AN ANALYSIS OF LABOR PRODUCTIVITY IN SERBIA'S HOTEL INDUSTRY[1]

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Abstract:

Productivity, as a basic indicator of the success of a company's operations, shows the efficient use of labor in the work process. The subject of the research is labor productivity in the hotel industry in Serbia. The work aims to analyze the productivity of work in hotels from a natural and value aspect in 2022 and 2023. The analysis includes hotels according to categorization (number of stars), size, and location of the facility. The research included 31 hotels, according to the categorization with three, four, and five stars. The financial data used in this analysis were taken from the financial reports of the observed business entities, on the Agency for Business Registers website. The obtained results show the growth of business income per employee in 2023 in nominal terms, and, at the same time, a decrease in real terms. Labor productivity shows an increase in hotels of the five-star category, as well as in small and large hotels.

Keywords:

hotel industry, labor productivity, number of employees, business income.

JEL Classification:

Z31, Z 32

INTRODUCTION

The main goal of every company is to achieve business success and maximize profit, which is defined as the difference between income and costs. Since revenues and costs have opposing effects on business performance, it is essential to adhere to fundamental economic principles such as productivity, efficiency, and profitability.

Productivity can be understood in a broader and narrower sense. Broadly speaking, productivity takes into account all inputs such as labor, capital, and land. Productivity, in a broader sense, gives equal importance to every input (labor, capital, and land) in the creation of a product (Čerović *et al.*, 2020). In a narrower sense, productivity refers to labor productivity, which measures the relationship between output and labor input. The goal of every company is to be as efficient as possible, using less labor to achieve more output, whether in production, sales, or services.

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In the hotel industry, where business is strongly related to the number of employees, productivity analysis primarily centers on labor productivity. This metric is influenced by a range of factors, including employees' work experience, motivation, interpersonal relationships, and the quality of training they receive. Problems such as frequent labor turnover, low wages, and the lack of motivation can reduce productivity. It is necessary to identify these factors and propose measures to improve productivity. According to Čerović *et al.* (2020), numerous factors related to the workforce affect productivity: work experience, employee qualifications, courtesy, motivation, relationships within the collective, teamwork, training, etc., so it is necessary to determine their intensity and measures that will encourage positive and eliminate negative influences. Frequent labor turnover, lack of quality hospitality staff, lack of interest in work, and wages that are below average can affect reduced productivity. It is necessary to determine the intensity of all factors, in order to propose measures that encourage the growth of labor productivity. According to Siregar and Sulaiman (2017), performance improvements are desirable for both employers and employees. Employers, in particular, value enhanced employee performance as it leads to increased productivity and higher corporate profits.

The aim of this paper is to provide an overview of productivity indicators and analyze work productivity in hotels in Serbia. Based on the analysis results, it seeks to determine the optimal number of employees required per department to enhance operational efficiency.

LITERATURE REVIEW

Enhancing employee productivity remains one of the greatest challenges in business operations, a topic extensively explored by numerous scholars and industry experts. Stanišić and Radović (2023) indicate that the satisfaction of basic psychological needs and a working environment that creates favorable conditions for work have a positive effect on the work outcomes of employees in the hotel industry. According to Simpao (2018), improving labor productivity is one of the more enthralling and challenging aspects of managing the hotel and restaurant business. A key responsibility of managers is to ensure that every resource within the business contributes effectively to achieving the company's goals while maximizing organizational value. To improve overall profitability, managers should focus on identifying critical success factors and developing sustainable competitive advantages. Some hotel companies are successful because they have implemented proper strategies, while others struggle due to their inability to identify and implement the right strategies (Poldrugovac, 2016). Labor productivity measured per hour worked is a key determinant. Low labor productivity has serious implications for international competitiveness and sectoral growth rates. Therefore, the productivity of labor also affects competitiveness in the international tourism market (Fatma *et al.*, 2016).

According to Xie *et al.* (2023), effective hotel human resource management should prioritize the cultivation of front-line employees' self-professional identity, harness the positive role of emotional labor, and enhance labor productivity. This approach can lead to reduced operating costs, improved service quality, staff stability, and increased hotel revenue. Nguyen and Phan (2024) point out that the labor productivity improvement is often regarded as the major driver for business development, especially in emerging economies. Ognjanović (2016) examined the interdependence of business activities that contribute to the creation of value and business financial and non-financial performance of hotels. The obtained results show that the business activities of human resources management, marketing activities aimed at the efficient use of hotel capacities, and the possibility of innovating basic and additional hotel activities contribute to the growth of employee productivity.

