

24 been expanding globally, with critically alert situations demanding multiple emergency actions
25 by government entities around the world (Kim et al., 2020). Many countries and cities are on
26 complete lockdowns to prevent COVID-19 from spreading. One of the severely impacted
27 industries is the hotel industry. For example, in the United States, the room occupancy rates of
28 hotels plummeted to 39.4% in March 2020 (Statista, 2020).

29 The deterioration of hotels' financial situations has wreaked havoc on employment and
30 job security. Hotels have forced their staffs to take early retirement, be laid off, take unpaid leave,
31 undergo a reduction in welfare benefits, and change their working shifts or positions (Edgecliffe-
32 Johnson, 2020, March 18). These oppressive circumstances have fostered anxiety in employees
33 about their work and have made them fearful for their employment future.

34 Occupational stressors were identified in previous studies as one of the key predictors
35 that negatively affect employee satisfaction, commitment, job performance, subjective well-
36 being, prosocial behavior, and intention to stay (Darvishmotevali and Ali, 2020; Hwang et al.,
37 2014; Kang et al., 2020; Kim et al., 2015; Yang and Lau, 2019). Hotel employees are in extreme
38 states of anxiety and feel stressful to work at their workplaces during the COVID-19 pandemic.
39 The grave situation of escalating occupational stress due to the detrimental impacts of the
40 pandemic on all hotel employees, from frontline workers to management, motivated us to
41 investigate the effects of the pandemic on occupational stressors and their consequences. Here,
42 we viewed stress, which is an individual's physical or psychological response to unusual
43 situations, as a common and essential part of life (Ivancevich and Matteson, 1980; Selye, 1976).
44 According to the International Labor Organization (2020), however, employees must confront a
45 huge challenge as they attempt to cope with the newly changing work environment created by
46 the COVID-19 pandemic and its consequent impact on occupational stressors.

47 This study aimed to examine the impacts of COVID-19 on hotel employees' perceptions
48 of occupational stressors and their outcomes. More specifically, it sought to identify the factors
49 affecting employees' occupational stressors after the outbreak of the COVID-19 pandemic.
50 Second, it sought to assess the status quo of job satisfaction, organizational commitment, job
51 performance, subjective well-being, prosocial behavior, and turnover intention. Third, it
52 attempted to identify the structural relations among the concepts. Fourth, it sought to compare
53 the hotel workers' perceptions of occupational stressors and their consequences, as influenced by
54 the employees' sociodemographic and job-related variables. Last, it aimed to compare hotel
55 workers' perceptions of the occupational stressors and their consequences before and after the
56 outbreak of the COVID-19 pandemic.

57

58 **2. Occupational stressors and their consequences**

59 ***2.1. Occupational stress and stressors***

60 Research on occupational stress has long been a major focus for many hotel practitioners
61 and academic researchers because of its significant impact on organizations (Huang et al., 2018).
62 For example, if an employee fails to cope with employment demands, conflict occurs between
63 employees or between the employee and his/her job (Faulkner and Patiar, 1997). In addition, that
64 conflict can provoke personal dysfunction that manifests in negative physiological and emotional
65 responses in the workplace (Levi, 1981). Thus, occupational stress can be defined as “a particular
66 individual's awareness or feeling of personal dysfunction as a result of perceived conditions or
67 happenings in the work setting” (Parker and DeCotiis, 1983, p. 161).

68 Because occupational stress is viewed as one of the most important challenges of human
69 resource management, many researchers have sought to identify the impacts of occupational

70 stress in the hospitality industry. Some studies have indicated that occupational stressors enhance
71 hotel employee's turnover intention (Hwang et al., 2014; Tongchaiprasit and Ariyabuddhiphongs,
72 2016). Other studies have shown that occupational stress reduces employee job satisfaction
73 (Hight and Park, 2019; Yousaf et al., 2019) and job performance (Abdelhamied and Elbaz, 2018;
74 Akgunduz, 2015). Therefore, it is meaningful and important to examine the dimensionality of
75 occupational stressors and their impacts on internal consequences in the hotel industry.

76

77 ***2.2. Relationship of occupational stressors to job satisfaction***

78 Job satisfaction is defined as the “pleasurable emotional state resulting from the appraisal
79 of one's job as achieving or facilitating the achievement of one's job values” (Locke, 1969). Put
80 differently, it is a judgment of the perceived relationship between employees' expectations from
81 their work and the perceived offering they receive (Lund, 2003). Indeed, job satisfaction is a
82 significant internal goal of every organization (Amissah et al., 2016). Studies have found that
83 occupational stress is a key predictor of employees' negative emotional outcomes, such as job
84 dissatisfaction (Barsky et al., 2004; Dartey-Baah et al., in press). In the literature on the
85 hospitality industry, Kim et al.'s (2015) study indicated that occupational stressors, including
86 role conflict and role ambiguity, were negatively associated with job satisfaction. In a study by
87 Yousaf et al. (2019) that examined the impact of occupational stress and the effects of work-
88 social support on the outcome of that stress, occupational stress was found to be the most
89 influential factor mitigating employee satisfaction. That conclusion has been found consistently
90 in other hospitality and tourism studies (Chan et al., 2015; Cheng and Yi, 2018). Therefore, we
91 proposed the following hypothesis.

92

93 *Hypothesis 1: Employees' occupational stressors negatively affect their job satisfaction.*

94

95 ***2.3. Relationship of Occupational Stressors to Organizational Commitment***

96 Organizational commitment comprises a large area of organizational perceptions,
97 incorporating not only job-level perceptions but also explicitly including the organizational
98 characteristics to which individuals attribute their emotional attachment, involvement, and
99 continuance in the organization. Hotel employees' cohesive contacts with customers make them
100 particularly prone to experiencing occupational stress (Wetzels et al., 1999). In accordance with
101 social exchange theory, hotel employees who labor in an unpleasant work environment that is
102 characterized by high occupational stress have a reduced likelihood of becoming involved with
103 and emotionally attached to the hotel of their current work (Tiyce et al., 2013). Two recent
104 hospitality-industry studies (Garg and Dhar, 2014; Yang and Lau, 2019) have confirmed this
105 argument, with the frontline hotel workers claiming emotional and physical stress and burnout
106 because of customer incivility. Such stress can lead to apathy at work and unwillingness to be
107 part of a team or a hotel (Lee and Mathur, 1997). On the basis of all of these findings, we
108 established the following hypothesis.

