

Hotel employee resilience during a crisis: Conceptual and scale development

Abstract

The resilience of hotel employees during crises (HERC) is not sufficiently researched and there is no existing measurement scale for it. This research applied a mixed-method approach to conceptualize HERC, validate the HERC dimensions, and develop a measurement scale. A first survey was conducted online with 69 employees from upscale hotels. A five-factor HERC emerged consisting of resistance, adaptability, cooperation, restoration, and thriving. A second study generated the initial measurement items for HERC. These items were refined based on an exploratory factor analysis (EFA) and a third study using confirmatory factor analysis (CFA) verified the factors from the second study. A five-factor model of employee resilience and its measurement scale was proposed, providing a foundation for establishing hotel crisis response strategies.

Keywords

Resilience; five-factor model; crisis management; scale development; COVID-19

Introduction

Hospitality businesses are prone to safety concerns (Pizam & Mansfeld, 1996) and experience various crises due to political upheaval, natural calamities, or terrorism that threaten the everyday operations and survival. COVID-19 adversely affected all countries and regions during 2019 to 2022. There were more than 120,000 confirmed cases in China and 188,000,000 around the world. The pandemic seriously disrupted the hotel industry's safe operations, profitability, and sustainability (Zhang, Zhang, & Liu, 2020). Building greater

crisis resilience is instrumental for hotels and their employees in adapting to risks, overcoming disruption, returning to normal, and continuing growing and developing (Ong, Bergeman, Bisconti, & Wallace, 2006; Zhu, Zhao, & Zhou, 2019). More resilient employees successfully deal with risk and adversity, and resilience has an impact on job security, job engagement, service quality, creative performance, and intention to leave (Aguiar-Quintana, Nguyen, Araujo-Cabrera, & Sanabria-Díaz, 2021; Dai, Zhuang, & Huan, 2019; Saad & Elshaer, 2020; Yang, Lu, & Huang, 2020; Xie, Zhang, Chen, & Morrison, 2023). In addition, resilient staff and organizations have become strategic tools for hotels to limit crisis damage, survive, obtain competitive advantages, and recover and develop from crises. Therefore, motivating and promoting resilience during a hotel crisis is of theoretical and practical value.

Meyer (1982) described how organizations and employees, through enhanced resilience, flexibly adapt to multiple adversities and achieve prosperity. Currently, hospitality is considered to be a labor-intensive and high-risk industry (Xie et al., 2020). Hotel employees engage in intensive physical and cognitively demanding work while making a sincere effort (via emotional labor) to display the appropriate emotions that increase service quality (Chen, Chang, & Wang, 2019). Since resilience can enhance hotel employees' abilities to deal with stressful conditions and recover from multiple adversities and thus resilience has attracted greater attention in hospitality and tourism research. Researchers have studied resilience among hotel employees in a variety of contexts, including abusive supervision (Dai, Zhuang, & Huan, 2019), customer mistreatment (Yang, Lu, & Huang, 2020), and job stress (Khliefat, Chen, Ayoun, & Eyoun, 2021). Hotel employee resilience during significant crises has been studied with respect to terrorist attacks (Saad & Elshaer, 2020), natural mishaps (Prayag,

Spector, Orchiston, & Chowdhury, 2020), and COVID-19 (Aguiar-Quintana et al., 2021).

However, these empirical investigations have adopted the dimensions and measurement scales of employee scales in normal (non-crisis) situations. However, employees' resilience response strategies to daily adversity (e.g., service failure) and major crises (e.g., COVID-19, natural disasters) are different (Fey & Kock, 2022; Xie et al., 2023), particularly for employees in crisis-sensitive industries such as hotels. The occurrence, development, responses, and management of crises are dynamic. To achieve effective response and rapid recovery, hotels and employees must adopt tailored resilience responses for every crisis stage (Hao et al., 2020; Lombardi et al., 2021; Xie et al., 2023), underlining the dynamic characteristics of employee resilience in crises. Scholars focus on hotel employees' resilience qualities and traits in daily adverse situations rather than their dynamic response abilities (Aguiar-Quintana et al., 2021; Dai et al., 2019; Yang et al., 2022). Since employee resilience in crises is receiving more attention, a measurement scale of employee resilience is needed to be developed that reflects dynamic responses to crises. This research contributes by conceptualizing HERC and developing a valid measurement scale.

