

T.C.
ANTALYA BİLİM ÜNİVERSİTESİ
INSTITUTE OF POSTGRADUATE EDUCATION

BUSINESS ADMINISTRATION
MASTER'S THESIS

**THE IMPACT OF TECHNOLOGICAL UNEMPLOYMENT ANXIETY ON
EMOTIONAL EXHAUSTION OF EMPLOYEES IN TOURISM SECTOR**

Razan AMMOUN

JUNE 2025

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DECLARATION

I hereby declare that in the preparation of this master's thesis titled “The impact of technological unemployment anxiety on emotional exhaustion of employees in the tourism sector”, scientific ethical principles have been adhered to, proper citations have been made in accordance with academic norms when referencing the works of others, no alterations have been made to the data used, and no part of this study has been submitted as another academic work.

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RAZAN AMMOUN



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ABSTRACT

THE IMPACT OF TECHNOLOGICAL UNEMPLOYMENT ANXIETY ON EMOTIONAL EXHAUSTION OF EMPLOYEES IN TOURISM SECTOR

Razan AMMOUN

MSc Thesis in Business Administration

Supervisor: Assoc. Prof. Dr. Mustafa Emre CİVELEK

June 2025; 73 pages

The fast growth of technology and artificial intelligence (AI) has changed the way people work in many fields, especially those that need a lot of workers, like tourism. These technologies make things more efficient and productive, but they also make jobs less secure, make people emotionally exhausted, and create new problems for managers to solve. This review of the literature looks at the psychological and economic effects of automation on tourism workers, focused on how technological unemployment anxiety makes them feel emotionally exhausted. It also talks about how management is changing in workplaces that use AI, pointing out both the possible benefits and ethical issues of AI-driven decision-making. The results show that while teaching digital skills and getting employees involved can help reduce stress, for the workforce to be sustainable in the long run, leaders need to be able to adapt and policies need to be changed.

This review stresses how important it is for businesses and lawmakers to come up with plans that balance the benefits of technology with putting people first when hiring. This will help the tourism industry be ready for disruptions caused by automation. The results of this study emphasize the need of proactive approaches to reduce uncertainty and stress among travel staff members. Organizations may build a more resilient workforce by encouraging digital skill development, improving employee engagement, and applying adaptive leadership techniques. Furthermore, this research emphasizes the important part legislators play in combining technology advancement with a human-centered approach to employment so guaranteeing a sustainable and inclusive future for the travel sector. My research question "How does technological unemployment anxiety influence emotional exhaustion among employees in the tourism sector?".

KEYWORDS: Automation, Artificial Intelligence (AI), Technological Unemployment Anxiety, Emotional Exhaustion, Job Insecurity, Tourism Industry, Digital Transformation.

COMMITTEE: Assoc. Prof. Dr. Mustafa Emre CİVELEK

Asst. Prof. Dr. Müzeyyen Çiğdem AKBAŞ

Assoc. Prof. Dr. Adnan Veysel ERTEMEL

ÖZET

TEKNOLOJİK İŞSİZLİK KAYGISININ TURİZM SEKTÖRÜNDE ÇALIŞANLARIN DUYGUSAL TÜKENMİŞLİĞİ ÜZERİNDEKİ ETKİSİ

Razan AMMOUN

Yüksek Lisans Tezi, İşletme Anabilim Dalı

Danışman: Doç Dr. Mustafa Emre CİVELEK

June 2025; 73 sayfa

Teknolojinin ve yapay zekanın (YZ) hızlı büyümesi, insanların birçok alanda, özellikle de turizm gibi çok sayıda çalışana ihtiyaç duyan alanlarda çalışma şeklini değiştirmiştir. Bu teknolojiler işleri daha verimli ve üretken hale getirir, ancak aynı zamanda işleri daha az güvenli hale getirir, insanları duygusal olarak tüketir ve yöneticilerin çözmesi gereken yeni sorunlar yaratır. Bu literatür incelemesi, otomasyonun turizm çalışanları üzerindeki psikolojik ve ekonomik etkilerine, teknolojik işsizlik kaygısının onları duygusal olarak nasıl tükettiğine odaklanarak bakmaktadır. Ayrıca, YZ kullanan işyerlerinde yönetimin nasıl değiştiğinden bahsederek, YZ odaklı karar almanın hem olası faydalarına hem de etik sorunlarına işaret etmektedir. Sonuçlar, dijital becerileri öğretmenin ve çalışanları dahil etmenin stresi azaltmaya yardımcı olabileceğini gösterirken, iş gücünün uzun vadede sürdürülebilir olması için liderlerin uyum sağlayabilmesi ve politikaların değiştirilmesi gerektiğini göstermektedir.

Bu inceleme, işletmelerin ve kanun koyucuların işe alımlarda teknoloji avantajlarını insanları ön planda tutarak dengeleyen planlar yapmasının ne kadar önemli olduğunu vurgulamaktadır. Bu, turizm sektörünün otomasyondan kaynaklanan kesintilere hazır olmasına yardımcı olacaktır. Bu çalışmanın sonuçları, seyahat personeli arasında belirsizliği ve stresi azaltmak için proaktif yaklaşımlara duyulan ihtiyacı vurgulamaktadır. Kuruluşlar, dijital beceri gelişimini teşvik ederek, çalışan katılımını iyileştirerek ve uyarlanabilir liderlik tekniklerini uygulayarak daha dayanıklı bir iş gücü oluşturabilirler. Dahası, bu araştırma, kanun koyucuların teknoloji ilerlemesini istihdama yönelik insan merkezli bir yaklaşımla birleştirerek seyahat sektörü için sürdürülebilir ve kapsayıcı bir gelecek garantilemede oynadıkları önemli rolü vurgulamaktadır. Araştırma sorunu "Teknolojik işsizlik kaygısı, turizm sektöründeki çalışanlar arasında duygusal tükenmişliği nasıl etkiler?".

ANAHTAR KELİMELEER: Otomasyon, Yapay Zeka (AI), Teknolojik İşsizlik Kaygısı, Duygusal Tükenmişlik, İş Güvensizliği, Turizm Endüstrisi, Dijital Dönüşüm.

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Doç. Dr. Adnan Veysel ERTEMEL

SYMBOLS AND ABBREVIATIONS

AI	: Artificial Intelligence
TUA	: Technological Unemployment Anxiety
ILO	: International Labour Organization
MBI	: Maslach Burnout Inventory
WHO	: World Health Organization
JD-R	: Job Demands-Resources
IOT	: Internet of Things
UBI	: Universal Basic Income
IA	: Intelligent Automation

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PREFACE

This thesis investigates the psychological and financial consequences of automation on travel agents, examining how digital transformation affects job security, employee well-being, and organizational sustainability. It also explores how management practices are evolving in AI-integrated companies, covering ethical issues of AI-driven decision-making as well as possible advantages.

I would want to take this opportunity to thank prof. Mustafa Emre CİVELEK, my supervisor, whose advice, helpful criticism, and support have been crucial to this research process. I also want to express my sincere gratitude to the respondents who gave their time and insights to this survey while juggling their work obligations. Finally, I want to express my sincere gratitude to my family and friends for their constant encouragement and support, which kept me going as I finished this thesis.

As a final step in my MBA program, this thesis addresses all professionals negotiating the obstacles of digital change in the travel sector. This study should help to clarify the complexity of automation and motivate careful plans for controlling technical change in the workforce.

1. INTRODUCTION

Technological advancements have deeply transformed industries worldwide, including the tourism sector. Innovations such as artificial intelligence(AI), automation and robotics have reshaped how services are delivered, leading to improved efficiency and customer satisfaction (Gretzel et al., 2020). However, these developments provide difficulties, especially for workers who frequently worry about losing their jobs to automation and digitalization- A phenomenon known as technological unemployment anxiety (Brynjolfsson and McAfee, 2014).

In the tourism industry, which is primarily reliant on human connection, the incorporation of technology has generated worries regarding worker sustainability. (Ivanov & Webster, 2019) may view automation as a danger to their job security, particularly in positions that are replaceable, including customer service representatives, travel agents, and receptionists. This fear is a psychological issue as well as an economic one since it can result in emotional exhaustion, a condition of ongoing weariness and emotional depletion brought on by stress (Maslach and Leiter, 2016).

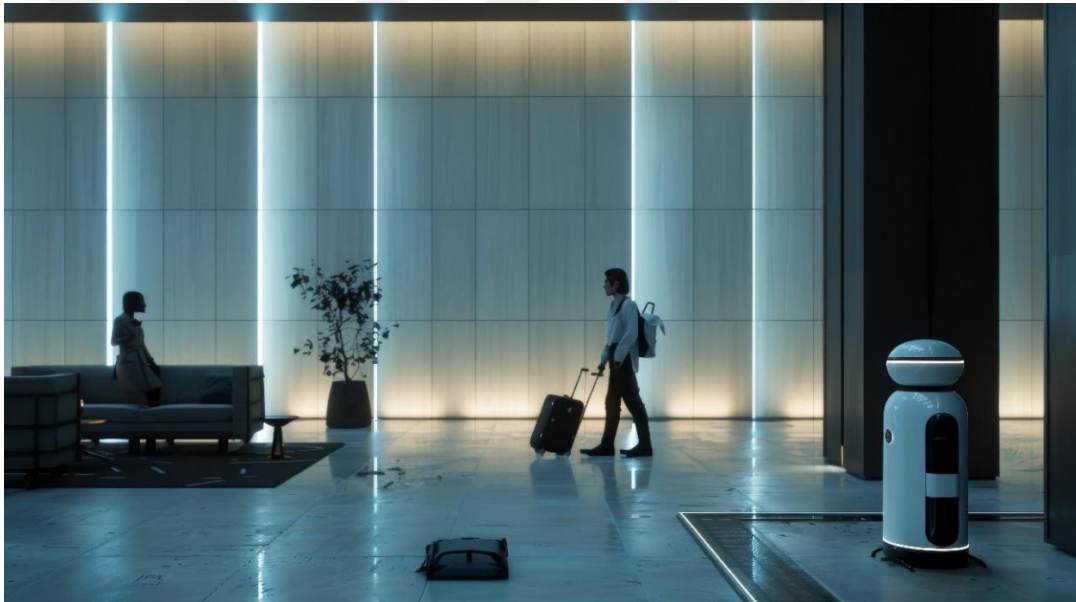


Figure 1. AI and Automation Transforming Service Delivery in Tourism

Source: OpenAI (2025), AI-generated via ChatGPT and DALL·E.

(As the digital landscape changes, employees' fears about job stability are growing as automation is incorporated more and more into customer-facing roles, changing the way services are provided. The future of employment in industries that mainly rely on face-to-face contacts is becoming increasingly uncertain as computers and artificial intelligence take on more activities that were previously completed by human workers. In addition to casting doubt on workers' feeling of job security, this change also calls into question the wider effects of automation on human labor in the service industry)

Emotional exhaustion has big effects on both workers and businesses in the

tourism sector. Workers may experience decreased job satisfaction, lower productivity and mental health concerns (Sonnentag ET,2017).

In tourism sector, what is the impact of technological unemployment anxiety on emotional exhaustion. The tourism industry can improve organizational sustainability by supporting its workforce with training, mental health initiatives, and effective adaptation strategies by addressing the relationship between technological anxiety and emotional exhaustion (Kim et, 2021).



Figure 2. Psychological Toll of Automation-induced Job Insecurity

Source: yakobchuk – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-photo/businessman-drinking-coffee-morning-working-laptop-home_22733386.htm

(Persistent anxiety over job loss to technology contributes to emotional exhaustion, diminishing employee well-being and productivity—necessitating organizational interventions focused on resilience and mental health)

The primary objective of this study is to examine into the link between technological unemployment anxiety and emotional exhaustion among tourism workers. It aims to determine how the perceived fear of job loss due to automation and technological improvements relates to emotional weariness, which is a key component of burnout. By investigating this connection, the study hopes to identify practical insights to reduce these negative affects and build a more sustainable workforce in the tourism industry (Brynjolfsson and McAfee, 2014; Maslach and Leiter, 2016)

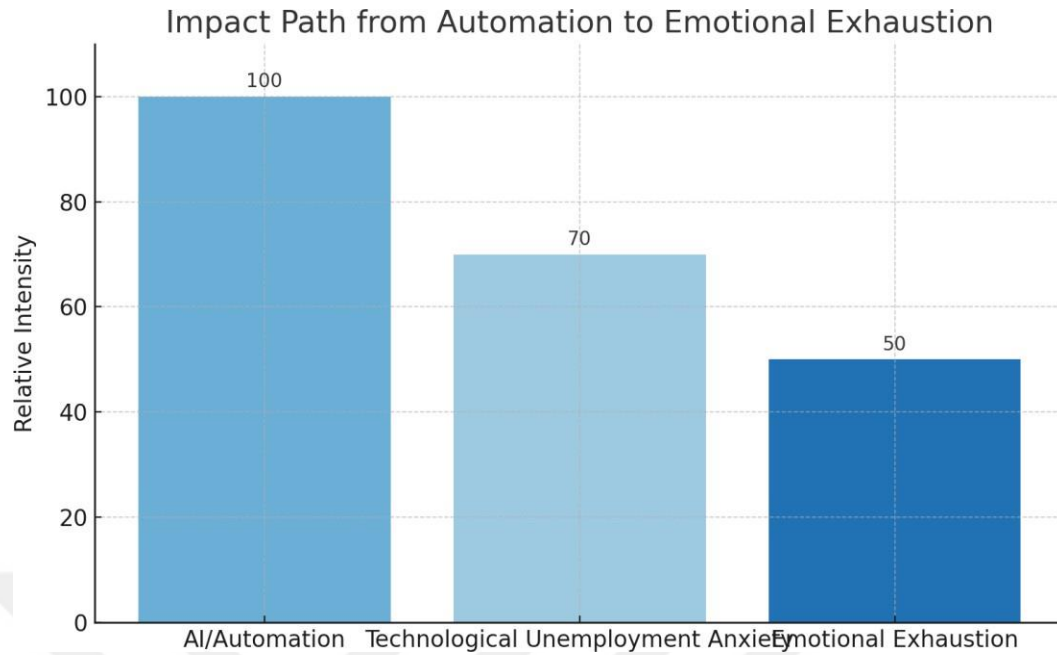


Figure 3. Conceptual Pathway from Automation to Emotional Exhaustion

Source: Chart generated with the assistance of ChatGPT (2025), based on a conceptual framework developed by the researcher

(This chart visualizes the progressive impact of AI and automation on workforce well-being, highlighting how rising job insecurity contributes to emotional exhaustion in the tourism sector)

Digitalization has evolved over decades, beginning with the introduction of computers in the mid-twentieth century and progressing through major technological milestones such as the invention of the internet in the 1990s and advances in artificial intelligence and cloud computing in the twenty-first century (Castells, 2000; Gordon, 2016). This shift from analog to digital technology transformed sectors worldwide, connecting organizations, streamlining operations, and redefining consumer behavior. Today, digitization is a distinguishing feature of modern economies, radically altering the way firms and communities operate.

The relevance of digitization stems from its capacity to boost productivity, encourage innovation, and provide new economic opportunities. Businesses can save money and increase operational efficiency by automating procedures and connecting data systems (Brynjolfsson & McAfee, 2014). It also democratizes access to global markets, enabling small businesses to compete on a global scale. Governments benefit from improved public services via digital platforms, while companies such as e-commerce and fintech thrive in the digital economy (OECD, 2020). However, digitalization poses some challenges, such as widening the gap between advanced and developing economies and necessitating investments in workforce reskilling.

