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The impact of service robots on employee burnout in the hospitality industry: An empirical study

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***Abstract**: This study aims to investigate the impact of service robots on the well-being of hospitality employees, with a particular focus on key burnout dimensions: Emotional Exhaustion, Depersonalization, and Personal Accomplishment. Empirical data were collected through an online questionnaire, which was completed by 1,234 employees from the hospitality industry across four Southeastern European countries: Croatia, Serbia, Montenegro, and Bosnia and Herzegovina. The results of the Mann-Whitney U-test revealed significant findings. Employees who worked with service robots reported lower levels of Emotional Exhaustion and Depersonalization compared to those who did not. However, they also experienced lower levels of Personal Accomplishment, suggesting a mixed impact of robot integration on employee well-being. These findings highlight the complex relationship between service robot adoption and employee burnout. While robots may reduce emotional strain and detachment, they may also lead to diminished feelings of professional achievement. The results underscore the importance of adopting a balanced approach to robot integration in hospitality settings, ensuring that technological advancements contribute to both operational*

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efficiency and employee well-being. This research provides valuable insights into the broader implications of service robot use in the hospitality industry.

***Keywords**: service robots, employee burnout, emotional exhaustion, depersonalization, hospitality industry*

Uticaj uslužnih robota na izgaranje zaposlenih u ugostiteljskoj industriji: Empirijsko istraživanje

***Apstrakt**: Rad ima za cilj da istraži uticaj uslužnih robota na dobrobit zaposlenih u ugostiteljskoj industriji, s posebnim fokusom na ključne dimenzije izgaranja zaposlenih: emocionalnu iscrpljenost, depersonalizaciju i lični osećaj postignuća. Empirijski podaci su prikupljeni pomoću onlajn upitnika na koji je odgovorilo ukupno 1.234 zaposlenih u ugostiteljskim objektima u četiri zemlje jugoistične Evrope: Hrvatske, Srbije, Crne Gore, Bosne i Hercegovine. Rezultati Mann-Whitney U-testa pokazali su statistički značajne razlike. Zaposleni koji rade sa uslužnim robotima iskazali su niži nivo emocionalne iscrpljenosti i depersonalizacije u poređenju sa zaposlenima koji ne koriste uslužne robote, dok su istovremeno doživeli manji osećaj ličnog postignuća. Dobijeni rezultati ukazuju na kompleksnost uticaja robota na dobrobit zaposlenih, jer iako roboti mogu da smanje emocionalni stres i distanciranje, mogu da izazovu i smanjeni osećaj ličnog postignuća. Rezultati ističu značaj uravnoteženog pristupa u procesu integracije robota u ugostiteljstvu, kako bi se obezbedila sinergija između tehnološkog napretka i dobrobiti zaposlenih. Zaključci imaju značajne implikacije za buduću primenu uslužnih robota u ugostiteljstvu i postavljaju čvrste temelje za dalja istraživanja i optimizaciju njihovog uvođenja u radne procese.*

***Ključne reči**: uslužni roboti, izgaranje zaposlenih, emocionalna iscrpljenost, depersonalizacija, ugostiteljska industrija*

1. Introduction

Technological advancements have significantly transformed both daily life and the way industries operate, with the hospitality industry, traditionally known for its labor-intensive nature, also adopting various technological innovations for service delivery (Gutierriz, Ferreira, & Fernandes, 2023; Xu, Hsiao, Reid, & Ma, 2023). Among these innovations, service robots have gained popularity for their ability to automate tasks, streamline service processes, and reduce labor costs. Service robots are seen as “autonomous intelligence that supports both service providers and tourists in achieving their professional or personal objectives”

(Park, 2020, p. 2). Robots in the hospitality industry are capable of performing a wide range of tasks, including guest check-ins, room cleaning, item delivery, concierge services, food preparation, drink making, guest entertainment, guiding, and providing various types of information (Chen, Wang, Law, & Zhang, 2023; Ivanov, Gretzel, Berezina, Sigala, & Webster, 2019). Various types of robots such as reception robots, porter robots, guide robots, concierge robots, and room service delivery robots (Song, Zhang, Hu, & Cao, 2022), may free employees from repetitive tasks, attract customer interest, and help address labor shortages (Lukić Nikolić & Labus, 2024a). The integration of service robots is expected to enhance productivity, service quality, and operational efficiency (Lukić Nikolić, 2024). The hospitality industry is witnessing an increasing adoption of service robots, with their introduction to hotels growing at a compound annual growth rate of 25.5%. By 2030, robots are expected to make up approximately 25% of the workforce in the hospitality industry (Xu, Hsiao, Reid, & Ma, 2023).

