AGEING OF THE LABOUR FORCE – INSIGHTS FROM THE CROATIAN HOSPITALITY INDUSTRY

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Abstract

Purpose - The research aims to investigate the ageing of the labour force in the Croatian hospitality industry and its implications for sustainable development. Specifically, the study seeks to determine if the ageing trend within the hospitality sector aligns with national labour market trends.
Design - The study focuses on analysing the age structure of the workforce in the hospitality industry compared to the overall national level. By examining the dynamics of ageing within this industry, the research aims to uncover any contrasting patterns and trends in the workforce composition.
Methodology - Utilizing secondary data from the Croatian Bureau of Statistics, the research conducts a regression analysis to delve into the age distribution within the hospitality industry. The analysis covers a period from 2009 to 2022, providing insights into the changes in the age structure of the labour force over time.
Approach - The study delves into the effects of global changes and crises on the labour market in Croatia. By focusing on the hospitality industry, known for its seasonality, low wages, and high proportion of unskilled labour, the research aims to understand how these factors have influenced the age composition of the workforce.
Findings - The research reveals a notable trend within the hospitality industry, showcasing a higher proportion of younger workers compared to the national average. This observation contradicts the general ageing trend observed at the national level, highlighting the unique dynamics within the hospitality industry sector.
Originality of the research - The study's originality lies in its specific focus on the ageing workforce within the Croatian hospitality industry. By shedding light on how this sector diverges from national labour market trends, the research provides valuable insights into the changing demographics of the workforce in a critical sector like the hospitality industry. This analysis contributes to a deeper understanding of the implications of age demographics on business policies and human resource management within the industry.
Keywords aging labour force, older employees, hospitality industry, tourism

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INTRODUCTION

The ageing of the labour force can be observed in all developed economies, including Europe. Many factors influence population ageing, and the most commonly cited in the professional and academic literature are emigration/migration as a result of globalisation, open borders and free markets, low birth rates and longer life expectancy (Nejašmić, Toskić, 2013; Kudo, Mutisya, Nagao, 2015). In its report Ageing Europe (2020), Eurostat also cites reasons such as advances in healthcare and medical technology, as well as increased individual awareness of the benefits of a healthy lifestyle and generally improved living conditions. The effects of an ageing population are far-reaching and are usually seen in a negative context. For example, the ageing population has a negative impact on economic growth, social costs and public finances as well as the healthcare system (older people often require more expensive specialised care, which places a greater burden on the healthcare system) (Vučemilović, Rončević, 2022).

On 1 January 2023, the population of the EU is estimated at 448.8 million people, of whom more than a fifth (21.3%) are aged 65 and over. The share of people aged 55 and over in the total workforce in the EU-27 increased from 11.9% to 20.2% between 2004 and 2019; this trend was uninterrupted as the share increased every year. The fastest increase in the number of people in employment was in the 60-64 age group, with the total number of people in employment in this age group more than doubling (up 139%). The number of people in employment aged 65to 69 and 55 to 59 also increased rapidly by 99 % and 70 % respectively. The projections show that the proportion of the working-age population is expected to decline steadily until 2100, while the proportion of older people in the total population is likely to increase: People aged 65 and over will make up 32.5% of the EU population in 2100, up from 21.3% in 2023. (Eurostat, 2024).

The data for Croatia is not encouraging either. Moreover, Croatia is one of the fastest ageing nations in Europe - in the last 10 years, the proportion of people over 65 has risen by 4.6 percentage points. This is reflected in the labour market, i.e. the increase in the share of the older population in the structure of the total working population, which brings with it the need to explore the changes that occur in people as they age and which may consequently be reflected in the quality of their work performance and labour productivity.

