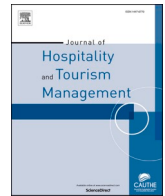




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# Formation of hotel employees' service innovation performance: Mechanism of thriving at work and change-oriented organizational citizenship behavior

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## ABSTRACT

Building upon self-determination theory and social exchange theory, this study proposes a research framework and examines the formation of service innovation performance. Data was collected during the COVID-19 pandemic in 2021. A total of 374 hotel employees from 92 departments were collected in Taiwan. The results revealed that both leader-member exchange (LMX) and coworker support exert positive effects on thriving at work and change-oriented organizational citizenship behavior (OCB). Besides, thriving at work exerted positive effects on change-oriented OCB, and change-oriented OCB exerted positive effects on service innovation performance. Furthermore, thriving at work partially mediated (1) the relationship between LMX and change-oriented OCB, and (2) the relationship between coworker support and change-oriented OCB.

## 1. Introduction

The COVID-19 outbreak in 2020 has dramatically damaged the hospitality industry (Hsieh et al., 2021; Jung et al., 2021). The hospitality industry is a labor-intensive industry, and hospitality organizations have been forced by the pandemic to implement staff cuts to control personnel cost. Consequently, employees have developed a sense of job insecurity, resulting in a high risk of turnover (Jung et al., 2021). To survive in the market with increasing uncertainties, numerous hospitality organizations have utilized creativity and service innovation to maintain competitive advantages (Hoang et al., 2022; Liang et al., 2022; Sharma et al., 2021; Yang et al., 2021). Therefore, service innovation performance, which refers to employee behaviors contributing to service innovation (Hu et al., 2009), becomes a contemporary focus among hoteliers (Sharma et al., 2021; Yang et al., 2022). To contribute knowledge to one of the most important existing focuses in the hospitality industry, the purpose of this study is to propose and examine the formation of hotel employees' service innovation performance.

Luthans et al. (2008) proposed the concept of positive organizational behaviors (POBs), which was derived from theories on positive psychology. Following the emphases on POBs and positive psychology over the past two decades, one most common concern about employees in the workplace is whether they feel energetic and happy while working

(Choi, 2007; Li et al., 2016; Niessen et al., 2012), rather than sacrificing their mental health for work performance. In line with this trend, this study proposes the mechanism of thriving at work and change-oriented organizational citizenship behavior (OCB) as the main process of forming hotel employees' service innovation performance. Thriving at work is an emerging research topic that few studies on organizational behavior have explored (Niessen et al., 2012). Based on self-determination theory (SDT; Deci & Ryan, 2000), Spreitzer et al. (2005) developed a comprehensive exploratory study on thriving at work by applying a socially embedded model. SDT focuses on the basis of the need-satisfaction for autonomy, competence, and relatedness, and explains the core process of how individuals evolve their inner resources for behavioral self-regulation and personal development (Ryan & Deci, 2000; Ryan et al., 1997; Shulga, 2021). Spreitzer et al. (2005) explained that thriving at work is a psychological state that comprises the combined feelings of vitality and learning. The work performance of employees is affected when they languish or thrive psychologically. Hence, thriving employees enjoy progress and momentum, and have the tendency to conduct change-oriented OCB, which refers to employees' citizenship behavior to support needed changes in an organization (Choi, 2007; Li et al., 2016).

Currently, only a few hospitality studies have examined the effects of thriving at work on work-related outcomes. Wu and Chen (2019) used

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statistical validation methods to verify the positive relationships among shared leadership in hotel organizations, employees thriving at work, and employee engagement in prosocial behaviors. Chang and Busser (2020) conducted a quantitative study on the relationship between thriving at work and career retention in the hospitality industry. In management academy, Kleine et al. (2020) have conducted a meta-analysis and literature review to discuss the antecedents and consequences of thriving at work. Obviously, the empirical hospitality research on thriving at work remains limited, especially being thriving during the COVID-19 pandemic. In this study, we propose that employees who are thriving at work may have the motivation to conduct change-oriented OCB, and therefore resulting in their dedication on service innovation performance.

On the other hand, we add the perspective of social exchange theory (SET) (Blau, 1964; Cropanzano & Mitchell, 2005) to explain the formation of service innovation performance. Under the operations of human behaviors, social exchanges occur from exchanges in society when individuals expect returns from others (Blau, 1964). Some previous studies of thriving have utilized SET to explain the context of thriving (Zhang, 2018; Zhang et al., 2019). As such, the present study posits that the reinforcement of thriving at work is largely based on the quality of relationships as perceived by individuals and in interpersonal interactions (e.g., interactions between supervisors and their subordinates).

Hence, based on SET, this study further proposes that leader-member exchange (LMX) and coworker support as antecedents of thriving at work for two reasons. First, LMX allow a manager to develop various social exchange relationships with various subordinates (Dienesch & Liden, 1986; Graen & Schiemann, 1978; Lee, 2005)—when a manager and their subordinate establish a high-quality relationship that is based on mutual trust and commitment, the manager can encourage the subordinate to undertake more tasks and responsibilities, and the subordinate can receive more assistance, encouragement, and support from the manager while accomplishing their tasks (Erdogan & Enders, 2007). This high-quality relationship can further vitalize employees to complete work tasks. On the other hand, high-quality relationships and trust between managers and subordinates also drive subordinates to engage in learning activities involving knowledge exploration or sharing. Second, when employees perceive that they are receiving support from their peers, they are inclined to continue learning and pursuing self-growth with more vitality; this phenomenon can also motivate employees to complete work tasks using untested or novel methods (Luthans et al., 2008).