Despite the surge in interest and research around service robots in hospitality, most existing studies focus on customer perceptions, with little attention paid to the experiences of hospitality employees (Xu, Hsiao, Reid, & Ma, 2023). The aim of this paper is to investigate the impact of service robots on the well-being of hospitality employees, specifically examining how their interaction with robots influences key dimensions of burnout, including Emotional Exhaustion, Depersonalization, and Personal Accomplishment. Through an analysis of employees who work with service robots versus those who do not, this paper seeks to provide a deeper understanding of how the integration of robots in the workplace affects employees' psychological and emotional states. By exploring these relationships, this paper aims to contribute valuable insights into the broader implications of service robot adoption in the hospitality industry. This paper is grounded in both the Maslach Burnout Inventory and the Job Demands-Resources (JD-R) model. These frameworks help to explain how the introduction of service robots might influence the levels of burnout and personal accomplishment among hospitality employees by either alleviating or exacerbating job demands and resources.

2. Literature review

The hospitality industry has experienced rapid adoption of service robots over the past decade. This technological shift promises efficiency, consistency, and cost savings, but also raises important questions about how robots affect employees' work experiences and well-being. Burnout — a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal

accomplishment — is already a major concern in hospitality, an industry characterized by high emotional labor, long hours, and peak-season intensity. Service robots are introduced in hospitality primarily to reduce labor costs, increase efficiency, and offer contactless service (especially post-COVID). Studies emphasize that deployment is often concentrated in front-office, housekeeping, and food-service tasks where repetitive or high-contact work creates operational burdens. At the same time, hospitality settings are customer-facing and emotionally-labor-intensive; replacing or augmenting human roles with robots therefore has complex implications for service quality and the social nature of work.

A consistent finding across surveys and field studies is that employees' perceptions of robots heavily shape outcomes (Bhargava, Bester, & Bolton, 2021; Parvez et al., 2022; Nikolova, Cnossen, & Nikolaev, 2024). Where employees perceive robots as helpful tools that reduce dangerous or highly repetitive tasks, acceptance and positive well-being outcomes are more likely. Conversely, when robots are seen as job-substituting, surveillance-enabling, or poorly integrated, employees report greater job insecurity, anxiety, and technostress. Several large surveys and mixed-methods studies document a phenomenon labelled "robot-phobia" or robot-induced job insecurity, which increases stress and turnover intentions among hotel and foodservice workers. Employees exhibiting higher levels of robot-phobia report increased feelings of job insecurity and stress. These negative emotions are linked to a higher intention to leave their jobs, contributing to the already high turnover rates in the hospitality industry (Chen & Cai, 2025; Pan, Lin, & Wong, 2025; Sarfraz et al., 2024; Zhang et al., 2023). The findings indicate that hospitality workers experience concerns regarding potential replacement by robotic technologies in the near future. Consequently, it is recommended that hospitality organizations implement comprehensive training and educational programs addressing both the benefits and limitations of robotic systems, while fostering a supportive and collaborative workplace culture that emphasizes effective human–robot interaction.

Wang, Sun, Zhang, & Feng (2024) examine how the use of service robots in tourism settings (e.g., for tour guides, hotels, and attractions) affects staff career identity. It draws on cognitive-affective systems theory to propose that attitudes toward robot use may influence identity through emotional and cognitive mechanisms. The use of service robots negatively impacts how tourism staff perceive and identify with their careers (i.e. lowers career identity). This suggests that automation (robot deployment) is not neutral in its psychological effects — it influences how staff see their role, status, and meaning in their profession. The negative effect of robot use on career identity is (at least partly) explained by emotional exhaustion. In other words, interacting with (or working alongside) service robots increases emotional exhaustion,

which in turn weakens one's career identity. The study highlights that robot adoption in tourism/hospitality should not be viewed solely from a technological or efficiency lens: there are psychological consequences for human staff.