109

110 *Hypothesis 2: Employees' occupational stressors negatively affect their organizational*
111 *commitment.*

112

113 ***2.4. Relationship of job satisfaction and occupational commitment to turnover intention,***
114 ***subjective well-being, and prosocial behavior***

115 Job performance is defined as employees' performed activities and behaviors that
116 contribute to an organization's goals, including the delivery of tangible services (e.g., hotel
117 check-in and check-out) and intangible services (e.g., guest relations) (Jeong and Lam, 2016). In
118 addition to employee job performance, subjective well-being has also received attention in the
119 extant hospitality literature, through efforts to reveal the cognitive and emotional evaluations of
120 hotel employees' lives (Wang et al., 2020). Life satisfaction is a crucial issue in employees'
121 subjective well-being because of its close relationship with life success (Diener et al., 2002).

122 Prosocial service behavior refers to employee behaviors that are helpful to other
123 individuals, groups, or organizations. Prosocial behavior in this study refers to individual social-
124 altruism and voluntary behaviors that are intended to benefit another in society (Eisenberg et al.,
125 2015).

126 Turnover intention can be defined as employees' expression of their intention to quit an
127 organization and to seek another job (Tett and Meyer, 1993). High turnover rate of hotel
128 employees has become a main feature of the hotel industry. Previous studies have indicated that
129 occupational stress leads to negative job satisfaction (Hight and Park, 2019; Yousaf et al., 2019).
130 Moreover, stressed employees exhibit a weak commitment to the workplace (Garg and Dhar,
131 2014). In a psychological study, Yousef (2000) proposed that employees who are highly
132 committed to their organizations and satisfied with their jobs will exhibit high job performance.
133 This relationship has been tested and validated in recent hospitality and tourism studies (Aydın
134 and Kalemci Tüzün, 2019; Koo et al., 2019). Based on the strong connection between job
135 satisfaction and life satisfaction, some studies (Lee et al., 2016; Yurcu and Akinci, 2017) sought
136 to identify and support the positive association between job satisfaction and subjective well-

137 being in the hospitality industry. In addition, Polo-Vargas et al. (2017) identified an indirect link
138 between organizational commitment and life-satisfaction through employee engagement.

139 High turnover rate is an emergent challenge for hotel businesses. Previous studies have
140 identified that high levels of perceived occupational stress are associated with high levels of
141 turnover intention (Koo et al., 2019; Wen et al., 2020). Moreover, negative associations have
142 been identified between job satisfaction and turnover intention and between job commitment and
143 turnover intention (Hsiao et al., 2020; Kim et al., 2017).

144 More recently, hospitality and tourism scholars have extended their research focus from
145 organizational outcomes to societal outcomes, such as prosocial behavior. Studies have
146 suggested that employees who are relatively more satisfied with their workplace and more
147 committed to it tend to join voluntary activities more frequently (Isen and Baron, 1991) and
148 engage more often than average in social networking (Brissette et al., 2002), although those
149 studies did not explicitly test the relationships between job satisfaction, job commitment, and
150 prosocial behavior. Thus, the following hypotheses are proposed.

151
152 *Hypotheses 3a–3d: Employees' job satisfaction positively affects their job performance*
153 *(Hypothesis 3a), subjective well-being (Hypothesis 3b), and prosocial behavior (Hypothesis 3c),*
154 *and negatively affects their turnover intention (Hypothesis 3d).*

155
156 *Hypotheses 4a–4d: Employees' organizational commitment positively affects their job*
157 *performance (Hypothesis 4a), subjective well-being (Hypothesis 4b), and prosocial behavior*
158 *(Hypothesis 4c), and negatively affects their turnover intention (Hypothesis 4d).*

159 ***2.5. Comparison of occupational stressors and other consequences according to hotel***
160 ***employees' sociodemographic and job-related variables***

161 Previous studies have suggested that hotel employees' occupational stressors can be
162 influenced by various sociodemographic and job-related variables, such as gender, position level,
163 age, department, and hotel type (Herrero et al., 2012; Wireko-Gyebi and Ametepeh, 2016). For
164 example, Herrero et al. (2012) suggested that women initially have higher stress levels than men
165 do. Some studies have found that managerial hotel employees tend to experience greater stress
166 because their job duties include handling complaints from demanding customers (Karakas and
167 Tezcan, 2019; Lee and Shin, 2005). To accomplish sustainability within hotel human resource
168 management, age is the most dominant variable for young employees, who are more willing to
169 change jobs (Vetráková et al., 2019). In Aydin's (2018) study, hotel employees in different
170 departments showed various levels of occupational stress because their job duties differed, even
171 though they worked in the same hotel. Karatepe and Uludag (2008) compared the roles of job
172 stress, burnout, and job performance among hotel employees between independently
173 owned/family-owned hotels and chain hotels. Their results indicated that employees who were
174 working in independently owned/family-owned hotels demonstrated a higher degree of
175 emotional exhaustion and depersonalization than employees of chain hotels did. Thus, the above-
176 discussed studies prompted the following hypothesis.

177

178 *Hypothesis 5: The magnitude of occupational stressors and employee-associated outcomes will*
179 *differ in accord with hotel employees' sociodemographic and job-related variables.*

180

181 ***2.6. Comparison of occupational stressors and their consequences before and after the onset***
182 ***of the COVID-19 pandemic***

183 The hotel and tourism business is one of the largest and most rapidly growing industries,
184 but it is extremely vulnerable. The negative impacts of health-related risks can be devastating
185 and enduring (Rosselló et al., 2017). The major impact of health-related risks on tourism is a
186 decrease in inbound tourist demand, and that impact extends to the level of a dependence on a
187 health-related disease pandemic area (Yang and Chen, 2009). Although the actual economic
188 losses of health-related diseases in the tourism sectors depend on their relative contributions to
189 the national economy, travel and trade restriction measures can create significant economic
190 losses for an affected area (Huang, 2009; Smith, 2006; Otoo and Kim, 2018). A health-related
191 disease generates political conflict, such as discrimination against races and nationalities, entry
192 bans, and strict quarantine measures (Curley and Thomas, 2004).