Digitalization has significant corporate and economic ramifications. With firms like Uber and Airbnb rethinking existing business models, it has upended traditional

sectors (Rogers, 2016). Through real-time engagement and data-driven customization, it improves customer experiences and increases customer happiness and loyalty (Chaffey & Smith, 2021). The workforce also faces difficulties as a result of automation, which results in job displacement and necessitates aggressive steps to solve technological unemployment (Autor, 2015). Notwithstanding these obstacles, digitalization continues to be a vital force behind economic expansion and innovation, highlighting its pivotal role in determining the direction of both industry and society.

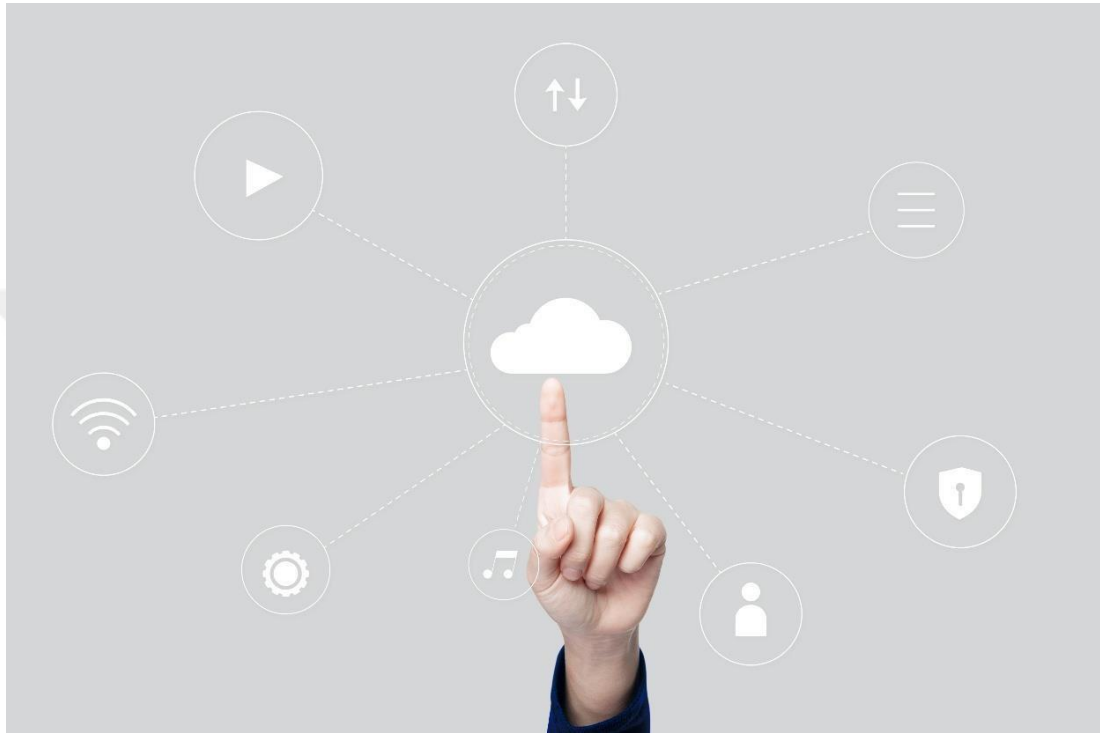


Figure 4. Evolution of Digitalization and its Economic Impact

(The progression from early computing to modern AI and cloud technologies marks a fundamental shift in how industries operate, reshaping organizational efficiency, connectivity, and consumer behavior across decades)

Source: rawpixel.com – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/free-photo/cloud-file-sharing-banner-background_16016458.htm

The International Labour Organization (ILO) defines unemployment as being “without work, currently available for work, and seeking work” (ILO, 2023), meaning that a person is unemployed if they do not have a job but are actively looking for one and are ready to start working immediately. Unemployment can occur for a variety of reasons, including economic downturns, changes in industries, or when workers lack the necessary skills for available jobs (Mankiw, 2020). Unemployment is a common issue in every economy and is used to gauge how well a nation's labor market is functioning.

Both people and society are impacted by unemployment. Individuals may experience stress, low self-esteem, and financial difficulties as a result. On a larger scale,

high unemployment can slow down economic growth, increase poverty, and create challenges for communities. To address unemployment, governments and organizations often focus on creating jobs, providing training programs, and supporting industries to grow. Understanding unemployment is essential to creating a strong economy where people have the opportunity to work and thrive (Blanchard & Johnson, 2013).



Figure 5. Understanding Unemployment in Modern Economies

(Defined by joblessness and active job seeking, unemployment reflects broader economic trends and structural shifts, serving as a key indicator of labor market health)

Source: EyeEm – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-photo/rear-view-man-sitting-staircase_124462819.htm

A psychological syndrome known as burnout develops as a protracted reaction to ongoing stressors at work that have not been effectively addressed. Emotional exhaustion, depersonalization (or cynicism), and a diminished sense of personal success are its three primary characteristics (Maslach & Leiter, 2016). While depersonalization is a sense of alienation or unfavorable attitudes toward work or coworkers, emotional exhaustion refers to feelings of being worn down and overburdened by work responsibilities. Feelings of inefficiency and failure in one's professional function are reflected in a lessened sense of personal accomplishment.

In the 1970s, psychologist Herbert Freudenberger first proposed the idea of burnout, and Christina Maslach went on to expand on it. In organizational and research contexts, Maslach's work—specifically, the development of the Maslach Burnout Inventory (MBI)—has established itself as the gold standard for assessing burnout

(Maslach & Jackson, 1981). Both individuals and companies can be greatly impacted by burnout, which can result in issues with mental and physical health, increased absenteeism, and lower productivity. As an occupational issue, burnout is now acknowledged by the World Health Organization (WHO), which highlights the significance of tackling it through improved work conditions, stress management, and organizational support (WHO, 2019).



Figure 6. Dimensions of Burnout in the Workplace

(Burnout arises from chronic unmanaged stress and manifests through emotional exhaustion, detachment from work, and a diminished sense of professional achievement—posing serious risks to employee well-being and productivity)

Source: Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/free-photo/young-entrepreneur-tired-work_7295425.htm

This study highlights the significant impact of technological unemployment anxiety on emotional exhaustion among employees in the tourism sector. Rapid technological advancements, while essential for improving efficiency and competitiveness, can create job insecurity and stress, leading to burnout and reduced workplace productivity. Emotional exhaustion, characterized by feelings of fatigue and disengagement, can harm both employee well-being and organizational performance, as it lowers job satisfaction, increases turnover, and diminishes service quality (Maslach & Leiter, 2016). Managers must therefore adopt proactive strategies to mitigate these effects and foster a work environment where employees feel supported and valued during technological transitions.

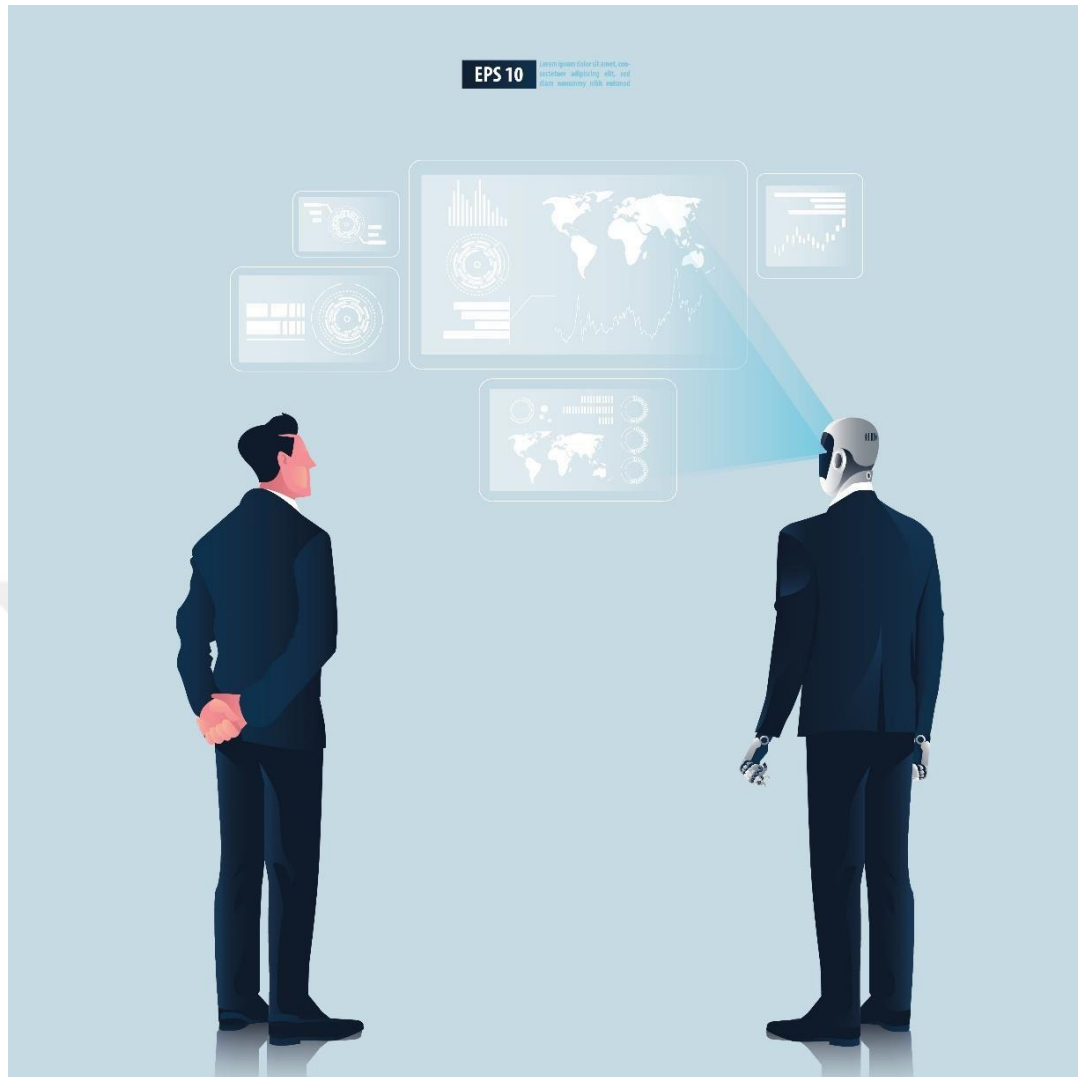


Figure 7. Emotional Exhaustion Triggered by Technological Change in Tourism

(As automation reshapes service delivery in tourism, employees may experience heightened job insecurity and emotional strain—calling for organizational strategies that prioritize mental well-being and support during digital transitions)

Source: ledinuge – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-vector/futuristic-humanoid-business-people-with-artificial-intelligence-technology-concept-businessman-robot-watching-hologram-graphic-user-interface_7027234.htm

Managers should concentrate on tactics that support worker engagement and well-being in order to effectively handle emotional weariness. Fostering open communication to reduce uncertainty, offering opportunities for training and upskilling to give staff members new skills, and incorporating staff in decision-making processes to boost their sense of ownership and lessen resistance to change are some of the main recommendations (Blanchard & Johnson, 2013). Organizations should also put a high priority on workload management to prevent overworking staff during changes, and they should put in place mental health initiatives to help with stress management. Employee

resilience and morale can also be increased by praising and appreciating their contributions amid technology upgrades. By putting these strategies into practice, managers may strike a balance between the demands of their employees and the advantages of technology developments, resulting in an organizational culture that is more adaptable and sustainable.



Figure 8. Organizational Strategies to Manage Emotional Exhaustion

(To reduce burnout in the face of technological change, leaders must provide open communication, training, mental health assistance, and employee recognition to build resilience and flexibility. Leadership must ensure that employees feel heard and supported during transitions, promoting a culture where technology enhances rather than threatens. Continuous professional development programs assist workers adapt to a fast-changing workplace, while mental health programs help manage stress and worry. Rewarding staff for their achievements and adaptability boosts morale, keeping them motivated and engaged despite technology advances)

Source: wavebreakmedia_micro – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/free-photo/female-staff-interacting-with-passenger_9598473.htm

2. LITERATURE REVIEW

2.1. The Impact of Technological Advancements on Job Security, Burnout, and Employee Well-being

Brynjolfsson and McAfee (2014) study the revolutionary role that automation and artificial intelligence (AI) play in changing labor markets. They concentrate particular emphasis on the acceleration of job displacement in the 21st century. Their research sheds light on the paradoxical nature of technology advancement, which not only generates professions requiring high levels of expertise but also reduces employment chances in low-skilled and repetitive fields. Building on the "Second Machine Age" idea, they propose that technology development fundamentally transforms economic structures. They do this by doing a comprehensive literature study and conducting an analysis of economic trends. While highlighting the socio-economic disparity that is exacerbated by automation, the authors advocate for additional research into the psychological effects of workforce displacement, particularly in service-oriented industries such as tourism.

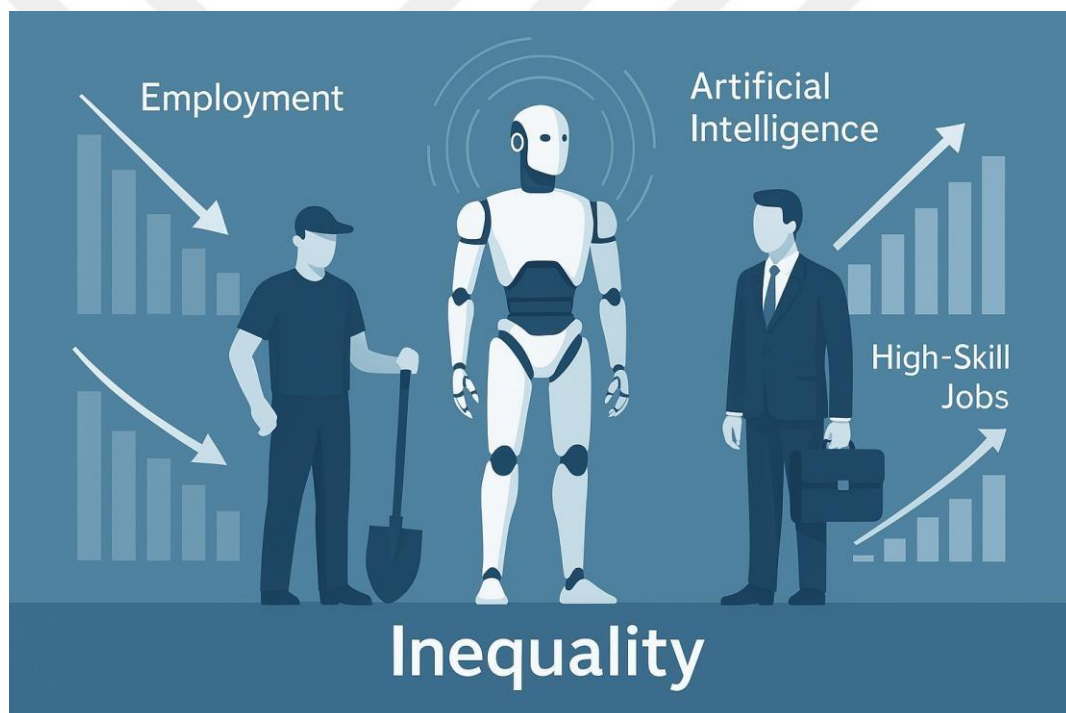


Figure 9. The Dual Impact of Technological Advancement on Labor Markets

(Technological progress drives demand for high-skilled roles while displacing repetitive and low-skilled jobs, intensifying socio-economic disparities and raising critical questions about worker well-being and systemic adaptation)

Source: Illustration generated with the assistance of ChatGPT (2025), based on a conceptual framework developed by the researcher

The authors Maslach and Leiter (2016) investigate the concept of emotional exhaustion as the foundation of burnout. They establish a connection between burnout and chronic stresses in the workplace, such as job insecurity and organizational pressures.