Fig. 1 shows the research framework of this study. Under the theoretical support of SDT and SET, we argue that LMX and coworker

support are two main sources of social relations to support hotel employees' thriving at work. Later, thriving at work motivates employees to perform change-oriented OCB, which then leads to service innovation performance. This proposed model significantly contributes to knowledge creation in organizational behavior and hospitality management by showcasing the antecedents and consequences of thriving at work, especially its relationships with change-oriented OCB and service innovation performance. Additionally, we offer a pioneering view that thriving at work as a critical mediating role to connect social exchange resources (i.e., LMX and coworker support) and change-oriented OCB. The ensuing sections include literature review, methods, results, and discussion.

## 2. Literature review

### 2.1. Antecedents of thriving at work

Thriving at work is defined by Spreitzer et al. (2005) as the sense of vitality and the sense of learning experienced by individuals at work. Nix et al. (1999) noted that vitality refers to the feeling of owning available energy. Niessen et al. (2012) argued that affective vitality is synonymous with vigor and the subjective experience of liveliness and energy. Consolidating the definitions of thriving at work, Porath et al. (2012) inferred that learning and vitality are two constructs in the psychological process of personal growth that cover affective and cognitive properties. If an employee commits to learn but has limited enthusiasm and support, the employee may feel the learning journey as meaningless and lack of thriving. Spreitzer et al. (2005) explained that thriving is a symptom of reduced stress, and may differ due to various factors such as psychological state, mental resources, and the contextual features of a workplace. In this study, we propose LMX and coworker colleagues as the major intraorganizational factors that improve employees' thriving at work.

#### 2.1.1. LMX

The concept of LMX is originated from the concept of the vertical dyad linkage (VDL) between leaders and members proposed by Dansereau et al. (1975). In contrast to average leadership style perspectives, LMX posits that because of time and resource constraints, leaders develop heterogeneous exchange relationships with various members through their continual engagement in role interactions (Dienesch & Liden, 1986). According to the logic of social exchange perspective (Cropanzano & Mitchell, 2005), employees with positive and high-quality exchange relationships with their supervisors are identified as in-group and regarded by their supervisors as being on the side of the

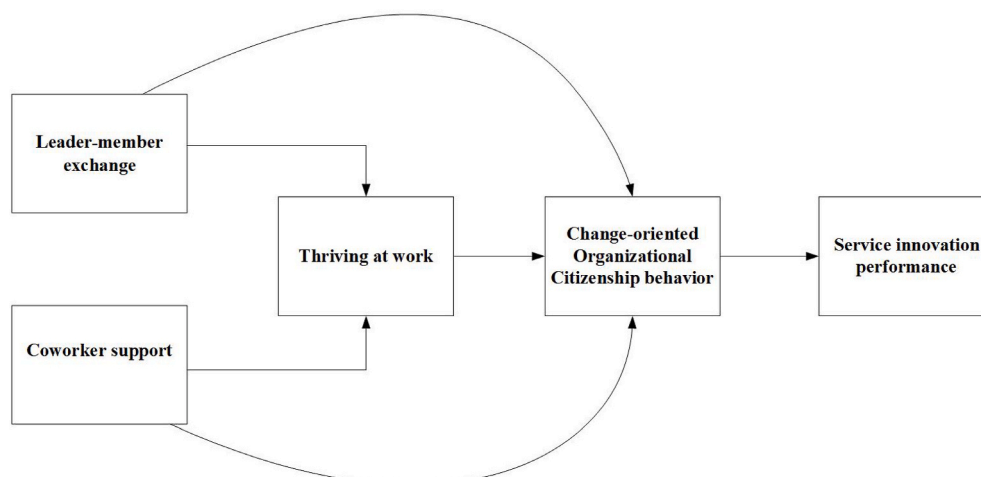


Fig. 1. The research framework.

supervisors. These exchange relationships are characterized via mutual respect, commitment, trust, and obligations (Brower et al., 2000). During the development of LMX, supervisors determine how much they empower employees based on each employee's reliability and executive skills (Bauer & Green, 1996). Employees who feel empowered may pay back their leaders' support by good work performance (Bauer & Green, 1996).

This study posits that LMX has a major effect on the job vitality of employees. In their qualitative study, *Shraga and Shirom (2009)* argued that for employees, maintaining a positive and interactive relationship with their manager (e.g., receiving praise or positive feedback) is a major factor in increasing employee thriving. Therefore, when high-quality LMX exists in workplace, employees gain positive work experiences of care, support, and empowerment. These positive work experiences support employees to develop self-efficacy and gain willingness to undertake work-related risks (*Graen & Cashman, 1975*).

Furthermore, employees with high LMX are more willing to engage in challenging job tasks when they seek to improve performance (*Janssen & Van Yperen, 2004*). Relatedly, *Quinn (2007)* asserted that the higher the quality of the relationship between two individuals, the more energized they feel. *Akgunduz et al. (2022)* also indicated that the high quality LMX has positive effects on employee advocacy. Therefore, when employees with high LMX normally feel motivated at work and are full of vitality (*Atwater & Carmeli, 2009*). Furthermore, active social interactions between managers and employees can contribute to the establishment of relationships of mutual respect and trust, which can help to create a work atmosphere that fosters work thriving among employees (*Kleine et al., 2020*). Therefore, we propose.