1. OVERVIEW OF PREVIOUS STUDIES

Dimovski et al. (2022, p. 13) have categorised age-related changes within an individual into three equally important groups: physical changes, cognitive and affective changes, and personality and motivation. **Physically** demanding activities in the hospitality industry entail an increased risk of occupational diseases and injuries such as musculoskeletal injuries, burns, lung and skin diseases (Zhang, Torres and Jahromi, 2020). Rates of acute trauma have been found to be highest among kitchen staff and housekeepers, while housekeepers also have the highest rate of musculoskeletal disorders (Buchanan et al., 2010). In addition to preventive measures (education, use of technologies that reduce the use of human labour, etc.), organisations need to use their HR policies to enable solutions such as internal mobility of employees (to jobs that match the physical fitness of older employees) or reduced working hours, while supporting an organisational culture without intergenerational conflicts that affect organisational performance (McGuire, Todnem, Hutchins, 2007). Although some **cognitive** abilities may decline with age, it is argued that both cognitive and physiological decline can be compensated for by experience. Research by Abubakar and Wang (2019) shows that experience is the most important human factor influencing human performance compared to age. Kanfer and Ackerman (2004) argue that there is neither theoretical justification nor empirical evidence for the assumption that work **motivation** inevitably and generally declines with age. Process-oriented formulations of work motivation tend to emphasize effort and time rather than knowledge as the personal resources that an individual use to determine the direction, intensity and persistence of their work behaviour. For older workers, knowledge tends to be of great importance, while the opposite is true for younger workers. From an organisational perspective, the most effective motivational interventions for mid-life and older workers may be those that focus on the use and distribution of relevant knowledge and experience (Kanfer, Ackerman, 2004, 456). Ng and Feldman (2008, 403) also suggest that older workers may be just as motivated as younger workers to contribute to their organisation.

It is not clear whether age affects productivity, but most studies showed no differences between the productivity of younger and older workers (see Viviani et al., 2021). Aubert and Crepon (2006) claim in their study that productivity decreases with age, but only slightly, from 55 to 59 years, and then increases again from 60 years and above (which is explained by the low number of well-educated and paid workers in this group). Interestingly, productivity in all three sectors (manufacturing, trade, services) is lower among 35-39 year olds than among 40-55 year olds. Asavanirandorn, Pechdin and Trang (2022) claim that there are no productivity differences by age and that the productivity of older workers can be promoted by adapting the workplace and working conditions to older workers. Börsch-Supan, Hunkler and Weiss (2021) claim that there are no productivity differences between the ages of 20 and 60. While average productivity remains the same, they find differences depending on the complexity of tasks: productivity increases with age in teams with more demanding tasks and decreases in routine tasks. On the other hand, Calvo-Sotomayor, Laka and Aguado (2019) found that productivity decreases with age (they used the 1983-2014 dataset), while Hernæs et al. (2023) show that a larger proportion of older workers seems to have a small positive effect on labour productivity. Such discrepancies in the study results are the result of different approaches to measuring productivity on the one hand and the way age is observed and measured on the other (e.g. difference between chronological and biological age).

The impact of an ageing population on the labour market is significant and complex. However, many beliefs about ageing have since become prejudices. Each age has its own potential, so the age inclusive workforce brings diversity and synergy of experience, perspectives and ideas. Of course, ageing population as a whole also means an aging labour force and the changes in the labour force structure in terms of the increasing proportion of older workers are quite clear from the statistical data. However, the data show that the situation is not the same in all sectors of the economy.

In 2022, the share of tourism in Croatia's GDP was 19.5% (Ministry of Tourism and Sport, 2022), with tourism being one of the strongest drivers of the country's economic development. Therefore, the focus on the labour force as an indispensable part of the service in this industry is both interesting and justified.

The National classification of activities (NKD; in use since 2007, data available from 2009) in section "I" follows Accommodation and food service activities, in other words hospitality industry (hotel and catering industry). In this part of the tourism industry, it was easiest to analyse the changes in the age structure of the labour force. At the beginning of the 2000s, the Croatian hospitality industry was characterised by a high proportion of older workers, which was partly due to low mobility and the associated low turnover and high unemployment rate. The effects of global changes and crises (e.g. the economic crisis of 2008, the 2020 pandemic, population migration, the opening of the EU labour market) have now also spilled over into the labour market in Croatia. From a country with a high unemployment rate, Croatia has quickly become a country that cannot meet its own labour needs. Given the characteristics of the hospitality industry (seasonality, low wages, high proportion of unskilled labour), it is to be expected that the age structure of the workforce has changed and the proportion of older workers in the structure has decreased, meaning that the proportion of young workers has increased. This contradicts the state and movement of the structure of the labour market at a national level, but is in line with the usual structure in this service industry worldwide (e.g. US Bureau of Labor Statistics, 2024).