Ognjanović *et al.* (2022) investigated the relationship between the productivity of managers in hotels and intellectual capital, as part of the hotel's intangible assets. The results of the research show that investing in human, structural, and consumer capital positively contributes to the productivity of managers. Additionally, the results indicate that there are no significant differences in the productivity levels of managers across three-, four-, and five-star hotels. According to Jibir *et al.* (2023), human capital is now recognized as a key element that can be utilized to achieve organizational objectives. Firms strive to effectively manage their workforce through human capital development in order to achieve not only business objective but also business survival and sustainability. Holjevac *et al.* (2012) examined long-term natural indicators (average number of nights per employee) and value indicators of productivity (total income/operating income/net profit per employee). Factors such as labor availability, labor quality, leadership style, management practices, technology adoption, and capital allocation have been identified as critical determinants of labor productivity improvement in the hotel service sector in Vietnam (Nguyen & Phan, 2024). The overall findings indicate that investments in and stocks of human capital significantly enhance firms' productivity. In particular, the average years of educational attainment of skilled workers (professional competencies), GM level of education (complex functions), and workers with high school education (basic skills) are the stocks of human capital that bring about gains in labor productivity (Jibir *et al,* 2023). However, the results also reveal a general decline in productivity, highlighting the urgent need to implement measures aimed at boosting productivity.

The hotel industry is vulnerable to uncertainties arising from economic crises, regulatory changes, and pandemics. This vulnerability inevitably causes hotel occupancy rates to drop, leading to lower revenue growth (Agung *et al*, 2024). Brown *et al.* (2020) found that, regardless of hotel size, the value added increased significantly as the number of employees grew. Expanding the number of rooms available for sale as well as upscale positioning generated significantly greater value added for medium-sized hotels. The value added by large hotels was significantly enhanced when they were company-owned and managed by a branded management company. The hotels exhibited constant returns to scale. Relative to capital inputs, labor accounted for the bulk of value added (Brown *et. al*, 2020). Holjevac *et al.* (2012), emphasize investing in training and education and giving more authority to employees. Since the research showed that hotels with the ISO 9000 certificate have higher productivity than hotels without the certificate, it was pointed out that hotels could contribute to work productivity by implementing a quality management system.

METHODOLOGY

Data from the Agency for Economic Registers website (https://fin.apr.gov.rs/JavnaPretraga) were taken for the analysis of labor productivity. The criteria for selecting hotel facilities were: continuous operation in 2022 and 2023, and having hotel management as their primary and sole activity (activity code 551000 – hotels and similar accommodation). The previous two years were not taken into consideration because, due to limited movement, health measures, and recommendations during the pandemic, the hotel's business results are devastating, it can even be said that there was no business at all. (Radić *et al.*, 2021). In the defined sample of 31 hotels, the four-star hotels are the most represented, accounting for 61.29% of the total. Three-star hotels make up 29.03%, while five-star hotels are the least represented at 9.68%. Based on location, the sample includes three spa hotels, six mountain hotels, and twenty-two city hotels. In terms of size classification, according to Đoković (2018), the sample consists of six small, sixteen medium, seven large, and two very large hotel facilities. To avoid the distortion that could arise

from treating hotels of varying sizes and employee numbers as having equal influence on the average, a weighted average was applied. This was calculated using the cumulative number of employees, cumulative business income, and cumulative net profit. In order to get a more realistic insight into the movement of productivity, we took into consideration the inflation rate so as to eliminate the effect of price growth on the obtained results. According to data from the National Bank of Serbia, the average inflation for 2023 was 12.1%. The values of productivity indicators (business income and net profit) were converted into constant prices, 2022 =100, using the consumer price index as a deflator, according to the following formula:

$$Xi^{SC2022} = \frac{Xi^{TC}}{IPCi^{B}} \times 100$$

Where Xi^{SC2022} is the value of the indicator in constant prices from 2022, $⟦Xi⟧^{(TC)}$ is the value of the indicator in current prices, and $⟦IPCi⟧^{B}$ is the consumer price index for that year (Mašić, 2024). Subsequently, base productivity indices for 2023 relative to 2022 were calculated using the following formula:

$$I2023^{B} = \frac{Xi2023}{X2022} \times 100,$$

Where $I2023^{B}$ represents the base productivity indices for 2023, $Xi2023$ is the value of the productivity indicator in 2023 at constant prices, and, $X2022$ the value of indicators in the base period (Mašić, 2024).