There are three critical gaps in the research on hotel employee resilience. The conceptualization of hotel employee resilience needs more exploration and empirical investigation. Companies, including hotel businesses, are confronted by a growing array of crises that pose complex and unique challenges, and have disastrous negative impacts on various service industries (Zhang et al., 2020). There is urgency in seeking solutions that allow employees to grow and develop when encountering adversity. One of the solutions is in enhancing employee resilience, which can augment performance and well-being (Hu, Zhang,

& Wang, 2015; Kuntz, Malinen, & Näswall, 2017; Shin, Taylor, & Seo, 2012), as well as help organizations reduce shocks, resist pressures, and achieve prosperity, thereby becoming a decisive factor in achieving sustainability in crises or multiple adverse situations (Zhu, Zhao, & Zhou, 2019; Zhang, Xie, Wang, Morrison, & Coca-Stefaniak, 2020). Therefore, hotels must promote staff resilience during crises and adversity. However, the appropriate empirical investigations are limited, and the connotation of hotel employee resilience needs more in-depth exploration (Prayag, 2017). The dimensions and a measurement scale for the resilience of hotel employees during major crises have also not been developed. Crises significantly influence the hospitality industry and impact hotel employees' perceptions, attitudes, and behaviors (Okumus & Karamustafa, 2005). Adapting and responding to adverse situations, including stress, trauma, failure, frustration, and challenge builds resilience. With greater resilience, employees can deal with crises and overcome adversity, while restoring stability and continuing their career growth and personal development (Dyer & McGuinness, 1996; Gillespie et al., 2007; Xie et al., 2023). Thus, it is necessary to identify the dimensions and a hotel employee resilience measurement scale. In addition, disagreements exist about measuring employee resilience. The current employee resilience scales mainly include trait and capacity resilience scales (Connor & Davidson, 2003; Näswall, Kuntz, Hodliffe, & Malinen, 2013; Yu, Zhang, Yu, & Zhang, 2007). Employee resilience measurement models are inconsistent, making it challenging to comprehend the characteristics of employee resilience fully (Zhang et al., 2020). Different measurement approaches for employee resilience are proposed, including non-independent (within psychological capital), independent, multidimensional, and context-specific. The resulting measurement scales have

assessed employee resilience in specific contexts and occupations (Dai, Zhuang, & Huan, 2019; Luthans et al., 2007; London & Noe, 1997; Saad & Elshaer, 2020). However, their application must often be revised and adjusted due to different situations and contexts. Also, the existing employee resilience measures lag behind theory development and do not fully capture the dynamics of this construct (Nguyen et al., 2016; McLarnon & Rothstein, 2013). Thus, scale development for employee resilience with a process-oriented perspective will assist in informing this debate.

The research objectives were: (1) through structured interviews, to define HERC dimensions, and (2) to produce a HERC measurement scale by conducting a series of surveys. In so doing, this research proposes a dimensional structure and measurement scale for hotel employee crisis resilience. This provides a practical tool for hotels to assess, intervene, and promote employee resilience. It also supplies a theoretical foundation for charting hotel crisis response strategies.

Literature review

Crisis management and resilience

A crisis in hospitality is an unpredictable event that disrupts the normal operations of hotels (Xie et al., 2022). Crisis management includes preventing, assessing, coping with, and resolving crises, returning to normal, and attempting to limit harm (Bullock, Haddow, & Coppola, 2017). Fink (1986) proposed a crisis lifecycle theory with prodromal, acute, chronic, and resolution stages. Hotel corporations need to develop tailored responses and strategies for each stage. Faulkner (2001) proposed a framework for disaster management in tourism

including the pre-event, prodromal, emergency, intermediate, recovery, and resolution stages. Recently, disaster management strategies were applied to determine the responses of tourism enterprises to the global pandemic. Hao, Xiao, and Chon (2020) developed a management framework that incorporated anti-pandemic phases, principles, and strategies. Therefore, tourism crisis management involves prevention, planning, response, recovery, and learning.

Resilience, meaning “to bounce back” or “to leap back”, is the ability of a business to withstand and recover quickly from challenging conditions (Hu, Zhang, & Wang, 2015). Resilience has been analyzed in multiple disciplines, including ecology, engineering, geography, physics, psychopathology, and psychology (Xie et al., 2023; Zhu et al., 2019). However, it has yet to have a consistent conceptualization. Several researchers have prepared concept analyses of resilience from the aspects of antecedents, defining attributes, and consequences, and obtained somewhat different results. The antecedents of resilience have been identified as adversity, trauma, cognitive ability, and realistic worldview; and attributes such as self-efficacy, hope, and coping; with the consequences of integration, control, adjustment, and growth (Gillespie et al., 2007). Niitsu’s et al. (2017) suggested that the antecedents of resilience were traumatic events; the attributes were ego-resiliency, social support, emotional regulation, and heredity; and the consequences were positive adaptation and none to mild psychopathological symptoms. This, resilience is generated from stress, trauma, crises, challenge, and adversity and reveals the psychological strategies by which individuals recover and grow in these situations. Resilience within positive psychology is viewed as a resource and individual potential with development value and has received increasing attention (Xie, Zhang, Chen, & Morrison, 2023). Resilience protects individual

mental health, helping people mitigate the harmful effects of adversity and crisis and ultimately promoting well-being (Paredes, Apaolaza, Fernandez-Robin, Hartmann, & Yañez-Martinez, 2021; Prayag, Spector, Orchiston, & Chowdhury, 2020; Rasheed, Fatima, & Tariq, 2022; Vijayalakshmi, Kathyayani, Sreelatha, Reddy, Manjunatha, Kumar, & BadaMath, 2023).