**H1.** LMX is positively related to thriving at work.

### 2.1.2. Coworker support

Derived from *Cobb's (1976)* definition of social support, coworker support refers to "information leading one to believe that he/she is cared for, loved, esteemed, and a member of a network of mutual obligations" (p. 300). *House (1981)* classified social support into four categories: emotional support, instrument support, informational support, and appraisal support. *Kim et al. (1996)* further proposed three forms of support from the perspective of social contexts, namely, (1) coworker support, which pertains to work group cohesion and primary work groups; (2) supervisor support, which involves a line manager who conducts performance evaluations; and (3) kinship support, which pertains to the support from one's family, particularly one's spouse. Studies have argued that coworker support reinforces group cohesion among coworkers, which effectively reduces sickness presenteeism and emotional exhaustion (*Baeriswyl et al., 2017*). Other studies have also reported that coworker support effectively reduces job stress (*Guchait et al., 2016*) and enhances the employees' self-esteem (*Goodwin et al., 2004*).

Consequently, when employees feel that they are supported by their coworkers, their positive mental state can get improved, and the employees may become more inclined to attempt unproven or novel methods at work when needed to complete their job tasks (*Luthans et al., 2008*). During the epidemic, social support processes such as coworker support can cause respectful interactions, which can help hotel employees learn to appreciate diverse viewpoints (*Colmekcioglu et al., 2022*). Therefore, supportive coworkers can not only help individuals to cope with adversity and to undertake necessary growth but also motivate them to seek new knowledge and skills (*Kleine et al., 2020*). Based on the above arguments, this study holds that when employees feel that they are supported by coworkers, they gain positive affective and cognitive feelings and are willing to continue learning and growing at work. Hence, we propose.

**H2.** Employees' perceived coworker support is positively related to thriving at work.

## 2.2. Change-oriented OCB

Change-oriented OCB covers meanings such as voice, innovation behavior, personal initiative, and taking charge (*Choi, 2007; Seppala et al., 2012*). Change-oriented OCB represent efforts by an individual to actively identify and implement changes in work policies, methods, and processes to improve present work state and performance (*Choi, 2007*). *Van Dyne et al. (1995)* asserted that helping and compliance are defined as extra-role behaviors that serve to maintain and reinforce existing work relationships and task processes, and thereby improve performance. *Podsakoff et al. (2000)* asserted that individual initiative is a voluntary action that improves task or organizational performance through creativity or innovation. When an environment subsequently becomes more competitive and less predictable, employees must demonstrate more initiative, agility, and innovation when they are handling work-related tasks rather than complacency with respect to existing work relationships and delegated tasks (*Bettencourt, 2004*). The OCBs of hotel employees are crucial for organizational management in hotels (*Yu et al., 2021*). To foster change-oriented OCB, studies have proposed strategies such as a having a strong vision or innovation culture (*Choi, 2007*), promoting personality traits (*Nikolaou et al., 2008; Sung & Choi, 2009*), and encouraging openness to change (*Seppala et al., 2012*). *Kleine et al. (2020)* and *Kabat-Farr and Cortina (2017)* indicated that employees have the natural tendency to help colleagues when they aware that they have learned and accumulated sufficient work skills and knowledge.

Being in a state of learning and growth helps an employee identify problems and develop new solutions for various problems at work. Building on *Argyris and Schon (1978)* that learning includes single-loop and double-loop learning, *Carmeli (2007)* contended that learning behaviors (including failed learning behaviors) not only involve single-loop learning (i.e., the discovery and correction of errors) but also double-loop learning behaviors that coping experiences toward challenge can in return contribute to existing mental models and norms. The vitality exhibited by employees in their job tasks can be reflected on more than the increase of task performance (*Little et al., 2011*). *Carmeli and Spreitzer (2009)* argued that when an individual experiences a sense of vitality in their work, they tend to feel energized and stimulated when they are engaging in innovation tasks. Such energy is a positive emotion that employees experience when they can engage in a specific behavior or task they are interested in (*Dutton, 2003; Quinn & Dutton, 2005*). These behaviors or job tasks often involve creative thinking or actions that are outside the scope of the individual's routine and responsibilities; that is, they are concrete manifestations of change-oriented OCB.

When employees feel energized and vitalized at work, they are more motivated to accomplish their job-related goals or even achieve better-than-expected work performance. Subsequently, through OCB, they may give back to their colleagues and companies. *Han and Hwang (2021)*, *Liu et al. (2020)* and *Zhang et al. (2022)* also asserted that employees who thrive at work represent a major catalyst that induces creative behavior. Based on the need-satisfaction logic of SDT, intrinsic motivation drives hotel employees with positive affective and cognitive states, and further makes them feel full of energy and vitality with ambition to acquire knowledge and skills from learning activities. These positive effects and cognitions drive employees to overcome the difficulties and problems that they encounter while performing their job tasks, and further motivate these employees to satisfy the demands of out-of-role activities. Therefore, we propose that when employees are thriving at work, they are motivated to engage in change-oriented OCB. Based on the above, we propose.

