


## POST-PANDEMIC DIGITAL TRANSFORMATION: MITIGATING TECHNOSTRESS AND INCREASING WELL-BEING IN THE HOSPITALITY INDUSTRY VIA THE PERSON-TECHNOLOGY FIT MODEL

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**Abstract:** Understanding how to reduce employee tech stress is crucial for improving workforce well-being and maximizing operational efficiency in the tourism and hospitality sectors due to the post-COVID-19 digital transformation. Therefore, this study aims to investigate the impact of enhancing restaurant employees' digital transformation readiness and technological device readiness on reducing employees' technostress. The study employed a qualitative methodology of semi-structured interviews, primarily addressing the paucity of scholarly investigations within this specific research area. The interviewee cohort encompassed both managerial and staff members from two distinct categories of restaurants (i.e., fast-food and casual dining restaurants). The study found eight factors related to the readiness of restaurant employees for digital transformation, as well as four factors related to the readiness of restaurant technological devices. According to interviewees, these factors have been found to reduce restaurant employees' techno stressors. Theoretically, this study extends the digital transformation readiness model from three to eight factors, and the study extends the person technology fit model from three to four factors to reduce employees' technostress. From a managerial perspective, restaurant managers can use the study framework to enhance employees' technological skills, foster a positive attitude toward digital transformation, and invest in user-friendly technology, which can ultimately reduce technostress and improve employee well-being and performance in the dynamic hospitality industry.

**Keywords:** digital transformation readiness, person-technology fit model, employees technostress, hospitality industry, qualitative research

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### INTRODUCTION

The COVID-19 pandemic has accelerated the pace of technology adoption in the restaurant industry, driving the implementation of digital solutions for contactless ordering, payment, and delivery to meet evolving customer preferences and safety concerns (Helal, 2023). Digital transformation has become essential for operational efficiency (Baiyere et al., 2020), enhancing the customer experience (Cichosz et al., 2020), and increasing competitiveness within modern hospitality businesses (Hassanin et al., 2023). Digital transformation is a complete process involving integrating digital technology, data, and automation into different elements of a hospitality business's operations, strategies, and business models to improve performance, efficiency, and competitiveness (Helal, 2023; Kumar et al., 2023). Nevertheless, combined with the

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benefits digital transformation provides, the increasing reliance on technology within the hospitality industry has also presented a significant obstacle (Helal and Saleh, 2024), for example, technostress among employees (Shi et al., 2024). Technostress is a phenomenon that encompasses the experience of anxiety, dissatisfaction, and overwhelm arising from using technology in the workplace (Hassanin et al., 2023; Khedhaouria et al., 2024).

The study by Christ-Brendemühl and Schaarschmidt (2020) delved into the complexities of technology-induced job demands and their ripple effect on Frontline Employees (FLEs) technostress, revealing a negative cascade that impacted customer satisfaction and FLEs' sense of delight in the service environment. In parallel, Högberg (2021) shed light on the adverse effects of techno stressors, such as work overload and the ever-evolving algorithms, experienced by employees within an international hotel chain. Similarly, Wu et al. (2022) conducted an in-depth examination of the consequences of technostress among employees in technologically advanced hotels, unveiling its detrimental influence on employee well-being and performance. However, these previous studies did not analyze restaurant employees' digital transformation and technological device readiness in minimizing technostress.

Restaurant employees' digital transformation readiness, such as positivity, technological affinity, and technical skills (Ng, 2012), could be crucial in their adaptability to technology, reducing resistance-related stress and facilitating their proficiency. Similarly, the person-technology fit model proposed three usability features: information quality, interface quality, and technical features (Massey et al., 2007), which could impact how employees interact with technology, enhancing the user experience and reducing stress associated with complexity and inefficiency. Furthermore, addressing techno stressors, including information overload, constant connectivity, techno-invasion, techno-complexity, and techno-uncertainty (Wu et al., 2022), becomes more manageable when employees are well-prepared for digital transformation and equipped with technology that supports their needs. Consequently, this research aims to address this gap by pursuing two primary objectives: first, investigating the impact of improving restaurant employees' digital transformation readiness, recognizing its significance in the rapidly evolving technological landscape, and second, exploring the relevance of the person-technology fit model in reducing technostress. The study proposed two hypothesis questions to reach the study's aim:

- Does enhancing restaurant employees' digital transformation readiness reduce their levels of technostress, thereby improving their overall well-being and job performance in the restaurant sector?
- To what extent does the person-technology fit model influence restaurant employees' technostress levels, including usability, information quality, interface quality, and technical features?

This study makes several significant theoretical and managerial contributions to the hospitality industry. The study expands the person-technology fit model by incorporating technical features and investigates how usability, information quality, interface quality, and technical features collectively impact reducing employees' technostress experiences. In addition, the study extends Ng's (2012) digital transformation readiness model from three to eight factors, shedding light on how these employees' digital transformation readiness factors impact reducing their technostress levels. Hence, restaurant managers can use the study framework to improve employees' technological skills, foster a positive attitude towards digital transformation, and invest in user-friendly technology, thus reducing technostress and enhancing employee well-being and performance in the dynamic hospitality industry.

## LITERATURE REVIEW

### 1. Technostress in tourism and hospitality

Technostress refers to the adverse physiological reactions' individuals experience from using technology at the workplace (Hassanin et al., 2023). According to Christ-Brendemühl and Schaarschmidt (2020), technostress is a common negative in today's digital world. Technostress can negatively impact employees' job performance and well-being (Shi et al., 2024). Employees may feel overwhelmed by the multitude of software programs or apps they are expected to use, struggle to keep up with updates and changes to existing systems and feel pressured to be available and responsive at all times due to the use of mobile devices and other digital communication tools (Christ-Brendemühl, 2022; Nastjuk et al., 2023). Additionally, malfunctioning technology can cause frustration or anxiety, mainly if it negatively affects the customer's experience (Shi et al., 2024). Also, lack of support or training for using new technologies in the workplace can contribute to technostress (Hassanin et al., 2023).