193 Although previous studies have provided significant contributions to our comprehension
194 of the macro-level outcomes caused by health-related risks, only a few studies have attempted to
195 examine the micro-level employee-associated outcomes caused by health-related disease. Hotel
196 operations may require their employees to take unpaid leave, reduce their working hours, change
197 their employment status, reduce their salary, and forego their overtime compensation
198 (Chaturvedi, 2020, April 09). Hotel employees become extremely anxious when they lose faith
199 in the future of the hotel industry. In addition, endless cost-saving measures can destroy the
200 satisfaction, commitment, and loyalty of employees (Wang et al., 2018; Wong and Li, 2015).
201 Therefore, it is assumed that employee perceptions of occupational stressors will be different
202 before and after the COVID-19 pandemic outbreak, and we proposed the following hypothesis.

203

204 *Hypotheses 6: The magnitude of occupational stressors and employee-associated outcomes will*
205 *be different before and after the COVID-19 pandemic.*

206

207 **3. Methods**

208 The measurement items for the final survey were developed through a thorough literature
209 review, in-depth interviews, and pilot surveys. The twenty-three items used to measure the
210 attributes of occupational stressors were adopted from previous studies (Hwang et al., 2013;
211 Hwang et al., 2014; Tongchaiprasit and Ariyabuddhiphongs, 2016). To ensure the content
212 validity of the items that we derived from the literature review and to identify new items that we
213 might have missed, we conducted in-depth interviews with five hotel managers and 10 hotel
214 employees. Eight other items were added to the scale on the basis of the situation of the COVID-
215 19 pandemic. For example, “forceful advanced annual leave,” “demand of replacing the job
216 duties for other departments (e.g., buffet restaurant, guest relation),” and “frequent
217 reporting/documentation about the hygiene issues.” In addition, a pilot test was conducted with
218 50 hotel employees through online panel survey to purify the measurement items. A total of 31
219 items were used to measure the construct of occupational stressors.

220 The items that we used to manifest job satisfaction (four items) were derived from
221 previous studies (Babin and Boles, 1998; Netemeyer et al., 1996). Four items to indicate
222 organizational commitment were also drawn from a previous study (Kucukusta et al., 2016),
223 whereas three items that manifest turnover intention were extracted from a study conducted by
224 Netemeyer et al. (1996). Four items related to job performance were extracted from previous
225 literature (Griffin et al., 2007). Five items that addressed subjective well-being were extracted
226 from previous literature (Diener and Fujita, 1995; Zhao et al., 2016). Finally, items indicating

227 prosocial behavior (three items) were selected from previous research (Gagné, 2003; Twenge et
228 al., 2007). All of the items were measured using a seven-point Likert scale ranging from strongly
229 disagree (1), neutral (4) to strongly agree (7).

230 The sample for this study was composed of hotel employees in the United States. A self-
231 administered online panel survey was conducted through online panel companies to select
232 targeted nationwide samples and to consider cost and time effectiveness (Granello and Wheaton,
233 2004). The main survey was executed from 28 April to 21 May 2020 and comprised three
234 screening questions that requested information on current employment status, working
235 experience in hotels, and awareness of the pandemic outbreak. Respondents were asked to
236 evaluate their perceived occupational stressors and consequences on the basis of pre- and post-
237 COVID-19 pandemic. Ultimately, those procedures resulted in a collection of 800 questionnaires.
238 Responses from employees who had been working for a hotel for less than one year were
239 eliminated from the list of respondents. To trace insincere answers, profiles for the number of
240 work years, age, work position, and work department were compared for every respondent. As a
241 result, 42 questionnaires were removed because they were believed to contain untrustworthy
242 responses, including having only one number checked throughout the entire questionnaire, the
243 survey having been completed within two minutes, and report of a high employment position
244 despite the respondent's young age. Consequently, a total of 758 respondents were accepted for
245 further data analyses.

246

247

248 **4. Results**

249 ***4.1. Profiles of the respondents***

250 According to the results of the frequency analysis, 63.7% of the respondents were males.
251 Categories of age groups, in group-size order, were 30s (43.7%), 20s (28.1%), 40s (20.4%), and
252 50s (7.8%). In terms of educational level, approximately 60.6% of the participants had a
253 university degree. A majority of respondents were working at a supervisory level (39.3%), while
254 32.8% were at a managerial level. Slightly more than half (55.1%) of the participants worked for
255 independent, privately owned hotels, while 44.3% of the respondents worked for chain-brand
256 hotels. About 71% of them were working in front-of-house departments, whereas 28.1% of them
257 were working in back-of-house departments. In regard to duration of work in the hotel industry,
258 the largest group was that of individuals who had worked in hotels for four to nine years (51.1%),
259 followed by the group who had worked for one year to three years (25.3%), and finally the group
260 who had worked for 10 years or longer (23.6%). The locations of the respondents' work
261 residence were Texas (12.0%), New York (11.5%), California (11.3%), Florida (6.2%), and
262 Pennsylvania (4.4%). The respondents reported that their work hotels' room occupancy rate after
263 the COVID-19 outbreak was 40.4%, compared with a room occupancy rate before COVID-19 of
264 71.3%. Further detailed profiles are provided in Table 1.

265

266

[TABLE 1]

267

268 ***4.2. Exploratory factor analysis of the measurement model (first half of the data set, n = 379)***

269 The data collected were randomly split into two data sets for cross-validation (Kline,
270 2016). An exploratory factor analysis (EFA) with principal-axis factoring and promax rotation

271 was conducted for the first half of the data set ($n = 379$). As Table 1 shows, items with
272 communalities below 0.4 and factor loadings of less than 0.4 were considered for removal
273 (Stevens, 1992). Factors were selected if their eigenvalues were greater than 1.0. The reliability
274 alphas for all of the domains ranged from 0.86 to 0.94. Finally, the 24 items that were generated
275 showed a three-factor solution. The three extracted domains of occupational stressors were
276 labeled “traditional hotel-work stressors,” “unstable and more demanding hotel-work-
277 environment stressors,” and “unethical hotel-labor-practices-borne stressors.” Other constructs
278 generated a single-factor solution.