They trace the development of burnout research from its conceptualization in the 1970s to contemporary understandings of stress in the workplace, with an emphasis on the role that unsupportive work settings play in increasing emotional weariness. Within the framework of the Burnout Theory, which establishes a connection between emotional tiredness, depersonalization, and decreased personal accomplishment, their technique incorporates qualitative surveys and longitudinal investigations. In addition to giving substantial insights into burnout, the study draws attention to the necessity of specialized treatments in the tourist industry, which is a sector that is frequently neglected in previous studies.



Figure 10. Emotional Exhaustion within the Framework of Burnout Theory

(Chronic workplace stress, job insecurity, and unsupportive environments contribute to emotional exhaustion and burnout—particularly in service industries like tourism, where

targeted interventions remain limited in existing research)

Source: Illustration generated with the assistance of ChatGPT (2025), based on a conceptual framework developed by the researcher

Within the context of the tourism business, Sigala (2020) investigates the enormous influence that digital revolution has had, revealing both potential and difficulties at the same time. From the beginnings of computerization to the incorporation of artificial intelligence and large amounts of data, this study traces the development of digital transformation, with a particular emphasis on the conflict that exists between operational efficiency and job security. The study is situated under the Dynamic Capabilities Theory, and it makes the argument that adaptability is essential for the success of organizations in the digital era. The study makes use of case studies and secondary data analysis. However, Sigala argues that there is a significant study gap in addressing the psychological and emotional affects that such changes have on employees. This is despite the fact that she emphasizes the significance of communication and staff training in order to successfully navigate digital transition.

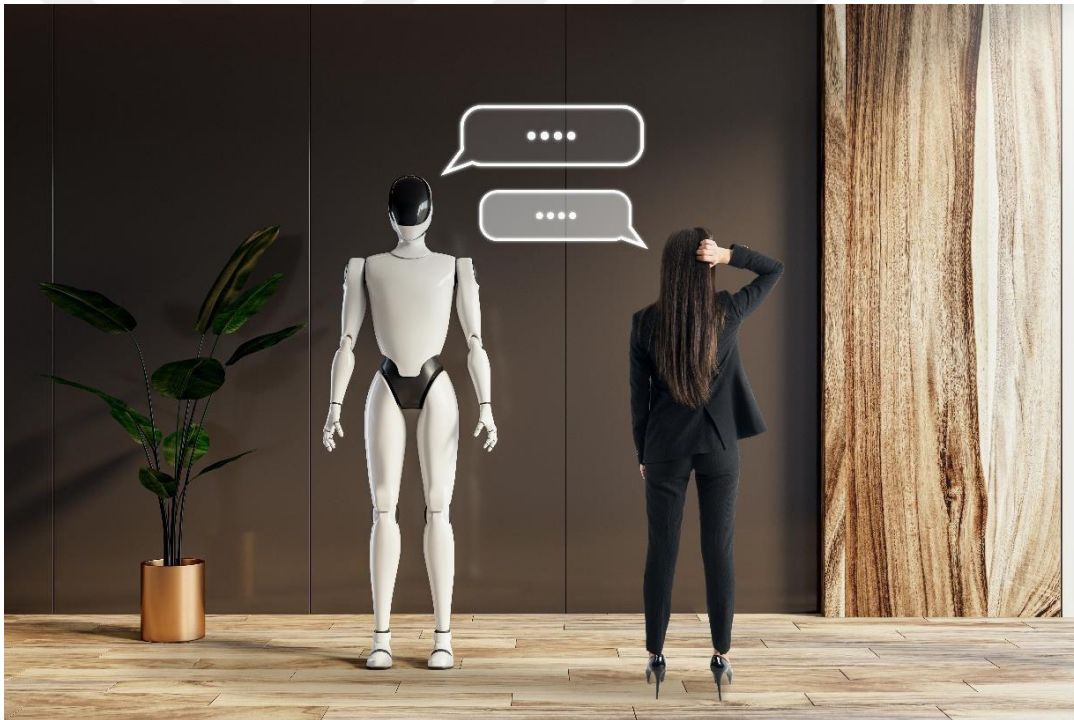


Figure 11. Digital Transformation and Workforce Adaptability in Tourism

(The integration of AI, data, and automation in tourism enhances operational efficiency but introduces psychological and emotional pressures on employees—highlighting the need for supportive communication and training strategies during digital transitions)

Source: Who is Danny – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-photo/robot-businesswoman-interacting-modern-office-environment-with-chat-bubbles_389681751.htm

In this study, Kim et al. (2021) investigate the role that leadership plays in

resolving burnout, particularly in organizations that are heavily dependent on technology. The study highlights the growing demand for empathic management by analyzing historical shifts in leadership techniques and highlighting the importance of these shifts. The article examines many tactics, including inclusive decision-making, chances for training, and supportive management. These strategies are supported by a combination of methods, including employee surveys and case studies. The research, which is based on the Transformational Leadership Theory, demonstrates that leadership that is both inspiring and supportive is successful in decreasing burnout. Nevertheless, it is necessary to conduct additional research into the ways in which these techniques might be adapted to the specific issues that are faced by the tourism industry.



Figure 12. Leadership Strategies for Preventing Burnout in Digital Organizations

(Transformational leadership practices—such as empathy, support, training, and inclusive decision-making—can reduce burnout in technology-dependent workplaces. Adapting these approaches to tourism settings is key to sustainable workforce engagement)

Source: Freepik (2025). Premium license. No attribution required. Retrieved from https://www.freepik.com/free-photo/cheerful-business-people-meeting-raising-arms_3346359.htm

McKinsey & Company (2019) presents an in-depth analysis of technological unemployment, which includes a summary of the factors that contribute to it, the implications it has, and the potential remedies to it. The authors note that whereas innovations give chances for new positions, they also worsen job displacement in repetitive tasks. This is something that they take into consideration. Using historical data and econometric analysis, the study draws attention to the necessity of proactive reskilling

programs and legislative initiatives to address growing worker worries. This is especially important in industries that are susceptible to technology changes, such as tourism.

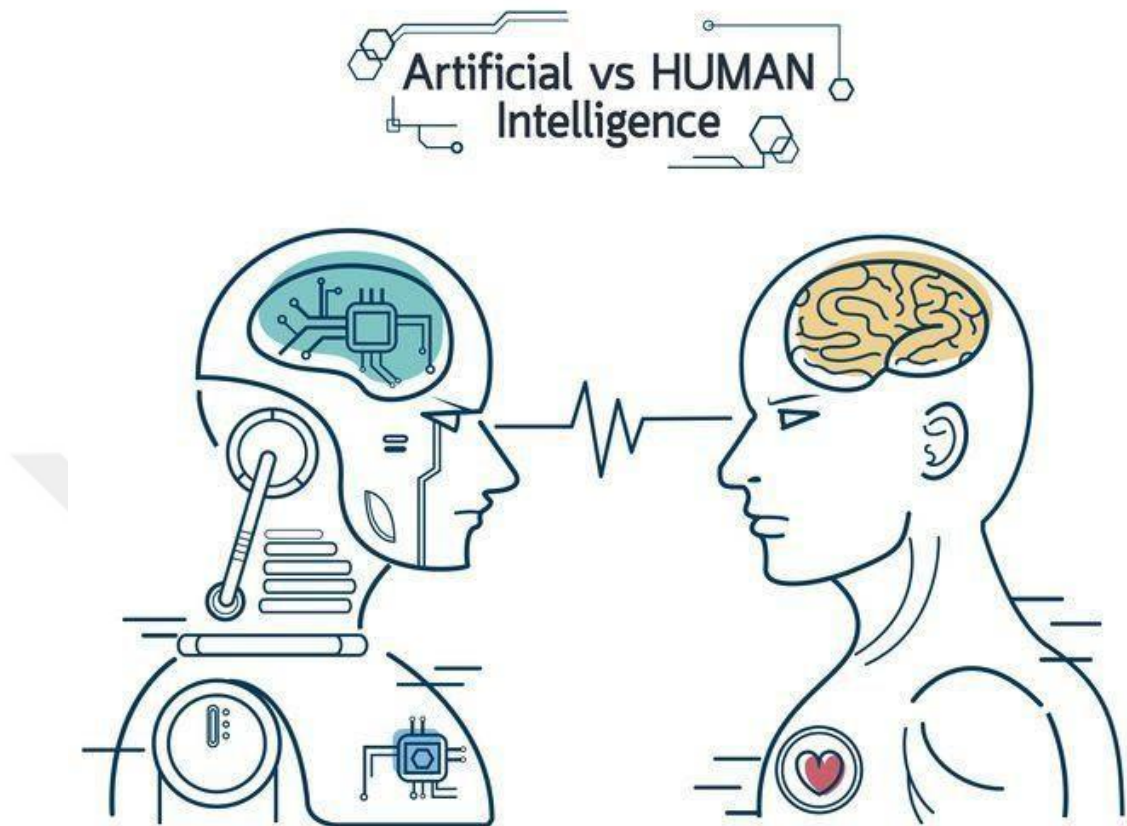


Figure 13. Human Intelligence versus Artificial Intelligence in the Context of Job Displacement

(As AI continues to automate cognitive and manual tasks, the divide between machine logic and human adaptability deepens—underscoring the urgent need for reskilling initiatives and policy responses to protect vulnerable sectors like tourism)

Source: Unknown author. (n.d.). *Artificial vs human intelligence* [Illustration]. Retrieved from Google Images

In spite of the fact that they are primarily concerned with retail, Clark et al. (2018) investigate the relationship between technology advancements, employment insecurity, and stress, and they propose similarities for the tourism industry. According to the findings of their research using a variety of methods, technological advancements, despite the fact that they are advantageous for operational efficiency, greatly add to employee anxiety owing to the perception of job insecurity. The research suggests that in order to address these worries, organizational techniques such as clear communication and stress management programs should be implemented.



Figure 14. Perceived Job Insecurity and Stress in Tech-driven Workplaces

(Technological advancements, while enhancing efficiency, often intensify employee anxiety due to fears of job loss—highlighting the need for transparent communication and mental health support within organizations navigating digital change)

Source: pressmaster – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-photo/serious-analyst-manager-analyzing-online-data-by-workplace_38283048.htm

The authors Jones and Smith (2021) investigate a variety of potential strategies that could be implemented in order to enhance the mental health and psychological well-being of those who are employed in the hospitality business. Through the evaluation of systematic reviews and data obtained in the field, they are able to identify the key sources of stress, which include emotional exhaustion and job insecurity, among other things. Their research findings emphasize the necessity of mental health programs and suggest the introduction of workplace training to develop psychological resilience. In addition, they urge that workplace training be implemented. As an additional point of emphasis, they stress the significance of establishing a supportive working environment in which employees are made to feel appreciated and connected. This can help to alleviate feelings of isolation and burnout. In addition, their findings indicate that frequent mental health check-ups and access to counseling services could dramatically reduce the amount of stress experienced in high-pressure workplaces. In order to contribute to the overall well-being of their employees and to promote a workforce that is both healthier and more sustainable, companies can contribute to the mental health of their employees by encouraging open communication about mental health.



Figure 15. Promoting Psychological Resilience in Hospitality Workplaces

(Addressing stressors such as job insecurity and emotional exhaustion through mental health programs and training initiatives is essential to support psychological resilience and improve employee well-being in the hospitality industry)

Source: olgsera – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-ai-image/psychologist-supporting-patient-therapy-session-sunset_401892682.htm

2.2. The Psychological Impact of Digital Transformation in the Tourism Industry

The authors of the 2019 study, Grandey et al., investigate the repercussions of emotional labor on employees in the context of digital transformation throughout service industries. The purpose of this study is to investigate how the implementation of automated systems impacts interpersonal roles. Employees are frequently required to strike a balance between the demands of technology and the responsibilities that are centered on humans. Using a thematic analysis of survey responses and case studies, the researchers have determined that although digital technologies lower the amount of work that is repetitious, they can increase the amount of emotional labor that is required since they raise the expectation of faultless interactions with customers. The Conservation of Resources Theory serves as the theoretical framework for this study, which highlights the importance of providing employees with psychological support and training in order to prepare them for the emotional issues that are brought about by digital transformation. There is a paucity of research on how emotional labor interacts with job satisfaction in contexts that are heavily dependent on technology, which is one of the gaps that has been found.



Figure 16. Emotional Labor in the Age of Digital Transformation

(As automated systems reshape service roles in tourism, employees are expected to deliver seamless human interactions alongside digital efficiency—intensifying emotional labor and highlighting the need for psychological support and role-specific training)

Source: Wavebreak Media – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-photo/coffee-shop-restaurant_1680825.htm

The psychological implications of employment insecurity caused by automation in a range of industries, including tourism, are examined by Frey and Osborne in their 2017 study. The authors show, using econometric models and longitudinal data, that routine jobs are disproportionately affected negatively by automation, which in turn increases workers' levels of anxiety and emotional strain. The study argues that job displacement is not evenly spread across demographics, leading to increased vulnerability among particular employee groups. It bases its claim on the Task-Based Model of Employment. The recommendations call for the establishment of focused upskilling initiatives and mental health interventions in order to lessen the detrimental consequences of automation-induced insecurity. They also stress the significance of developing workplace regulations that offer employees security and clear career advancement, boosting their confidence in the face of technology advancements. According to the report, companies should encourage an adaptable culture where employees are encouraged to acquire the skills they need to succeed in a world that is becoming more and more automated.



Figure 17. Unequal Psychological Impacts of Automation

(Routine roles in tourism are especially vulnerable to automation, heightening emotional strain and job insecurity—particularly among specific employee groups. Targeted upskilling and mental health support are essential to mitigate these effects)

Source: fpphotobank – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-photo/housekeeping-lady-uniform-entering-room-with-trolley_8742772.htm

Kundu et al. (2022) investigate the function of employee involvement in mitigating the adverse effects of technological disruptions. Employees who are engaged in their work are more resilient to the effects of stress and anxiety related to their occupations, according to the results of their mixed-method study, which includes questionnaires and interviews from the tourism and hospitality sectors. As the basis for this study, the Job Demands-Resources (JD-R) model is used. According to this approach, resources and supportive management could serve as a buffer against the negative consequences of digital transformation. The study suggests that more research be done to examine the long-term advantages of such approaches, even while the results emphasize the importance of leadership in promoting involvement. According to the study, encouraging a sense of connection and purpose among staff members might also lessen their emotions of uneasiness during times of technological transition. Organizations can improve resilience and job satisfaction by giving workers the chance to participate in decision-making processes and do meaningful work. In order to guarantee sustained participation in a constantly changing digital environment, the authors also support the creation of strategies that attend to the practical as well as emotional demands of staff members



Figure 18. The Role of Employee Engagement in Navigating Digital Disruption

(Grounded in the Job Demands–Resources model, employee engagement—fostered by supportive leadership and access to workplace resources—can enhance resilience and reduce the psychological impact of job-related stress in the hospitality sector)

Source: DC Studio – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/free-photo/tourist-giving-passport-receptionist_234116865.htm

The impact of digital skills training programs on the anxiety levels of employees in the tourism sector is examined by the authors Brown et al. (2020). Based on Social Cognitive Theory, the study shows that training programs significantly lower workplace stress by boosting workers' self-confidence in their technological tool proficiency. The study has a longitudinal approach, which entails keeping track of participants before and after training. The results show that having digital abilities enhances job satisfaction and performance in addition to lowering anxiety. On the other hand, the authors acknowledge that little is known about how these benefits vary according on the organizational and cultural context. To optimize its efficacy in lowering anxiety, they recommend that future research look at how digital skills training might be adapted to various cultural situations. In order to guarantee that staff members maintain their confidence as technology advances, the authors also stress the significance of continuing assistance and refresher training. Lastly, they emphasize the necessity of a comprehensive strategy that helps staff members adjust to the evolving workplace by providing them with both technical training and emotional support.