Tourism and hospitality research on technostress has identified several types of technostress (e.g., information overload, constant connectivity, techno-invasion, techno-complexity, and techno-uncertainty) (Christ-Brendemühl, 2022; Hassanin et al., 2023; Shi et al., 2024). First, information overload occurs when individuals are exposed to too much information, making it difficult to process and prioritize what is essential (Wu et al., 2022). Second, constant connectivity refers to the expectation that individuals are always available and connected through technologies, even outside work hours (Ayyagari et al., 2011; Christ-Brendemühl, 2022). Third, techno-invasion occurs when technologies invade an individual's personal space or time, such as receiving work-related emails or messages during non-work hours (Högberg, 2021).

Fourth, techno-complexity refers to the difficulty individuals may experience in using complex technologies or adapting to new technologies (Hassanin et al., 2023). Fifth, techno-uncertainty occurs when individuals feel uncertain about using new technologies or how they will impact their work tasks or responsibilities (Shi et al., 2024). These techno stressors can lead to feelings of overwhelm, anxiety, reduced productivity, insecurity, stress, and reduced confidence in employees' abilities (Christ-Brendemühl, 2022). Therefore, to tackle these technostress challenges, the present study has proposed a conceptual model consisting of two independent variables, namely the person-technology fit model and employees' digital transformation readiness, which can influence technostress as the dependent variable (Figure 1).

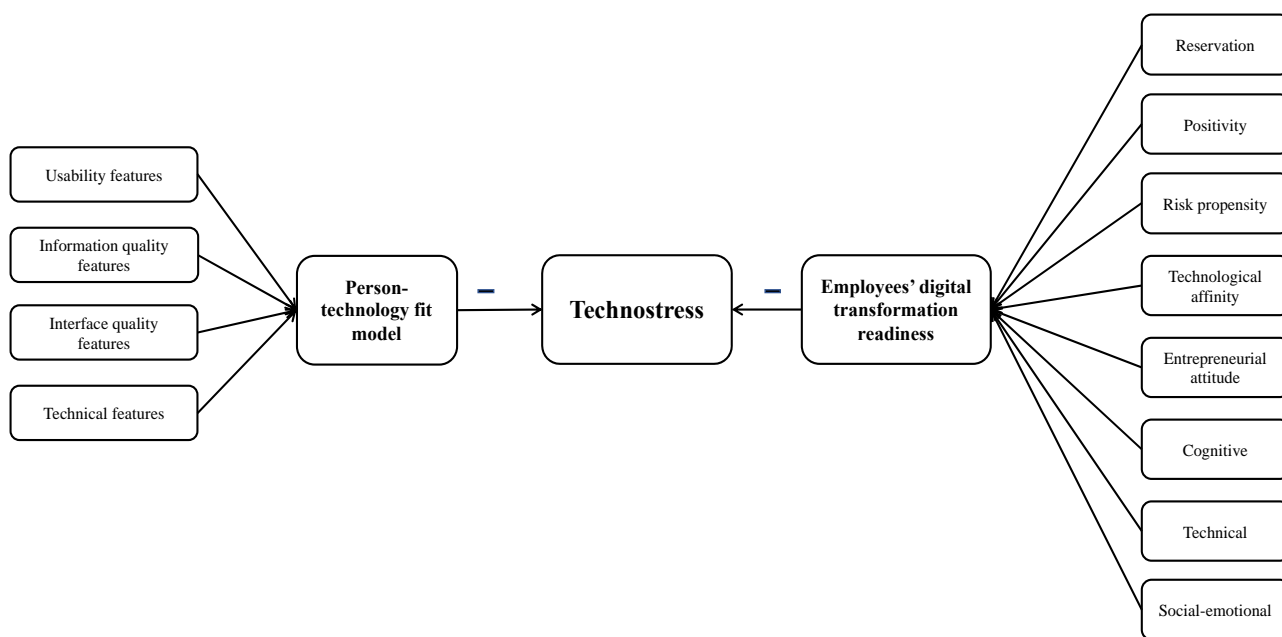


Figure 1. Conceptual model

## 2. Conceptual development

### 2.1. Person-technology fit model and technostress

The person-technology fit model is a framework aimed at determining the causes of workplace stress associated with information technology devices (Ayyagari et al., 2011). The model proposed three technological features (i.e., usability, information, and interface quality). First, usability features refer to the ease with which employees can interact and utilize technology in their daily tasks (Qi, 2019). Second, information quality features pertain to the accuracy and reliability of technology-provided data (Mahadin et al., 2020). Reliable information ensures that employees can make informed decisions and provide customers with accurate information (Massey et al., 2007). Third, interface quality features focus on technology interfaces' visual and interactive aspects (Alves et al., 2020). A well-designed interface enhances the user experience and can streamline restaurant operations, including features like touchscreen menus, mobile ordering apps, and digital table management systems (Daradkeh et al., 2023).

The person-technology fit model emphasizes user interactions but ignores technical features. Technical features are the specific attributes and functionalities of a technical system or device associated with its hardware, software, and network capabilities (Qi, 2019). Ignoring these elements can disrupt restaurant operations and affect the customer and employee experience. Additionally, technical features like reliable hardware, up-to-date software, and security considerations are crucial in maintaining smooth and secure operations (Christ-Brendemühl, 2022). Neglecting these aspects can lead to inefficiencies, unforeseen costs, and reputational damage. Thus, the restaurant's technical features can either alleviate or exacerbate employees' technostress, as the smooth operation of technology can significantly impact their work experience. Therefore, this study extends the person-technology model to a holistic model that ensures employees a positive experience, maintaining efficient and secure restaurant operations.

### 2.2. Employees' digital transformation readiness and technostress

Digital transformation refers to utilizing modern digital technologies to transform and improve various aspects of a restaurant's operations, such as its business models, services, and products (Daradkeh et al., 2023). Digital transformation entails integrating digital technologies into every aspect of a restaurant to boost efficiency, productivity, and competitiveness (Kumar et al., 2023). The readiness of employees for digital transformation is essential for restaurants to adapt successfully to the rapidly changing digital landscape (Helal, 2023). Digital transformation readiness refers to the degree to which employees are prepared to adopt and utilize digital technologies in the workplace (Ng, 2012). Developing skills, knowledge, and attitudes that enable employees to use and adopt digital technologies effectively, efficiently, and safely at work constitutes digital transformation readiness. Hence, digitally ready employees are more likely to embrace change and be receptive to novel working methods and challenges, ultimately leading to a more prosperous and less stressful transition.

