studies were carried out in structural divisions and based on materials from the state budgetary institution "St. Petersburg City Veterinary Station". The statistical and economical method was used, based on statistical data collection and analysis and theoretical generalization. [4] To assess cost-effective measures was using the computational-constructive research method. To compare the performance of enterprises of various types of activities was using an abstract-logical research method. To study the cost of working time was using the technique of photography of the working day, timing, and photo timing of labor processes. Work time and break time were into account. The time of breaks in research is represented by those regulated by labor legislation and a specialist's work schedule and unregulated.

The calculation of the efficiency of using working time was according to the formula:

$$K_p = \frac{T_{op} + T_{ps} + T_{rp}}{T_{rd}}$$

T_{op} – time of operational work, min;

T_{ps} – time of preparatory and final work, min;

T_{rp} – time of regulated breaks, min;

T_{rd} – working day, min.

The level of employment of a veterinary specialist in operational work was according to the formula:

$$Y_{sp} = \frac{T_{op}}{T_{rd}} \times 100\%$$

The indicator of the labor productivity reserve by reducing the time for other work is according to the formula:

$$T_{p1} = \frac{T_{dp}}{T_{op}}$$

T_{p1} – wasting time;

T_{dp} – time spent on other types of work.

Loss of working time due to reasons depending on the contractor (unregulated breaks):

$$T_{p2} = \frac{T_{pn}}{T_{op}}$$

T_{pn} – non-scheduled breaks.

The reserve for increasing labor productivity (T_{tot}) will be:

$$T_{tot} = T_{p1} + T_{p2}$$

RESULTS AND DISCUSSION

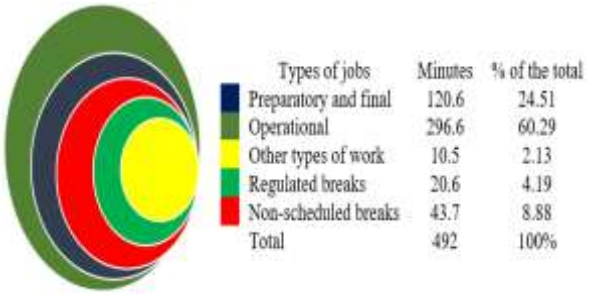
The time of work of veterinary specialists at the serviced enterprise when processing veterinary accompanying documents in the information system "Mercury" is presented from the following components: time of preparatory and final work, operational time, and time of organizational and technical maintenance of the workplace.

To calculate the efficiency of using working time, the contractor's work processes during the work shift must be attributed to one of the groups of types of work: preparatory and final, operational, other types of work, regulated or non-regulated breaks.

For a veterinarian at enterprises related to the circulation and production of food products using the App "Mercury," preparatory and final work includes: telephone conversations on work issues, production meetings, and negotiations, moving and transitions, turning on and off office equipment, the way to the place of product inspection, as well as other types of labor activities directly related to the provision of labor processes. For operational work: inspection of products, verification of brands, weights and markings, an inspection of containers, an inspection of a vehicle, verification of accompanying documentation, registration of an accompanying veterinary document, and other types of work that provide the main labor activity when moving and manufacturing products of animal origin. For different kinds of work: work is not directly related to the provision of the labor process.

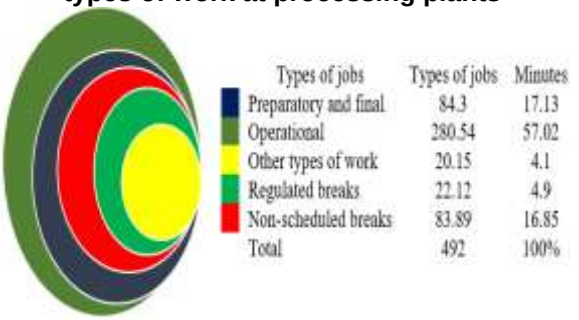
To determine the cost of working time for each of the work types, the timing of working time is carried out, with the entry of the results obtained into the record sheet and the subsequent calculation of the arithmetic mean. Such measurements are at least three times, not less than five specialists.

To obtain an objective average statistical result, it is reasonable to carry out measures on groups of persons with the most identical work activity. In this connection, our studies were into groups depending on the type of enterprise serviced by a veterinary specialist. Analyzing figure 1 we noted the specificity of the work of processing enterprises is that the main activity of a veterinary specialist is associated with the implementation of a set of specific works characteristic only of this type of enterprise, namely, registration of a batch of products, sampling of raw materials and products, accounting and registration of biological waste. As a result, with a minimal amount of time spent on unregulated breaks, a lot of time is spent on preparatory and final work and other types of work.