Figure 19. The Impact of Digital Skills Training on Employee Confidence and Well-being

(Training programs that enhance employees' digital competencies reduce workplace anxiety and increase job satisfaction—demonstrating the value of self-efficacy and continuous learning in the face of digital transformation)

Source: Flowo – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-ai-image/cropped-shot-employer-standing-near-window-holding-digital-tablet-reading-news-social-media_183303828.htm

In their study, Peterson and Burke (2021) look into how technology adaptation contributes to burnout in the hospitality industry. The study investigates the connection between adaption pressures and emotional weariness using a mixed-method approach. Workers who are required to adapt more frequently are more likely to experience burnout if their organizations do not adequately support them, according to the authors, who use the Transactional Theory of Stress and Coping. Adaptive leadership tactics and resilience-enhancing programs are among the suggestions. However, the report also note that there hasn't been enough research on how these findings might be applied to smaller tourism businesses. The authors argue that more studies should look at the correlation between technological adaption and burnout from a smaller company's perspective, taking into account factors like leadership styles and resource constraints. Additionally, they suggest looking at how collaboration and peer support might lessen stress during times of technological transition. The study also stresses the significance of fostering an organizational culture that promotes open communication regarding stress and burnout as a means to lessen the impact of adaptation's drawbacks.

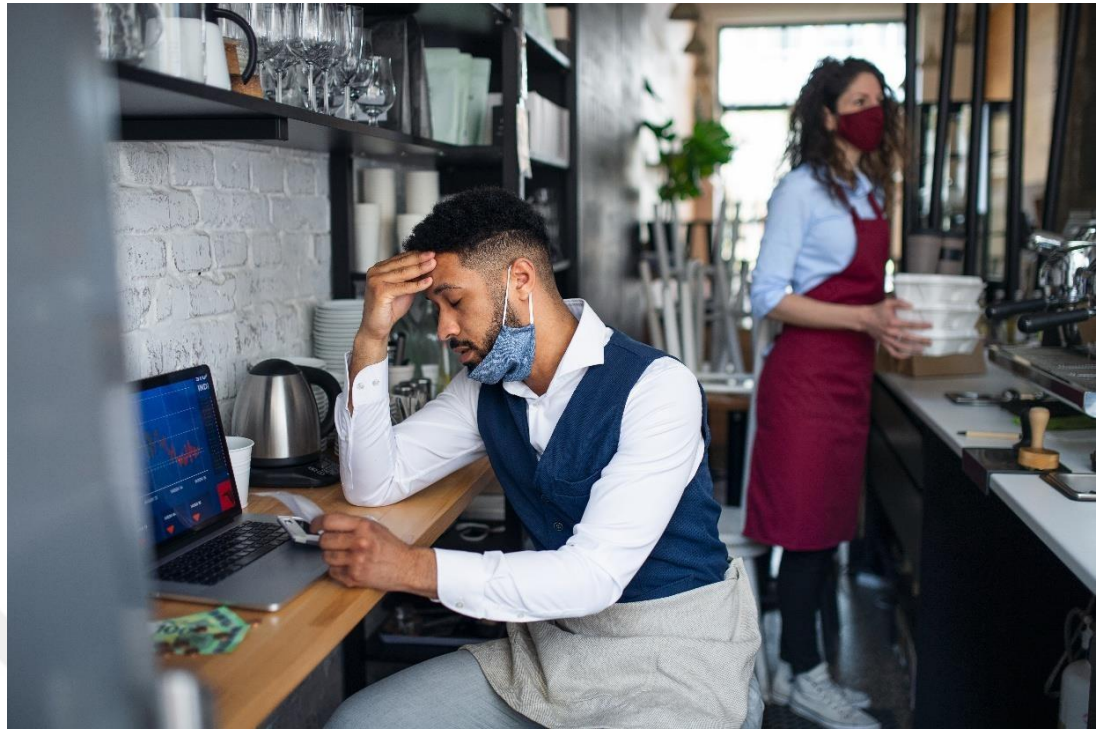


Figure 20. Technological Adaptation and Emotional Exhaustion in Hospitality

(Continuous adaptation to digital systems without proper organizational support increases the risk of burnout among hospitality workers—highlighting the importance of adaptive leadership and resilience-building strategies)

Source: Kiwistocks – Freepik.com. Premium license. No attribution required. Retrieved from https://www.freepik.com/premium-photo/frustrated-coffee-shop-manager-cafe-small-business-coronavirus-new-normal-concept_371871417.htm

2.3. The Impact of Automation and AI on Workforce

The purpose of this literature review is to investigate the influence that automation and artificial intelligence (AI) have on the dynamics of the workforce, with a specific emphasis on the sensation of emotional weariness experienced by workers in the tourism industry. There have been concerns raised regarding redundancy and its socio-psychological effects as a result of technological advancements, such as the Internet of Things (IoT), which have significantly increased productivity and streamlined processes while simultaneously reducing the need for human labor (Ford, 2009; Uckelmann, Harrison, & Michaelle's, 2011). Emotional tiredness is a significant problem in labor-intensive industries such as tourism, where human interaction continues to be essential (Civelek, 2009). This exhaustion is frequently caused by job insecurity and an increase in the amount of work that has to be done. Historical insights, such as the Luddite movement of the 18th century and Keynes's (1931) discourse on technological unemployment, illustrate the persistent fears of labor displacement. On the other hand, optimistic visions, such as Rifkin's (2014) abundance economy, suggest that there may be potential long-term benefits. On the other hand, the digital economy, which places a higher value on information than traditional production components such as labor and

capital, has contributed to an increase in worker redundancy. This can be observed in businesses such as Facebook, which generate considerable revenues with a small amount of labor input (Ford, 2015). It is crucial to investigate the relationship between technology advancement, job security, and employee well-being since the tourism industry has particular challenges in preserving human-centric service delivery in the midst of fear caused by automation. The purpose of this review is to highlight the necessity of organizational and policy measures to manage emotional tiredness and promote workforce sustainability in a period of rapid technological change. This is accomplished by synthesizing historical and contemporary viewpoints.



Figure. 21 Workforce Transformation under Automation and Artificial Intelligence

(Technological advances such as AI and IoT drive productivity while reducing human labor needs—raising concerns about redundancy, emotional exhaustion, and workforce sustainability in human-centered industries like tourism)

Source: Freepik. (2025). Premium license. No attribution required. Retrieved from https://www.freepik.com/free-ai-image/dynamic-data-visualization-3d_396662939.htm

In the post-digital era, technological advancements, particularly automation and artificial intelligence, have significantly altered labor dynamics, with many traditional jobs becoming obsolete and product life cycles shortening (Gupta & Wilemon, 1990). This disruption leads to economic inequality, as those with greater access to technology and information, typically the wealthier segments of society, benefit from increased productivity, while the less fortunate experience wage stagnation and job displacement (Zhou & Salvendy, 2015; Green, 2010). The digital divide, initially defined by internet access disparities, has now evolved into a broader economic divide, with automation further compounding unemployment and reducing consumer purchasing power (Ford, 2009). As a potential remedy to the increasing unemployment, Universal Basic Income (UBI) has been proposed, with early ideas from Paine (1797) and Friedman (1962) influencing modern debates, although critics argue it could lead to inflation or a weakened work ethic (Standing, 2007; Bheemaiah, 2017). The rise of blockchain technology also presents an alternative to the traditional financial system, possibly eliminating intermediaries such as banks and governments (Girasa, 2018). However, the increasing pervasiveness of the Internet of Things (IoT) and surveillance technologies has raised concerns about privacy erosion, leading to societal pressures to adapt to constant surveillance in exchange for convenience and security (Rifkin, 2014; Morgan, 2014; Houle, 2018). The culmination of these forces could lead to unpredictable social and psychological consequences as society navigates a future where technology increasingly controls economic and personal aspects of life.



Figure 22. Technological Dominance and its Socio-Economic Implications in the Post-digital Era

(As intelligent systems reshape work, finance, and surveillance, automation widens the digital divide and challenges traditional labor structures—raising concerns over economic inequality, workforce displacement, and psychological well-being in an increasingly algorithmic society)

Source: Freepik. (2025). Premium license. No attribution required. Retrieved from https://www.freepik.com/free-photo/standard-quality-control-concept-m_36027722.htm

Automation, artificial intelligence, renewable energy, and 3D printing are some of the technologies that are driving significant adjustments in production and labor relations that are brought about by the post-digital environment. Despite the fact that these improvements contribute to an unparalleled level of unemployment and economic inequality, they also lead to a significant boost in productivity. According to Keynes (1931), Universal Basic Income (UBI) has been proposed as a potential short-term solution to stabilize the capitalist system. However, it is important to note that this solution just alleviates symptoms of the more fundamental problems that are created by the advances in technology. As the use of artificial intelligence and automation becomes more widespread, it is imperative that the government initiate a transition toward economic models that are more open and collaborative. The idea of a "sharing economy" emerges, which is characterized by the transfer of ownership from capital owners to decentralized institutions or individuals. On the other hand, this transition might result in chronic redundancy, which would lessen the cognitive loads that people have to bear, and it might ultimately lead to a society of individuals who have no sense of purpose (Ford, 2015; Carr, 2011). The absence of employment may also decrease human skills, which may result in a population that is dependent on the care and supervision provided by the government. When viewed in this light, the role of the government in managing redundancy, providing stability through universal basic income, and investing in essential technology becomes absolutely necessary in order to prevent the collapse of the economy. This transition is supposed to be accomplished through the implementation of five different strategies: the elimination of human interaction in corporate operations; the provision of free energy; the reduction of transportation expenses; the reduction of the significance of capital; and the implementation of a guaranteed income. These measures are necessary for securing the transition to an abundance economy; In spite of this, challenges of redundancy and social control will emerge as a consequence of their deployment. There is a potential for the formation of an authoritarian control structure through the utilization of technology like as citizen scoring and surveillance, which has the capacity to reshape society in ways that cannot be undone. This is the ultimate threat. Because of this, individuals may have the impression that they are being constantly observed and evaluated by automated systems, which could result in a severe degradation of personal privacy, autonomy, and freedom of speech. Over the course of time, such mechanisms have the potential to normalize restrictive social norms and repress dissent, so profoundly changing civic life and the power relations prevalent within society.



Figure 23. Structural Imbalance and the Socioeconomic Risks of Automation

(As productivity accelerates through automation, artificial intelligence, and decentralized technologies, labor relations face destabilization. Without strategic intervention, the resulting imbalance could lead to widespread redundancy, erosion of human agency, and increased risks of societal control through technological surveillance)

Source: Freepik. (2025). *Premium license. No attribution required.* Retrieved from https://www.freepik.com/free-photo/green-character-scale_955504.htm

According to experts like Kurzweil, who projects that artificial intelligence (AI) will surpass human intelligence by a billion times by the middle of the twenty-first century, the introduction sets the stage for the discussion of the legal issues and uncertainties surrounding this development (Hansell & Grassie, 2011). The review's goal is to examine the ramifications of this change, especially with regard to redefining legal systems that presently follow an anthropocentric viewpoint, which centers the legal and ethical cosmos on mankind (Pagallo, 2013; Leach, 2015). Unprecedented ethical and legal quandaries result from this anthropocentric approach's failure to address the possible rights and obligations of advanced AI (Barfield, 2015). Different points of view are also discussed, such as the idea that future intelligent robots should be treated as ancient slaves, as suggested by some researchers who cite Roman slave laws as a possible framework (Kakoudaki, 2014; Pagallo, 2013). The study highlights the need for equality-based solutions to human-robot relations and contends that such an approach is untenable. In the end, this overview of the literature seeks to shed light on the changing legal landscape of AI and open the door to resolving these urgent problems (Ersoy, 2017;

Turkle, 2011).



Figure 24. Rethinking Legal Systems in the Age of Superintelligent AI

(As artificial intelligence advances beyond human cognition, current anthropocentric legal frameworks struggle to address its rights, obligations, and ethical treatment. Future systems must reconcile legal theory with machine agency to avoid outdated parallels and embrace inclusive justice for human-AI coexistence)

Source: Generated with the assistance of ChatGPT (2025), based on a conceptual framework developed by the researcher

The examined sources offer an extensive analysis of artificial intelligence (AI) and social robotics, encompassing their historical foundations, ethical considerations, and practical applications. Schmalstieg and Hollerer (2016) as well as Nilsson (2010) delineate the conceptual underpinnings of intelligence, establishing a connection between adaptability and perception in relation to the historical development of artificial intelligence. In contrast, Jaynes (1976) and Wilber (2002) investigate the philosophical aspects of intelligence, although their analyses are characterized by a lack of substantial

empirical support. Pagallo (2013) and Müller (2016) examine the ethical and legal challenges associated with accountability for actions prompted by artificial intelligence. They critique the concept of conferring legal personhood upon robots; however, their frameworks lack empirical validation. In the field of social robotics, Bartneck and Forlizzi (2004) present a comprehensive, research-driven framework that underscores the significance of anthropomorphic embodiment and communication. This perspective stands in contrast to the works of Darling (2012) and Acemoglu and Restrepo (2018), which prioritize functionality while neglecting the examination of cultural variations. Guadamuz (2017) and Directive 91/250/EEC analyze copyright concerns pertaining to works generated by artificial intelligence, highlighting deficiencies in existing policies while neglecting to consider the ramifications of advancements in AI creativity. In summary, although these sources offer significant theoretical perspectives, the deficiency of empirical research in numerous domains highlights the necessity for forthcoming studies to integrate cross-cultural analyses, case studies, and policy evaluations in order to effectively address the dynamic landscape of artificial intelligence and robotics.