RESULTS

In this paper, we will look at the labor productivity in the hotel by calculating the ratio of output and input values, from a natural and value aspect. The structural indicators considered in this analysis include the number of accommodation units, number of employees, business income, and net profit. In 2023, the total number of employees across all analyzed hotels increased by 14% compared to the previous year. Additionally, total business income in 2023 rose by approximately 8.35% relative to 2022.

In 2023, net profit increased by 4.83% compared to the previous year. However, natural indicators, such as the number of accommodation units per employee, indicate a drop in productivity due to an increase in the number of employees and lower efficiency. However, caution is needed when interpreting these results, as physical indicators do not account for all relevant factors. For instance, in lower-category hotels, a single employee may serve more guests, which could misleadingly suggest higher labor productivity in such establishments (Čačić, 2013).

Table 1. Indicators of labor productivity of employees in the hotel industry

Years	Total revenue	Total number of employees	Net gain	The revenue per employee	Profit per employee
2022	13,046,155,000	2,537	1,361,346,000	5,142,355.14	536,596.77
2023	15,846,221,000	2,841	1,427,084,000	5,577,691.31	502,317.49

Source: Author's calculation

Value indicators (total business income per employee and net profit per employee) show an increase in productivity by 8.47%, i.e. a decrease in productivity by 6.37% successively. The obtained results show that the total number of employees grew slower than the growth of total business income and contributed to the growth of productivity, but faster than the growth of net profit, thus exerting pressure on productivity reduction (Table 2).

On the other hand, this study had to account for price instability as an external factor that was evident during the observed period. The situation changes when we consider the effects of inflation. Furthermore, we note that there was a drop in productivity, viewed from the aspect of total business income, at the level of the analyzed sample of 3.24% in 2023 compared to the previous year. Net profit in 2023 increased by 4.83%, but productivity decreased by 16% compared to 2022. The results obtained for the defined sample in the observed period are shown in Table 2.

Table 2. Indicators of labor productivity of employees in the hotel industry

Year	2022	2023
Number of accommodation units per employee	1,66	1,48
Base index	100	89
Total business income per employee in constant prices	5,142,355.14	4,975,638.99
Base index	100	97
Net profit per employee in constant prices	536,596.77	448,097.68
Base index	100	84

Source: Author's calculation

The factors that could contribute to the increase in productivity can be divided into two groups:

1) Internal factors: Compliance with world hotel standards, modern organization and planning of work, standard hotel system for monitoring work results and business statistics, quality of products and services (TQM), investment in modern equipment and technology, internal regulations and rules on rewards, internal regulations and rules on rewards, interpersonal relations, motivation and skills of staff, continuous education of managers and hotel staff, staff information system, salaries and other personal income, qualification structure of employees, working conditions, guest satisfaction, etc.

2) External factors: degree of development of the economy, socio-political system, growth rate of the social product, economic policy, state and development of infrastructure, personnel education system, labor legislation, global problems, etc.

In 2020 and 2021, the global COVID-19 pandemic, along with numerous interstate and domestic restrictions, significantly reduced the scope of service provision. As a result, many companies faced severe financial difficulties, leading to workforce reductions, and in some cases, the complete cessation of operations (Filipović & Radović, 2024). Today, artificial intelligence is emerging as a key tool for enhancing both labor productivity and overall business performance. According to McKinsey Global Institute research, generative artificial intelligence could increase labor productivity by 0.1 to 0.6 percent globally by 2040. (Čačić, 2013)

Čerović and Čomić (2013) acquire three necessary factors for the success of any hotel: location, location, and location. Analyzing the productivity of hotel facilities by type, a negative trend in labor productivity was recorded in 2023 compared to the previous year. Labor productivity in spa-located

hotel facilities declined by 4.03 percentage points, while mountain hotels experienced a larger decrease of 8.49 percentage points. City hotels recorded the highest labor productivity, although it was still 2.33 percentage points lower than in 2022 (see Figure 1).