Ng (2012) proposed a digital literacy model for assessing employees' readiness for digital transformation. Ng's (2012) framework for digital literacy identifies three key dimensions: technical, cognitive, and social-emotional. The technical dimension entails the skills to effectively utilize digital technologies, such as connecting devices, troubleshooting, and managing data (Helal, 2023). The cognitive dimension pertains to critical thinking and the ability to search for, evaluate, and ethically create digital content (Tohara, 2021). The social-emotional dimension entails utilizing digital technologies for communication, collaboration, and day-to-day tasks while maintaining a safe and responsible online presence (Ng, 2012). However, this study proposes five additional factors that focus on the psychological and behavioral characteristics that influence an individual's readiness for digital transformation (i.e., reservation, positivity, risk propensity, technological affinity, and an entrepreneurial attitude). The "reservation dimension" relates to individuals' concerns and attitudes about technology, particularly its potential drawbacks (Tate et

al., 2015). Conversely, the "positivity factor" gauges employees' cheerful disposition toward technology, a key driver for successful digital implementation (Helal, 2023). "Risk propensity" measures an individual's willingness to embrace risk despite potential failures, requiring courage and self-motivation (Makki et al., 2016).

"Technological affinity" reflects one's outlook on emerging technologies, influencing their readiness to adopt and expertise in utilizing new tools (Franke et al., 2019). Lastly, an "entrepreneurial attitude" encompasses a proactive, innovative, and risk-taking mindset vital for leveraging digital technology to drive organizational change and value creation, with components like adaptive performance and self-reported initiative contributing to this entrepreneurial mindset (Daradkeh et al., 2023; Helal, 2022). Hence, the proposed eight factors can significantly reduce employees' technostress by addressing digital readiness's technical and psychological dimensions.

## MATERIALS AND METHODS

The study uses a qualitative approach, where semi-structured interviews are the principal research method. Semi-structured interviews refer to data collection where open-ended questions and topics guide the conversation while allowing for unplanned inquiries and participant-driven discussion (Sparkes and Smith, 2013).

The research methodology encompassed various components, including the use of selection interviews, the application of specific interview techniques, and the employment of methods for analyzing the collected interview data. The amalgamation of these methodological elements yielded a substantial and diverse data pool. This data was subsequently analyzed to explore the impact of enhancing restaurant employees' digital transformation readiness and technological device readiness on reducing employees' technostress.

### 1. Selection Interviews

The research team set two main inclusion criteria to select the sample. First, the research team emphasizes the importance of selecting employee candidates for interviews who have suffered from technostress for several reasons. Employees who have personally experienced technostress can provide valuable insights into the challenges and sources of stress associated with digital transformation initiatives within restaurant settings.

Their first-hand experiences can provide a deeper, more nuanced understanding of technology fatigue. Furthermore, these employees are likely to possess a more empathic perspective, which can help formulate effective strategies for relieving technostress among employees. Second, participants must fully understand their restaurant's digital transformation initiatives and technologies to address the research questions effectively. Therefore, to identify suitable candidates for the interview, the research team contacted restaurant managers directly to measure their willingness to participate in the study and the willingness of their employees. Ultimately, the study included interviews with 11 restaurant managers and 30 restaurant employees from two different types of restaurants in Cairo, Egypt (i.e., fast-food and casual dining restaurants) who met the criteria set for participation.

The study used convenience sampling, a non-probability sampling technique predicated on selecting research participants based on their accessibility and immediate availability (Stratton, 2021). Convenience sampling was adopted due to its practicality and efficiency, offering a rapid and cost-effective means of recruiting participants, consequently conserving valuable time and resources. It is worth noting that there is no official list of Egyptian restaurants to select from, further underscoring the pragmatic choice of convenience sampling in such circumstances (Helal, 2022).

In fast-food restaurants, employees encounter various digital transformation technologies that can be potential sources of technostress. One such technology is the point-of-sale system, a cornerstone for order processing and payment, and it can be a source of technostress if it is complex or error-prone, leading to order mix-ups or customer dissatisfaction (Qi, 2019). Additionally, online ordering apps and websites commonly used in the fast-food industry can create stress when dealing with a high volume of online orders during peak hours, increasing pressure and the likelihood of mistakes in food preparation (Helal, 2023). In casual dining restaurants, digital reservation systems play a crucial role in managing table assignments and customer requests, and technostress may emerge if these systems crash or fail to seamlessly integrate walk-in customers, leading to chaos during peak dining hours (Nilsson et al., 2021).

### 2. Interview Techniques

The interview process was structured into two delineated sections. In the initial section, the interviewees were presented with fundamental queries to elicit information about their backgrounds and characteristics. The participants are divided into two main categories: restaurant managers and employees (see Table 1). Notably, the participants' ages range from 20 to 54, with a diverse age distribution. Gender representation is relatively balanced, as both male and female participants are in both work roles. All participants underwent face-to-face interviews and were employed in international or local chain restaurants, further categorized as casual dining or fast-food establishments. Interview durations varied from 42 to 85 minutes.

Furthermore, the second section of the interview was dedicated to exploring inquiries specifically concerning the structural model. The study employed a set of interview questions meticulously crafted in alignment with the overarching research framework (Appendix). These questions were thoughtfully tailored by incorporating insights gleaned from an extensive body of prior research encompassing digital transformation, technostress, digital transformation readiness, and the person-job fit model to address the research objectives.

### 3. Interview Analysis

The study opted for a thematic approach to analyze their data, drawing inspiration from the principles Braun and

Clarke (2019) articulated in their thematic analysis description. Thematic analysis is a qualitative research method that systematically identifies, analyzes, and reports patterns or themes within a dataset. Further, the initial step in the data analysis process involved acquainting themselves with the collected data.