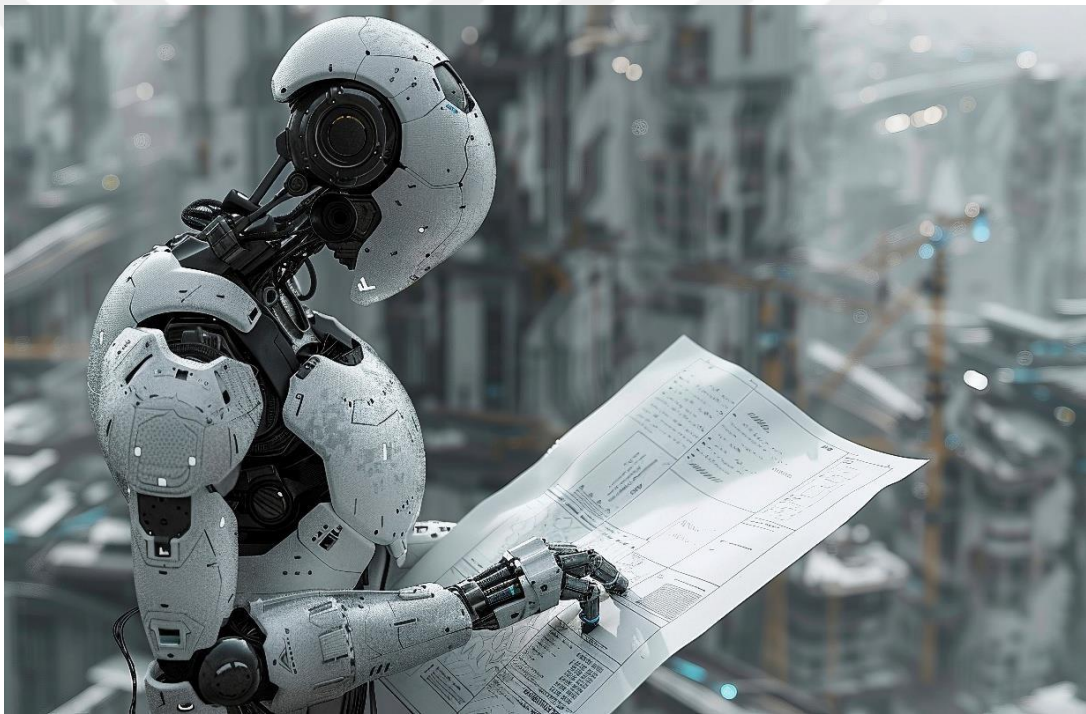


Figure 25. Rethinking Intelligence and Agency in AI Systems

(As artificial intelligence advances toward human-level reasoning and creative capacity, interdisciplinary research raises critical questions around ethics, responsibility, embodiment, and legal personhood. The evolution of intelligent machines challenges existing anthropocentric frameworks and calls for new models of accountability in AI-driven environments)

Source: Premium license. No attribution required. Retrieved from https://www.freepik.com/free-ai-image/scene-with-futuristic-robot-used-construction-industry_154036703.htm

The analysis underscores the increasing reliance of cyberspace protection policies

on the levels of integration among Member States, which are adapting in response to emerging cybersecurity challenges and societal transformations, transitioning from Web 2.0 to Society 4.0. Robotic technologies are progressing across multiple sectors; however, they also give rise to ethical and social concerns, including the potential for psychological dependencies to develop between users and socially interactive machines, a phenomenon that companies may seek to exploit. Cultural disparities additionally impact ethical and legal considerations, thereby necessitating localized research (Scheutz, 2012; Malle et al., 2015). Bostrom (2014) asserts that artificial intelligence is advancing incrementally and may soon exceed the cognitive capabilities of non-human animals. This development has initiated discourse regarding the ethical and legal responsibilities associated with machines, including the prospective applicability of criminal legislation. As robots increasingly become integrated into everyday life, their recognition as social entities underscores the necessity of confronting legal, social, and ethical considerations. The current framework of British law, which allocates copyright to creators of artificial intelligence, is presently the most conducive to encouraging investment. However, discussions regarding the potential conferral of human-like rights upon machines remain unresolved and are of paramount importance for future policy development.

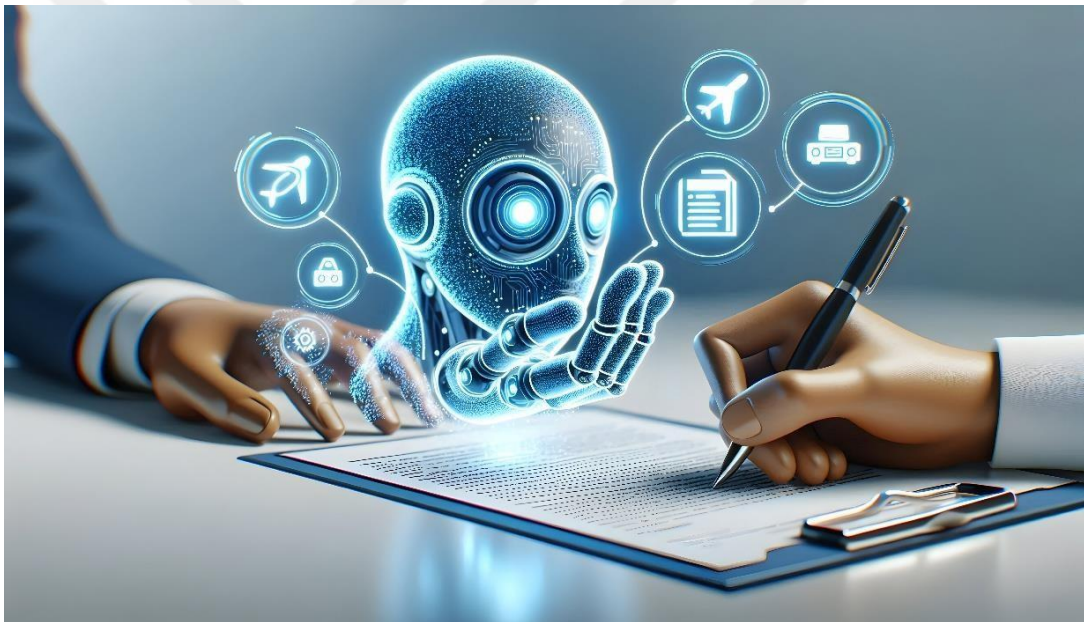


Figure 26. The Legal and Ethical Challenges of AI Integration

(As AI technologies become increasingly embedded in society, traditional legal systems face unprecedented challenges in assigning rights, responsibilities, and protections to non-human agents. This reflects growing concerns around legal accountability, societal impact, and ethical frameworks in the age of intelligent machines)

Source: Licensed from Freepik.com (2025), under a Premium License for unlimited use without attribution. Retrieved from https://www.freepik.com/premium-ai-image/3d-hand-signing-contract-surrounded-by-cyber-security-icons-holographic-display-zoom-s_279320699.htm

This literature review investigates the progression of artificial intelligence (AI)

and its ramifications for human-like cognition and consciousness, analyzing both the potential and the challenges presented by AI as it approaches functionalities akin to human intelligence. The review will concentrate on the definitions and conceptualizations of intelligence and consciousness, emphasizing historical perspectives ranging from Aristotle to contemporary scholars. It will also examine the potential for artificial intelligence to develop cognitive abilities, emotional experiences, and possibly consciousness, as discussed by Schmalstieg and Hollerer (2016), Goldstein et al. (2014), and Bostrom (2014). This analysis will examine how these advancements are transforming disciplines such as robotics, management, and ethics, while also addressing societal and psychological concerns, including the potential for artificial intelligence to demonstrate irrational or detrimental behavior (Müller, 2016; Sanderson & Gruen, 2006). Furthermore, it will examine the wider ramifications of artificial intelligence integration, encompassing present applications such as virtual assistants, as well as prospective advancements that may pose challenges to existing legal and ethical frameworks (Rose, 2016; Barfield, 2015). The objective is to comprehend the trajectory of artificial intelligence development, the complexities associated with defining machine consciousness, and the ethical implications that emerge as machines become increasingly integrated into human society.

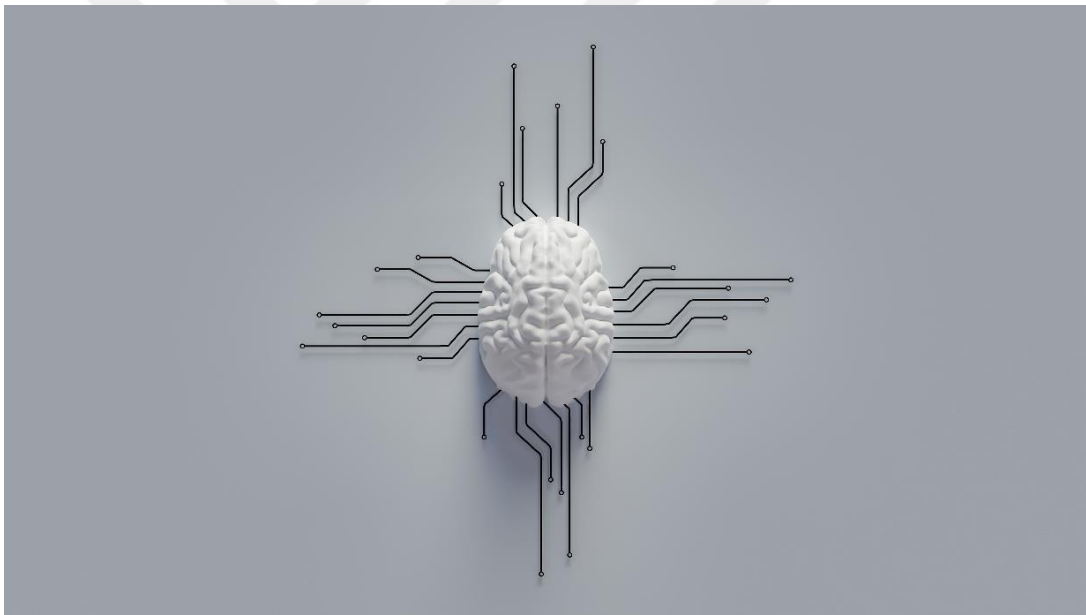


Figure 27. Symbolic Intersection of Cognition and Artificial Intelligence

(A conceptual visualization illustrating the convergence of biological cognition and digital processing, reflecting discussions on artificial intelligence reaching levels of human-like consciousness and thought. The neural-like circuitry extending from a brain form metaphorically represents the evolving integration of emotional, cognitive, and ethical dimensions into machine intelligence)

Source: Freepik Premium License (2025), retrieved from https://www.freepik.com/premium-photo/artificial-intelligence-digital-brain-concept-background-3d-rendering_74779283.htm

The body of literature concerning management and its evolution in response to the progression of artificial intelligence (AI) offers a diverse array of viewpoints, emphasizing both historical underpinnings and prospective ramifications. Singh (2010) delineates management as the activities undertaken by managers to sustain and enhance an organization, emphasizing processes that are driven by human interaction. Nonetheless, Brinker and Minnick (2013) contend that organizations, although primarily human-centric, may evolve to incorporate machine elements, especially as artificial intelligence and robotics become increasingly incorporated. This transition calls into question conventional task-oriented perspectives of management, as underscored by Bose (2012) and Davies et al. (2015), who accentuate the intangible and artistic dimensions of leadership in inspiring and directing employees. The differentiation between management and leadership is examined by Spisak et al. (2011), who propose that leadership is fundamentally grounded in human evolution. However, they also contend that the future may witness artificial intelligence supplanting the necessity for human leadership. The evolving definition of business management is further emphasized by the works of Pollard (1968) and Koçel (2018), as the emergence of artificial intelligence necessitates a reevaluation of management functions, including planning and decision-making. Fayol's (1916) conventional management functions—namely planning, organizing, coordinating, commanding, and controlling—are subject to critique by Thomas (2008) due to their restricted applicability within the realm of artificial intelligence. The future of management is characterized by the growing autonomy of artificial intelligence, which is set to assume responsibilities that have conventionally depended on human intellect (Kurzweil, 2005; Lima & Green, 2017). Certain scholars, including Gubbins (2003), contend that definitions of management must evolve to encompass artificial intelligence; however, this necessitates a reevaluation of current models that predominantly focus on human goal-setting and resource allocation. The management challenges attributable to human actions, such as ethical breaches and interpersonal conflicts (Gabris, 1988; Raines, 2012), are underscored as significant concerns. In this context, artificial intelligence is posited as a potential remedy, capable of mitigating human errors and biases, as articulated by Taylor and Bouazzaoui (2018). Furthermore, despite the fact that human intelligence continues to be superior in certain situations (Muller, 2016), there is a clear indication that artificial intelligence will eventually surpass human capacities in management duties. As a result of this evolution, a fresh and all-encompassing definition of management is required, one that takes into account the function of artificial intelligence inside the operations of an organization (Chen, 2018). It is becoming increasingly common for artificial intelligence systems to assume duties such as decision-making, performance appraisal, and resource allocation. As a result, traditional administrative roles are being revolutionized. Because of this transformation, new leadership skills are required, notably in the areas of supervising human-AI collaboration and ensuring that ethical standards are maintained inside automated operations. In addition, firms will be required to strike a balance between maintaining human-centered values that are fundamental to the culture of the workplace and the well-being of employees and maximizing operational efficiency. It is the contention of academics that proactive solutions need to be established in order to solve difficulties that are associated with accountability, transparency, and emotional intelligence in management structures that are backed by artificial intelligence.



Figure 28. Redefining Leadership and Management in the Era of Artificial Intelligence

(This illustration portrays the evolving partnership between human managers and AI systems, reflecting a reimagined approach to business leadership. As artificial intelligence takes on greater autonomy in planning, analysis, and decision-making, the image captures the synergy and shifting responsibilities within management roles in the digital age)

Source: Freepik. Retrieved from https://www.freepik.com/free-ai-image/man-hanging-out-with-robot_132309708.htm

The development of consciousness and management are intricately connected, with consciousness arising from the necessity to interrogate reality and existence. This process has historically been associated with the advent of religion and the establishment of large human collectives (Jaynes, 1976; Torrey, 2017). This advancement necessitated the implementation of sophisticated management strategies to effectively tackle the progressively intricate challenges faced by society. As humanity undergoes a transition from biological to technological evolution, it is anticipated that artificial intelligence (AI) will exceed human capabilities, resulting in the emergence of inorganic life forms and the introduction of novel legal and ethical challenges (Kurzweil, 2011; Mintzberg et al., 2013). The future of management necessitates a redefinition that integrates artificial intelligence as an equal or potentially superior entity, thereby addressing the evolving dynamics between humans and machines (Soraker & Steinhart, 2013; Ersoy, 2017). This

paper presents a novel definition of management that emphasizes the sustainability of artificial intelligence systems, the optimization of stakeholder interests, and the regulation of the behaviors of AI entities within organizational contexts. This represents a significant transition towards decision-making that is propelled by artificial intelligence (Ravi, 2015; Kumar & Sharma, 2000). The definition provided seeks to stimulate further discourse regarding the transforming function of artificial intelligence in the realm of business management (Liebler & McConnell, 2016).