Liu, Zhang, Lin, & Jia (2025) identify three main types of robot-related stressors (from the employee's viewpoint) when robot service fails: 1) Illegitimate tasks — tasks that employees perceive as unreasonable, unfair, or outside their role, induced by robot failure contexts; 2) customer mistreatment — negative or abusive behavior from customers blaming the human staff (or venting) when robot services go wrong, and 3) robotic instability — unpredictability, malfunctioning, or inconsistency of the robot systems themselves. These stressors influence how employees regulate their emotions (emotional labor strategies) and ultimately affect how engaged they are in recovery behaviors (at work, after the shift, etc.). He et al (2023) show that when employees collaborate with robots, they may perceive this as a threat to their own self-esteem (i.e. feeling less competent, devalued, or "replaced"). The perceived self-esteem threat is positively associated with burnout among employees. In other words, when employees feel their self-worth is threatened via robot collaboration, they are more prone to burnout symptoms. Although much of the literature focuses on the positive side (efficiency, productivity) of human–robot collaboration, this study highlights a psychological "dark side."

Recent empirical work (Yam et al., 2023) shows that the spread of service robots and artificial intelligence in hospitality (hotels, restaurants) is a double-edged sword: while robots can automate routine, physically demanding tasks, their presence can also increase employees' job insecurity, technostress, and emotional exhaustion — three core antecedents of burnout and turnover intentions in hospitality settings. Greater exposure to robots increases perceptions of job insecurity and, in turn, promotes maladaptive workplace behaviors, including indicators related to burnout and incivility. This line of work frames robot presence as a stressor that activates cognitive appraisals of threat (i.e., "robots will replace me"), which then raises emotional strain.

Horpynich, Mistry, & Doğan (2025) conclude that in the hospitality industry, integrating service robots is not just a technical/operational change but a psychological and social change. Employees' cognitive appraisals of robot risk (how threatening they perceive robot adoption to their job security) play a central role in determining whether the introduction of robots will increase turnover intentions. Moreover, because younger employees (Generation Z) may respond differently, interventions (communication, training, role redesign) should be tailored to generational expectations and perceptions.

3. Research methodology

Empirical research was conducted using a questionnaire technique for data collection. The questionnaire consisted of two sections. The first section included profile questions such as gender, education, age, country in which respondents work, and whether they work with service robots or not. The second part of the questionnaire included statements from the Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996). Respondents had to rate their level of agreement on a Likert scale (0 - never; 1 - once a year or less; 2 - once a month or less; 3 - several times a month; 4 - once a week; 5 - several times a week; 6 - every day) for statements that were classified into three scales: Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA).

The hypotheses proposed in this study are formulated to explore the potential impact of service robots on the well-being of hospitality employees, specifically focusing on key burnout dimensions: Emotional Exhaustion, Depersonalization, and Personal Accomplishment.

H1a: There is a statistically significant difference in Emotional Exhaustion levels between hospitality employees who work with service robots and those who do not.
H1b: There is a statistically significant difference in Depersonalization levels between hospitality employees who work with service robots and those who do not.
H1c: There is a statistically significant difference in Personal Accomplishment levels between hospitality employees who work with service robots and those who do not.

These dimensions are integral components of employee burnout, which can significantly affect both their performance and overall mental health in the workplace. By testing these hypotheses, this study aims to contribute to the broader discourse on the implications of technology adoption in the workplace. Table 1 summarizes the research hypotheses regarding the impact of service robots on key burnout dimensions among hospitality employees, explaining how robots act as job resources or demands within the JD-R model framework.

Table 1. Research hypotheses within the JD-R model framework

	H1a	H1b	H1c
Burnout Dimension	Emotional Exhaustion	Depersonalization	Personal Accomplishment
Explanation	Emotional labor is high in the hospitality industry. Robots help by taking over repetitive or emotionally demanding tasks, reducing employees' emotional burden.	Employees may detach emotionally due to constant interpersonal interactions. Robots reduce the frequency/intensity of such interactions, alleviating strain.	Robots may automate tasks that previously gave employees a sense of purpose, limiting opportunities for achievement and recognition.
JD-R Model Interpretation	Robots act as job resources by lowering emotional demands, which decreases Emotional Exhaustion of employees.	Robots reduce interpersonal demands, which lowers the tendency for emotional detachment (Depersonalization).	Robots may reduce motivational resources (e.g., task significance, autonomy), leading to lower Personal Accomplishment.

Source: Authors' research

After preparing the questionnaire, pilot testing was conducted to ensure its clarity and validity. The pilot testing involved 30 respondents from the hospitality industry. Cronbach's alpha coefficient for all scales was greater than 0.7, indicating that the measuring scale is highly reliable.