There are no clear and general standards for which age groups of employees are considered old or older. The ultimate limit is usually the legal retirement age of employees (in Croatia it is 65 years). Based on existing research in the hospitality industry (e.g. Cheung and Woo, 2021; Jenkins and Poulston, 2014), which justifies such a decision by, among other things, the fact that the average age of employees in the hospitality industry is lower than in other industries, older employees are considered in this study as those aged 50 and over.

Based on this problem, the following hypothesis was formulated: *The trend of the share of over 50-year-olds in the total number of employees in the Croatian hospitality industry is opposite to the trend of this share at the Croatian level as a whole.*

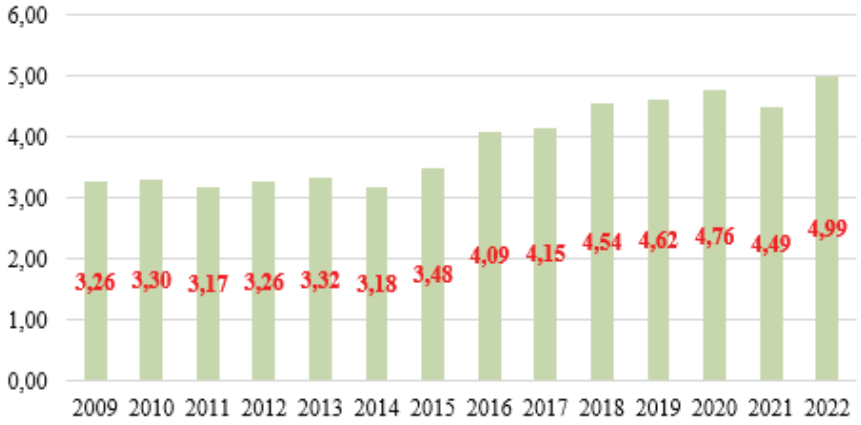
2. METHODOLOGY AND DATA ANALYSIS

For research purposes, this paper analysed data on the labour force in the Republic of Croatia and in particular in Section "I" (Accommodation and food service activities) for a period of 14 years, i.e. from 2009 to 2022 (persons in paid employment in legal entities, by age, situation as on 31 March). The analysis covers time series of only 14 years, but the change in the monitoring methodology, i.e. the change in the classification of economic activities from 2007 and the data available from 2009, made it impossible to cover a longer period due to the incomparability of the data. Official statistics record employees in 11 age groups: up to 18 years, 65 years and older and in the 5-year span for the period between the two age groups mentioned. These age groups were also used for the purposes of this study.

The period analysed was characterized by the effects of the global economic crisis (2008) and the high unemployment rate, but also by the pandemic and its consequences. These changes were reflected both in the labour market and in the labour force. Overall, however, apart from minor fluctuations, there was continuous growth in the number of employees during the period analysed. According to the data available from the Croatian Bureau of Statistics (for the years 2010 to 2023) the number of employees in the observed period ranged from 1,007,456 in 2014 to 1,233,420 employees in 2022. The average number of employees in the analysed period was 1,110,048 with a standard deviation of 71,468.15.

The same data for section "I" shows the development of the number of employees from a minimum of 32,007 in 2014 to a maximum of 61,514 employees in 2022. The average number of employees in this period was 43,618 with a standard deviation of 9,960.42. At the level of the Republic of Croatia, the number of employees grew by an average of 0.41% per year in the observed period, while the growth in the number of employees for section "I", i.e. for the hospitality industry, was faster and amounted to an average of 3.75% per year. The result is an increase in the share of employees in the hospitality industry in the total number of employees, visible in Figure 1.