This step involved transcribing the interviews, conducting repeated listens to the recordings, and systematically reading through the resulting transcripts to comprehend the dataset thoroughly. Subsequently, preliminary codes were generated from the data, highlighting aspects of particular interest related to the study's research questions.

The study framework was a guiding tool, ensuring that all pertinent themes were consistently identified and rigorously examined. Tables were employed as a practical tool within the data analysis process to facilitate the organization and summarization of information derived from the interviews. This thorough analytical process identified key themes, including restaurant employees' techno stressors, digital transformation readiness among restaurant employees, and employees' technology fit readiness, contributing significantly to the research findings.

Table 1. Participants profile (Source: Created by authors)

Restaurant number	Code	Pseudonym	Work Role	Age	Gender	Interview Type	International or Local Chain	Restaurant type	Interview Length
1	1	Amira	Restaurant manager	34	Female	Face-to-face	Local	Casual dining restaurant	62 min
	2	Tarek	Restaurant employee	24	Male				58 min
	3	Amina	Restaurant employee	30	Female				45 min
2	4	Fatma	Restaurant manager	54	Female		International	Fast-food restaurant	55 min
	5	Ahmed	Restaurant employee	25	Male				85 min
	6	Yasmin	Restaurant employee	23	Female				45 min
	7	Dalia	Restaurant employee	30	Female				48 min
3	8	Samira	Restaurant manager	46	Female		International	Casual dining restaurant	44 min
	9	Mahmoud	Restaurant employee	31	Male				48 min
	10	Nour	Restaurant employee	24	Female				52 min
	11	Hana	Restaurant employee	29	Female				61 min
4	12	Hossam	Restaurant manager	44	Male		Local	Casual dining restaurant	52 min
	13	Karim	Restaurant employee	28	Male				63 min
	14	Leila	Restaurant employee	28	Female				81 min
	15	Lina	Restaurant employee	31	Female				49 min
5	16	Adel	Restaurant manager	38	Male		International	Fast-food restaurant	71 min
	17	Sherif	Restaurant employee	23	Male				57 min
	18	Amal	Restaurant employee	29	Female				59 min
	19	Nada	Restaurant employee	21	Female				49 min
6	20	Mona	Restaurant manager	39	Female		International	Fast-food restaurant	44 min
	21	Sameh	Restaurant employee	30	Male				61 min
	22	Yasmine	Restaurant employee	31	Female				71 min
	23	Karm	Restaurant employee	27	Male				48 min
7	24	Tawfeek	Restaurant manager	46	Male		Local	Casual dining restaurant	69 min
	25	Anter	Restaurant employee	26	Male				55 min
	26	Hagar	Restaurant employee	26	Female				57 min
	27	Omar	Restaurant employee	29	Male				47 min
8	28	Nermine	Restaurant manager	31	Female		International	Fast-food restaurant	42 min
	29	Khaled	Restaurant employee	23	Male				61 min
	30	Salma	Restaurant employee	29	Female				64 min
	31	Amr	Restaurant employee	24	Male				51 min
9	32	Ashraf	Restaurant manager	37	Male		International	Fast-food restaurant	68 min
	33	Youssef	Restaurant employee	20	Male				55 min
	34	Hoda	Restaurant employee	30	Female				61 min
	35	Hisham	Restaurant employee	32	Male				49 min
10	36	Samir	Restaurant manager	42	Male		International	Fast-food restaurant	56 min
	37	Emad	Restaurant employee	25	Male				53 min
	38	Tamer	Restaurant employee	26	Male				64 min
11	39	Nadia	Restaurant manager	44	Female		Local	Casual dining restaurant	51 min
	40	Mohamed	Restaurant employee	29	Male				56 min
	41	Nasr	Restaurant employee	24	Male				55 min

## RESULTS

### 1. Technostress in the restaurant industry

The study investigated technostress meaning among employees in two different types of restaurants (i.e., fast-food and casual dining restaurants). 'According to a fast-food restaurant employee technostress describe the anxiety, frustration, and difficulties employees face when dealing with workplace technology' (Tamer). Fast-food restaurant employees encountered challenges adapting to new digital tools, such as order processing software and self-service kiosks. 'Karm expressed frustration with a new touchscreen ordering system, which he found confusing and time-consuming.' 'Nada, on the other

hand, struggled with the implementation of a mobile app for managing inventory, as it required unfamiliar technical skills.' In the casual dining restaurant context, employees also faced technostress when quickly adapting to the latest technological advancements. 'Mohamed mentioned that he found it challenging to adapt to a new table reservation system, which required him to learn new software and workflows quickly.' Also, 'Omar echoed these sentiments, emphasizing the steep learning curve associated with the restaurant's new digital menu system.'

Further, employees in both fast-food and casual dining restaurants experienced technostress to varying degrees when it came to quickly adapting to new technological advancements implemented in their workplaces. 'A fast-food restaurant employee showcased adaptability by actively seeking guidance from his tech-savvy coworkers and using online resources to enhance his proficiency with a new touchscreen ordering system to cope with its technostress' (Khaled). 'On the other hand, Salma, another fast-food employee, faced more significant challenges adapting to the digital tools.' In the casual dining restaurant context, 'Nasr exemplified adaptability by taking the initiative to familiarize himself with a new reservation system through self-directed learning.' Conversely, 'Hagar encountered technostress when adapting to the restaurant's digital menu system and found the learning process more time-consuming than expected.'