The final questionnaire was administered online via Google Forms, with data collection taking place from January to October 2024. The study included employees from the hospitality industry across four Southeastern European countries: Croatia, Serbia, Montenegro, and Bosnia and Herzegovina. These countries were selected because of their shared historical, economic, and sociopolitical contexts. Although their levels of development and political climate differ, they all face similar challenges resulting from the post-Yugoslav transition.

The completely anonymous questionnaire was emailed to the hospitality managers, who were politely asked to participate and forward the questionnaire to their employees. Approximately 2,000 hospitality employees received the questionnaire, and a total of 1,234 participants completed it, resulting in a response rate of 61.7%. This is considered an acceptable response rate in social science research, where rates typically range from 30% to 70% (De Vaus, 2013).

Processing and analysis of collected data were performed using Microsoft® Excel® 2019 and Statistical Software for Social Sciences, SPSS, version 21.0. The normality of the data distribution was examined using the Kolmogorov-Smirnov test, along with histograms, skewness, kurtosis, the normal probability

curve, and the boxplot. The results for the scales in Maslach Burnout Inventory with a significance (Sig.) of 0.000, indicated that the assumption of normal data distribution was not met. As a result, non-parametric statistical techniques were used for statistical analysis within the measurement scales. The Mann-Whitney U-test was used to compare differences between two groups with a 95% confidence interval. Levene's test for equality of variances was applied in all tests comparing differences between groups, meeting the assumption of variance homogeneity in all cases ($p > 0.05$).

Table 2 presents the Cronbach's alpha coefficients for the measurement scales EE, DP, and PA. The values for all three scales exceed the threshold of 0.7, demonstrating their high reliability (Taber, 2018).

Table 2. Cronbach's Alpha coefficient for EE, DP, and PA scales

Scale	N	Cronbach's Alpha
Emotional Exhaustion (EE)	9	0.972
Depersonalization (DP)	5	0.961
Personal Accomplishment Assessment (PA)	8	0.979

Source: Authors' research

4. Results

Table 3 presents the key information about the respondents. The sample consists of 1,234 respondents, with a fairly balanced gender distribution (54.1% male and 45.9% female). The majority of participants have completed secondary education (61.8%), while a smaller proportion have attained college (21.8%) or university degrees (14.5%), and only 1.9% report primary education as their highest level. Regarding age, the largest group falls within the 30–50 age range (62.6%), indicating a predominantly working-age population, followed by younger individuals up to 30 years old (23.6%), and a smaller group over 50 (13.8%). Geographically, the sample is most heavily represented by Croatia (42.1%), followed by Serbia (25.1%), Montenegro (17.1%), and Bosnia and Herzegovina (15.7%).

Table 3. Key information about the respondents

Characteristic	Answers	N	%
Gender	Male	667	54.1
	Female	567	45.9
Education	Primary school	24	1.9
	Secondary School	762	61.8
	College	269	21.8
	University	179	14.5
Age	Up to 30	291	23.6
	From 30 to 50	773	62.6
	Above 50	170	13.8
Country	Serbia	310	25.1
	Croatia	519	42.1
	Montenegro	211	17.1
	Bosnia and Herzegovina	194	15.7

Source: Authors' research

Table 4 presents the basic facts concerning service robots in hospitality. The data shows that 61.4% of respondents work with service robots, while 38.6% do not. This suggests that a majority of the respondents are already engaged with or exposed to service robots, indicating a growing integration of robotics into workplaces in hospitality.

Table 4. Key information about the service robots in the hospitality establishments

Answers	N	%
Work with service robots	758	61.4
Do not work with service robots	476	38.6

Source: Authors' research

Table 5 presents the results of the Mann–Whitney U-test. First, this test was conducted to assess differences in Emotional Exhaustion between hospitality employees who work with service robots and those who do not. The test revealed a statistically significant difference in median Emotional Exhaustion scores, $U = 126{,}223.50$, $Z = -8.95$, $p < .001$. Employees who work with service robots reported significantly lower levels of Emotional Exhaustion ($Md = 1.78$, $N = 758$) compared to those who do not ($Md = 2.89$, $N = 476$). This suggests

that interaction with service robots may be associated with reduced emotional exhaustion in the workplace.

The results of the Mann–Whitney U-test indicate a statistically significant difference in Depersonalization scores between hospitality employees who work with service robots and those who do not. Employees working with robots reported lower levels of Depersonalization (Md = 1.00, N = 758) compared to those not working with robots (Md = 2.00, N = 476), U = 143,898.00, Z = -6.22, p < .001. This suggests that employees in robot-integrated environments may experience fewer tendencies toward emotional detachment or cynicism in their interpersonal interactions.