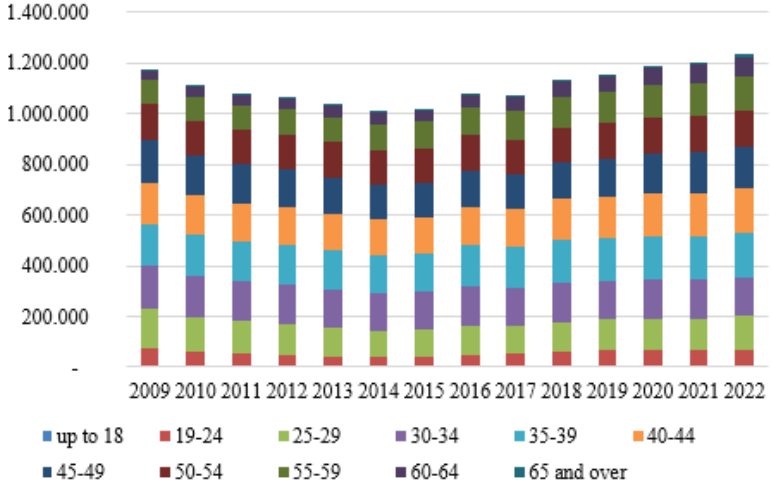
Figure 1: **Share of employees in the hospitality industry in the total number of employees (2009 – 2022)**



Source: Statistical Yearbook of the Republic of Croatia (2010-2023)

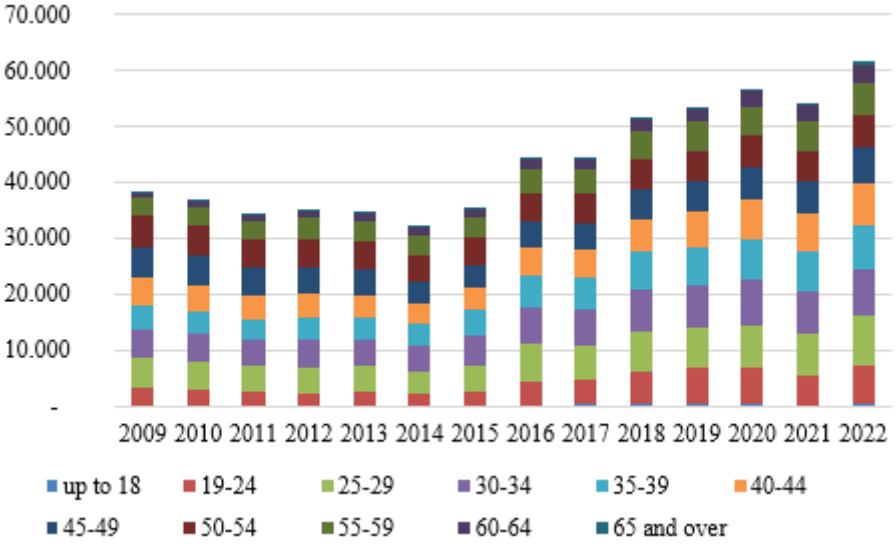
The number of employees is monitored according to eleven age groups. The structure for Croatia as a whole and for hospitality industry (section "I") by age is shown in Figures 2 and 3. It can already be seen from these figures that the structure of the hospitality industry does not follow the trend observed at the Croatian level: the proportion of younger age groups increases over time, i.e. the proportion of older people decreases.

Figure 2: **Employees by age, Croatia (total)**



Source: Statistical Yearbook of the Republic of Croatia (2010-2023)

Figure 3: **Employees by age, hospitality industry (section „I“)**



Source: Statistical Yearbook of the Republic of Croatia (2010-2023)