Technology is vital for simplifying and facilitating work procedures in fast-food restaurants. For instance, 'a cashier in a fast-food establishment described how digital ordering systems allowed for efficient order processing, leading to reduced wait times for customers' (Sherif). Conversely, responses from casual dining restaurant employees exhibited greater diversity. For instance, a server at a casual dining restaurant mentioned 'his proficiency in using a tablet-based ordering system' (Mahmoud). In contrast, another server from a different casual dining restaurant described 'his occasional difficulties with the same system' (Karim). The availability of communication tools between employees and the workplace has led to technostress among restaurant workers. The employees' answers showed they had to remain constantly available through technology outside work hours. 'Fast-food restaurant employees generally report clear technostress from frequent communications from colleagues and managers' (Amal and Yasmine). Similarly, casual dining restaurant employees described feeling pressured to respond to work-related calls, messages, and emails during their personal time, emphasizing the blurring of work-life boundaries. For example, 'a hostess in a casual dining restaurant detailed the challenge of receiving last-minute shift changes via telephone, leading to anxiety about work invading her personal life' (Amina). Hence, technology had encroached upon their space or time.

Restaurant managers in fast-food and casual dining establishments have acknowledged the presence of technostress among their employees. 'A fast-food manager emphasized the importance of structured training and clear task delegation to mitigate technostress' (Fatma). In the casual dining setting, a manager noted that her employees exhibited a higher level of tech-savviness, necessitating less managerial intervention to perform their duties effectively' (Amira). The manager's strategy was to provide employees with resources and the autonomy to use technology best, contributing to reduced technostress. Further, restaurant managers also raised worries about the idea among their employees that they should always be accessible through technology beyond working hours, potentially intruding upon personal space and time. In the fast-food context, 'the manager acknowledged that employees sometimes felt compelled to be available beyond their shifts, leading to concerns about work-life balance' (Mona). In the casual dining restaurant, 'a similar perception was observed among employees who reported feeling obliged to respond to work-related messages promptly' (Hossam).

## 2. Technostress and the person-technology fit model

The study evaluated employees' perspectives from fast-food and casual dining restaurants regarding the relationship between technology characteristics and technostress. Implementing complicated point-of-sale systems in fast-food restaurants can give rise to technostress, particularly during periods of high order volume. 'During peak hours characterized by lengthy queues and numerous intricate orders, the system is susceptible to experiencing technical glitches' (Tamer). Conversely, in the environment of casual dining establishments where technological tools such as point-of-sale systems are extensively employed, the usability of these tools assumes great significance in mitigating technostress. 'For instance, an employee at a casual dining restaurant benefits from the simplicity of touch interfaces on order-taking systems' (Lina). These user-friendly features facilitate the efficient processing of orders and, in turn, diminish the likelihood of technostress stemming from usability-related issues.

Information quality features also contribute to the technostress experienced by restaurant employees. In fast-food restaurants, where standardized menus and limited customization options are familiar, the information provided on technology tools is typically accurate and reliable, enhancing employee confidence (Emad and Hisham). In contrast, in casual dining restaurants, complex menus and diverse order options can lead to data quality issues, like incorrect prices or menu descriptions, eroding employee confidence in the information presented, and increasing technostress. 'For example, one of our customers had a nut allergy and depended on the technology tool to make an informed decision regarding their meal choice. Unfortunately, due to data quality issues, the system at that time failed to deliver accurate allergy information, ultimately jeopardizing the customer's health' (Anter).

Additionally, the interface quality features of technology tools substantially impact technostress. Fast-food restaurant technology tools often feature intuitive and visually appealing interfaces, which are designed with clarity and simplicity in mind. 'Device icons and navigation are straightforward, contributing to higher efficiency and reduced technostress among employees' (Sameh). In contrast, casual dining restaurants may employ more intricate interfaces to accommodate diverse menus, which can lead to employee overwhelm and technostress due to interface complexity. 'The intricate interface requires me to navigate through multiple screens and submenus to process orders accurately' (Leila).

Hence, this interface complexity may result in potential errors, delays, and increased frustration among employees, adding to their demanding workload. Lastly, the performance and reliability of technical features significantly influence technostress. Fast-food restaurants have more extensive technical features like order processing systems and payment terminals, which, if not properly maintained, can lead to technical issues and increased technostress. *'Frequently, during periods of high demand, customers indicate a desire to utilize self-service kiosks for placing orders. However, they encounter an issue wherein the screen becomes unresponsive, so impeding their ability to personalize their order or complete the payment process'* (Ahmed). In contrast, *'casual dining restaurants typically rely on well-maintained and dependable technology tools, which enhance operational efficiency and reduce technostress'* (Tarek and Nour).

Usability features in technological tools are critical to reducing technostress among restaurant employees from managers' perspective. *'Managers in both types of restaurants found that the ease of use of technologies considerably improves employee efficiency and reduces technological stress'* (Nadia and Samir). Also, aspects of information quality, especially the correctness, availability, and dependability of data provided by technology tools, are essential for managers to consider when dealing with technological stress in both restaurants. *'At our fast-food restaurant, we realize the importance of constantly updating data on all digital devices, whether used by customers or employees'* (Ashraf).

Also, in a casual dining restaurant, one manager said, *'We constantly try to study customers' desires regarding the data they want us to provide to them on digital devices'* (Tawfeek). Moreover, restaurant managers highlighted that the interface quality features, and the user interfaces of technology tools play a crucial role in determining the visual appeal. *'The manager at a fast-food restaurant highlights how the user-friendly interface of the order processing system enables quick and accurate order placement, reducing potential errors and stress'* (Nermine).

On the other hand, *'a manager at a casual dining restaurant observes that the complexity of the interface on the point-of-sale system can lead to confusion and frustration during peak hours, which negatively impacts the workflow and employee well-being, especially with new employees'* (Samira). Finally, regarding technical features, restaurant managers stated that the performance and reliability of technology tools significantly impact employee efficiency and technostress levels. *'A fast-food restaurant manager mentioned how technical issues arising from inadequate maintenance of technology tools can amplify technostress'* (Fatma). Similarly, *'a manager at a casual dining restaurant note that when the order processing system experiences frequent glitches or slow response times, it hampers workflow, increases frustration, and elevates technostress among employees'* (Samira).

### 3. Technostress and employees' digital transformation readiness

Employees' readiness for digital transformation plays a crucial role in their ability to manage technostress within the context of fast-food and casual dining restaurants. The study found that employees with a higher affinity for digital tools and technologies for their restaurant responsibilities play a crucial role in their readiness for digital transformation and ability to manage technostress effectively. However, fast-food employees may be resistant to the implementation of automated order-taking kiosks, fearing job displacement. *'I am quite open to embracing new technologies, but when they introduced those automated order-taking kiosks, it made me worry about potential job displacement'* (Yasmin).