Finally, the Mann–Whitney U-test was conducted to examine differences in Personal Accomplishment between employees who work with service robots and those who do not. The results revealed a statistically significant difference, U = 125,480.50, Z = -9.27, p < .001, with employees working with robots reporting significantly lower levels of Personal Accomplishment (Md = 1.13, *N* = 758) compared to their counterparts (Md = 5.00, *N* = 476). This may indicate that working with robots is associated with diminished feelings of professional efficacy and achievement.

Table 5. Results of the Mann-Whitney U-test

Scale	Answers	N	Mean	Md	U	z	p
Emotional Exhaustion (EE)	Work with robots	758	2.55	1.78	126223.50	-8.945	0.000*
	Do not work with robots	476	3.35	2.89			
Depersonalization (DP)	Work with robots	758	2.28	1.00	143898.00	-6.220	0.000*
	Do not work with robots	476	2.62	2.00			
Personal Accomplishment Assessment (PA)	Work with robots	758	3.06	1.13	125480.50	-9.267	0.000*
	Do not work with robots	476	4.35	5.00			

Source: Authors' research

5. Discussion

The results of hypotheses testing are presented in Table 6. All three hypotheses are supported, evidencing a complex relationship between human-robot interaction and employee well-being: while working with robots may reduce emotional exhaustion and depersonalization, it appears to negatively impact perceived personal accomplishment.

Table 6. Results of hypotheses testing

Hypothesis	p-values	Decision
H1a: There is a statistically significant difference in Emotional Exhaustion levels between hospitality employees who work with service robots and those who do not.	0.000	Supported
H1b: There is a statistically significant difference in Depersonalization levels between hospitality employees who work with service robots and those who do not.	0.000	Supported
H1c: There is a statistically significant difference in Personal Accomplishment levels between hospitality employees who work with service robots and those who do not.	0.000	Supported

Source: Authors' research

Firstly, employees who interact with service robots reported significantly lower levels of Emotional Exhaustion compared to their counterparts. This suggests that robots may help alleviate emotional strain by automating repetitive tasks, thereby reducing the emotional burden typically experienced by employees in the hospitality industry. This reduction in Emotional Exhaustion could potentially enhance employee well-being and reduce the risk of burnout (Lukić Nikolić, 2024). Other studies also indicate that working with service robots can alleviate emotional exhaustion among employees. For instance, research conducted across four Southeastern European countries found that the presence of workplace robots was negatively associated with emotional exhaustion and turnover intentions, suggesting that robots may reduce the emotional strain on employees (Lukić Nikolić & Labus, 2024b). Conversely, some studies highlight that excessive robot-related workloads can lead to mental and physical exhaustion, especially when employees perceive the technology as increasing their workload rather than alleviating it (Fu, Zheng, & Wong, 2022).

Secondly, the study revealed that employees working with robots reported significantly lower levels of Depersonalization, suggesting that robot integration in the workplace may reduce emotional detachment and cynicism. This finding

highlights that service robots might foster more meaningful and less emotionally draining interactions, enabling employees to feel more connected to their work and clients. The introduction of service robots can influence employees' interpersonal dynamics and feelings of depersonalization. Research has shown that robot service failure stressors, such as illegitimate tasks and robotic instability, can lead to emotional labor strategies like surface acting, which in turn may increase workplace depersonalization. This suggests that while robots can enhance efficiency, they may also contribute to feelings of detachment among employees (Liu, Zhang, Lin, & Jia, 2025). The study that explores the impact of employee-robot engagement on workplace depersonalization through the lens of psychological empowerment revealed that engaging with robots in the workplace can mitigate feelings of depersonalization by enhancing employees' psychological empowerment. This empowerment arises from the meaningful and competent interactions employees experience with robots, fostering a sense of self-determination and impact. Moreover, the research highlights the role of developmental human resource practices in facilitating this process, emphasizing the importance of supportive organizational practices in integrating robots into the workplace (Liu, Zhang, Lin, & Guan, 2025).

The findings also revealed that employees working alongside service robots reported lower levels of Personal Accomplishment. This suggests that although robots may alleviate emotional exhaustion and depersonalization, they can simultaneously diminish employees' sense of professional fulfillment. This decline may stem from the automation of certain tasks, which could lead employees to feel less competent or attached to their work. Notably, the impact of service robots on Personal Accomplishment appears to be nuanced. While some interactions may reduce fulfillment, others can enhance psychological empowerment and, in turn, foster a stronger sense of achievement. For instance, a study of hospitality employees in China found that collaborative experiences with service robots improved trust and psychological empowerment - factors closely associated with Personal Accomplishment (Liu, Zhang, & Zhu, 2024).