The two concepts of resilience and crisis management have a natural connection. Resilience is derived from crisis or adversity, which helps firms identify and cope with the challenges of uncertain environments, promoting sustainable development (Becken, 2013). Prayag (2017) argued that crisis management and resilience are linked. Resilience offers a complementary perspective to crisis management for understanding how companies cope with adversity. Steen and Morsut (2020) constructed a framework for crisis management including resilience ability that was comprised of anticipating, monitoring, responding, and learning). They highlighted resilience's critical role in responding and recovering from disasters. Thus, resilient corporations are less likely to fail, adapt better to environmental changes, and recover more quickly than vulnerable organizations (Hall, Malinen, Vosslander, & Wordsworth, 2016; Lombardi, Cunha, & Giustiniano, 2021; Prayag, Spector, Orchiston, & Chowdhury, 2020). The crisis management of tourism companies can be expressed as the resilience response of organizations and their employees to a crisis, as well as showing different resilience abilities at the various crisis stages. The resilience of tourism companies and employees is not only reflected in the resistance and prevention to potential risk factors in the pre-event and prodromal stages; but also in adaptation and collaborative responses to the impacts of a crisis in its emergency and intermediate stages, as well as in the recovery and

bouncing back in the recovery and resolution stages. Therefore, from the crisis management perspective and the crisis lifecycle, resistance, adaptability, cooperation, restoration, and thriving are tourism corporations' five core elements of employee resilience. Based on that, this research conceptualized HERC and validated its dimensions and measurement scale.

Employee resilience

Conceptualization of employee resilience

A widely accepted definition of employee resilience has yet to be agreed upon. However, this resilience encompasses traits, capacities, processes, and outcomes (Reich, Zautra, & Hall, 2010; Niitsu et al., 2017). Resilience is a personal trait through which people cope with adverse situations (Connor & Davidson, 2003; Mubarak et al., 2022; Ong et al., 2006). The capacity perspective considers resilience to be individual abilities comprising resistance, survivability, adaptability, restoration, thrivingness, and development when confronted with losses, difficulties, and disadvantages (Näswall, Kuntz, Hodliffe, & Malinen, 2013, 2015; Wang, Cooke, & Huang, 2013). Individual adaptation to and recovery from adversity is the process-oriented perspective that treats resilience as a dynamic process (Xie et al., 2023; Zhu et al., 2019). Resilience as a behavior assisting people to recover from adversity is the emphasis in the outcome perspective (Harvey & Delfabbro, 2004).

The antecedents of individual resilience are adversity, trauma, failure, stress, difficulty, and frustration (Gillespie, Chaboyer, & Wallis, 2007; Niitsu, Houfek, Barron, Stoltenberg, Kupzyk, & Rice, 2017). Adapting to and rapidly recovering from adverse conditions results from employee resilience (Chen, Liu, Li, & Cai, 2022). Resilience is considered to be a dynamic capacity that can be developed through training and exercise, which helps

employees continuously resist, adapt, recover, and thrive in adversity (Saad & Elshaer, 2020; Gillespie et al., 2007; Luthans, 2002). Therefore, employee resilience is a dynamic and developable ability in adverse conditions such as trauma, difficulty, failure, stress, and frustration, demonstrated in the resistance, adaptation, cooperation, and ultimate achievement of recovery and thrivingness of employees to these adverse conditions (Xie et al., 2022).

Dimensions and measurement of employee resilience

Employee resilience dimensions and measurement are still in continuous development and exploration. Since current definitions of employee resilience involve diverse orientations (e.g., trait, capacity, process, and outcome), there are also diverse measurement scales with different conceptualizations, attributes, and dimensions. Regarding trait orientation, four resilience scales are widely used and revised in various occupational settings to measure employee resilience: the Connor-Davidson Resilience Scale (CD-RISC), the Dispositional Resilience Scale (DRS), the Ego-Resilience Scale (ERS), and the Resilience Scale (RS) (Block & Kremen, 1996; Connor & Davidson, 2003; Hu, Zhang, & Wang, 2015; Wagnild & Young, 1993). For capacity, Näswall et al. (2013) developed an employee resilience scale with 18 items in five dimensions (learning orientation, proactive posture, positive outlook, network leveraging, and adaptive capacity).