Figure 1. Labor productivity observed in relation to the division of hotels by type
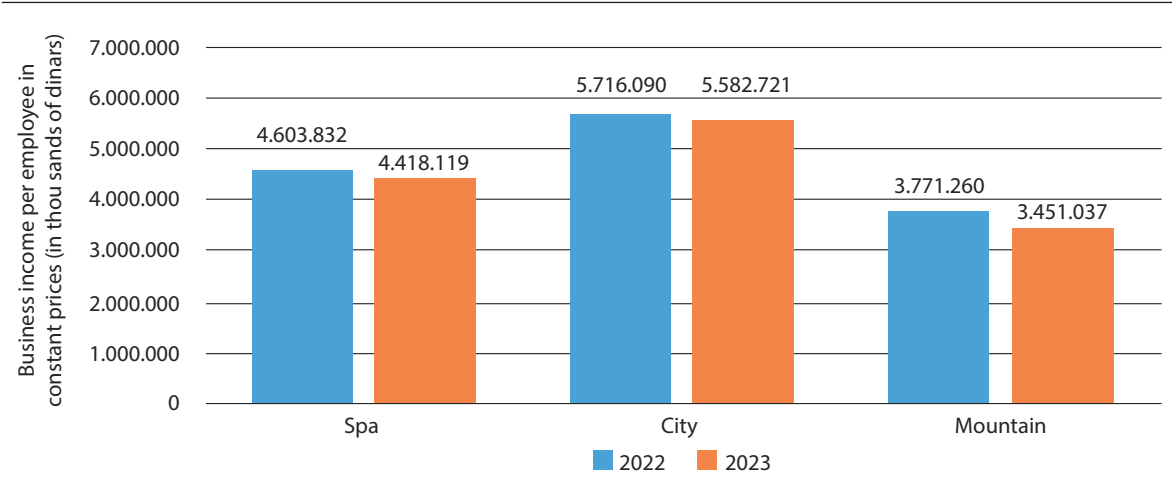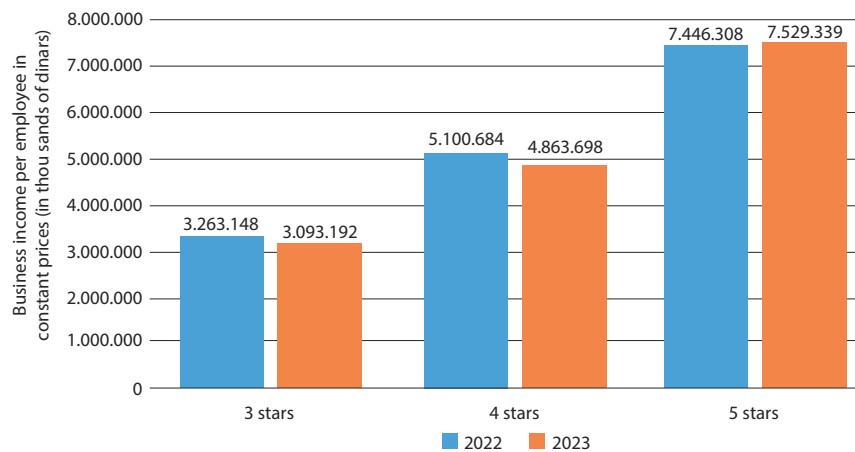

Source: Author's calculation

Benchmarking analyses in tourism and hospitality in recent years have revealed a growing trend in the development of urban tourism. This is especially contributed by the progress of congress tourism, which is mostly realized in cities due to the developed tourist infrastructure. The growing popularity of Serbia as a tourist destination, driven by effective destination management and global political circumstances, has led to an increase in tourist arrivals nationwide, particularly in the capital and other major cities.

The research, which included 31 hotels in different categories, showed that three-star hotels had the biggest drop in revenue per employee in 2023, which is 5.21%. Four-star hotels recorded a smaller drop in productivity of 4.65%, while five-star hotels only recorded an increase in labor productivity of 1.12%. Across all hotels analyzed, the productivity of five-star hotels was almost double the average. The productivity of three-star hotels is about 63% to 62% of the average productivity, while the productivity of four-star hotels dropped from 99% to 98% of the average (Figure 2).

Higher-category hotels offer a high level of service quality, are equipped with modern technologies, and require high norms and standards regarding employees. The management of the hotel company must plan the required number and structure of employees in each department in accordance with the category of the facility. Greater investment in employee education is an important factor in the success of a hotel facility leading to more productive workers; however, Serbia spends below the average of European Union countries. According to a report by the World Bank and UNICEF, 3.9% of GDP was allocated for education in 2018 from the state budget, which is below the EU average of 4.6%. Aleksić (2024), states that some jobs in hotels will be low-productivity regardless of whether they are performed by a highly qualified person or a person without qualifications (maid jobs).