The results correspond well with the Job Demands-Resources (JD-R) model, which posits that employee well-being is influenced by the balance between job demands (e.g., workload, emotional pressure) and job resources (e.g., tools, support, autonomy). The observed lower levels of Emotional Exhaustion and Depersonalization among employees working with service robots suggest that robots may act as job resources by reducing emotional and interpersonal demands, such as repetitive tasks or stressful customer interactions. However, the significantly lower levels of Personal Accomplishment reported by the same respondents indicate a potential decrease in perceived job significance or opportunities for skill utilization, highlighting that the presence of robots may

simultaneously reduce motivational resources. These mixed effects underscore a core principle of the JD-R model: that job resources can buffer the negative effects of demands, but if core motivational elements are undermined, employee engagement and fulfillment may still suffer. However, when effectively integrated, service robots have the potential to enhance employees' personal accomplishment in the hospitality industry. By automating routine tasks, providing opportunities for job crafting, and fostering positive emotional experiences, robots can contribute to a more fulfilling and competent workforce. Careful consideration of design, autonomy, and employee perceptions is essential to maximize these benefits and mitigate potential challenges.

6. Conslusion

The results of this study, based on responses from 1,234 hospitality employees across Croatia, Serbia, Montenegro, and Bosnia and Herzegovina, confirm that working with service robots significantly influences employee well-being. Employees interacting with service robots reported lower levels of Emotional Exhaustion and Depersonalization, suggesting that robots may alleviate some psychological burdens associated with hospitality work. However, they also reported lower levels of Personal Accomplishment, indicating potential concerns about professional fulfillment in robot-assisted environments. These findings highlight the dual impact of robot integration and underscore the importance of carefully balancing technological efficiency with employee psychological needs in the hospitality industry of Southeastern Europe.

This paper has several implications. From a theoretical standpoint, this research extends Maslach's Burnout Inventory by exploring how the integration of service robots in the hospitality industry impacts the key dimensions of burnout - Emotional Exhaustion, Depersonalization, and Personal Accomplishment. By demonstrating that service robots can reduce emotional exhaustion and depersonalization but potentially lower personal accomplishment, the study provides new insights into the complexities of burnout in technologically advanced work environments. This offers an opportunity to refine burnout theory in industries where human-robot collaboration is becoming increasingly prevalent. Furthermore, the findings contribute to the Job Demands-Resources (JD-R) Model by illustrating how service robots act as a resource that can alleviate certain job demands (e.g., emotional exhaustion and depersonalization) but also introduce new challenges, such as reducing employees' sense of personal accomplishment. The study suggests that the effects of technological interventions are not solely

positive or negative, but rather a balance between increased job demands and available resources.

From a practical standpoint, the findings provide valuable insights for hospitality managers considering the integration of service robots into their operations. Leaders and managers must carefully balance the use of robots to ensure that employees still feel a sense of professional achievement and fulfillment. While robots can reduce stress and emotional fatigue, it is crucial to provide employees with opportunities for meaningful interactions and personal growth. Organizations might implement initiatives such as mentorship programs, skill development workshops, and regular feedback channels to enhance employees' sense of Personal Accomplishment, counteracting the potential negative effects of service robots.

This research is accompanyed with certain limitations that should be taken into account. The research used a cross-sectional design, collecting data at a single point in time. This limitation means that the study cannot establish causal relationships between working with service robots and the reported changes in Emotional Exhaustion, Depersonalization, and Personal Accomplishment. Future research should adopt a longitudinal approach to examine the long-term effects of service robot integration on employee well-being. This would allow researchers to track changes in burnout levels and personal accomplishment over extended periods, providing a clearer understanding of the sustained impacts of robots on employees' mental and emotional health. The study focused on employees in four Southeastern European countries (Croatia, Serbia, Montenegro, and Bosnia and Herzegovina), which may limit the generalizability of the findings to other regions with different cultural, economic, and technological contexts. The hospitality industry in other countries, particularly those with higher levels of technological adoption, may experience different results. Future studies should expand the geographical scope to include employees from diverse cultural and economic backgrounds, as well as countries with varying levels of robot integration in the hospitality industry.

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