Various measurement structures for employee resilience have been proposed, including non-independent, independent, multidimensional, and context-specific structures. Regarding the non-independent structure, some researchers measured employee resilience as a dimension of psychological capital; for example, Luthans, Youssef, and Avolio (2007) proposed that hope, resilience, optimism, and self-efficacy constituted employee

psychological capital and that it was a higher-order factor. For the independent structure, some research regards resilience as employee positive personality characteristics, which help them sustain high engagement, passion, and performance in adversity or crises (Aguiar-Quintana, Nguyen, Araujo-Cabrera, & Sanabria-Díaz, 2021; Dai, Zhuang, & Huan, 2019; Yang, Lu, & Huang, 2020). For a multidimensional structure, the dimensions of employee resilience are abilities to cope with multiple adversities. For example, Saad and Elshaer (2020) measured employee resilience from the dimensions of hardiness, resourcefulness, and optimism. Career, educational, emotional, and behavioral resilience have emerged as concepts (Luthar, Cicchetti, & Becker, 2000; Su et al., 2022). The context-specific structure of employee resilience measurement is gradually receiving greater concern. For example, London and Noe (1997) introduced resilience into career management. They proposed that career resilience is a dimension of career motivation and represents an ability for adapting to changing situations, even those that are discouraging or disruptive.

Hotel employee resilience

Resilience is hotel employees' dynamic and developable capabilities to resist, adapt, and cooperate against adversity and attain recovery and growth (Saad & Elshaer, 2020; Xie et al., 2023). Hotel employee resilience enables them to maintain positive working states such as job engagement, positive emotions, and job satisfaction during adversity or crisis (Aguiar-Quintana, Nguyen, Araujo-Cabrera, & Sanabria-Díaz; Dai, Zhuang, & Huan, 2019; Zhu, Zhao, & Zhou, 2019) and has a critical influence on employee job security, well-being, creative performance, service quality, organizational resilience, and corporate business continuity (Prayag, Spector, Orchiston, & Chowdhury, 2020; Saad & Elshaer, 2020; Xie,

Zhang, Chen, & Morrison, 2023; Yang, Lu, & Huang, 2020). This research combined crisis management and the crisis lifecycle model proposing that hotel employee resilience is a five-factor model composed of resistance, adaptability, cooperation, restoration, and thriving.

Resistance

Resistance is an employee ability to identify, resist, and prevent various potential risk factors when facing a crisis or adversity. Hotel employees suffer various potential risk factors during their work, including customer mistreatment, facility failures, virus infections, terrorist attacks, and poor security management (Krause, Scherzer, & Rugulies, 2005; Pizam, 2010; Xie, Zhang, Morrison, & Chen, 2022; Yang, Lu, & Huang, 2020; Zhang, Xie, Wang, Morrison, & Coca-Stefaniak, 2020). The resistance and prevention of the potential safety and risk factors form the hotel employees' ability to resist. Hotel employees can engage in safety compliance and safety participation to resist the potential risk factors during a significant crisis and develop safety adaptation to prevent and solve the ever-changing safety threats and risk issues in hotel workplaces (Kim, Kim, & Lee, 2021; Zhang, Xie, Wang, Morrison, & Coca-Stefaniak, 2020; Zhang, Xie, & Morrison, 2021). In addition, employees with strong resistance have rational consideration, optimism, and hardiness during adversity or crisis, mitigating and buffering the negative impacts (Saad & Elshaer, 2020). For example, Yang et al. (2020) examined the resilience's moderation of customer mistreatment on staff well-being. It was determined that resilience mitigated the negative effect of mistreatment on staff vigor and exhaustion. Thus, resistance is a protective factor to shield hotel employees' resources and well-being from being damaged in adverse situations.

Adaptability

Adaptability is the employee capacity to adjust and actively adapt to crisis or adversity. Essentially, adaptability emerges naturally after a crisis or disaster, and it is reflected in the fact that employees make full use of resources, properly deal with various emergencies, and make appropriate self-adjustment and work adaptation based on the complex and changeable crisis and adverse situations (Rasheed et al., 2020; Nilakant et al., 2014). Thus, adaptability refers to employee efforts to maintain matching with external work environments in adversity or crisis (Savickas, 2011), thereby achieving survival and livelihood. Since hotel employees encounter unfavorable conditions such as weak job security, serious occupational disease, restricted career development, and high social stigma (Krause, Scherzer, and Rugulies, 2005; Xie et al., 2020), employee and career adaptability have received increasing attention in hospitality. Hotel employees with strong career adaptability can more readily adjust to the demands of social and psychological challenges and resolve problems creatively in adverse situations, which significantly predicts their career development, work well-being, and intentions to leave (Zhang, Xie, Wang, Morrison, & Coca-Stefaniak, 2020; Rasheed, Fatima, & Tariq, 2020; Safavi & Bouzari, 2019). In addition, employee capacity to adapt (human capital) during a crisis, such as problem-solving skills, innovation and creativity, self-adjustment and self-organize, internal resources utilization, and situation monitoring and awareness, is an important indicator of the hotel disaster resilience framework (Brown et al., 2018).