**H3.** Thriving at work is positively related to change-oriented OCB.

## 2.3. Thriving at work as a mediator

*Kim and Koo (2017)* asserted that LMX has a significant and direct

influence on transformative innovation in hotel organizations. Kang and Jang (2019) also held that social support that includes coworker support has a significant and direct influence on change-oriented OCB. Meanwhile, in H1, H2, and H3, we propose that thriving at work has direct and positive correlations with LMX, coworker support, and change-oriented OCB, respectively, and this relational context highlights the mediating role of thriving at work. Despite the lack of research on thriving at work in hospitality literature, few relevant studies have revealed that the stimulation of thriving at work through empowering leadership can indirectly increase change-oriented OCB (Li et al., 2016). Walumbwa et al. (2018) argued that thriving at work can indirectly improve organizational commitment under the influence of servant leadership. Han and Hwang (2021) addressed that thriving at work acts a mediating role between workplace exclusion and OCB toward customers. Cheng et al. (2021) also found that thriving at home mediates the relationship between problems at home and proactive customer service performance.

The logic of socially embedded model of thriving emphasizes the social integration of employees within teams and work units (Walumbwa et al., 2018). At workplaces, social integration supports trust and respect for autonomy, thereby promoting thriving (Goh et al., 2022). From a social exchange perspective, during social integration, various parties maintain and stabilize interpersonal relationships and social organizations by measuring the relative interests of various goals and actions (Blau, 1964). Members in the in-group not only receive more attention and support from their supervisors but also have access to more benefits and resource sharing (Gomez & Rosen, 2001; Chen et al., 2007). Accordingly, when hotel supervisors encourage their followers to adopt positive behaviors, this phenomenon also reflects the existence of a favorable and positive relationship between the hotel supervisors and their followers. Under H2, the aforementioned phenomenon indicates that thriving at work in a hotel workplace not only indirectly increases change-oriented OCB through LMX but also increases change-oriented OCB through coworker support. Taken together, we propose.

**H4.** Thriving at work has partial mediating effects on the relationship between LMX and change-oriented OCB.

**H5.** Thriving at work has partial mediating effects on the relationship between coworker support and change-oriented OCB.

#### 2.4. Service innovation performance

Due to the uncertainty and intensity of competition in the hospitality industry, innovation is seen as an important source of development and provides hotel companies with a competitive advantage (Hoang et al., 2022; Tajeddini et al., 2020; Wu and Chen, 2018). Innovation can be implemented as a form of reorganization, reconstruction, or application of related information, resources, technologies, and knowledge by organizational peers (Xie et al., 2020; Kogut & Zander, 1992). Service innovation refers to the generation and implementation of novel service techniques or ideas to improve service problems (Yang et al., 2021). When hotel managers can identify customer needs and implement service innovation, they can not only develop unique core capabilities but also sustain competitive advantages for their hotels. Furthermore, when hotel employees are more active and adopt extra-role behaviors that support them to face challenges, their innovative behaviors become more pronounced. For example, hotels have collaborated with their customers or incorporated their customers' ideas to develop smart applications. Such smart applications have been popular in the hotel market because employees and managers in the hotel organizations are willing to listen to challenging or creative ideas from their customers (Baradarani & Kilic, 2018; Sarmah et al., 2017). Therefore, when hotel employees are having open-minded attitude on adopting new ideas and methods to improve work, they are more likely to perform well on service innovation behavior. Therefore, we propose.

**H6.** Change-oriented OCB is positively related to service innovation performance.

### 3. Method

#### 3.1. Data collection

Using statistical data of four-star hotels that were compiled by the Tourism Bureau under Taiwan's Ministry of Traffic and Communication in 2021, questionnaire surveys were administered through purposive sampling. Because the dependent variables in the present study included service innovation performance, we sampled customer-facing departments (i.e., departments that manage guest rooms, dining facilities, and leisure facilities). Before distributing the questionnaires, we addressed two major issues. First, because the present study involved analyzing employees as a collective, we had to verify that the members within each group were closely interacting entities (Klein & Kozlowski, 2000). The two criteria for team identification and selection were as follows: (1) a team's scope of work must be related to customer services and interfacing, and (2) the members of a team must belong to the same group, interact regularly (Klein & Kozlowski, 2000), and share the same line manager (because the present study examined coworker support). The second challenge was to reduce the issues of common-method variance (CMV) (Podsakoff et al., 2003). To this end, the following two prevention mechanisms were applied in the present study: (1) to minimize respondent assumptions, the identity of variables were not disclosed in the questionnaire and multiple scales were used to measure these variables; (2) the questionnaires were distributed and collected in two phases that were separated by a 2-month interval to reduce single-point measurement errors.

The first data collection phase was in March 2021. With the assistance of hotel human resource (HR) managers, 600 frontline workers from 120 departments were surveyed on LMX, coworker support, and thriving at work. As a result, we collected 485 valid responses from 116 departments. The second phase was in May 2021. During this phase, participants who completed the first-phase questionnaire were asked to complete a second questionnaire about change-oriented OCB and service innovation performance. At the end, we collected 374 valid responses from 92 departments. In summary, a total of 600 questionnaires were administered to the study sample, and 374 valid responses were collected (i.e., valid recovery rate of 62.33%). The data comprised mostly female (58.23%) and unmarried (65.8%) workers. Most of the respondents were aged 25 years or younger (38.6%). Employees with a university education accounted for 71% of the sample, and more than half of the respondents had no more than 5 years of work experience (56.3%).