279

280

[TABLE 2]

281

282 ***4.3. Confirmatory factor analysis of the measurement model (second half of the data set, $n =$*** 283 ***379)***

284 A confirmatory factor analysis (CFA) was applied to the second half of the data set
285 ($n=379$), to confirm the factor structure that had been identified from the EFA. The results of the
286 CFA indicated a satisfactory level of fit for the overall fit indices ($\chi^2 (1000) = 1723.63$ ($p <$
287 0.001), CFI = 0.95, TLI = 0.94, RMSEA = 0.04, GFI = 0.84). The standardized factor loading of
288 each item ranged from 0.64 to 0.82, thus exceeding the threshold value of 0.5. All average
289 variance extracted (AVE) values and construct reliability values were higher than 0.5 and 0.85,
290 respectively, thus supporting convergent validity. In addition, the square roots of the AVE values
291 for each construct were greater than the correlation coefficients for the corresponding inter-
292 constructs, thus demonstrating discriminant validity.

293

294 **4.4. Structural equation modeling**

295 In Table 3, the results of our structural equation modeling (SEM) demonstrate a
296 satisfactory level of fit for the overall fit indices ($\chi^2(1034) = 3350.36$ ($p < 0.001$), CFI = 0.91,
297 TLI = 0.90, RMSEA = 0.05, GFI = 0.85). We examined a total of 14 direct relationships in this
298 study, and the results supported 10 of those 14 hypotheses. Hypotheses 1a and 2a were tested by
299 examining the relationship between traditional hotel-work stressors, job satisfaction ($\beta = 0.88$, t
300 $= 9.90$, $p < 0.001$), and organizational commitment ($\beta = 0.85$, $t = 9.80$, $p < 0.001$). The results led
301 us to reject Hypotheses 1a and 2a.

302 As expected, the influence that unstable and more demanding hotel-work-environment
303 stressors had on job satisfaction and on organizational commitment were significant and negative
304 ($\beta = -0.23$, $t = -2.81$, $p < 0.01$; $\beta = -0.26$, $t = -3.21$, $p < 0.01$, respectively); thus, Hypotheses 1b
305 and 2b were supported. In addition, unethical hotel-labor-practices-borne stressors exerted a
306 significant negative effect on job satisfaction and organizational commitment ($\beta = -0.32$, $t = -$
307 3.08 , $p < 0.01$; $\beta = -0.23$, $t = -2.23$, $p < 0.05$), thus supporting Hypotheses 1c and 2c.

308 The hypothesized influences that job satisfaction had on job performance ($\beta = 0.36$, $t =$
309 8.27 , $p < 0.001$), on subjective well-being ($\beta = 0.46$, $t = 12.53$, $p < 0.001$), and on prosocial
310 behavior ($\beta = -0.22$, $t = 5.90$, $p < 0.001$) also were significant. Thus, Hypotheses 3a, 3b, and 3c
311 were supported. In addition, the influences that organizational commitment had on job
312 performance ($\beta = 0.20$, $t = 5.05$, $p < 0.001$), on subjective well-being ($\beta = 0.37$, $t = 10.35$, $p <$
313 0.001), and on prosocial behavior ($\beta = 0.41$, $t = 10.68$, $p < 0.001$) were significant and positive.
314 Therefore, Hypotheses 4a, 4b, and 4c were supported.

338 hotel-work stressors ($t(754) = -2.11, p < 0.05$), unstable and more demanding hotel-work-
339 environment stressors ($t(754) = -2.43, p < 0.05$), and unethical hotel-labor-practices-borne
340 stressors ($t(754) = -1.96, p < 0.05$), and again greater job satisfaction ($t(754) = -3.06, p < 0.01$),
341 organizational commitment ($t(754) = -3.25, p < 0.01$), job performance ($t(754) = -2.57, p <$
342 0.05), and subjective well-being ($t(754) = -3.25, p < 0.01$), than their younger counterparts did.

343 Hotel employees who worked in back-of-house departments had slightly higher job
344 satisfaction than the employees who worked in front-of-house departments had ($t(754) = -2.08,$
345 $p < 0.05$). In addition, hotel employees who worked in independent, privately owned hotels had
346 higher perceived traditional hotel-work stressors ($t(754) = -2.26, p < 0.05$) and unethical hotel-
347 labor-practices-borne stressors ($t(754) = -2.97, p < 0.01$), and again greater job satisfaction (t
348 $(754) = -3.53, p < 0.001$), organizational commitment ($t(754) = -2.97, p < 0.01$), and prosocial
349 behavior ($t(754) = -2.71, p < 0.01$) than their counterparts in chain hotels had.

350

351

[TABLE 4]

352

353 *4.6. Hotel employees' perceptions of occupational stressors and consequences before and after* 354 *the COVID-19 pandemic outbreak*

355 Hypothesis 6 was tested by examining the difference between hotel employees'
356 occupational stressors and their consequences before and after the COVID-19 pandemic
357 outbreak. A significant difference between the before-outbreak and after-outbreak values was
358 observed at the .001 level for the two new occupational stressors and their consequences. Thus,
359 Hypothesis 6 was supported. Table 5 shows that the traditional-hotel-work stressors, such as
360 excessive workload, long working hours, work demands on private life, repetitive work, lack of

361 time with family, and poor cooperation with other staff/departments, were statistically higher
362 before the onset of the pandemic than after it had taken hold.

363 In contrast, both the unstable and more demanding hotel-work-environment stressors and
364 the unethical hotel-labor-practices-borne stressors were statistically lower before the onset of
365 COVID-19 than they were after the pandemic had taken root. In addition, hotel employees’
366 attitudes and behaviors were statistically different before the onset of the pandemic than they
367 were after it. Table 4 shows that job satisfaction, organizational commitment, job performance,
368 subjective well-being, and prosocial behavior had each significantly decreased after the
369 pandemic took hold, whereas turnover intention was significantly higher after COVID-19 had
370 become quite prevalent. The detailed information is visually showcased in Figure 1.