Figure 2. Labor productivity observed in relation to the division of hotels by category

Source: Author's calculation

If we look at hotels by size, or capacity, we see that only small and very large hotels recorded an increase in productivity in 2023 compared to the previous year (Fig. 3). Compared to the sample average, operating revenues per employee in small hotels range from 75.16% to 80.46% of the average values. Medium-sized hotels recorded a small decrease, from 81.44% to 80.42% of the average, while large hotels remain at the level of 120.99% to 120.61% of the record values. The largest increase in productivity was recorded by very large hotels, with 152.20% of the average revenues per employee.

Figure 3. Labor productivity in relation to the division of hotels by size
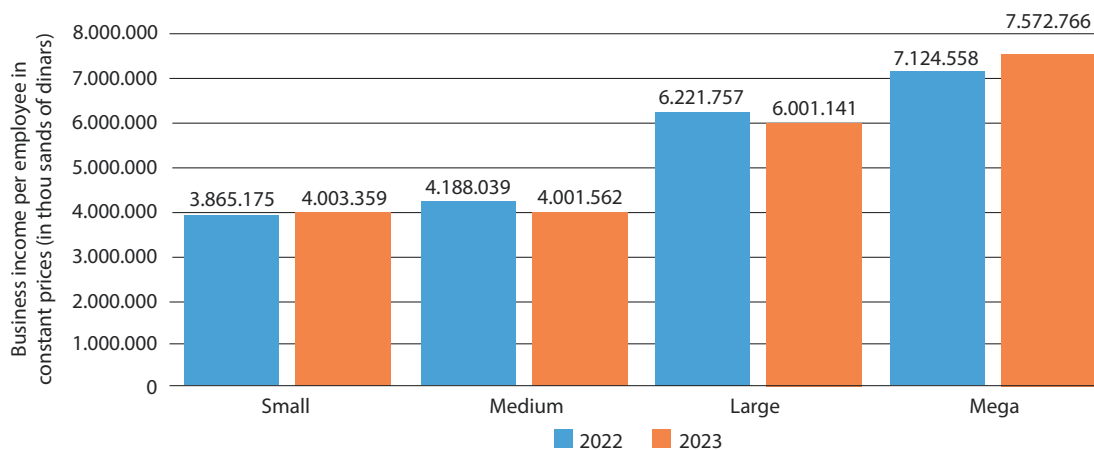
Source: Author's calculation

CONCLUSIONS AND DISCUSSION

The results show that labor productivity, measured by total compensation per employee in 2023, nominally increased by 8.47% compared to 2022, but in real terms, there was a decrease of 3.24%. Five-star hotels, as well as small and very large hotels, recorded an increase in productivity. Hotels in cities have the highest productivity. It is recommended that the management of spa and mountain hotels prioritize controlling labor costs – which have increased faster than operating revenues – to enhance productivity. Employee training is also an important factor in increasing productivity. In order to improve productivity and competitiveness in the market, the hotel industry is recommended to invest in the development and integration of artificial intelligence into its business processes.

The research had some limitations, one of which was the sample size. It was conducted in April 2024, when the 2023 financial statements for some hotels were not available on the Business Registers Agency website, and therefore could not be included in the analysis. Monitoring labor productivity is key to determining the optimal number of employees per department, which can increase the success of the hotel business. However, the data on the number of employees did not distinguish between full-time and part-time workers, nor did they distinguish between employees by length of service, work department, professional experience, and level of education. Labor productivity depends on many financial and non-financial factors that were not taken into account, which would provide a more complete insight into the operations of the observed hotels.

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ANALIZA PRODUKTIVNOSTI HOTELSKOG SEKTORA U SRBIJI

Rezime:

Produktivnost, kao osnovni pokazatelj uspešnosti poslovanja preduzeća, pokazuje efikasno korišćenje radne snage u procesu rada. Predmet istraživanja je produktivnost rada u hotelijerstvu u Republici Srbiji. Rad ima za cilj da analizira produktivnosti rada u hotelima sa prirodnog i vrednosnog aspekta u 2022. i 2023. godini. Analizom su obuhvaćeni hoteli prema kategorizaciji (broj zvezdica), veličini i lokaciji objekta. Istraživanjem je obuhvaćen 31 hotel, prema kategorizaciji sa tri, četiri i pet zvezdica. Finansijski podaci korišćeni u ovoj analizi preuzeti su iz finansijskih izveštaja posmatranih privrednih subjekata, sa sajta Agencije za privredne registre. Dobijeni rezultati pokazuju rast poslovnih prihoda po zaposlenom u 2023. godini u nominalnom izrazu, a istovremeno realno smanjenje. Produktivnost rada pokazuje porast u hotelima kategorije pet zvezdica, kao i u malim i velikim hotelima.