Hence, fast-food restaurants must understand employees' concerns about job displacement by new technologies, which cause technostress. On the contrary, in casual dining restaurants, employees show positivity of the utmost relevance when adopting novel technology. *'We use digital devices for enhancing customer service and ordering processes. For instance, we have embraced tablet-based menus with enthusiasm to provide a more engaging dining experience'* (Nour and Hana). Hence, casual dining restaurant employees demonstrate a willingness to adopt novel technology, resulting in an enhanced dining experience and potentially mitigating technostress.

Moreover, the result shows how employees' risk propensity towards technology might minimize technostress by making them more open to new systems and applications that improve fast-food and casual dining operational efficiency and performance. *'We are always willing to experiment with new systems and customer feedback apps, thereby enhancing the overall operations and performance of the restaurant'* (Youssef and Omar). In addition, casual restaurant employees showed an entrepreneurial attitude toward exploring innovative ways to improve restaurant operations through technology more than fast-food restaurant employees. *'Managers frequently consult us on the most crucial new technologies to improve ordering and customer service procedures'* (Nasr).

Further, in fast-food and casual dining restaurants, low-tech employees' technical skills are crucial to not disrupt due to the technology used. *'We are always trained to fix some simple problems that may arise with digital devices, including a frozen or unresponsive touchscreen and connectivity issues with Wi-Fi and Bluetooth devices'* (Dalia, Hoda, and Mohamed). Restaurant employees added that despite the training and knowledge we acquire to deal with technology, system downtime and service errors are the main reasons for the stress. Employees of both types of restaurants have shown that maintaining a responsive online presence is essential to customer satisfaction and effective communication. However, *'we are under technological stress due to the high volume of online orders, system downtime, the high demand for delivery services, and the steady flow of reservations, inquiries, and customer complaints'* (Amr and Anter).

Restaurant managers provided valuable insights into their employees' technology adoption attitudes and abilities in the study on digital transformation readiness and technostress in fast-food and casual dining restaurants. Fast-food restaurant managers indicated great employee enthusiasm for new technologies. *'Our employees rapidly adopted self-ordering kiosks and mobile ordering apps to boost service efficiency and customer satisfaction'* (Adel).

Additionally, managers found that staff typically welcomed technological advances because they saw the opportunity for improved operations and customer service. For example, *'in high-demand periods, our employees were willing to*

*take calculated risks while experimenting with new technologies, showing their adaptability'* (Fatma). Also, managers affirmed that employees' comfort with digital tools and technologies in this context was high, with many possessing technical skills relevant to their restaurant roles, such as proficiency with point-of-sale systems.

On the other hand, casual dining restaurant managers reported a more cautious approach to technology adoption among their employees. While some staff members exhibited eagerness, others displayed reluctance, mainly when dealing with complex interfaces for tasks like reservation management. *'Despite recognizing the potential benefits of technology, such as efficient reservations and menu presentation, some employees were less comfortable and exhibited reservations about technology's impact on their roles'* (Nadia). However, *'those with an entrepreneurial mindset sought innovative ways to leverage technology'* (Tawfeek). Casual dining managers observed employees adapting to new digital tools in response to changing circumstances within the restaurant. Further, *'although technical skills varied among our employees, effective communication and collaboration with colleagues and customers were achieved through training and teamwork, ensuring everyone was comfortable and informed about digital tools'* (Hossam).

## DISCUSSION AND IMPLICATIONS

This study examines how improving restaurant employees' digital transformation and technical device readiness reduces technostress. Technostress led fast-food employees to struggle with new digital tools like touchscreen order processing systems and mobile apps, resulting in dissatisfaction and time-consuming modifications. Casual dining employees faced technostress when introduced to table reservation systems and computerized menus. While some employees adapted by seeking guidance or self-directed learning, others found the learning curve steep, underscoring the variation in technostress experiences. These findings highlight the need to provide personalized support and training to employees to reduce stress (Christ-Brendemühl and Schaarschmidt, 2020; Hassanin et al., 2023).

Further, integrating technology into the restaurant industry has brought positive and negative effects. In fast-food establishments, digital ordering systems streamlined order processing, reducing customer wait times (Alshreef et al., 2023). In contrast, the experiences of casual dining restaurant employees were more diverse. Some expressed proficiency in tablet-based ordering systems, while others encountered occasional difficulties with the same technology. This divergence in experiences suggests that the impact of technology on employee performance and well-being varies depending on the specific context and individual adaptability (Shi et al., 2024).

Furthermore, one common theme in fast-food and casual dining restaurants was the encroachment of technology on employees' personal lives (Ayyagari et al., 2011; Högberg, 2021). Moreover, the study also examined the perspectives of restaurant managers in mitigating technostress among their employees. In fast-food restaurants, structured training and clear task delegation were essential in helping employees adapt to new technology and reducing associated stress. In contrast, casual dining managers noted that their employees exhibited a higher level of tech-savviness, requiring less managerial intervention. These findings underscore the importance of tailored strategies to alleviate technostress and promote a healthy work-life balance (Shi et al., 2024). The study delves into the impact of employees' technology fit readiness on technostress among fast-food and casual dining restaurants. In fast-food restaurants, implementing complex point-of-sale systems during high-demand periods can lead to technostress due to potential technical glitches.

In contrast, casual dining establishments prioritize the usability of technology tools to mitigate technostress. Information quality features also play a role in the technostress experienced by restaurant employees. In fast-food restaurants, where menus are standardized and options limited, technology tools typically provide accurate and reliable information, enhancing employee confidence. However, in casual dining restaurants with diverse menus, data quality issues, such as incorrect prices or menu descriptions, erode employee confidence and increase technostress. The person-technology fit model aligns with these findings, highlighting the importance of information quality features in influencing technostress (Mahadin et al., 2020).