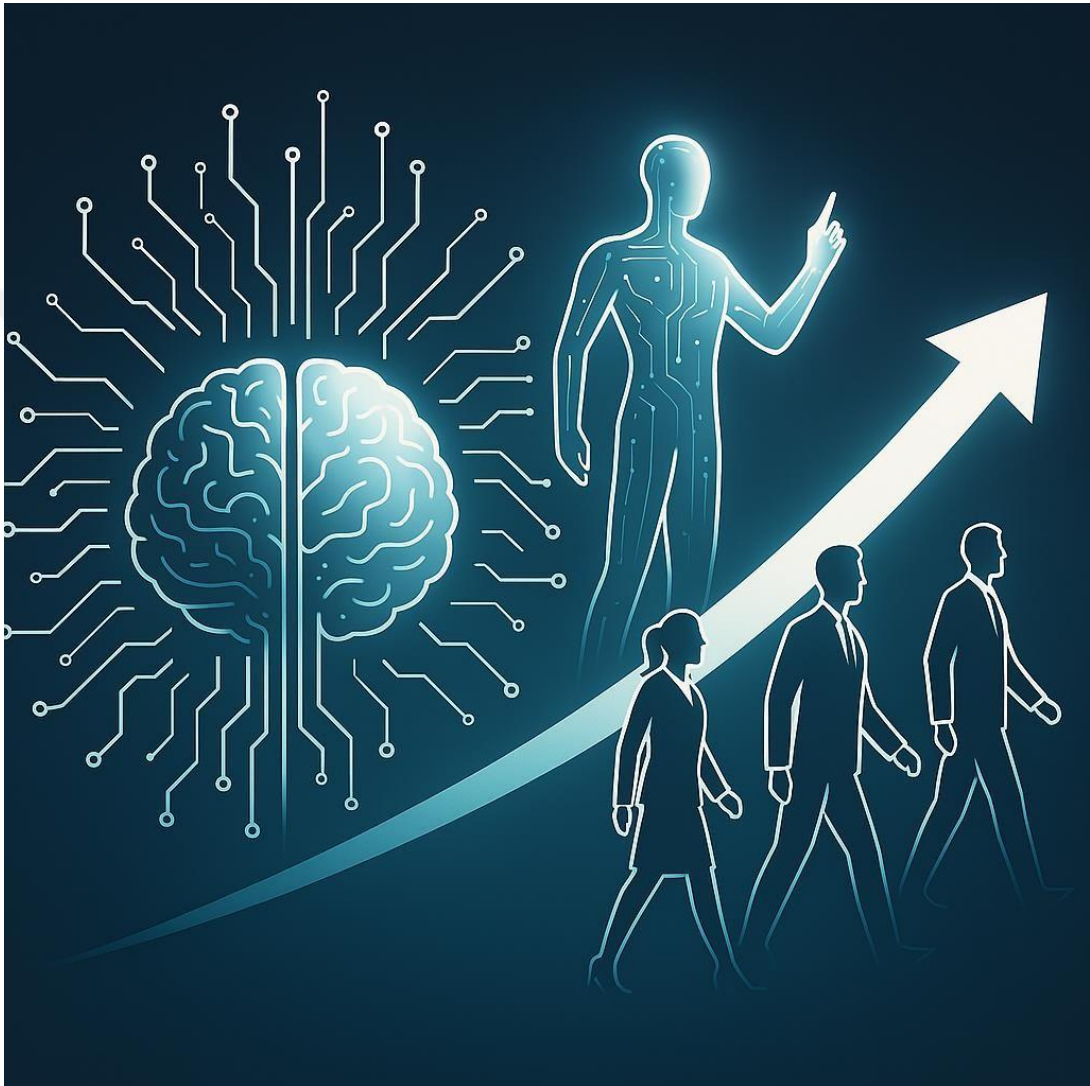


Figure 29. Evolving Management in the Age of Artificial Consciousness

(This visual reflects the conceptual shift from traditional human-centric management to a future where artificial intelligence is integrated as a decision-making entity. As AI surpasses human cognitive capacities, management definitions evolve to include inorganic intelligence, sustainability of AI systems, and the regulation of their behavior within organizations—emphasizing a future shaped by collaboration between humans and machines)

Source: Generated with the assistance of ChatGPT (2025), based on a conceptual prompt

provided by the researcher

Ivanov (2020) offers an in-depth analysis of the impact of automation and digital technologies on the tourist and hospitality sector, highlighting substantial effects on employment frameworks, employee welfare, and organizational methodologies. He classifies the effects of automation on the workforce into three categories: job elimination, wherein machines supplant routine and repetitive positions; job transformation, in which current roles adapt to necessitate new technical and emotional competencies; and job creation, where entirely new roles arise to oversee and facilitate advanced technologies. Ivanov's analysis focuses on the psychological stress that this transition inflicts on tourism personnel, notably the increase in job insecurity, emotional fatigue, and workplace anxiety stemming from concerns of technological unemployment. The research underscores ethical problems, including the potential for depersonalizing service encounters and heightened staff surveillance via AI systems. Ivanov emphasizes the significance of proactive human resource tactics, including as ongoing staff training, emotional resilience initiatives, and collaborative methods for managing digital transformation, as essential ways to mitigate these pressures. He additionally urges industry regulators to establish frameworks that safeguard labor rights and encourage ethical technology use in tourism environments. Ivanov's research is particularly relevant to this thesis as it explicitly connects the operational modifications induced by automation to the psychological and emotional difficulties encountered by tourism employees, while offering pragmatic solutions for sustaining a human-centered, resilient workforce amidst AI-driven disruption.

Soffia et al. (2024) performed a comprehensive meta-analysis examining the progression of robotization and service automation within the tourist and hospitality sector from 1993 to 2024. Their research underscores the substantial changes in employment frameworks resulting from the incorporation of artificial intelligence (AI) and robotic technology. The report classifies workforce impacts into job displacement, where automation supplants mundane jobs; job transformation, necessitating individuals to acquire new technology skills; and job creation, which involves responsibilities focused on managing and maintaining automated systems. Soffia et al. highlight the psychological consequences of these developments, observing heightened job insecurity and emotional fatigue among employees confronting the uncertainties of technological unemployment. The study also examines ethical issues, including the possible degradation of human-centered service values and heightened surveillance via AI technologies. The authors recommend proactive human resource measures to address these difficulties, including as ongoing training programs, emotional resilience initiatives, and inclusive methods for digital transformation. They additionally advocate for industry regulators to create frameworks that safeguard labor rights and encourage the ethical utilization of technology. This study is pertinent to the current thesis as it clarifies the direct relationship between automation-induced operational changes and the psychological and emotional challenges faced by tourism employees, providing practical solutions to cultivate a resilient, human-centered workforce in the context of AI-driven disruptions.

The authors Xing et al. (2022) investigate the changing dynamics of human-automation interaction within the hotel and tourism industry. They place particular emphasis on the concept of "cognitive friction" that occurs when clients interact with

automated services. According to the findings of their research, there are two key factors that create friction: the value beliefs that customers have toward human-automation interaction (HAI) and the experiential views that they have during encounters of this kind. The research highlights the fact that although automation is intended to improve service efficiency, it may inadvertently contribute to customer discontent if it is not integrated in a seamless manner, which may eventually have an effect on the duties and responsibilities of employees. Employees may be subjected to increasing pressure to manage and alleviate these frictions, which may result in higher emotional labor and the possibility of burnout. The authors urge for a balanced approach, arguing that firms should prioritize employee training and support systems in addition to focusing on technology improvements in order to successfully traverse the problems that are brought by automation. This viewpoint is consistent with the larger discussion on the psychological and organizational consequences of automation, which stresses the importance of developing strategies that guarantee both the satisfaction of customers and the well-being of employees in an environment that is becoming increasingly automated in terms of providing service.

The authors Kaklauskas et al. (2022) investigate the incorporation of intelligent automation (IA) as a component of digital transformation within the tourist and hospitality business. They highlight the potential of IA to improve the quality of customer service and the overall experience experienced by customers. The study demonstrates that although IA has the potential to streamline processes and improve efficiency, it also requires a reevaluation of the human aspect in service delivery. This was discovered through qualitative research that involved 39 semi-structured interviews with tourism service providers in Cyprus. The findings underline the fact that artificial intelligence should be used to supplement human connection rather than to replace it. This will ensure that the empathic and personalized components of hospitality that customers love are maintained. The findings of this study highlight the significance of striking a balance between human-centric methods and technical improvements in order to ensuring that service quality and employee happiness are maintained. This study gives information on how employees perceive technological changes in their work environment and how they adjust to those changes. It is particularly pertinent to discussions on the psychological and organizational implications of automation since it sheds light on how employees adapt to these changes.

A framework is presented by Arakawa (2019) that aims to identify and prioritize the most important elements that significantly impact the application of automation and artificial intelligence in the hospitality and tourism business. In this study, the Analytic Hierarchy Process (AHP) is utilized to analyze a total of 23 sub-criteria that are generated from prior research. The five basic criteria that are evaluated are human knowledge, services, robotics applications, internal environment, and institutional environment. According to the research, the most major elements that influence the adoption of automation and artificial intelligence are human knowledge, services, and applications of robotics. According to the findings of the study, it is essential to strike a balance between human-centric methods and technical improvements in order to preserve satisfaction levels among employees and service quality. This research by Arakawa gives useful insights for policymakers and industry experts who are looking to establish sustainable strategies for deploying and managing automation and artificial intelligence

in the tourist and hospitality sector. These insights are provided by the research's provision of a structured framework.

A comprehensive historical and conceptual examination of the evolution of artificial intelligence technologies and their progressive integration into numerous industries, including services such as tourism and hospitality, is provided by Nilsson (2010) in his seminal work, *The Quest for Artificial Intelligence*. Despite the fact that Nilsson's primary focus is on the technical development of artificial intelligence, his observations continue to be extremely pertinent when it comes to analyzing how AI-driven automation affects labor relations and service delivery models in the present day. In this talk, he covers the progression from rule-based systems to machine learning and intelligent agents, and he forecasts big changes in industries that are dependent on human contact. Nilsson acknowledges the social and ethical consequences of these technologies, particularly the potential displacement of human labor and the psychological strain that might form when persons are pushed to adjust to rapid technological changes. He also admits the fact that these technologies have the potential to disrupt human labor. It is through his work that the theoretical framework is laid for viewing artificial intelligence not only as a collection of tools but also as a disruptive force that is transforming organizational structures, employment positions, and the connections between humans and machines. In the tourism industry, where the human touch has long been considered to be the most important factor in determining service quality, this foundational perspective is very necessary. It is possible for this thesis to further contextualize the emotional tiredness and job instability that tourist personnel face as a result of the adoption of AI by putting current automation trends within Nilsson's broader framework for the growth of artificial intelligence.

A radical theory about the evolution of human consciousness was proposed by Jaynes (1976) in his influential work titled *The Origin of Consciousness in the Breakdown of the Bicameral Mind*. This theory suggested that ancient humans operated under a structure known as the "bicameral mind," in which decision-making was guided by auditory hallucinations that were perceived as the voices of gods or leaders. Jaynes's primary interest was on the historical and cognitive development of consciousness; yet, his discoveries contain intriguing implications for modern talks on artificial intelligence and human-machine interaction. Jaynes published his findings in the journal *Cognitive Science*. When viewed in the context of tourism and hospitality, where emotional labor and human connection continue to play a vital role, Jaynes's study raises questions about how consciousness, self-awareness, and decision-making processes adapt when humans increasingly engage with intelligent machines that appear to be independent. Employees may suffer new forms of psychological strain, emotional dissonance, or role ambiguity as AI systems get more sophisticated and replicate aspects of human cognition and emotion. This is especially true in service sectors, where empathy and social contact are crucial components of the job. By situating the contemporary labor issues brought about by artificial intelligence within Jaynes's more comprehensive theory of consciousness, this thesis has the potential to provide a novel psychological perspective that can be used to analyze the emotional and cognitive demands that tourism workers experience as they navigate AI-driven transformations.

A detailed systematic study was carried out by Kumawat et al. (2025) with the purpose of investigating how employees working in the hotel industry perceive and

interact with artificial intelligence (AI) technologies. The study focused on employee-centric viewpoints in the hospitality industry and utilized the PRISMA methodology and the TCCM (Theory, Context, Characteristics, Methodology) framework to conduct an analysis of eighty empirical publications that were retrieved from the Scopus database during the course of the research. Key antecedents that influence the adoption of artificial intelligence were discovered by the authors. These antecedents include organizational support, technological preparedness, and individual attitudes. In addition, mediators and moderators, such as job happiness, perceived usefulness, and cultural factors, were investigated in order to gain a better understanding of the roles that they play in determining employee responses to the incorporation of AI.

Despite the fact that the introduction of AI has the potential to improve operational efficiency and customer service, the assessment emphasized the fact that it also creates concerns among employees over job security, role ambiguity, and the requirement for ongoing skill development. The authors stressed the significance of proactive organizational measures, such as programs that provide complete training and communication that is open and honest, in order to foster positive attitudes among employees regarding artificial intelligence. In addition, the study highlighted the importance of conducting additional research in the future to address geographical gaps, particularly in places that are underrepresented, and to investigate the effects of AI adoption on employee well-being and career progression over time.

Through the utilization of the Conservation of Resources (COR) theory and social support theory as basic frameworks, Hou and Fan (2024) study the influence that artificial intelligence (AI)-induced job stress has on the work engagement of hotel employees. As part of their research, they are collecting data from five-star hotels in China to determine how stressors associated to artificial intelligence (AI) affect the psychological capital of employees and their overall involvement in their work. The findings indicate that stress brought on by artificial intelligence considerably reduces the level of work engagement among hotel employees. Furthermore, the relationship between stress brought on by artificial intelligence and professional engagement is mediated by psychological capital, which includes emotions such as self-efficacy, optimism, hope, and resilience. This indicates that workers who possess a higher amount of psychological capital are better suited to deal with the stress that is associated with the integration of AI, which allows them to sustain higher levels of engagement despite the stress.

Additionally, the study reveals perceived organizational support as a moderating influence in this dynamic. Specifically, when employees sense a higher level of support from their business, the detrimental impact of AI-induced stress on psychological capital is mitigated. On the other hand, a low perceived level of organizational support makes the negative consequences of stress on psychological resources much more severe. The importance of organizational support in reducing the negative effects of technological breakthroughs on employee well-being is highlighted by these insights, which highlight the vital role that organizational support plays. This research makes a contribution to the larger conversation about the incorporation of artificial intelligence in the hospitality industry by drawing attention to the psychological challenges that employees face and highlighting the necessity of supportive organizational practices to foster resilience and sustained engagement in the face of disruptions brought about by technological advancements.

A comprehensive study was carried out by Kong et al. (2024) to investigate the ways in which artificial intelligence (AI) can boost innovation among employees working in the hospitality industry. The researchers created a moderated mediation model so that they could investigate the mechanisms through which artificial intelligence promotes employee innovation. This model was founded on the philosophy of self-determination. The idea of perceived autonomy backed by artificial intelligence was the primary focus of the research. This refers to the degree to which workers believe that AI technologies give them more power and flexibility in their work. The information was gathered from forty-seven full-time workers in the hospitality business who had regular interactions with artificial intelligence systems.

According to the findings, the perceived autonomy, which is supported by artificial intelligence, has a favorable influence on employee innovation, particularly through the role of work exploration as a mediator. The term "work exploration" refers to the proactive actions that employees take in order to seek out new information, experiment with fresh ideas, and engage in creative problem-solving. According to the findings of the study, when employees view artificial intelligence (AI) as a tool that promotes their autonomy, they are more likely to engage in exploratory behaviors that lead to inventive outcomes.

In addition, it was discovered that the association between AI-supported autonomy and innovation was regulated by two of the most important elements, namely AI trust and proactive personality. Trust in artificial intelligence refers to the faith that workers have in the dependability and efficiency of AI systems. The term "proactive personality" describes the inclination of an individual to take charge of their surroundings and bring about change in their surroundings themselves. A proactive personality and high levels of trust in artificial intelligence were found to amplify the positive impact that AI-supported autonomy has on work exploration and, as a result, innovation, according to the findings of the study.

These results highlight how important it is to cultivate an atmosphere in which employees have faith in artificial intelligence technologies and are encouraged to do things on their own initiative. via the implementation of training programs that build trust in artificial intelligence systems and via the recruitment or development of personnel with proactive dispositions, organizations have the ability to improve creativity. By shedding light on the myriad of ways in which artificial intelligence can act as a catalyst for employee-driven innovation, this study makes a significant contribution to a more comprehensive understanding of human-AI collaboration in the hospitality industry.

Yilmazdogan (2024) carried out a qualitative study with the purpose of investigating the ways in which Artificial Intelligence (AI) and Augmented Reality (AR) technologies can be utilized to address the growing problem of staff turnover in the hotel and tourism industry. The study analyzes the possibilities of artificial intelligence and augmented reality as strategic tools to increase workforce stability. This is done in recognition of the issues associated with the industry, which include significant worker turnover, talent shortages, and the requirement for consistent service quality. According to the findings of the research, artificial intelligence has the potential to simplify recruitment procedures, enhance staff selection, and tailor training programs, all of which can lead to increased job satisfaction and commitment. On the other side, augmented

reality technologies provide opportunities for immersive training experiences and real-time support, which helps to facilitate the development of skills and reduces stress associated to work. The combination of these technologies has the potential to provide a workplace that is more stimulating and encouraging, which will ultimately result in increased employee retention. On the other hand, the research notes that there may be some possible downsides, such as the possibility of reduced personalization in service encounters and more employee surveillance. In order to alleviate these worries, Yilmazdogan places a strong emphasis on the significance of putting in place ethical frameworks and proactive human resource strategies. These tactics include programs that incorporate emotional resilience and regular staff training. Through this approach, companies have the ability to guarantee that the incorporation of technology does not undermine the human-centric essence of hospitality services but rather supports it.