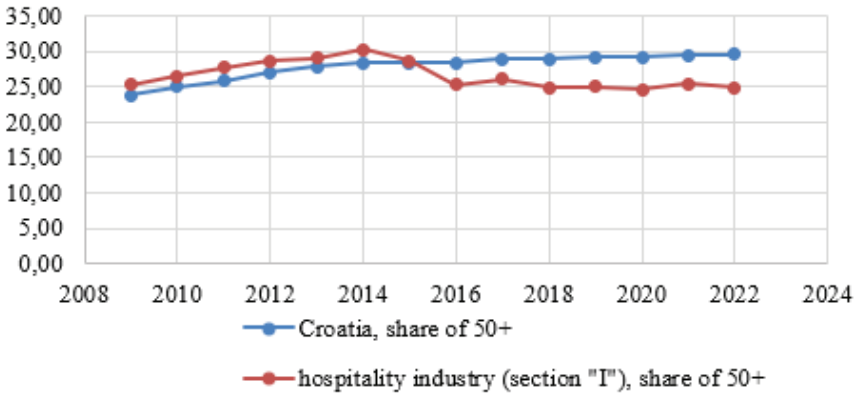
For the purpose of further analysis, particular attention was paid to employees aged 50 and over and their share of the total number of employees. The data are listed in Table 1 and shown in Figure 4.

Table 1: **Share of employees aged 50 and over in the total number of employees**

Year	Croatia, share of 50+	Hospitality industry (section “I”), share of 50+
2009	23,75	25,31
2010	24,98	26,55
2011	25,80	27,66
2012	26,99	28,67
2013	27,86	29,09
2014	28,35	30,23
2015	28,39	28,64
2016	28,37	25,32
2017	28,98	26,06
2018	28,89	24,84
2019	29,13	25,04
2020	29,24	24,65
2021	29,49	25,48
2022	29,57	24,90

Source: Statistical Yearbook of the Republic of Croatia (2010-2023)

Figure 4: **Share of employees aged 50 and over in the total number of employees**



Source: Statistical Yearbook of the Republic of Croatia (2010-2023)

Since 2015, the proportion of people over 50 in the hospitality industry has been continuously lower than the same proportion in Croatia.

To test the hypothesis, a linear trend model was estimated. The data was processed with Gretl software and the results are presented below.

Table 2: **Regression analysis results: Share of employees 50 years and over, Croatia (total)**

Model 1: OLS, using observations 2009-2022 (T = 14)				
Dependent variable: Croatia, share 50+				
	coefficient	std. error	t-ratio	p-value
Const	24,9047	0,445429	55,91	7,06e-016 ***
time	0,391660	0,0523130	7,487	7,36e-06 ***
Mean dependent var	27,84217	S.D. dependent var	1,805313	
Sum squared resid	7,471043	S.E. of regression	0,789042	
R-squared	0,823667	Adjusted R-squared	0,808973	
F(1, 12)	56,05319	P-value (F)	7,36e-06	
Log-likelihood	-15,46898	Akakike criterion	34,93796	
Schwarz criterion	36,21608	Hannah-Quinn	34,81965	
rho	0,685646	Durbin-Watson	0,342030	
Test for normality of residual -				
Null hypothesis: error is normally distributed				
Test statistic: Chi-square (2) = 0,416689				
with p-value = 0,811927				

Source: authors

The estimated regression coefficient indicates that the proportion of employees aged 50 and over increases by 0.39 on average. The regression coefficient is significant at 1%. All performed diagnostic statistics (normality of residuals and homoscedasticity of residuals) indicate the adequacy of the model i.e. that the model passes all the tests. The R^2 shows that almost 82,4% of the variation in the dependent variable is correlated with time.

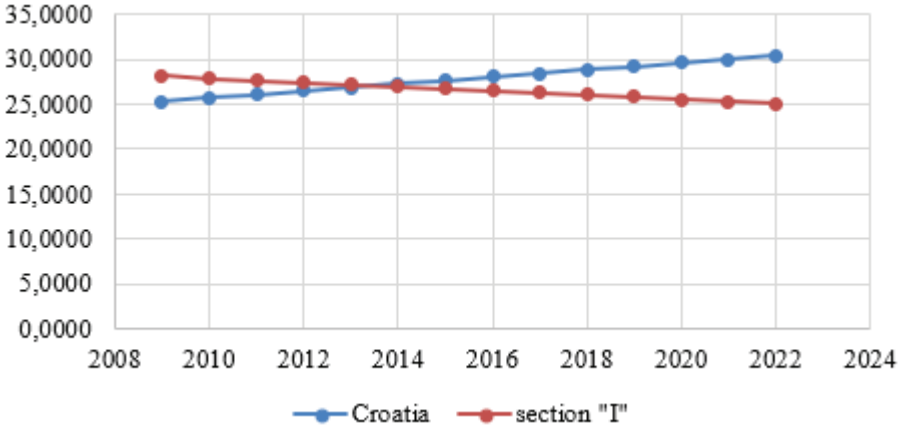
Table 3: **Regression analysis: Share of employees 50 years and over, hospitality industry (section "I")**