371

372 **[TABLE 5, FIGURE 1]**

373

374 **5. Discussion**

375 The results of this study indicate that hotel employees who had high perceived levels of
376 traditional hotel work stressors still experienced positive job satisfaction and organizational
377 commitment. This result differs from our expectation, which was based on a number of previous
378 studies that had shown that employees’ occupational stress was likely to reduce their job
379 satisfaction and organizational commitment (Chan et al., 2015; Tiyce et al., 2013; Yousaf et al.,
380 2019). However, those earlier studies did not consider an unpredicted economic recession, which
381 likely affected our results. As a result of the coronavirus pandemic, the underemployment rate
382 has surged and hotel employees’ incomes have been substantially curtailed by a reduction in staff
383 welfare. It may be that in our study, the hotel employees were willing to ignore the traditional

384 hotel-work stressors during a global economic crisis because those stressors were compensated
385 for by the employees' ability to still earn income for their livelihood in the midst of a time of
386 slashed employment. Perhaps even more importantly, it may be that having such stresses
387 signified an effort by the hotel to stand shoulder to shoulder with its employees to ride out the
388 current difficult times, and consequently such employer support generated job satisfaction and
389 organizational commitment.

390 This study also identified two new domains of hotel occupational stressors (unstable and
391 more demanding hotel-work-environment stressors, and unethical hotel-labor-practices-borne
392 stressors) that occurred after the COVID-19 pandemic had created an extreme state of anxiety
393 and had lowered job satisfaction and organizational commitment. These results are confirmed by
394 previous studies that demonstrated the negative effect of occupational stress on employees'
395 attitude (Cheng and Yi, 2018; Kim et al., 2015; Yang and Lau, 2019).

396 Second, the effects that job satisfaction and organizational commitment exert on
397 employee behavior have already been demonstrated (Aydın and Kalemci Tüzün, 2019; Brissette
398 et al., 2002; Yousef, 2000; Yurcu and Akinci, 2017) and shown to reflect the original idea of the
399 social exchange theory, which states that job satisfaction and organizational commitment are
400 positively associated with hotel employees' constructive behaviors (Garba et al., 2018).

401 Nevertheless, the findings of this study are inconsistent with previous studies in which job
402 satisfaction and organizational commitment were negatively associated with turnover intention
403 (Hsiao et al., 2020; Kim et al., 2017; Koo et al., 2019; Wen et al., 2020). Some hotel employees
404 might feel that quitting their job is not an ideal option because during times of imminent
405 economic risk it is extremely difficult to find a new job with the same remuneration package.

406 Therefore, the hotel employees in our study who reported a low level of job satisfaction and
407 organizational commitment did not necessarily have a higher turnover intention.

408 Third, hotel employees' sociodemographic and job-related variables played a significant
409 role in the respondents' perceived occupational stressors and their consequences pre- and post-
410 COVID-19 outbreak. In our study, the above-age-40 managerial-level employees showed a
411 higher job satisfaction and organizational commitment than the entry and supervisory employees
412 did, even though they also had a higher level of perceived occupational stress. Two feasible
413 explanations exist. First, older-age managerial employees are more likely to enjoy their job and
414 consider their current employment to be a long-term career through which they can achieve self-
415 accomplishment, such as enhanced opportunities for career development (Lu, Lu, Gursoy, and
416 Neale, 2016). Second, older-age managerial employees are more experienced than their younger
417 counterparts are in managing stressful situations, which could explain their higher satisfaction
418 and job commitment even in a situation of higher occupational stressors. In addition, this study's
419 respondents who were working in independent, privately owned hotels exhibited stronger job
420 satisfaction, commitment, and prosocial behavior than their chain-employed counterparts did,
421 which is inconsistent with the findings of a previous study (Karatepe and Uludag, 2008). The
422 most plausible explanation for that difference according to hotel type is that chain hotels have to
423 follow strict standards and guidelines issued from their international corporate offices, whereas
424 the employees who work in independent, privately-owned hotels enjoy flexible policies, and that
425 situation can easily create the sense of employees sharing life's ups and downs with the hotel
426 business owners.

427 Fourth, it is important to note that the traditional hotel-work stressors decreased
428 significantly after the onset of COVID-19, meaning that after the outbreak of the pandemic, hotel

429 employees reacted less sensitively to the traditional hotel-work stressors. The most plausible
430 explanation for that change is that the hotel business was critically affected by stringent
431 restrictions on tourist movements, and also by several social distancing measures, such as
432 shelter-in-place orders, travel restrictions, bans on large social gatherings, and closed
433 entertainment venues (Courtemanche et al., 2020). For example, permanent hotel employees
434 were compelled to accept unpaid leave, while temporary hotel employees were forced to cut
435 back on their working hours (Edgecliffe-Johnson, 2020, March 18). Unstable job security and
436 paranoia about their work environment, such as the prospect of immediate joblessness, reduced
437 pay, or a change of work department, undoubtedly helped current staff appreciate their jobs
438 despite also perceiving traditional hotel-work-environment stressors.

439

440 **6. Academic and practical implications**

441 This study's findings have important academic implications. First, this research was
442 novel in revealing new occupational stressors and their effects on hotel employees after the
443 COVID-19 pandemic outbreak. In addition, this was the first empirical study in the hotel
444 industry that compared hotel employees' occupational stressors and their consequences before
445 and after the onset of the COVID-19 pandemic, and that investigated the relationships between
446 those stressors and their consequences and the employees' sociodemographic and job-related
447 variables.

448 Second, this study suggests a new factor/domain structure for occupational stressors.
449 Previous studies indicated a six-dimensional framework of occupational stressors that pertain to
450 conflicts with home life, difficult tasks and unsatisfactory pay, conflicts arising from job
451 responsibility, unfair treatment, a lack of support, and the organizational culture (Hwang et al.,

452 2013; Hwang et al., 2014). However, in the current study we loaded those items onto one single
453 factor that we labeled traditional hotel-work stressors. We then identified two new domains of
454 occupational stressors: unstable and more demanding hotel-work-environment stressors, and
455 unethical hotel-labor-practices-borne stressors.