The interface quality features of technology tools significantly impact technostress. In fast-food restaurants, intuitive and visually appealing interfaces contribute to higher efficiency and reduced technostress among employees. However, casual dining restaurants may employ more complex interfaces due to their diverse menus, leading to employee overwhelm and technostress. These findings are consistent with the person-technology fit model, which emphasizes the visual and interactive aspects of technology interfaces as factors influencing technostress (Alves et al., 2020). The performance and reliability of technical features also influence technostress. In fast-food restaurants, technical issues with extensive technology features, like self-service kiosks, can lead to increased technostress during high-demand periods. Conversely, casual dining restaurants rely on well-maintained and dependable technology tools, reducing technostress.

The study explored the relationship between employees' readiness for digital transformation and their ability to manage technostress in the fast-food and casual dining restaurant context. It was evident that employees' readiness for digital transformation plays a pivotal role in their capacity to effectively deal with technostress (Hassanin et al., 2023). However, in fast-food restaurants, there was a notable variation in employee readiness, primarily driven by concerns about job displacement due to the introduction of automated order-taking kiosks. Conversely, in casual dining restaurants, employees displayed a markedly positive attitude toward adopting innovative technology.

Their enthusiasm for adopting new technologies, such as tablet-based menus, was aimed at enhancing the dining experience, potentially mitigating technostress. Furthermore, the study revealed that employees' risk propensity towards technology could play a significant role in minimizing technostress.



## Implications

### 1. Theoretical implications

There are numerous noteworthy theoretical implications of this study. First, the research sheds light on the diverse experiences of employees in fast-food and casual dining restaurants, emphasizing the importance of tailored support and training programs. These programs should consider individual differences and contextual factors to manage technostress (Christ-Brendemühl and Schaarschmidt, 2020) effectively. The study also reveals the dual impact of technology in the restaurant industry, with fast-food restaurants benefiting from streamlined processes while casual dining settings exhibit more varied experiences. This result highlights the context-dependent nature of technology's effects on employee performance and well-being (Shi et al., 2024). Further, the study underscores the challenge of technology encroaching on employees' personal lives, emphasizing the importance of work-life balance policies (Högberg, 2021).

Second, this study extended the person-technology fit model by incorporating technical features and investigates how usability, information quality, interface quality, and technical features collectively impact reducing employees' technostress experiences. This expanded model provides a comprehensive framework for understanding and addressing technostress in the workplace, emphasizing the importance of aligning technology with the needs and capabilities of employees (Ayyagari et al., 2011). Hence, the findings corroborate the relevance of the person-technology fit model, both in its original form and the extended version, in explaining the relationship between technology characteristics and employee well-being.

Third, the current study expanded Ng's (2012) digital transformation readiness model by introducing five additional factors, shedding light on how these factors collectively impact the reduction of employees' technostress levels. By exploring the relationship between employees' readiness for digital transformation and their ability to manage technostress in the fast-food and casual dining restaurant context, the study emphasizes the multifaceted nature of digital readiness and its impact on technostress. The findings suggest that employees' readiness for digital transformation can be influenced by factors such as job displacement concerns, risk propensity, and technical skills, which have a significant bearing on their ability to manage technostress. Moreover, the study underscores the role of restaurant managers in guiding employees through the technology adoption process, with their insights revealing how managers can promote a positive technological environment and reduce technostress by addressing employee attitudes and capabilities. This expanded digital transformation readiness model provides a comprehensive framework for understanding the interplay between employees' readiness for digital transformation and their ability to cope with technostress.

### 2. Managerial implications

The findings of this study have significant practical implications for managers in the fast-food and casual dining restaurant industry who aim to mitigate employee technostress. Fast-food employees encountered difficulties with tools such as touchscreen order processing systems, leading to frustration and time-consuming adjustments, highlighting the adverse effects of technostress on their work. In response to these challenges, fast-food restaurant managers must consider customized training programs for individual employee differences and preferences (Christ-Brendemühl and Schaarschmidt, 2020).

Moreover, establishing clear work-life balance policies, setting boundaries for off-hours communication, and minimizing last-minute changes can mitigate the encroachment of technology on employees' personal lives, thereby enhancing their well-being and overall job satisfaction (Högberg, 2021). For casual dining restaurant managers, focusing on customized training and support is essential due to the diverse experiences and adaptability of employees. By providing a tailored environment that accommodates both tech-savvy and less tech-savvy employees, managers can mitigate the potential negative impacts of technology on employee performance and well-being (Lee et al., 2023).

The study examined the perspectives of restaurant managers on addressing technostress among their employees, emphasizing the need for tailored strategies. In fast-food restaurants, structured training programs and clear task delegation are vital to helping employees adapt to new technology effectively and reducing associated stress (Lee et al., 2023). In contrast, casual dining managers should consider fostering a culture of innovation and adaptability by encouraging employees with an entrepreneurial mindset to explore innovative ways to leverage technology. Effective communication and collaboration, even among employees with varying technical skills, can ensure a positive technological environment and minimize technostress (Daradkeh et al., 2023).

The study delved into the influence of technology characteristics on technostress among employees in fast-food and casual dining restaurants. It is of paramount importance for restaurant managers to place a high priority on the usability of the technology systems deployed in their establishments. Managers should also establish data validation procedures to proactively identify and rectify errors and inconsistencies, concurrently fostering a feedback mechanism for employees to address data quality issues promptly (Daradkeh et al., 2023). This approach not only enhances work quality but also mitigates stress stemming from technology use.