#### 3.2. Measurement

To reduce CMV, we used reverse translation to verify the quality of scale translation from English to Chinese (Brislin, 1970). We also invited five hotel HR managers to review the questionnaires and ensure that the content of the questionnaires was appropriate for hotel workplace. They also checked the content validity of the questionnaire by assessing whether the questionnaire items were comprehensible and appropriate for hotel employees. All the scale items were evaluated on a 5-point Likert scale.

In this study, LMX was measured using an 11-item scale from Liden and Maslyn (1998). These 11 items cover four constructs; specifically, 3 items pertain to affect, 3 items pertain to loyalty, 2 items pertain to contribution, and 3 items pertain to professional respect. Wang et al. (2005) demonstrated that this LMX scale has robust reliability and validity and a Cronbach's  $\alpha$  value of 0.81, and a second-order confirmatory factor analysis (CFA) also indicated the scale has robust convergent and discriminant validity. Coworker support was measured using 7 items from Ladd and Henry (2000). The thriving at work was

measured with 4 items developed by Porath et al. (2012). Choi's (2007) change-oriented OCB scale, which comprised 4 items, was used in this study. The change-oriented OCB scale was verified to have a Cronbach's  $\alpha$  of 0.83, and it performed favorably for convergent and discriminant validity. We measured service innovation performance using 6 items proposed by Hu et al. (2009) to capture employee service innovation behaviors.

### 3.3. Data analysis

The study data on 374 employees were collected from 92 hotel departments in Taiwan. However, the collective analysis of these data and the use of aggregate data in a subsequent statistical analysis may lead to non-independence bias (Kenny & Judd, 1986). Therefore, before the individual scores were aggregated and averaged at a collective level, we tested the feasibility of the aggregate averages (Klein & Kozlowski, 2000). For this test, the criterion for Rwg, ICC(1), and ICC(2) were set to  $\geq 0.7$ ,  $>0.05$ , and  $>0.6$ , respectively (Bliese, 2000). These criteria were set to verify whether participants' perceptions of LMX, coworker support, thriving at work, change-oriented OCB, and service innovation performance were consistent among employees from the same department and different among employees from different departments. The mean Rwg values for LMX, coworker support, thriving at work, change-oriented OCB, and service innovation performance were .81, .75, 0.79, 0.82, and 0.89. These results indicated that the perceptions of these five variables among employees within the same department were consistent. The ICC(1) values were between 0.18 and 0.28, and the ICC (2) values were between 0.68 and 0.72; these results indicated that the individual scores could be aggregated and averaged at a collective level.

After the level of analysis was clarified and the feasibility of data processing was verified, the statistical analysis of the present study was conducted in two phases (measurement model phase and structural model phase) in accordance with the method proposed by Anderson and Gerbing (1988). First, during the measurement model phase, CFA was performed using Amos 24.0 software to check the reliability, convergent validity, and discriminant validity. After the reliability and validity of the model were verified, the second analysis phase was performed with the same software. We used structural equation modeling (SEM) to test the causal relationships between the constructs to test the proposed hypotheses.

## 4. Results

### 4.1. Descriptive statistics analysis

The results of a descriptive statistics analysis (Table 1) revealed

**Table 1**  
Means, standard deviations, and correlations.

Variable	Mean	S. D.	LMX	CS	T	COCB	SI
Leader-Member Exchange (LMX)	3.74	.73	(.90)				
Coworker Support (CS)	3.86	.61	.66**	(.91)			
Thriving (T)	3.81	.57	.39**	.35**	(.85)		
Change-Oriented Organizational Citizenship Behavior (COCB)	3.78	.70	.58**	.50**	.42**	(.89)	
Service Innovation Performance (SI)	3.75	.67	.53**	.33**	.45**	.59**	(.90)

Note.

1. \*\* $p < .01$ .

2. The correlations and internal reliabilities (Cronbach's alpha) are based on  $N = 86$  units. All values of Cronbach's alpha are provided along the diagonal in parentheses.

significant, positive correlations among all the examined latent variables. The values of the coefficients of correlation were between 0.33 and 0.66. The positive correlation between LMX and coworker support was high relative to the other detected correlations ( $r = 0.66, p < .000$ ). The correlations of LMX with thriving at work and change-oriented OCB had coefficients of 0.39 ( $p < .000$ ) and 0.58 ( $p < .000$ ). The correlations of coworker support with thriving at work and change-oriented OCB had coefficients of 0.35 ( $p < .000$ ) and 0.50 ( $p < .000$ ). The coefficient of the correlation between thriving at work and change-oriented OCB was 0.42 ( $p < .000$ ). The correlation between change-oriented OCB and service innovation performance had a coefficient of 0.59 ( $p < .000$ ). The standard deviation values of the variables ranged from 0.57 to 0.73.