Cooperation

Cooperation represents the ability of employees to support, communicate, and collaborate with others in crises or adversity. Hotels offer comprehensive products and services (e.g.,

accommodation, business services and meeting rooms, entertainment, food and beverages).

Individual employees need to gain the knowledge, experience, and skills to cope with diverse safety issues. Thus, hotel employees must share information, exchange resources, and collaborate with others to respond effectively to crises or adversity. Hotel employees can seek cooperation, communication, and support from customers, colleagues, supervisors, organizations, and managers. Procedural and emotional support from hotel managers positively affects staff well-being and quality-of-life of life when encountering adverse situations such as customer incivility (Baker & Kim, 2020). Perceived supervisor and co-worker support for error management positively influences psychological safety and service recovery performance with service failures (Guchait et al., 2014). Moreover, the value of co-creation and cooperation by employees and customers, such as knowledge and information sharing, resource exchange, and service cooperation, can ensure the operation of service interactions safely and orderly and benefit both employees and customers (Yen et al., 2020).

Restoration and thriving

Restoration is the capacity to recover and bounce back from crises and adversity. Thriving refers to the ability of employees to attain growth and development based on restoration.

Thus, restoration and thriving are the outcomes when employees conquer and overcome a crisis or adversity, manifested in the recovery and growth from the negative effects caused. A crisis or significant adversity negatively affects hotel employees, including their career status (e.g., unemployment), physical and mental states (e.g., physical health, emotional exhaustion), and families (e.g., family well-being) (Chien & Law, 2003; Goodrich, 2002; Yang, Lu, &

Huang, 2020; Zhang, Xie, Wang, Morrison, & Coca-Stefaniak, 2020; Agarwal, 2021). Thus, the ability to recover refers to restoring stable career development, healthy physical and mental states, and harmonious work-family relationships after a crisis or adversity. Multiple factors, such as mindfulness, organizational error tolerance, organizational support, human resource practices, and empowerment, are identified as having important impacts on hotel employee recovery from crises or adversity (e.g., COVID-19, service failures) (Agarwal, 2021; Hewagama, Boxall, Cheung, & Hutchison, 2019; Wang, Guchait, & Paşamehmetoğlu, 2020; Wang, Wen, Paşamehmetoğlu, & Guchait, 2021). The ability to thrive is to achieve growth and development based on restoration, directly reflected in career development, ability improvement, and confidence enhancement of hotel employees in crises or adversity (Saad & Elshaer, 2020; Okumus & Karamustafa, 2005). This helps to improve employee performance, occupational and life satisfaction, and well-being (Dai, Zhuang, & Huan, 2019; Hewagama, Boxall, Cheung, & Hutchison, 2019; Kawakubo & Oguchi, 2019).

Scale development

Churchill's (1979) mixed-method approach for scale development was adopted. Three studies were constructed for HERC scale development. Hotel employee resilience dimensions were identified in Study 1; the initial item pool for HERC was generated by Study 2, and a survey was conducted to refine the scale. Study 3 validated the factor structure from Study 2.

Study 1: Dimensions of HERC

Research design

This research conceptualized hotel employee resilience during COVID-19. Face-to-face

interviews during COVID-19 risked infection as well as violating the restriction of “social distance”. In addition, employee resilience involves hotel employees' life status and performance, more sensitive topics for them and hotel managers. Thus, an online questionnaire with three open-ended questions was used to gather employee perceptions of resilience during crisis events (Walsh, 2003). The respondents did supply their identities.

The online questionnaire contained three open-ended questions related to HERC and several respondent characteristics (gender, age, marital, education, department, position, monthly incomes, and work experience). They answered the following questions: (1) What qualities did employees need to possess to help hotels overcome the COVID-19 crisis? (2) What capabilities did they need to have to successfully complete during COVID-19? (3) What were the main features of hotel staff resilience during the pandemic? An expert panel of hospitality professors and Ph.D. students debated the answers to these questions.

Data collection

A leading market research website in China (www.wjx.cn) and convenience sampling were used for online interviews. Generally, upscale hotels have substantial requirements on the abilities and qualities of their employees, and often provide services and training to develop their resilience and dynamic adaptability during major crises, thus providing customers with high service quality as well as ensuring customer safety. Thus, this research selected upscale hotels to identify the dimensions of hotel employee resilience. Ten upscale hotels open during the pandemic in Fujian, Jiangxi, and Sichuan, China, were surveyed, in June 2020. Hotel human resource managers were sent the hyperlink to the interview questionnaire for checking and were asked to forward the link to employees in various positions. Assurance was given that

interviews were for academic purposes only and that responses were anonymous. Finally, a total of 69 respondents were surveyed. The respondents were 35 females and 34 males with 75.4% married. Most were 20-39 (68.1%), and 95.7% were senior high school or college graduates. Some 43.5% were frontline employees (e.g., from the concierge, housekeeping, and food and beverage departments) and 34.8% earned 2,501-5,000 CNY monthly. Junior staff represented 27.5% and 52.2% were senior managers. Those with more than five years of work experience in hospitality accounted for 66.7%