Furthermore, creating user-friendly and efficient interfaces is pivotal in significantly diminishing technostress. Restaurant managers ought to concentrate on crafting interfaces that are not only intuitive but also visually appealing, thus reducing the cognitive burden on employees (Qi, 2019). Engaging in usability testing with employees enables the identification of areas that require improvement, resulting in a smoother technological experience. Additionally, the routine maintenance and updating of technology systems are crucial in ensuring reliability and preventing disruptions (Leung and Loo, 2020). The implementation of redundancy and backup systems, coupled with the provision of robust technical support, contributes to a more seamless technological experience for employees, ultimately leading to a reduction in their stress levels. The study emphasized the relationship between employees' readiness for digital transformation and their ability to manage technostress in fast-food and casual restaurants. To address this, restaurant

managers should know the varying levels of employee readiness for digital transformation (Helal, 2023). When concerns about job displacement exist, open communication is vital (Melián-González and Bulchand-Gidumal, 2020). Managers can create a positive technological environment, reduce technostress, and enhance employee well-being by addressing attitudes and capabilities and fostering a culture of innovation. This is pivotal for improving overall employee satisfaction and operational efficiency (Daradkeh et al., 2023).

### 3. Limitations and further research

The current study, while offering valuable insights, does present several research limitations that warrant exploration in future research. The study employs a cross-sectional research design, capturing data at a single point in time, which, while valuable, does not account for potential changes and fluctuations in technostress, digital transformation readiness, and technology characteristics readiness over time. Adopting a longitudinal approach in future research could offer a more comprehensive understanding of these factors' evolution and interaction. Furthermore, the study primarily focuses on the restaurant sector within the broader hospitality industry, overlooking potential variations in technostress dynamics across different hospitality subsectors. Expanding the scope of future research to encompass a broader range of hospitality segments would provide a more holistic understanding of technostress within the industry. Finally, future research could explore factors beyond those examined in this study, such as fear of job displacement, leadership styles, organizational culture, and job demands, to understand their impact on employees' technostress better.

## CONCLUSIONS

This study demonstrates that effectively managing technostress in the restaurant industry hinges on aligning technology with employees' specific needs and capabilities. While technology brings benefits like faster service, it can also cause stress, especially with complex interfaces or unreliable tools.

The person-technology fit model highlights how well technology aligns with user needs is crucial. Personalized training, information quality, user-friendly interfaces, and reliable performance can all help mitigate technostress and improve employee well-being in the post-pandemic hospitality industry.

### Appendix:

Questions of technostress for employees:

- How do you manage and organize tasks using technology within the restaurant?
- Are you pressured to be constantly in touch and available through technology outside restaurant working hours?
- Have you ever felt that technology has encroached upon your space or time? How did you deal with this situation?
- Have you encountered difficulties using complex technologies or adapting to new ones implemented within the restaurant? Could you provide an example?
- Do you quickly adapt to new technological advancements implemented in the restaurant? How do you accomplish this?

Questions of technostress for restaurant managers:

- How do you, as a restaurant manager, oversee and organize tasks carried out by your employees using technology within the restaurant?
- As a restaurant manager, do you believe there is a perception among your employees that they should always be accessible through technology outside of their working hours at the restaurant?
- As a manager, have you ever observed that technology has intruded upon your employees' personal space or time? How do you address such situations?

- Have you encountered instances where your employees faced challenges in using complex technologies or adapting to new technologies implemented within the restaurant? Could you provide an example?
- As a restaurant manager, do you find that your employees quickly adapt to new technological advancements introduced in the restaurant? How do you facilitate this adaptation process?

Questions of technology characteristics for restaurant employees:

- How do you perceive the ease of use of the technology tools in your daily tasks?
- Can you highlight specific features in these tools that make them more user-friendly and potentially reduce your technostress?
- How confident are you in the accuracy and reliability of the information provided by your technology tools?
- Are there data quality features that stand out to you as contributors to reduced technostress?
- How intuitive and visually appealing are the interfaces of the technology tools you work with?
- Have you noticed any specific interface design elements that make your work more efficient and help alleviate technostress?
- How satisfied are you with the performance and reliability of the technical features in the technology tools you utilize?
- Can you highlight technical aspects that have positively impacted your efficiency and reduced technostress during your tasks?

Questions of technology characteristics for restaurant managers:

- How do you assess the user-friendliness of the technology tools implemented in your restaurant?

- Are there specific features or design elements in these tools that make them more user-friendly for your staff, potentially reducing technostress?
- How confident are you in the reliability and accuracy of the information provided by the technology tools used in your restaurant?
- Can you identify any data quality features that have positively impacted the quality of information, potentially reducing technostress among your employees?
- In your opinion, how intuitive and visually appealing are the user interfaces of the technology tools employed in your restaurant?
- Have you noticed any specific interface design elements contributing to smoother operations and reduced technostress for your staff?
- How satisfied are you with the overall performance and reliability of the technical features in the technology tools used in your restaurant?
- Can you pinpoint any technical aspects that have positively influenced your employees' efficiency and potentially reduced technostress in their work?

Questions of restaurant employees' digital transformation readiness that asked employees:

- How eager are you to embrace new technologies in your daily restaurant tasks?
- Do you generally have a positive attitude towards technological changes and how they affect your job?
- Are you open to taking risks when experimenting with new technologies in your role?
- How comfortable are you with digital tools and technologies for your restaurant responsibilities?
- Do you possess an entrepreneurial attitude when exploring innovative ways to improve restaurant operations through technology?
- Can you provide an example of a situation where you quickly adapted to a new digital tool or method in response to changing circumstances?
- What specific technical skills or knowledge do you have that are relevant to your job in the restaurant?
- How do you ensure effective communication and collaboration with colleagues and customers when using digital tools in a restaurant?

Questions about restaurant employees' digital transformation readiness were asked to restaurant managers:

- How would you assess your employees' eagerness to embrace new technologies in their daily restaurant tasks?
- From your perspective, do your employees generally exhibit a positive attitude towards changes in technology and how it impacts their jobs?
- Are your employees open to taking risks when experimenting with new technologies in their respective roles?
- How comfortable are your employees with digital tools and technologies for their restaurant responsibilities?
- Have you noticed if your employees are entrepreneurial when seeking innovative ways to enhance restaurant operations through technology?
- Can you share an example of a situation where an employee quickly adapted to a new digital tool or method in response to changing circumstances within the restaurant?
- What specific technical skills or knowledge do your employees have that are relevant to their restaurant roles?
- According to your observations, how do your employees ensure effective communication and collaboration with colleagues and customers when they use digital tools in the restaurant setting?

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