### 4.2. Measurement model analysis

Table 2 presents the results of the reliability analysis. The overall Cronbach's  $\alpha$  values were 0.90 for LMX, 0.91 for coworker support, 0.85 for thriving at work, 0.89 for change-oriented OCB, and 0.91 for service innovation performance. These results indicated that the study model had well internal consistency. In CFA, as shown in Table 2, the reliability of the latent constructs was determined by their composite reliability (CR). CR is a criterion for the reliability of the latent variables (constructs), and it can be used to measure the internal consistency of the latent variables. CR values of between 0.6 and 0.7 indicate acceptable reliability, and values of more than 0.7 indicate well internal consistency (Fornell & Larcker, 1981). The LMX constructs yielded CR values of between 0.72 and 0.92, and coworker support had a CR value of 0.91. Of the two thriving-at-work constructs, one had a CR value of 0.83, and the other had a CR value of 0.90. Change-oriented OCB had a CR value of 0.89, and service innovation performance had a CR value of 0.90. All the constructs had reliability values that were greater than 0.7, which is the criterion value suggested by Hair et al. (2008). The aforementioned results verified the study indicators had high levels of internal consistency and reliability.

Validity was also tested by CFA. We followed the model fit criteria proposed by Bagozzi et al. (1991). The model fit indicators were as follows:  $\chi^2 = 132.50$  ( $p = .000$ ),  $\chi^2/df = 3.49$ , GFI = 0.88, CFI = 0.95, IFI = 0.94, and SRMR = 0.05 for LMX;  $\chi^2 = 42.94$  ( $p = .001$ ),  $\chi^2/df = 3.07$ , GFI = 0.91, CFI = 0.95, IFI = 0.95, and SRMR = 0.04 for coworker support;  $\chi^2 = 126.10$  ( $p = .001$ ),  $\chi^2/df = 3.71$ , GFI = 0.91, CFI = 0.95, IFI = 0.952, and SRMR = 0.042 for thriving at work;  $\chi^2 = 2.177$  ( $p = .34$ ),  $\chi^2/df = 1.09$ , GFI = 0.99, CFI = 1.00, IFI = 1.00, and SRMR = 0.01 for change-oriented OCB; and  $\chi^2 = 35.94$  ( $p = .000$ ),  $\chi^2/df = 3.99$ , GFI = 0.88, CFI = 0.93, IFI = 0.93, and SRMR = 0.05 for service innovation performance. CFA results revealed that our data fit the proposed model well.

In accordance with the recommendations of Hair et al. (2010), we tested the convergent validity of the latent variables by using their composite reliability and average variances extracted (AVE). Every construct in the present study was revealed to have a CR value of more than 0.6, verifying the internal consistency of all the observation variable that were used to measure the latent variables (Hulland, 1999). Furthermore, the factor loading value of all the indicators ranged between 0.67 and 0.94, which is greater than recommended value of  $\geq 0.45$  recommended by Kline (2011); this verified the favorable convergent validity of the present study. The AVEs of each construct was between 0.54 and 0.80, thus convergent validity was verified on the basis of Fornell and Larcker's (1981) assertion that an AVE of  $> 0.5$  indicates convergent validity. Overall, the study instruments exhibited favorable convergent validity.

Discriminant validity was determined by comparing the AVEs with the square of the construct coefficients of correlations (Fornell & Larcker, 1981). Table 2 reveals that the AVE values of the five variables were greater than the squares of the matching coefficients of correlation. Therefore, the instruments were verified to have discriminant validity. This study also tested discriminant validity by comparing various model

**Table 2**  
Measurement properties of variables.

Variable	Factor/Indicator	Standardized loading	Cronbach's $\alpha$	CR	AVE
<b>Leader-Member Exchange</b> (Model fit statistics: $\chi^2 = 116.43$ , $df = 38$ , $\chi^2/df = 3.06$ , $GFI = .91$ , $CFI = .94$ , $IFI = .94$ , $SRMR = .04$ , $RMSEA = .07$ )	<b>Affect</b>		.92	.92	.79
	I like my supervisor very much as a person.	.85			
	My supervisor is the kind of person one would like to have as a friend.	.90			
	My supervisor is a lot of fun to work with.	.91			
	<b>Loyalty</b>		.89	.90	.75
	My supervisor defends my work actions to a superior, even without complete knowledge of the issue in question.	.87			
	My supervisor would come to my defense if I were "attacked" by others.	.93			
	My supervisor would defend me to others in the organization if I made an honest mistake.	.80			
	<b>Contribution</b>		.74	.76	.62
	I do work for my supervisor that goes beyond what is specified in my job description.	.75			
	I am willing to apply extra efforts, beyond those normally required, to further the interests of my work group.	.82			
	<b>Professional respect</b>		.92	.92	.80
	I am impressed with my supervisor's knowledge of his/her job.	.84			
	I respect my supervisor's knowledge of and competence on the job.	.94			
I admire my supervisor's professional skills.	.90				
<b>Coworker Support</b> (Model fit statistics: $\chi^2 = 32.94$ , $df = 14$ , $\chi^2/df = 2.35$ , $GFI = .92$ , $CFI = .96$ , $IFI = .96$ , $SRMR = .04$ , $RMSEA = .06$ )			.91	.91	.61
	My coworkers are supportive of my goals and values.	.74			
	Help is available from my coworkers when I have a problem.	.80			
	My coworkers really care about my well-being.	.85			
	My coworkers are willing to offer assistance to help me perform my work.	.83			
	My coworkers care about my general satisfaction at work.	.73			
	My coworkers care about my opinions.	.67			
My coworkers are complimentary of my accomplishments at work	.74				
<b>Thriving</b> (Model fit statistics: $\chi^2 = 78.03$ , $df = 19$ , $\chi^2/df = 4.11$ , $GFI = .90$ , $CFI = .94$ , $IFI = .94$ , $SRMR = .05$ , $RMSEA = .08$ )	<b>Learning</b>		.83	.83	.54
	I find myself learning often.	.78			
	I continue to learn more as time goes by.	.70			
	I see myself continually improving.	.72			
	I am developing a lot as a person.	.74			
	<b>Vitality</b>		.85	.90	.69
	I feel alive and vital.	.93			
I have energy and spirit.	.92				
I feel alert and awake.	.68				
I am looking forward to each new day.	.77				
<b>Change-Oriented Organizational Citizenship Behavior</b> (Model fit statistics: $\chi^2 = 2.17$ , $df = 2$ , $\chi^2/df = 1.09$ , $GFI = .98$ , $CFI = .99$ , $IFI = .99$ , $SRMR = .002$ , $RMSEA = .02$ )			.89	.89	.66
	I frequently come up with new ideas or new work methods to perform my task	.87			
	I often suggest work improvement ideas to others	.93			
	I often suggest changes to unproductive rules or policies	.77			
	I often change the way I work to improve efficiency	.66			
<b>Service Innovation Performance</b> (Model fit statistics: $\chi^2 = 45.62$ , $df = 9$ , $\chi^2/df = 5.06$ , $GFI = .91$ , $CFI = .95$ , $IFI = .95$ , $SRMR = .05$ , $RMSEA = .08$ )			.90	.90	.61
	At work, I sometimes come up with innovative and creative notions	0.71			
	At work, I seek new service techniques and methods	0.80			
	At work, I sometimes propose my creative ideas and try to convince others	0.83			
	At work, I try to secure the funding and resources needed to implement innovations	0.77			
	At work, I provide a suitable plan and workable process for developing new service ideas	0.75			
	Overall, I consider myself a creative member of my team	0.83			