456 Third, this study revealed that the traditional hotel-work stressor domain positively
457 affected job satisfaction and organizational commitment as a reflection of the special situation in
458 which most employees are fearful. However, our findings supported the notion that stressors can
459 be positive factors for determining an enhancement of job performance and motivation to work
460 hard (McGowan et al., 2006).

461 This study also has several meaningful practical implications. First, it showed how
462 clearly essential it is to identify employee stressors. In our findings, unstable and more-
463 demanding hotel-work-environment stressors received the highest score of occupational stressors
464 after the onset of the COVID-19 pandemic. Therefore, hotel management should identify and
465 consider diverse remedies for alleviating such occupational stress. For example, hotel
466 management must communicate with its employees about the hotel's situation, abide by their
467 own promises, and simplify the documentation process through an electronic checking system.

468 Second, unethical hotel-labor-practices-borne stressors had the second-highest post-
469 COVID-19 outbreak stressor score, thus highlighting the importance of organizational norms and
470 fulfillment of hotel employees' expectations. Even though cost-saving measures may be
471 inevitable, hotel management must consider the hotel employees' psychological perceptions and
472 reactions to situations of insecure employment. For example, before taking unfavorable actions,
473 hotel management needs to approach its internal customers using effective communication

474 messaging that thoroughly explains the hotel’s emergent financial situation and prospects and
475 that solicits their understanding.

476 Third, the respondents ranked traditional hotel-work stressors below the other two
477 stressor domains. This finding accompanies the fact that after the onset of the COVID-19 global
478 health risk, the traditional hotel-work stressors were positively associated with both job
479 satisfaction and organizational commitment. A logical explanation would be that hotel
480 employees were grateful to have a job and therefore accepted the conventional stresses, such as
481 long working hours, excessive workload, and repetitive work. Thus, hotel management should
482 make serious efforts to help employees weather the unprecedented situation through job sharing,
483 changes in work shifts, changes in work departments, training, and competency development.

484 Fourth, job satisfaction and organizational commitment did not explain the low turnover
485 intention following the onset of the COVID-19 pandemic. That may be explained by the fact that
486 hotel employees are more fearful of job security than they are motivated by job dissatisfaction or
487 weak organizational commitment. Furthermore, job satisfaction and organizational commitment
488 are still important predictors of employees’ behavior, such as job performance, subjective well-
489 being, and prosocial behavior. Therefore, hotel management must develop and quickly provide
490 relevant stress-management programs, such as mentoring, reading of humanity books,
491 consultations, team building, stress-release workshops, and outings.

492 Finally, the perceived occupational stressors and their consequences varied across the
493 employees’ sociodemographic and job-related variables. This finding is important because hotel
494 management will need to offer a variety of stress-relief programs that address the features
495 associated with the most influential variables. For example, in the comparison of the stress levels
496 before and after the onset of the pandemic, females, seniors, and managerial staff all showed

497 more-elevated levels of stress than their counterparts did. Therefore, management will need to
498 care for the most-affected groups, and in particular, for senior employees who are concerned
499 about retirement and family obligations.

500

501 **7. Conclusions and suggestions for future study**

502 The COVID-19 pandemic has caused severe financial deterioration in the hotel industry,
503 and the ecosystem of hotel human resources has been greatly affected. Even more important is
504 the fact that the structure of occupational stressors has changed. After the onset of the COVID-19
505 pandemic, we identified the existence of three domains of occupational stressors: traditional
506 hotel-work stressors, unstable and more demanding hotel-work-environment stressors, and
507 unethical hotel-labor-practices-borne stressors. Traditional hotel-work stressors turned out to be
508 a positive predictor of job satisfaction and organizational commitment, whereas the other two
509 stressors were negatively associated with job satisfaction and commitment. In addition, job
510 satisfaction and organizational commitment positively affected job performance, subjective well-
511 being, and prosocial behavior. On the other hand, job satisfaction and organizational
512 commitment were no longer predictors of turnover intention. In addition, occupational stressors
513 and their consequences were found to exert significantly different influences pre-COVID-19
514 versus post-COVID-19 outbreak, in association with the employees' sociodemographic and job-
515 related variables. This finding provides important practical implications to hotel management for
516 how to handle the changing ecosystem of hotel human resources.

517 This study is involved with some limitations. First, it depends on hotel employees' self-
518 report that is reliant on memory. Now that they must evaluate their perceived occupational
519 stressors before and after the COVID-19 pandemic, memory decay can incur accurate response.

520 However, the limitation can be mitigated because it was a gap of about two months between the
521 spread of the pandemic in the United States and the survey time. Meanwhile, conducting a
522 longitudinal analysis is suggested to validate the results of this study. Second, the data were
523 collected only in the U.S., where the largest number of confirmed cases of COVID-19 were
524 reported. A future study will need to use data from other countries in a comparison of the effects
525 of the pandemic on hotel job security. Furthermore, a future study will need to conduct in-depth
526 interviews with employees to identify latent psychological factors that could be influential,
527 because our questionnaire was limited to include individually peculiar items. Finally, because
528 this study dealt with a current situation of unstable employment conditions, future research
529 should continue to identify substantial long-term plans and systems for employment and job
530 security.

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Table 1. Profiles of the respondents ($N = 758$)

Variable	Category	Percentage (%)
Gender	Female	36.0
	Male	63.7
	Others	0.3
Age	20s	28.1
	30s	43.7
	40s	20.4
	50s or older	7.8
Position level	Entry-level	25.6
	Supervisory-level	39.3
	Managerial-level	32.8
	Executive-level	2.3
Educational level	High school or less	4.7
	Post-secondary school /Associate Degree/ Diploma (etc...)	9.4
	University degree	60.6
	Master degree and above	25.3
Hotel type	Independent privately owned hotel	55.1
	Chained-brand hotel	44.3
	Others	0.6
Working department	Front of house	68.0
	Back of house	31.3
	Others	0.7
Years of experience in hotel industry	Less than 4 years	25.3
	4 - 9 years	51.1
	Longer than 9 years	23.6
Hotels' room occupancy rate	Before the COVID-19 outbreak	71.3
	After the COVID-19 outbreak	40.4
Location of working hotel	Texas	12.0
	New York	11.5
	California	11.3
	Florida	6.2
	Pennsylvania	4.4
	Ohio	2.9
	Washington	2.6
	North Carolina	2.1
	Arizona	2.0
	Chicago	2.0
	Colorado	2.0
	Illinois	2.0
	New Jersey	2.0
	Massachusetts	1.7
	Michigan	1.7
	Virginia	1.7
Others	31.9	