According to the findings of the study, although artificial intelligence and augmented reality technologies bring both potential and challenges, the well-considered use of these technologies can greatly contribute to minimizing staff turnover. It is possible for these technologies to assist in the formation of a workforce that is more stable and resilient in the hotel and tourism business. This can be accomplished by increasing job satisfaction, dedication, and possibilities for career advancement.

A detailed study was carried out by Oguiliy et al. (2024) to investigate the influence that the incorporation of artificial intelligence (AI) has on staff turnover rates in the hotel business. Despite the fact that artificial intelligence technologies have a multitude of advantages, such as increased operational efficiency and higher customer service, the research indicates that these technologies also present obstacles that can have an impact on the retention of employees.

The problem known as "robot-phobia," in which workers are afraid that artificial intelligence and automation may one day replace their jobs, has been recognized as one of the key concerns. A higher possibility of employees abandoning their employment, increased stress, and increased job insecurity are all potential outcomes that can result from this anxiety. The research highlights the need of resolving these issues by emphasizing the importance of clear communication and including employees in the process of integrating AI in order to reduce fears and develop trust from the workforce.research.wsu.edu(weblink).

Furthermore, the research highlights the importance of providing employees with proper training and support in order to assist them in adapting to new technologies which are being introduced. Organisations have the ability to lessen resistance to change and foster a more positive attitude towards technological improvements by strengthening the technical skills of their personnel and boosting their confidence in their ability to use intelligent assistant tools.

Moreover, the study investigates the function that organizational culture plays in aiding the successful integration of artificial intelligence. The negative consequences of artificial intelligence-induced stress and turnover can be mitigated by a culture that places a high emphasis on continual learning, innovation, and the well-being of employees. The implementation of policies that place a priority on staff engagement and feedback can further promote a transition to operations that are enhanced by artificial intelligence. In conclusion, Oguiliy et al. (2024) offer insightful perspectives on the intricate

relationship that exists between the incorporation of AI and the turnover rate of employees in the hospitality management industry. It is vital to take into account employee views, training, and organizational culture in order to minimize employee turnover and maximize the benefits of technology breakthroughs, according to their results, even though artificial intelligence (AI) offers major advantages over traditional methods of doing things.



3. CONCEPTUAL BACKGROUND

The study aims to explore the relationship between the dimensions of technological unemployment anxiety and employees' emotional exhaustion. Based on the proposed research model, as illustrated in Figure 30, the following hypotheses have been formulated.

H₁: Lack of Technical Skill has a direct effect on Emotional Exhaustion

H₂: Incremental Technological Improvements has a direct effect on Emotional Exhaustion

H₃: Technological Disruption has a direct effect on Emotional Exhaustion

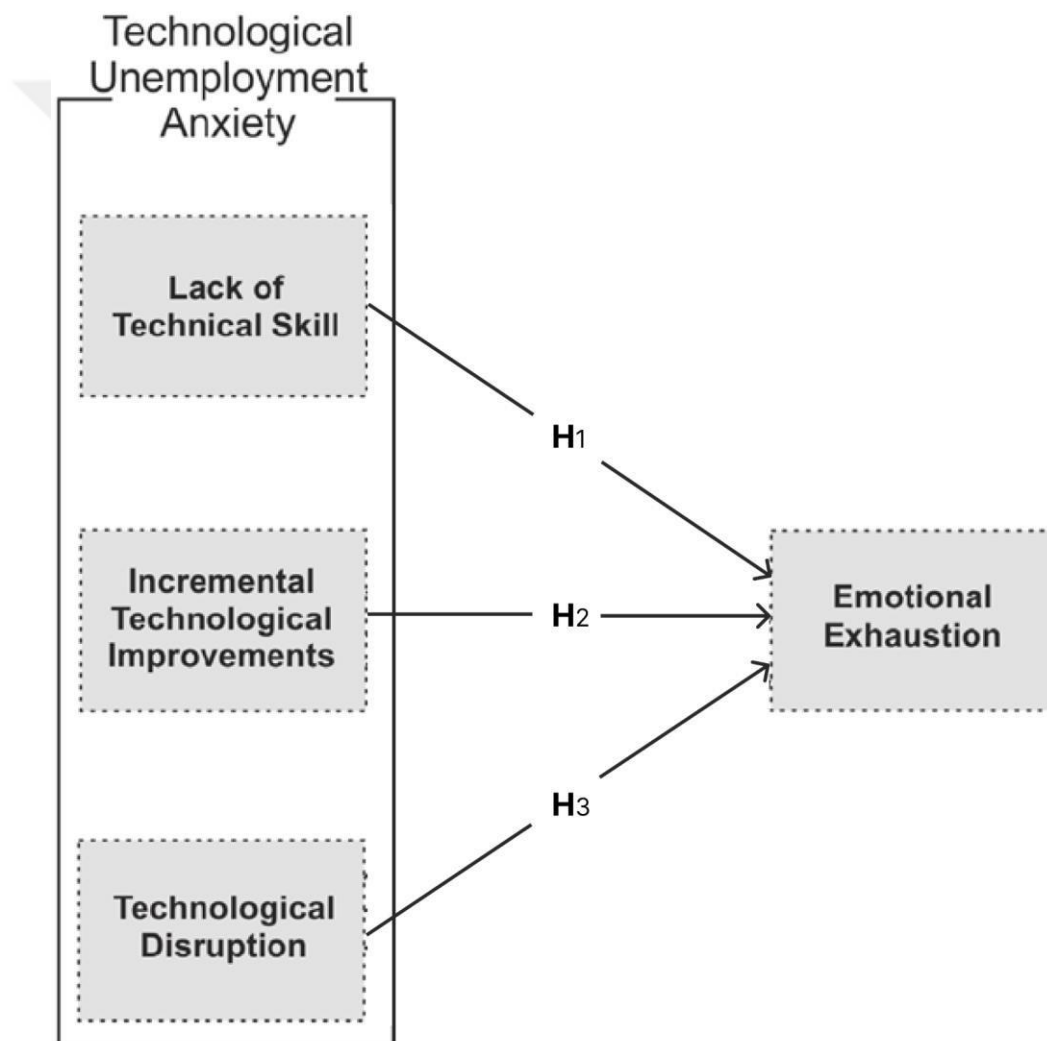


Figure 30. Research Model

3.1. Technological Unemployment Anxiety

The concept of technology-induced unemployment, first introduced by Keynes (1931) in his article “Economic Possibilities for Our Grandchildren,” describes a future scenario where technological advancements lead to a reduction in the need for human labor, thereby enabling a “leisure age.” The roots of this concept can be traced back to the First Industrial Revolution and the Luddite movement (Pehlivanoglu and Civelek, 2022). The Industrial Revolution marked the beginning of mechanization, bringing significant transformations to social and economic life. The Luddite movement, which emerged in the late 18th century, was led by British handweavers who feared job displacement due to the introduction of textile machinery. In response, the Luddites engaged in uprisings aimed at destroying these machines (Lehman, 2015). Contrary to their expectations, however, mechanization eventually created new employment opportunities, as displaced workers were absorbed into other companies or industries. Economists have since regarded the belief in sustained technological unemployment as unfounded, coining the term “Luddite fallacy” to describe this misconception (Campa, 2014).

While past technological advancements ultimately generated new jobs, the situation in the digital economy appears different. Since the First Industrial Revolution, the demand for human labor has steadily declined due to technological progress, a trend that has intensified with each subsequent industrial revolution. Contemporary technological advancements, particularly in automation and artificial intelligence, continue to transform production processes. As production becomes more efficient and cost-effective, there is a growing concern about a potential surge in unemployment. This rise in unemployment is expected to create demand uncertainty, resulting in a “vicious cycle” within the post-digital economy. This cycle poses a threat to the sustainability of the existing economic system. In recent years, excessive amounts of fiat money have been introduced to stimulate economic growth, while personal debt levels have risen. One of the defining characteristics of the post-digital economy is increasing inequality, which is further exacerbated by the digital divide—a disparity in access to technological resources, particularly the internet. This divide results in economic inequality, as knowledge becomes a critical production factor in the digital economy (Civelek, 2009, 2018). Consequently, the combined effects of inequality and unemployment could potentially lead to social unrest, as consumers lose their jobs and purchasing power.

Advancements in artificial intelligence and robotics are accelerating, with job displacement predicted to occur in three distinct stages: algorithm, augmentation, and autonomy (PwC, 2018; Grønsund and Aanestad, 2020). The algorithm stage, which is already underway, involves the automation of simple computational tasks. The augmentation stage, anticipated to reach maturity by the end of the 2020s, entails the automation of repetitive tasks, such as the use of autonomous aerial drones and warehouse robots. The final stage, autonomy, is projected to materialize by the end of the 2030s. At this stage, robots are expected to possess manual dexterity and problem-solving abilities, potentially disrupting various sectors and impacting all citizens (Wright and Schultz, 2018). Projections suggest that within the next 15 to 20 years, automation could eliminate 14% of current jobs, while another 32% may experience significant changes in job roles (OECD, 2019). The rapid scaling of companies within platform markets due to digital technologies can trigger organizational changes, often resulting in sudden job losses. As

technology continues to redefine the skills required for work, certain human skills are at risk of being rendered obsolete (The World Bank, 2019). Predicting the scale and trajectory of unemployment driven by technological advancements is inherently challenging. Unemployment rates fluctuate annually across different countries, reflecting varying levels of adaptability to technological change. According to OECD's harmonized unemployment rate data for December 2021, the average unemployment rate among member countries was 5.4%. In the Eurozone, the rate stood at 7.0%, while specific country rates were as follows: 3.9% in the USA, 4.2% in Australia, 6.0% in Canada, 11.4% in Turkey, 12.6% in Colombia, 12.7% in Greece, and 13.0% in Spain (OECD, 2022). This research employs the Technological Unemployment Anxiety (TUA) scale developed by Civelek and Pehlivanoğlu (2020). The TUA scale comprises three sub-dimensions: lack of technical skills, incremental technological improvements, and technological disruption. These dimensions serve as a basis for understanding how employees perceive and respond to the risk of job loss posed by technological change.

3.1.1. Lack of Technical Skill

The first dimension of Technological Unemployment Anxiety (TUA) is the lack of technical skills. This dimension is rooted in the perception that individuals face challenges in adapting to technological advancements, resulting in discomfort when using new technologies and systems (Civelek and Pehlivanoğlu, 2020). Technical skill refers to the ability and knowledge required to perform specific tasks and apply them in practical work settings. The lack of technical skills reflects an employee's belief that they are unable to keep up with technological changes, leading to discomfort in using new tools and systems while performing job-related tasks. Several factors contribute to this perception, including the belief that existing technical knowledge will become obsolete due to continuous technological advancements, current education and training may not suffice for future professional demands, and the complexity of technological systems will increase over time. Additionally, individuals may feel it will become more difficult to adapt to internet and mobile technologies, and their job performance could decline as new technologies emerge. The level of TUA related to a lack of technical skills can vary across professions. Employees in roles perceived as less likely to be replaced by technology may experience lower levels of anxiety compared to those in more vulnerable positions. This form of anxiety is particularly prevalent among workers with weaker technical skills, as they may struggle to update their competencies in response to technological advancements. Another contributing factor is the generational gap among employees, where older generations may find it more challenging to adapt to technological changes compared to younger colleagues (Pehlivanoğlu and Civelek, 2022).

3.1.2. Incremental Technological Improvements

The second dimension of Technological Unemployment Anxiety (TUA) is incremental technological improvements. Technological advancements continuously seek to address the evolving needs of society, a process that has been ongoing since the dawn of human history. Over time, numerous technological innovations have permeated both professional and social spheres. In the past half-century, the pace of this evolution has accelerated, progressing from simple hand tools to modern computers powered by artificial intelligence. This dimension is driven by several key perceptions. Individuals

may believe that the continuous improvement of workplace systems will gradually reduce the demand for human labor. They may also fear that the ongoing evolution of technology will lead to changes in their job descriptions that negatively impact employees. Additionally, there is concern that technological advancements will alter business processes in ways that diminish employee satisfaction and well-being. Some employees worry that technological progress could shorten their career lifespan, while others believe that the proportion of human labor in business operations will decline due to increased automation (Pehlivanoglu and Civelek, 2022).

3.1.3. Technological Disruption

The third dimension of Technological Unemployment Anxiety (TUA) is technological disruption. This dimension is characterized by the perception that technological advancements could eliminate certain job sectors, leaving many individuals unemployed for the remainder of their lives. It also encompasses concerns that formal education may become obsolete and that numerous organizations may cease operations in the future. While technological advancements play a transformative role in reshaping traditional lifestyles, they can also produce disruptive consequences. The rapid pace of change driven by Industry 4.0 is unprecedented in human history. Although technological progress has yielded significant benefits in various aspects of human life, it has also produced negative effects, such as environmental pollution from industrial waste and the destructive potential of nuclear power in warfare. From this perspective, it is understandable and, to some extent, inevitable that certain individuals may view technological advancements with anxiety (Pehlivanoglu and Civelek, 2022).

3.2. Emotional Exhaustion

The first dimension of employee burnout is emotional exhaustion, which serves as the core component and fundamental indicator of burnout. Compared to other dimensions of burnout, the effects of emotional exhaustion are more easily measured through medical diagnoses and disability assessments (Leiter and Maslach, 2016). Emotional exhaustion is described as a state of physical and emotional depletion, loss of energy, and a sense of being worn out due to prolonged stress and excessive workload (Leiter and Maslach, 1988). Employees experiencing emotional exhaustion may struggle to maintain focus on their tasks, limit interactions with colleagues, and exhibit a reduced sense of commitment to their work (Maslach and Jackson, 1981). Emotional exhaustion is often regarded as the initial stage of the burnout process (Boles et al., 1997).

4. METHODOLOGY

In order to investigate the connection between technological unemployment anxiety and emotional exhaustion among workers in the tourism industry, this study utilized regression analysis, which is one of the statistical methods that is utilized the most frequently and is considered to be among the most reliable methodologies in quantitative research. It is possible to trace the roots of regression analysis back to the least squares approach, which was first presented by the Parisian mathematician Adrien-Marie Legendre in the year 1805 (Akca, 2020). When it comes to investigating and quantifying the link that exists between a dependent variable and one or more independent variables, regression analysis is an especially useful tool. Researchers are able to evaluate the strength of these associations, as well as their direction and the prognostic significance of these relationships.

Through the use of this method, it is possible to gain a more comprehensive knowledge of the ways in which various factors contribute to changes in the dependent variable. This method is particularly well-suited for studies that involve several independent variables. Within the realm of regression models, the independent variables are commonly represented by the letter X, whereas the dependent variable is symbolized by the letter Y. A minimum of the interval level of measurement is required for the dependent variable in order to obtain valid findings from a regression analysis. On the other hand, the independent variables might be tested at the interval, ratio, or categorical levels. Due to the utilization of categorical variables, it is necessary to employ dummy coding in order to incorporate them into the regression model, as stated by Durmuş, Yurtkoru, and Çinko (2018).

This methodological approach enables statistical insights that are both descriptive and inferential, which helps to support the testing of hypotheses and in the prediction of outcomes. This study makes use of regression analysis to enable a thorough review of how anxiety associated to automation affects emotional outcomes. The findings of this study have practical consequences for the well-being of employees and for the management of organizations in the tourism industry.