Analysis and coding of data

Thematic analysis was used to process interview responses. Miles and Huberman (1994) proposed a staged analysis procedure of familiarization, coding, and categorization, which was adopted in this research. All interview content was read and checked for accuracy in the first stage. Second, words, phrases, and sentences demonstrating HERC were coded and labeled. Initial concepts were extracted and identified. Third, the initial coding and concepts were categorized, and then core themes were extracted. Two researchers independently reviewed and checked the processes used in the first and second stages. The first researcher coded, categorized, and refined interview contents. The second evaluated the results using agree-disagree, closed-ended responses). Coding and categorization validities were increased by resolving disagreements between the two researchers.

Results

The coding set of 616 labels was transcribed and narrowed down to 30 normative concepts after several rounds of discussion between the two researchers, and five core themes were extracted and purified. HERC consisted of the following five dimensions: resistance,

adaptability, cooperation, restoration, and thriving (Appendix 1). The resistance included hardiness, sticking to posts, anti-pressure, optimism, staying calm, and physical fitness. Adaptability included safety consciousness, obeying arrangements, mental adaptation, environmental adaptation, versatility, emergency response, and deployment execution. The cooperation included overcoming issues, sticking together, communication, teamwork, and self-sacrifice. Restoration included performance, passion, and confidence restoration. Thriving included skill improvement, learning, growth, increased responsibility, enhanced occupational quality, and ability enhancement. The survey's hyperlink was then sent to three more hotel employees to perform a theoretical saturation test. There were no new concepts and core themes emerging, indicating a theoretical saturation of the thematic analysis.

Study 2: Item generation and refinement of HERC

Questionnaire design

The HERC scale was the first questionnaire section, comprising the dimensions of resistance, adaptability, cooperation, restoration, and thriving. Four stages were completed to produce the measurement items. In the first stage, based on the dimensions and the conceptualization identified in Study 1, relevant HERC items were extracted and summarized from previous research through an extensive literature review. An expert group checked items translated from English to Chinese. Twelve items were generated from the thematic analysis of interviews in the second stage (Appendix 2). The expert group along with two hospitality managers assessed all items' content validity in the third stage. Items with similar connotations were merged, and items with content ambiguity that did not fit the research context were removed. In addition, each item's expression was optimized and improved

according to the hospitality and COVID-19 contexts. The fourth stage was a pilot study to test the item reliability of all dimensions. Respondent profile characteristics were in the second questionnaire section.

Some 215 valid pilot survey questionnaires were gathered from four upscale Chinese hotels in June 2020. The Cronbach's alphas for all dimensions were greater than 0.8; the HERC scale KMO was 0.944; and the factor loadings and community for all items were more than 0.5. However, several items (e.g., AD06, CO03) were cross-loaded in different dimensions in a rotated component matrix, and the two dimensions of restoration and thriving were indistinguishable. These items were modified by the expert group and a final version of the HERC scale was derived (Appendix 3).

Data collection

Thirteen upscale hotels in Sichuan, Anhui, Hunan, and Zhejiang were surveyed in June 2020. An online survey was conducted through www.wjx.cn due to the pandemic conditions at the time. The survey hyperlink was distributed to employees by hotel human resource managers. Finally, 300 forms were collected of which were 253 valid, for a response rate of 84.3%. Table 1 displays the demographic characteristics of survey respondents.

[Please position Table 1 about here]

Reliability assessment

Dimension and item reliabilities of the HERC scale were analyzed with SPSS 22.0, using Cronbach's alphas (> 0.7) and item-to-total-correlations (ITTC) (> 0.3). The ITTC of one item (RE01) was less than 0.3. The overall scale's Cronbach alpha was 0.957, and the alphas for dimensions spanned from 0.795 to 0.938, indicating acceptable internal consistency for

each dimension. The item with an ITTC of less than 0.3 was removed, and the EFA was run again on the remaining 29 items.

Exploratory factor analysis (EFA)

An EFA with principal component and varimax rotation analysis was performed to identify the HERC scale dimensions. The KMO index was 0.939 (> 0.7) and there were five factors with eigenvalues above one, with a cumulative variance of 71.36%. Based on the recommendations of Straub (1989), one item (RE05) with a community below 0.5 and one item (AD05) with cross-loading were removed. The EFA was re-run with 27 items; the KMO index was 0.936, five factors with eigenvalues above one were drawn, and the community and factor loadings were greater than the cut-off value of 0.5, accounting for 72.89% of total variance (Table 2).