Table 2. Results of EFA (n=379)

Domains and Constructs	Communality	Factor loading	Mean
Domain 1: Traditional hotel-work stressors (Eigenvalue: 12.14; Variance explained: 50.58%; Cronbach's $\alpha = 0.94$; Grand mean: 3.96)			
Excessive workload	0.70	0.88	4.00
Long working hours	0.68	0.87	3.90
Tight working time	0.62	0.86	4.08
Work demands on private life	0.66	0.83	3.91
Emotional stress from customers	0.53	0.72	3.95
Repetitive work	0.61	0.62	3.84
Too much job variety	0.65	0.61	4.28
Lack of time with family	0.65	0.56	3.84
Demands of a better personal performance	0.65	0.53	3.88
Poor cooperation with other staff/departments	0.59	0.50	3.91
Lack of involvement in decision making	0.58	0.43	3.96
Domain 2: Unstable and more demanding hotel-work-environment stressors (Eigenvalue: 2.10; Variance explained: 6.99%; Cronbach's $\alpha = 0.90$; Grand mean: 4.48)			
Concerns about lay off	0.68	0.88	4.62
Staff shortage	0.64	0.82	4.38
Concerns about salary cut	0.62	0.77	4.64
Unstable job environment	0.58	0.77	4.56
Emotional stress from current negative news	0.64	0.68	4.42
Insufficient resources for work (e.g., offering masks)	0.58	0.61	4.42
Frequent reporting/documentation about hygiene issues	0.58	0.57	4.37
Demanding hygiene policies or guidelines	0.55	0.53	4.44
Domain 3: Unethical hotel-labor-practices-borne stressors (Eigenvalue: 1.06; Variance explained: 2.85%; Cronbach's $\alpha = 0.87$; Grand mean: 4.09)			
Forced advanced annual leave	0.77	0.96	4.00
Forceful labor policies	0.71	0.81	4.06
Forced unpaid leave	0.56	0.62	4.15
Demand to replace the job duties with other departments (e.g., buffet restaurant, guest relations)	0.66	0.59	4.17
Demand to submit new ideas/proposals for attracting new customers every day.	0.59	0.50	4.08
Job satisfaction (Eigenvalue: 3.09; Variance explained: 77.18%; Cronbach's $\alpha = 0.90$; Grand mean: 4.38)			
I am enthusiastic about my job in this hotel.	0.78	0.89	4.35
I feel a great sense of personal satisfaction with my line of work in this hotel.	0.78	0.88	4.39
I am satisfied with my present line of work in this hotel.	0.78	0.88	4.50
I am happy to have this job in this hotel.	0.75	0.87	4.27
Organizational commitment (Eigenvalue: 3.12; Variance explained: 78.02%; Cronbach's $\alpha = 0.91$; Grand mean: 4.31)			
I feel a strong sense of belonging in this hotel.	0.79	0.89	4.35
I feel like part of the family at this hotel.	0.79	0.89	4.37
I feel emotionally attached to this hotel.	0.78	0.88	4.31
I feel happy to spend the rest of my career in this hotel.	0.76	0.87	4.21
Job performance (Eigenvalue: 3.24; Variance explained: 56.46%, Cronbach's $\alpha = 0.86$; Grand mean: 4.87)			
In this hotel, I have suggested ways to make my work unit more effective.	0.71	0.85	4.86
In this hotel, I have coordinated my work with coworkers.	0.71	0.84	4.76
In this hotel, I have initiated better ways of doing my core tasks.	0.69	0.83	4.81
In this hotel, I have presented a positive image of the organization to other people (e.g., clients).	0.66	0.81	4.89
In this hotel, I have carried out the core parts of my job well.	0.47	0.68	5.02

Subjective well-being (Eigenvalue: 3.62; Variance explained: 65.68%, Cronbach's $\alpha = 0.90$; Grand mean: 4.40)			
The conditions of my life are excellent.	0.71	0.84	4.41
In most ways my life is close to ideal.	0.71	0.84	4.33
I am satisfied with my life.	0.71	0.84	4.45
So far, I have gotten the important things I want in life.	0.60	0.77	4.58
If I could live my life again, I would change almost nothing.	0.56	0.75	4.21
Prosocial behavior (Eigenvalue: 2.47; Variance explained: 73.57%, Cronbach's $\alpha = 0.89$; Grand mean: 4.42)			
I like to spend more time on community services and volunteerism.	0.83	0.91	4.43
I like to be involved with community services and volunteerism.	0.74	0.86	4.37
I like to support donations/ charity activities for underprivileged people (e.g., donation, fundraising).	0.64	0.80	4.47
Turnover intention (Eigenvalue: 2.34; Variance explained: 67.10%; Cronbach's $\alpha = 0.86$; Grand mean: 4.35)			
In this hotel, I often think about quitting my present job.	0.70	0.84	4.34
In this hotel, I intend to search for a new job within the next 12 months.	0.68	0.82	4.42
In this hotel, I have searched for a new job during the past 12 months.	0.63	0.80	4.29

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Table 3. Direct Path for the Structural Model ($N=758$)

Hypothesis	Regression paths	Standard coefficient	t -value	Decision
H1a	OS1 → JS	0.88	9.90***	Reject (because of different sign)
H1b	OS2 → JS	-0.23	-2.81**	Accept
H1c	OS3 → JS	-0.32	-3.082**	Accept
H2a	OS1 → OC	0.85	9.80***	Reject (because of different sign)
H2b	OS2 → OC	-0.26	-3.21**	Accept
H2c	OS3 → OC	-0.23	-2.23*	Accept
H3a	JS → JP	0.36	8.27***	Accept
H3b	JS → SWB	0.46	12.53***	Accept
H3c	JS → PSB	0.22	5.90***	Accept
H3d	JS → TI	0.02	0.41	Reject
H4a	OC → JP	0.20	5.05***	Accept
H4b	OC → SWB	0.37	10.35***	Accept
H4c	OC → PSB	0.41	10.68***	Accept
H4d	OC → TI	-0.07	-1.59	Reject