fit indicators. Table 3 reveals that the five-factor model represented by the baseline model outperformed the other four comparison models for CFI, IFI, and RFI. Notably, a significant difference in  $\Delta\chi^2$  was detected ( $\chi^2 = 3.84$ ,  $p = .05$ ), verifying the discriminant validity of the variables (Anderson & Gerbing, 1988).

### 4.3. Hypotheses testing

Model estimates were obtained using SEM, and the parameters were determined using maximum likelihood estimation. The analysis results were as follows:  $\chi^2 = 602.21$  ( $p = .000$ ),  $\chi^2/df = 2.688$ ,  $CFI = 0.95$ ,  $GFI = 0.93$ ,  $IFI = 0.95$ ,  $SRMR = 0.05$ , and  $RMESA = 0.07$ . The fit of the

**Table 3**  
Comparison of measurement models.

Model		$\chi^2$	df	$\Delta\chi^2$	CFI	GFI	IFI	SRMR
Baseline model	<b>Five factors:</b> Leader-member exchange, coworker support, thriving, change-oriented organizational citizenship behavior, and service innovation performance	569.32	220	—	.95	.94	.94	.03
Model 1	<b>Four factors:</b> Leader-member exchange and thriving were combined into one factor. Other three factors were coworker support, change-oriented organizational citizenship behavior, and service innovation performance	918.14	224	348.82**	.79	.73	.79	.09
Model 2	<b>Three factors:</b> Leader-member exchange, thriving and change-oriented organizational citizenship behavior were combined into one factor. Other two factors were coworker support, and service innovation performance	1196.88	227	627.56**	.71	.63	.71	.10
Model 3	<b>Two factors:</b> Leader-member exchange, thriving, coworker support, and change-oriented organizational citizenship behavior were combined into one factor. Another factor was service innovation performance	1440.90	229	871.58**	.64	.56	.64	.13
Model 4	<b>One factor:</b> Leader-member exchange, thriving, coworker support, change-oriented organizational citizenship behavior, and service innovation performance were combined into one factor.	1810.42	230	1241.1**	.55	.50	.55	.16
Null model		2819.98	190					

Note: \*\* $p < .01$ .

overall data and theoretical models were verified to be acceptable.

Fig. 2 presents the results of a standardized path analysis. Thriving at work was revealed to be directly influenced by LMX ( $\beta = 0.26, p < .01$ ) and coworker support ( $\beta = 0.23, p < .01$ ). Therefore, H1 and H2 were supported. Thriving at work was also demonstrated to have a significant effect on change-oriented OCB ( $\beta = 0.27, p < .01$ ), supporting H3. This finding indicated that when employees in a department generally thrive at work, this positive psychological state helps them to overcome work difficulties and problems and to actively engage in extra-role tasks. Furthermore, change-oriented OCB was observed to have positive influences on service innovation performance ( $\beta = 0.64, p < .001$ ), supporting H6. The present study also attempted to examine whether thriving at work has a mediating role in the relationships of LMX and coworker support with change-oriented OCB. A Sobel test revealed that thriving at work has a partial mediating effect on the relationship between LMX and change-oriented OCB ( $z = 2.09$ ) and that between coworker support and change-oriented OCB ( $z = 4.01$ ); furthermore, the observed mediating effects had z values that were greater than 1.96, which was the value recommended by Preacher and Hayes (2004). These results verified that thriving at work played a partial mediating role in the influence paths between LMX and change-oriented OCB and

between coworker support and change-oriented OCB. Therefore, H4 and H5 were supported.