[Please position Table 2 about here]

Study 3: Scale validation of HERC

Data collection

Another round of surveys was conducted in Study 3 in early July 2020 to examine the HERC factor structure identified in Study 2. Some 28 upscale hotels operating during the pandemic were selected through convenience sampling. The data from the main geographical regions of Eastern Cina (Fujian, Zhejiang, Guangdong), Northeast China (Jilin), Central China (Anhui, Hunan), and Western China (Sichuan, Chongqing, Guizhou) were collected for analysis. A total of 800 forms were collected of which 602 were valid (75.25%). The demographic profile of survey respondents is displayed in Table 2.

Confirmatory factor analysis (CFA)

Structural equation modeling in AMOS 21.0 was used for CFA. According to Hair et al.'s (2010) recommendations, the default model was adjusted and improved according to the following: (1) standard factor loadings of items had to be above 0.5; (2) average variances extracted (AVEs) of each dimension must be above 0.5; and (3) the model modification indices. Four items (RE02, CO05, RE05, TR03) were removed to produce a more satisfactory factor structure and goodness-fit-indices ($\chi^2/df = 3.268$, RMR = 0.058, RMSEA = 0.061, NFI = 0.926, CFI = 0.947, TLI = 0.937, IFI = 0.947, RFI = 0.911, GFI = 0.907, PNFI = 0.772). The standard factor loadings of items were from 0.536 to 0.970, the composite reliability (CR) for dimensions spanned from 0.8531 to 0.9446, and the AVEs were from 0.5827 to 0.7767, which all surpassed the cut-off values and indicated good convergent validity (Table 3).

[Please position Table 3 about here]

Correlation analysis

The Pearson correlation coefficient's (0.673) maximum value was lower than the minimum value of the square root of the AVE (0.724), suggesting good discriminant validity for all dimensions. The Pearson correlation coefficients for all HERC dimensions were significant at the $p < 0.01$ level, demonstrating nomological validity (Table 4).

[Please position Table 4 about here]

Model comparison of HERC

Four competitive models were developed to identify the optimal HERC scale dimensional structure (Figure 1). Models 1 and 2 failed to meet the critical standards. Model 3 ($\chi^2/df = 3.268$, RMR = 0.058, RMSEA = 0.061, CFI = 0.947) and Model 4 ($\chi^2/df = 3.465$, RMR = 0.065, RMSEA = 0.064, CFI = 0.941) demonstrated high fit indices. In Model 4, the standard

factor loading of the five dimensions (resistance, adaptability, cooperation, restoration, and thriving) for the second-order HERC were 0.750, 0.864, 0.866, 0.890, and 0.806, all exceeding the 0.5 threshold and being statistically significant at the $p < 0.01$ level. Therefore, the HERC scale applies to the five correlated first-order measurement structures (Figures 1-3) and second-order measurement structures (Figures 1-4).

[Please position Figures 1-4 about here]

Cross-validity of HERC

SPSS was used to generate two random 301-case sub-samples. The cross-validity of HERC was assessed through inter-sample invariance testing. The results showed that the unconstrained and constrained models met the critical standard ($1 < \chi^2/df < 3$, RMSEA < 0.08 , RMR < 0.08 , CFI > 0.9). The chi-square difference test between the samples was invariant ($\Delta\chi^2$ ($\Delta df=18$) = 16.970, $p = 0.525 > 0.05$). Therefore, the HERC scale was invariant across different samples, and the cross-validity of the five-dimensional structure was supported.

Predictive validity of HERC

Previous research demonstrates that staff resilience reduces intentions to leave (Dai, Zhuang, & Huan, 2019). The predictive validity of HERC can be confirmed by assessing its influence on turnover intentions. Four items adapted from Bluedorn (1982) were used to measure employee intentions to leave. The results showed that HERC negatively predicted employee turnover intentions ($\beta = -0.374$, $t = -7.847$, $p < 0.001$) and, therefore, the HERC scale had acceptable predictive validity.

Conclusions and discussion

Conclusions

This research conceptualized and identified the dimensions of HERC using a literature review followed by interviews. Several rounds of questionnaire surveys were then conducted to validate a HERC scale. The main conclusions were as follows:

First, HERC was represented by a five-factor model composed of resistance, adaptability, cooperation, restoration, and thriving. The thematic analysis results showed that hotel employee resilience was classified into five core themes, including resistance, adaptability, cooperation, restoration, and thriving. These themes represented employee resistance, adaptation, and collaborative responses to the negative influence of the pandemic, finally achieving restoration and maintaining self-development. Thus, hotel employee resilience is a dynamic developmental ability that permits employees to be resistant, adaptive, and cooperative and to recover and thrive after trauma, stress, challenges, failures, difficulties, and crisis conditions.

Second, the HERC scale had acceptable reliability and validity scores. The scale applied to the five correlated first-order and second-order measurement structures and had acceptable internal consistency, convergent, discriminant, nomological, cross-, and predictive validities. HERC negatively predicted employee turnover intentions during COVID-19, and there were dimensional differences in HERC. Employees had higher scores for cooperation and restoration and lower scores for resistance and adaptability during a crisis.