The dimensions of the research model were established using scales adapted from previous studies. Data was collected through 104 valid questionnaires completed by employees of 14 companies in Turkey. To assess technological unemployment anxiety, Table 1 presents the statements included in the Technological Unemployment Anxiety Scale. Emotional exhaustion was measured using the 9-item scale proposed by Maslach and Jackson (1986). A five-point Likert scale was employed, ranging from "strongly disagree" to "strongly agree."

Table 1. Statements of TUA Scale

<i>Title of sub-dimension</i>	
Lack of technical skill	I think I will lag behind in terms of performance as technology advances.
	I do not feel comfortable using the technologies such as the internet and smartphones.
	I do not think I will be able to improve myself aptly so that I can adapt to technological advances.
	I find it difficult to adapt to the systems I use while doing my job.
Incremental technical improvement	I think that the change in the business processes due to the technological advancements will make me unhappy in the future.
	I think that the continuous improvement of the systems used in the workplace will reduce the need for me over time.
	I think my business life will become shorter as a result of the technological advancements.
	As a result of the continuous advancement of technology, I think my current job description will change in a way that will affect me negatively.
Technological disruption	I am worried that I may spend the rest of my life as unemployed due to the new technologies.
	I think that the education I have received at school will be invalid due to technological advances.
	I think that technological advances may cause the organisation I am working for to close down in the future.
	I think that technological advancements can completely eliminate the business line I have trained.

Source: Civelek, M.E. and Pehlivanoğlu, C. (2020) ‘Technological unemployment anxiety scale development’, *Eurasian Business & Economics Journal*, Vol. 22, No. 5, pp.64–76

The Technological Unemployment Anxiety (TUA) Scale has three subscales: Lack of Technical Skill, Incremental Technical Improvement, and Technological Disruption. Each sub-dimension comprises statements to examine employees' concerns and perceptions of workplace technology. Respondents score their agreement with these statements to assess their anxiety about performance, adapting to new systems, and job loss or redundancy due to digital transformation. This systematic technique identifies employee apprehension about changing workplace technologies.

5. FINDINGS

Multiple linear regression analysis was conducted to examine the relationship between the independent variables in the research model and the dependent variable using SPSS. The sub-dimensions of technological unemployment anxiety were treated as independent variables, and their impact on emotional exhaustion was analyzed. The results of the analysis are presented in the following tables.

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,532a	,283	,261	,71090

a. Predictors: (Constant), Lack of Technical Skill, Incremental Technical Improvement, Technological Disruption

Table 3. Regression Analysis ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	19,927	3	6,642	13,143	<,001b
Residual	50,538	100	,505		
Total	70,465	103			

a. Dependent Variable : Emotional Exhaustion

b. Predictors : (Constant), Lack of Technical Skill, Incremental Technical Improvement, Technological Disruption

The research model is mostly significant, as seen in Table 3. This verifies the statistical correctness and relevance of the suggested links between the variables of the study. The model accurately represents the key elements influencing emotional exhaustion connected to technological unemployment anxiety and employee well-being. Its importance supports the consistency of the conceptual framework of the study for more research. The model also provides helpful ideas for creating organizational strategies to control the psychological impact of digital revolution in tourism.

Table 4. Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.

(Constant)	1,168	,214	-	5,458	<,001
Lack of Technical Skill	,276	,101	,265	2,741	,007
Incremental Tech. Improvement	,121	,097	,147	1,247	,215
Technological Disruption	,218	,110	,235	1,985	,050

Based on the regression coefficient findings seen in Table 4, the hypothesis test results given in Table 5 were reached. As a result, hypothesis H1 and H3 were accepted. Hypothesis H2 was rejected.

Table 5. Hypothesis Test Results

Relationships	Standardized Coefficients	Hypothesis	Results
Lack of Technical Skills → Emotional Exhaustion	0.234*	H1	Supported
Incremental Tech. Improvement → Emotional Exhaustion	-0.130	H2	Not Supported
Technological Disruption → Emotional Exhaustion	0.150*	H3	Supported

*p < 0.05

H₁: lack of technical skills is supported because the standardized coefficients is less than 0.05.

H₂: Incremental tech. improvement is not supported because the standardized coefficients is more than 0.05.

H₃: Technological disruption is supported because the standardized coefficients is less than 0.05.



6. CONCLUSION & RECOMMENDATIONS

Rapid progress in artificial intelligence (AI) and automation technologies is causing a huge change in the tourism business, which is based on customer service and interaction. These new technologies make operations more efficient, customer service better, and data management better, but they also make things harder for workers in ways that are both psychological and structural. One of the biggest problems caused by this change in technology is technological jobless anxiety, which is a type of stress that people feel when they think they might lose their jobs to machines or automated systems.

Specifically, this study looked at how this kind of worry makes tourism workers emotionally worn out. It showed how complicated the link is between job insecurity and mental health. Using regression analysis, this study confirms that workers feel more emotionally tired and stressed when they think they are more likely to lose their jobs because of automation. This emotional burden not only makes people less productive and unhappy at work, but it also hurts team morale, service quality, and commitment to the company.

The data back up important parts of the Job Demands-Resources (JD-R) Model, the Conservation of Resources (COR) Theory, and the Transactional Theory of Stress and Coping. These frameworks suggest that workers are more likely to experience burnout and emotional exhaustion when their job demands, like not knowing how technology will change, are higher than their available resources. These stressors are made worse when workers don't have the right ways to deal with them or support systems in place, especially when they feel helpless or unprepared for changes that are coming.

In order to deal with these problems, businesses need to understand that technological growth shouldn't come at the expense of people. Instead, a deliberate commitment to workforce resilience should go hand in hand with the use of AI and automation. One of the main solutions this study found is upskilling, which means giving employees training and development chances to get better at using technology and being flexible. When employees feel like they know how to use technology tools, they are less likely to see them as threats and more likely to see them as ways to improve their own work.

Also, getting employees involved is a key way to lessen the bad affects of anxiety caused by automation. Clear communication, decision-making methods that include everyone, and acknowledging employees' contributions all help to build a sense of safety and belonging. By including workers in the process of change, businesses can make people less resistant to it and encourage a culture of trust and new ideas.

The ethical side of AI-driven decision-making is another important topic that was talked about in this study. As computers become more involved in hiring, assigning tasks, and judging performance, there is a greater need for moral standards that guarantee fairness, openness, and responsibility. Companies need to make sure that AI systems don't reinforce or copy bias, and that people are still involved in important decisions that touch employees' lives.

As a result, leadership becomes one of the most important parts of making this difficult change. To achieve both the goals of technological adoption and human sustainability, we need adaptive leadership styles that are marked by sensitivity, flexibility, and a focus on the future. Leaders must not only encourage new ideas, but also look out for the well-being of their employees and make sure that change is welcomed without fear.

A regulatory setting that is helpful can also be made by policymakers. For a workforce that is ready for the future and includes everyone, it is important for governments to support lifelong learning, offer social safety nets for workers who lose their jobs, and urge ethical tech development. Working together between the public and private sectors can help make sure that everyone gets a fair share of the benefits of going digital.

In conclusion, AI and automation have a lot of potential for the tourism business, but they need to be used carefully and with a lot of thought. Anxiety about technology unemployment has a real and big effect on people's emotions. To fix it, people at the organizational, managerial, and policy levels need to work together. The tourist industry can build a sustainable future where efficiency and compassion live together by putting money into people as well as technology. A balanced approach that values respect for human rights, lifelong learning, and moral innovation will not only protect the health and safety of workers but also make it easier for the industry to do well in a world that is becoming more and more automated.

The tourism sector has been greatly changed by the fast development of technology, especially artificial intelligence (AI) and automation, which has altered its operating environment and labor dynamics. Although these developments simplify operations, increase service efficiency, and strengthen consumer experiences, they also bring certain difficulties. Chief among these are worries about job security as workers grow more concerned that machines or smart systems may replace them. Increased emotional exhaustion, lower job happiness, and opposition to change are all results of this concern. Furthermore, the use of AI-driven tools calls for a change in conventional management practices, hence challenging leaders to create fresh ideas for ethical decision-making, training, and staff involvement. Therefore, automation and artificial intelligence have a double effect: they provide great advantages but also create important human and organizational issues that need to be carefully handled.

6.1. Psychological and Economic Implications

In light of the increasing integration of artificial intelligence (AI) and automation in the workplace, this article explores the several interactions among digital transformation, job insecurity, and employee well-being. Using the Job Demands-Resources (JD-R) Model, Conservation of Resources (COR) Theory, and the Transactional Theory of Stress and Coping, the paper offers a theoretical framework to show how technology developments generate both possibilities and obstacles for workers. Although AI-driven innovations can greatly increase operational efficiency and production, they also increase worries about job loss, role ambiguity, and less control over work processes. These pressures can cause general lower well-being, less job satisfaction, and emotional burnout. The study emphasizes the need of organizational

support systems—such as training, communication, and psychological resources—to offset the detrimental effects of technological uncertainty. In the end, the results emphasize the requirement of a balanced strategy to digital transformation—one that improves performance without endangering the mental health and stability of the workers.

6.2. The Need for Adaptive Leadership and Policies

The paper underlines how important adaptive leadership and responsive policy interventions are in negotiating the difficulties brought on by fast technological change. Innovation and the preservation of human-centered employment practices must be balanced as companies use AI and automation more and more. Especially in industries susceptible to technology change, leaders have to be proactive in handling the psychological and professional doubts felt by their staff members. Comprehensive upskilling and reskilling programs, continuous employee involvement projects, and the development of inclusive and supportive workplace cultures are among the main ways to reduce anxiety associated to automation. These initiatives improve personal adaptation and resilience as well as help the workers to feel safe and purposeful.

Furthermore, the ethical aspects of AI-driven decision-making processes—such as bias, transparency, and responsibility—emphasize the requirement of responsible leadership behaviors. To guarantee that technological integration promotes long-term workforce sustainability, organizations have to create governance systems giving fairness and inclusiveness first priority. Leaders may create trust, improve employee well-being, and finally guarantee a smoother transition into the future of work by including ethical issues into strategic planning and using a human-centric approach to change.

6.3. Building a Sustainable Future for Tourism

In conclusion, the travel and tourism industry is currently at a crucial crossroads, where the rapid integration of artificial intelligence (AI) and automation is altering the traditional dynamics of the labor market. As a result of the ongoing process of digital transformation, employment responsibilities, skill needs, and service delivery models are being redefined, and the need for proactive and strategic solutions is becoming increasingly important. When it comes to fostering employee adaptation, promoting upskilling, and ensuring psychological resilience, organizations, policymakers, and industry leaders need to implement holistic policies. On the other hand, it is vital to preserve the sector's fundamentally human-centric traits, including as empathy, emotional labor, and true customer connection, in order to keep service excellence and staff well-being at a high level.

Maintaining a healthy equilibrium between technical progress and human values is absolutely necessary in order to achieve long-term resilience and sustainability. It is important for future study to investigate the ways in which employees from different cultures perceive technological disruption, particularly in connection to fear about technological unemployment, job insecurity, and emotional exhaustion. In addition, doing research on the role that emotional intelligence plays in navigating workplaces that have been enhanced by artificial intelligence may give insightful information regarding

how people deal with stress, adjust to change, and sustain job happiness in the face of fast automation.

It is possible for the tourist sector to more effectively traverse the obstacles provided by automation if it adopts a balanced and inclusive strategy to digital transformation—one that centers the human experience—while also protecting the mental health of its employees and maintaining a service philosophy that prioritizes the needs of individuals.

6.1.1. Recommendations for Employees

Employees must take proactive measures to manage technological unemployment anxiety and protect their mental and professional well-being in light of the tourism industry's rapid digitization and growing integration of cutting-edge technologies like artificial intelligence, automated booking systems, and digital customer service tools. Employees should actively participate in workshops, online courses, and digital literacy programs that are pertinent to emerging technologies in the tourism industry in order to prioritize lifelong learning and personal growth. Employees who improve their digital abilities not only lessen their fear of losing their jobs, but they also put themselves in a competitive position for new tasks brought about by technological improvements. Additionally, workers are urged to develop flexibility and a growth mentality, seeing technological advancements as chances to advance their careers rather than as risks to their job security. Participating in mentorship programs, professional associations, and networking opportunities can offer helpful support networks and direction during organizational transitions. To effectively manage anxiety, emotional exhaustion, and work-related pressures, employees can also take use of the counseling services, stress management courses, and employee assistance programs (EAPs) that are provided by their employers. To lessen the negative consequences of stress and uncertainty at work, self-care, work-life balance, and peer support are all equally crucial. Employees in the tourist sector can improve their resilience, sustain job happiness, and effectively handle the changing demands of a technologically changing industry by taking charge of their professional development and well-being.

6.1.2. Recommendations for Employers

Given the results of the study, which show a clear correlation between technological unemployment anxiety and emotional exhaustion in workers in the tourism industry, employers must take comprehensive and proactive measures to reduce these adverse effects and promote a psychologically supportive workplace. Transparent and ongoing communication about organizational changes, the adoption of new technologies, and any potential effects on current job functions should be a top priority for employers. Employee anxiety can be decreased and a sense of security and inclusion can be fostered by having open and honest conversations that dispel rumors and uncertainty. Additionally, companies are urged to fund ongoing professional development programs, including internal training courses, workshops, and certification programs that emphasize digital skills, technology tools, and adaptive competences pertinent to the travel and tourist sector. Employers can turn possible risks into chances for professional advancement and organizational expansion by giving staff members the skills they need to collaborate with or oversee developing technologies. Helping employees cope with

work-related stress, anxiety, and emotional weariness also requires the establishment of Employee Assistance Programs (EAPs) and mental health support services. It is imperative for employers to foster a healthy organizational culture that prioritizes employee well-being, acknowledges the psychological effects of technological advancements, and fosters candid conversations about employment concerns and career goals. Employees' sense of control, belonging, and job satisfaction can also be improved by providing flexible career pathways, internal mobility opportunities, and participation in technology transformation decision-making processes. Employers may ultimately develop a resilient, engaged, and future-ready staff that can prosper in the quickly digitizing tourist industry by implementing these techniques.

6.1.3. Recommendations for Government and Policy Makers

Government officials and policymakers must acknowledge and solve the socioeconomic and psychological issues raised by technological unemployment anxiety among tourism sector workers as the industry rapidly transforms digitally. The creation and execution of comprehensive policies and programs that protect job security, encourage worker flexibility, and guarantee the general well-being of impacted employees should be given top priority by national and regional tourist organizations. Establishing extensive digital literacy, upskilling, and reskilling programs designed especially for the tourist and hospitality workers is one of the most successful tactics. To guarantee that workers at all levels and in all subsectors have the skills required to succeed in a technologically advanced workplace, these programs should be widely made available through online platforms, vocational training facilities, and collaborations with trade associations. Government agencies can also think about offering tax breaks, financial incentives, and subsidies to travel agencies that make investments in staff training and mental health support programs. Reducing job insecurity and maintaining workforce stability also depend on the creation of labor laws and job protection policies that protect workers throughout times of technological change. It is also advised that national guidelines for promoting psychological health in the workplace be established by policymakers, which would encourage travel agencies to implement counseling services, mental health programs, and employee well-being initiatives. Research, awareness campaigns, and public discussions on the effects of technology progress in the tourism industry can be further facilitated by cooperative efforts among government agencies, business executives, and academic institutions. Government and policymakers may promote a resilient, socially conscious, and sustainable tourism sector that can adjust to new digital developments while maintaining the well-being of its employees by taking a comprehensive and inclusive approach to policymaking.

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