Model 2: OLS, using observations 2009-2022 (T = 14)				
Dependent variable: Section "I", share 50+				
	coefficient	std. error	t-ratio	p-value
Const	28,3612	0,943419	30,06	1,15e-012 ***
time	-0,234592	0,110799	-2,117	0,0558 *
Mean dependent var	26,60177	S.D. dependent var	1,881789	
Sum squared resid	33,51462	S.E. of regression	1,671193	
R-squared	0,271971	Adjusted R-squared	0,211301	
F(1, 12)	4,482849	P-value (F)	0,055805	
Log-likelihood	-25,97561	Akakike criterion	55,95122	
Schwarz criterion	57,22934	Hannah-Quinn	55,83291	
rho	0,544164	Durbin-Watson	0,675222	
Test for normality of residual -				
Null hypothesis: error is normally distributed				
Test statistic: Chi-square (2) = 0,966436				
with p-value = 0,616795				

Source: authors

The second estimated model confirms the hypothesis that the share of employees over 50 years old for section "I" shows the opposite trend to what is observed at the Croatian level: the share of employees over 50 years old decreases for section "I", while it increases at the Croatian level. The regression coefficient is significant at 10%. All diagnostic statistics performed (normality of residuals and homoscedasticity of residuals) show the appropriateness of the model and that the model passes all tests. The R2 shows that only 27% of the variation in the dependent variable is correlated with time and that the variations due to the effects of other relevant variables need to be further analysed. The lines of regression (fitted values) are shown in Figure 5.

Figure 5: **Regression (fitted values), share of employees 50 years and over – Croatia (total) and hospitality industry (section "I")**



Source: authors

The figure above clearly shows the contrasting trends in the share of employees aged 50 and over: the share is rising in Croatia, while it is falling in the hospitality industry. The results obtained confirm the hypothesis tested.

DISCUSSION AND CONCLUSION

As a service industry, the hospitality sector has its own special characteristics, which means that the ageing labour force poses additional challenges for employers. The hospitality industry is labour-intensive, and diversified services mean that a diversified workforce is needed. In a situation where fewer and fewer young people are entering the labour market (due to negative demographic trends), it is an increasing challenge for the hospitality industry to recruit and secure the necessary labour force. Add to this the generally high labour turnover rate and the problem becomes even more apparent.

The ageing of the labour force is associated with greater health and safety risks in the workplace, particularly in physically demanding tasks, and work in the hospitality industry is largely associated with such physically demanding tasks (standing, working at high speed, lifting heavy loads, etc.).

To address labour shortages and improve operational efficiency, hospitality companies are increasingly turning to technology and automation solutions such as self-check-in kiosks, mobile ordering apps and robotic assistants. While these innovations may help alleviate some of the labour pressures facing the industry, they also raise questions about internal labour mobility and the need for ongoing training and upskilling initiatives to ensure workers can adapt to technological change. On the other hand, the aging of the general population also brings changes in the structure of demand - there is an increasing need for age-friendly hospitality services that meet the needs and preferences of older guests (from accommodation with accessibility features to services with protocols tailored to the needs of older guests). Young employees with limited industry knowledge can hardly fulfil the complex requirements of such services.

If we put all these concerns aside, the fact remains that young workers are less and less available to the labour market (and that they usually see the hospitality industry as only a first stop in their working lives). Migration as a source of labour can mitigate the impact of the ageing workforce, but it comes with other complex challenges, including those at the level of national (and supranational) migration policies (Khan, 2019).