Theoretical implications

First, based on the crisis management and developmental perspectives, this research conceptualized and proposed the five-factor model of HERC, which provides a new

theoretical model and perspective for future research on employee resilience. Hotel employee resilience attracts more attention during adversity as in major crises (Aguiar-Quintana, Nguyen, Araujo-Cabrera, & Sanabria-Díaz, 2021; Dai, Zhuang, & Huan, 2019; Saad & Elshaer, 2020; Xie, Zhang, Chen, & Morrison, 2023; Yang, Lu, & Huang, 2020). However, there needs to be research conceptualizing and identifying hotel employee resilience based on the perspective of crisis development and dynamic responses. In addition, employee resilience needs a consensus definition and research framework, and the connotation and measurement scale of HERC needs more theoretical analysis and empirical investigation. Therefore, this research proposed that hotel employee resilience is a dynamic developmental ability to resist, adapt, cooperate, and finally achieve recovery and thrive from adversity and crises. The proposed five-factor model provides a process-oriented theoretical model and framework for employee resilience research. The model constitutes a theoretical foundation for hotel crisis response strategies using an employee resilience response perspective.

Second, this research produced the reliable and valid HERC measurement scale that can be applied in follow-up empirical investigations. The measurement of employee resilience is receiving more attention; however, the measurement properties and structures are diverse based on different theoretical and disciplinary perspectives (Connor & Davidson, 2003; Näswall et al., 2013; Yu et al., 2007). In addition, various relevant measurement scales have been proposed, such as the non-independent, independent, multidimensional, and context-specific structures (Saad & Elshaer, 2020; Dai, Zhuang, & Huan, 2019; Luthans et al., 2007; London & Noe, 1997). Despite resilience being derived from adversity and crises (Gillespie et al., 2007), there is no research on dimension identification and scale

development for hotel employee resilience during crises. The scholarly contribution is in producing the HERC scale and providing empirical evidence and a measurement tool for hospitality employee resilience research.

Managerial implications

Hotel managers should enhance employee resilience during dynamic crisis events, thereby enhancing their capabilities in responding to external crises and adverse conditions.

Specifically, hotel managers should develop resilience-strengthening strategies that match the crisis stage to achieve effective adaptation and responses. In the pre-event and prodromal stages, hotel managers should strengthen employees' ability to identify, resist, and prevent potential risk factors and enhance their coping skills and safety consciousness through training and education. In emergency and intermediate stages, hotel managers should improve employee adaptability to adverse crises by empowering them with autonomy, reducing excessive intervention, sharing information, and providing necessary resources.

Moreover, managers should work with employees in different departments and positions to cope with the crisis, encourage employees to cooperate to overcome difficulties, and develop cross-department and cross-position crisis response plans. In the recovery and resolution stages, hotel managers should care for the needs of employees, help them adjust their work status, and provide positive feedback for their psychological worries. The manager should enhance positive expectations and confidence in the hotel crisis management by demonstrating the effectiveness of crisis responses. In addition, hotel managers should encourage employees to regard crisis as learning and growth opportunities and establish and implement crisis feedback systems. Experience sharing and training on employee crisis

responses and impacts should be used to improve the abilities to cope and adapt.

Second, the HERC scale represents a diagnostic tool for assessing the resilience of hotel staff. It can become a benchmark for hotel HRM within crisis management. For HRM, hotel managers can use this scale to assess new employee resilience abilities and take it as an important indicator for recruiting and promoting. Then, job responsibilities and tasks should be redesigned according to individual employee resilience abilities. More resilient employees should be placed in positions with significant challenges, complexity, and emotional labor, and decrease service failures and accidents caused by weak resilience staff, thereby improving overall hotel service performance. For crisis management, the proposed HERC scale should be used to continuously monitor changes in employee resilience and its dimensions during crises. Tailored strategies should be designed to adjust and improve hotel crisis management systems. For example, suppose employees score low on the cooperative dimension of resilience. In that case, managers should further develop systems for staff collaboration during a crisis or establish a crisis-lead team to lead all employees and aggregate resources to cope with challenges to achieve rapid recovery and development.

Limitations and future research directions

The first limitation is that the HERC scale was produced during the pandemic. Future investigations should validate and modify the HERC scale in differing crises (e.g., service failures and terrorist attacks). Second, upscale hotel staff in China were interviewed and surveyed. Future research should test the HERC scale in various lodging formats (e.g., budget hotels and homestays) and against different cultural backgrounds. Third, the empirical investigation and scale development did not consider employee personalities and

demographics. Hotel staff with differing risk propensities, positions, education levels, and departmental assignments could respond in dissimilar ways during crises. Future research should examine variations in resilience and its dimensions for hotel employees with different backgrounds.

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