Types of jobs	Minutes	% of the total
Preparatory and final	120.6	24.51
Operational	296.6	60.29
Other types of work	10.5	2.13
Regulated breaks	20.6	4.19
Non-scheduled breaks	43.7	8.88
Total	492	100%

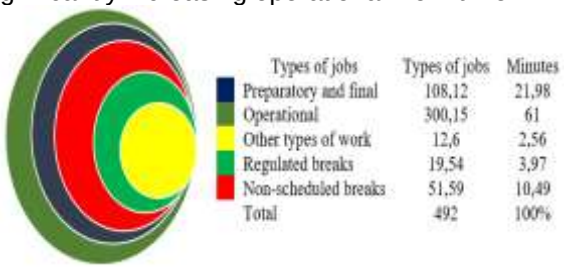
Figure1: Linear-radian model of the ratio of types of work at processing plants



Types of jobs	Types of jobs	Minutes
Preparatory and final	84.3	17.13
Operational	280.54	57.02
Other types of work	20.15	4.1
Regulated breaks	22.12	4.9
Non-scheduled breaks	83.89	16.85
Total	492	100%

Figure 2: Linear-radian model of the ratio of types of work at wholesale enterprises

Analyzing figure 2, we that a veterinary specialist at wholesale enterprises has several specific features that increase labor activity efficiency. These include a large volume of circulating products of the same name, high mechanization of labor when inspecting products, loading, shipment, and accounting mechanization, significantly increasing operational work time.



Types of jobs	Types of jobs	Minutes
Preparatory and final	108,12	21,98
Operational	300,15	61
Other types of work	12,6	2,56
Regulated breaks	19,54	3,97
Non-scheduled breaks	51,59	10,49
Total	492	100%

Figure 3: Linear-radian model of the ratio of types of work at wholesale and retail enterprises

A feature of the work of a veterinary specialist at wholesale and retail enterprises (See Fig. 1) can be considered control and accounting of products sold through the retail network, low mechanization of labor, a wide range of products, and small circulating lots, which in turn increased

the time for operational and preparatory and final work.

The established differences in the load depending on the type of enterprise serviced by type of work are due to the difference in the work processes performed and the serviced enterprises' specifics.

When calculating the efficiency of working time, the highest coefficient was obtained at processing plants - 0.91; the following wholesale and retail enterprises - 0.89; wholesale enterprises - 0.81, which confirms the conclusions drawn earlier.

The level of employment of veterinary specialists in operational work also confirms the earlier analysis of the activities and specifics of the work of enterprises of various types of activity: processing enterprises - 61.79%; Wholesale enterprises - 58.45%; wholesale and retail enterprises - 62.53%

The results of calculating the labor productivity reserve by reducing the time for other work: processing enterprises - 3.54%; wholesale enterprises - 7.19%; wholesale and retail enterprises - 4.2%.

The results of calculating the reserve for increasing labor productivity due to the elimination of unregulated breaks: processing enterprises - 14.74%; wholesale enterprises - 29.91%; wholesale and retail enterprises-17.19%

The results of calculating the total reserve for increasing labor productivity: processing enterprises - 18.28% (384.34 min / working week); wholesale enterprises - 37.1% (458.64 min / working week); wholesale and retail enterprises - 21.39% (402.82 min / working week).

The results obtained are the basis for adjusting veterinarians' activities at enterprises of various types of activity, providing the basis for distributing the workload, and the basis for the rational distribution of working time and its reserves to ensure a more productive mode of operation of enterprises.

CONCLUSION

Based on the results obtained, it can be concluded that the maximum utilization of working time by a veterinarian is achieved at processing plants. This is due to the complete range of labor tasks and specific labor processes, such as registration of a batch of products and product sampling. Veterinary specialists have the lowest coefficient at wholesale enterprises. This is also due to their work's specifics, namely a narrow range of work tasks performed, labor automation, and product identity. Simultaneously, the employment level in operational work is higher at wholesale enterprises, indicating high mechanization of labor, namely, the depreciation of preparatory and final work. Based on the calculated indicators and analysis of veterinary specialists' activities, it can be concluded that the maximum potential for the productivity of operational work can be achieved at wholesale enterprises and amount to 458.64 minutes per 40 hours working week.

CONFLICT OF INTEREST

The authors declared that present study was performed in absence of any conflict of interest.

ACKNOWLEGEMENT

The research was carried out within the framework of state assignment No. 082-00041-20-00 dated 23.12.2019.

AUTHOR CONTRIBUTIONS

D. Pomerantsev designed and performed the experiments and also wrote the manuscript. A. Aliev, P. Shekshuyeva, and N. Semenenko performed data collection and analysis. D. Zakhodnova designed experiments and reviewed the manuscript. All authors read and approved the final version.

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