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

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Table 4. Paired *t*-tests to Investigate Mean Differences Across Sociodemographic and Job-related Variables After the Onset of COVID-19

Domains and Constructs	Gender			<i>t</i> -value
	Male (M) (<i>n</i> =483)	Female (F) (<i>n</i> =273)	Difference (M-F)	
Traditional hotel-work stressors (Domain 1)	3.86	4.14	-0.28	-2.57*
Unstable and more demanding hotel-work-environment stressors (Domain 2)	4.36	4.87	-0.52	-5.08***
Unethical hotel-labor-practices-borne stressors (Domain 3)	4.02	4.26	-0.24	-2.03*
Job satisfaction	4.34	4.28	0.06	0.58
Organizational commitment	4.28	4.15	0.12	1.03
Job performance	4.80	4.96	-0.15	-1.50
Subjective well-being	4.32	4.33	-0.02	-0.15
Prosocial behavior	4.30	4.45	-0.15	-1.18
Turnover intention	4.11	4.44	-0.33	-2.60**

Domains and Constructs	Position level			<i>t</i> -value
	Entry and supervisory level (E) (<i>n</i> =492)	Managerial level and above (M) (<i>n</i> =266)	Difference (E-M)	
Traditional hotel-work stressors (Domain 1)	3.79	4.27	-0.48	-4.43***
Unstable and more demanding hotel-work-environment stressors (Domain 2)	4.50	4.62	-0.12	-1.12
Unethical hotel-labor-practices-borne stressors (Domain 3)	3.94	4.42	-0.48	-4.06***
Job satisfaction	4.12	4.69	-0.57	-5.28***
Organizational commitment	3.97	4.71	-0.75	-6.72***
Job performance	4.81	4.95	-0.14	-1.39
Subjective well-being	4.13	4.65	-0.52	-4.90***
Prosocial behavior	4.21	4.62	-0.40	-3.39***
Turnover intention	4.25	4.19	0.06	0.47

Domains and Constructs	Age			<i>t</i> -value
	20s and 30s (A) (<i>n</i> =544)	40 and older (B) (<i>n</i> =214)	Difference (A-B)	
Traditional hotel-work stressors (Domain 1)	3.89	4.14	-0.24	-2.11*
Unstable and more demanding hotel-work-environment stressors (Domain 2)	4.47	4.74	-0.27	-2.43*
Unethical hotel-labor-practices-borne stressors (Domain 3)	4.04	4.29	-0.25	-1.96*
Job satisfaction	4.21	4.58	-0.37	-3.06**
Organizational commitment	4.11	4.52	-0.41	-3.25**
Job performance	4.78	5.06	-0.28	-2.57*
Subjective well-being	4.21	4.59	-0.39	-3.25**
Prosocial behavior	4.29	4.53	-0.24	-1.85
Turnover intention	4.26	4.15	0.11	0.78

Domains and Constructs	Work department			<i>t</i> -value
	Front-of-house (F) (<i>n</i> =541)	Back-of-house (B) (<i>n</i> = 212)	Difference (F-B)	
Traditional hotel-work stressors (Domain 1)	3.95	3.98	-0.03	-0.25
Unstable and more demanding hotel-work-environment stressors (Domain 2)	4.58	4.44	0.14	1.23
Unethical hotel-labor-practices-borne stressors (Domain 3)	4.08	4.17	-0.09	-0.70
Job satisfaction	4.25	4.50	-0.25	-2.08*
Organizational commitment	4.18	4.37	-0.18	-1.44

Job performance	4.84	4.92	-0.09	-0.79
Subjective well-being	4.26	4.47	-0.21	-1.72
Prosocial behavior	4.31	4.48	-0.17	-1.32
Turnover intention	4.28	4.09	0.19	1.38

Domains and Constructs	Hotel type			<i>t</i> -value
	Chain hotel (C) (<i>n</i> =418)	Independent hotel (I) (<i>n</i> = 336)	Difference (C-I)	
Traditional hotel-work stressors (Domain 1)	3.85	4.09	-0.24	-2.26*
Unstable and more demanding hotel-work-environment stressors (Domain 2)	4.55	4.53	0.03	0.28
Unethical hotel-labor-practices-borne stressors (Domain 3)	4.00	4.23	-0.23	-2.06*
Job satisfaction	4.15	4.53	-0.38	-3.53***
Organizational commitment	4.08	4.42	-0.34	-2.97**
Job performance	4.84	4.90	-0.06	-0.63
Subjective well-being	4.25	4.41	-0.16	-1.51
Prosocial behavior	4.21	4.53	-0.32	-2.71**
Turnover intention	4.21	4.24	-0.03	-0.24

****p* < 0.001, ***p* < 0.01, **p* < 0.05.

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Table 5. Paired *t*-tests to Identify Mean Differences between Pre-COVID-19 and Post-COVID-19 Outbreak Occupational Stressors and Their Consequences (*N*=758)

Domains and Constructs	Before and After the Onset of COVID-19			<i>t</i> -value
	Before (B)	After (A)	Difference (B-A)	
Traditional hotel-work stressors (Domain 1)	4.46	3.96	0.50	7.36***
Unstable and more demanding hotel-work-environment stressors (Domain 2)	3.89	4.54	-0.65	-8.51***
Unethical hotel-labor-practices-borne stressors (Domain 3)	3.84	4.11	-0.27	-3.24**
Job satisfaction	5.21	4.32	0.89	12.67***
Organizational commitment	5.03	4.23	0.80	10.33***
Job performance	5.23	4.86	0.37	5.67***
Subjective well-being	5.05	4.32	0.73	10.23***
Prosocial behavior	4.87	4.36	0.51	6.41***
Turnover intention	3.98	4.23	-0.25	-2.682**

****p* < 0.001, ***p* < 0.01, **p* < 0.05.

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