Therefore, employers must turn to the development of business policies and practises that not only keep their employees in the system for as long as possible (in terms of their age), but also attract older employees (by suppressing age discrimination practises) and ensure the coexistence of a multigenerational workforce (Viviani et al. 2021). Although a higher proportion of younger workers may initially seem like a positive feature of the hospitality industry, it is associated with negative phenomena that affect productivity, costs and the overall success of companies. The most important in this sense are the turnover rate and the low qualification and lack of experience of young employees. Namely, the hospitality industry usually has a high turnover rate due to the seasonal nature of the activity, long working hours, low wages for unskilled labour, etc. The older population is unwilling to take on physically demanding jobs and the pressures of peak seasonal workloads, which increases the challenges

of hiring and retaining employees. The U. S. Bureau of Labor Statistics (2024) reports that the average tenure of older workers is generally higher than that of younger workers. Workers in service occupations, who are generally younger, had the lowest average tenure (2.8 years). Of the employees in service occupations, those in the food service industry had the lowest median tenure, at 1.6 years. In addition, the hospitality industry is a service industry with lower average salaries than in other industries (e.g. the average monthly net salary for the year 2023 for section "I" was EUR 972, which is 15.33% less than the average for Croatia; Croatian Bureau of Statistics, 2024). In addition to the high work intensity (especially during the season), this is certainly one of the reasons why young people quickly leave this industry and consider employment in this industry only as a "stopover" at the beginning of their professional development, which is usually continued in another industry or activity. Such learned work, together with the lack of experience, contributes to a lower competitiveness of services, but also of hospitality companies in general (higher costs for labour, materials, etc.).

To summarise, it can be said that the ageing population represents both a challenge and an opportunity for the hospitality industry. In the long term, the hospitality industry must not "relax" because it is currently able to attract younger employees. The general changes in the labour market caused by the ageing population will certainly have an impact on the changing situation of the hospitality industry in the foreseeable future. To prepare for the potentially very near future, employers will need to implement creative recruitment and retention strategies, invest in staff development programmes and adapt their offerings to the growing and diversifying needs of an ageing guest base.

On the other hand, policy makers (governments), employers and industry stakeholders will need to work together to address broader labour force trends (impact on economic growth, public policies, welfare systems, demographic changes, migration, etc.) and promote sustainable growth in the hospitality industry.

The limitation of the study is a time series of only 14 years, but the change in monitoring methodology, i.e. the change in the classification of economic activities from 2007 and the data available from 2009, made it impossible to cover a longer period due to the incomparability of the data. The limited time series contributed to the low significance of the regression models (10% level).

Another important limitation of this study is the fact that the analysed data from the Croatian Bureau of Statistics refer to March 31 in the observed years and therefore include the number of (mostly) full-time employees. Considering the strong seasonality of the hospitality industry and the fact that during the high season in summer the number of employees in the hospitality industry increases by up to 60%, an analysis of the situation in the summer months would most likely show an even more significant difference in the age structure between the hospitality industry and the overall economy of the Republic of Croatia.

This study points to several possible avenues for further research. Comparative analyses with other countries or regions should be conducted to understand whether the observed trends in the Croatian hospitality industry are unique or reflective of broader patterns in the industry. Cross-country comparisons could shed light on the role of cultural, economic or regulatory factors in shaping the age dynamics of the hospitality workforce. The paper discussed the mixed findings in the literature regarding the relationship between age and productivity. Future studies should address and examine the productivity and performance of older workers in the hospitality industry. Empirical studies focusing on the Croatian hospitality industry could provide more nuanced insights into this relationship. In addition, qualitative methods such as interviews or focus groups should be included to complement the quantitative analysis and gain deeper insights into the experiences, perceptions and challenges faced by older workers in the Croatian hospitality industry. These research directions could contribute to a more holistic understanding of the dynamics of the aging workforce in the hospitality industry and influence policy decisions, HR practices and the overall sustainability of the industry.

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