### 5. Discussion

In this study, LMX, coworker support, thriving at work, change-oriented OCB, and service innovation performance were consolidated to construct a theoretical framework to explain the formation of service innovation performance. Thriving at work was proven to have mediating effects for the effects from LMX and coworker support to change-oriented OCB. Furthermore, change-oriented OCB was revealed to have a significant, positive effects on service innovation performance. Theoretical and practical implications as well as our suggestions for future research are addressed in the following sections.

#### 5.1. Theoretical implications

First, focusing on thriving at work, studies have reported inconsistent findings on its antecedents and consequences. Kleine et al. (2020) summarized numerous antecedents and consequences by conducting a meta-analysis of research on thriving at work, and their findings have

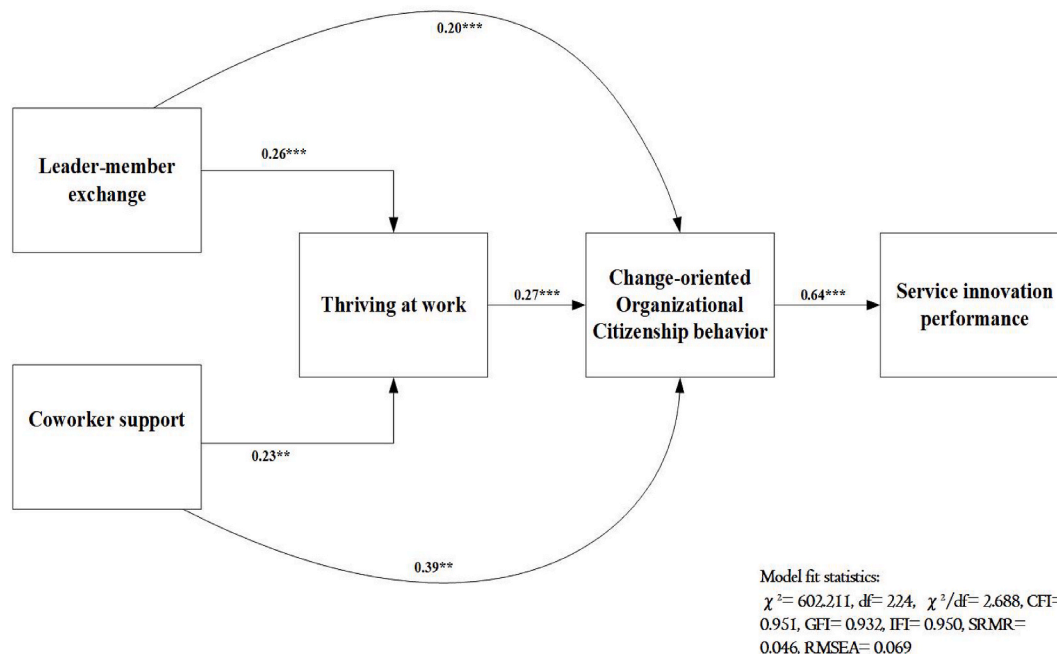


Fig. 2. SEM results.

also contributed to the theoretical development of this topic. However, the meta-analysis performed by [Kleine et al. \(2020\)](#) was limited by their insufficient to conduct an in-depth examination and interpretation of the hotel management challenges caused by specific environmental problems faced by the hotel industry. Furthermore, the data analyzed in the present study were collected during the COVID-19 pandemic, and the participating employees were engaged in service behaviors while coping with internal and external environmental threats caused by the pandemic. Consequently, their responses in our survey data reflected their perceptions and feelings during this challenging period. Because CMV in the collected data was reduced, the results of the subsequent statistical analyses could more precisely address the research questions of the present study with respect to thriving at work in hotels.

Second, from the perspective of SET, the present study aimed to validate the reasonableness of a theoretical framework explaining the formation of service innovation performance. SET asserts that organizational members engaging in exchange behaviors within social contexts mainly because they wish to receive an expected social benefit through these interactions ([Blau, 1964](#)). In a turbulent operational environment, hotel managers cater to the social interests and expectations of their employees in the hope of enhancing the workplace learning and vitality of their employees. Therefore, the findings of the present study can mitigate the research gap on the effects of LMX and coworker support on thriving at work, particularly in hotel workplaces. This study revealed that higher-quality LMX relationship has a considerable, stimulating effect on increasing the intentions of employees to learn and increasing their workplace vitality. These finding echoes former literature (e.g., [Kleine et al., 2020](#)) and highlights the role of LMX as a key antecedent of thriving at work. Consequently, a higher-quality LMX relationship not only allows a manager to provide support or problem-solving advice at work, but it also allows an employee to receive a greater number of challenging organizational tasks relative to their peers.

Third, our findings further extend the applicability of the socially embedded model of SDT into the context of hotel management. Specifically, with hotel employees as our samples, we substantiated the positive effects of thriving at work on change-oriented OCB, and further asserted the mediating effects of thriving at work for effects of LMX and coworker support on change-oriented OCB. Compared with conventional theories on OCBs, change-oriented OCB includes extra-role behaviors that are characterized by a high level of initiative and willingness to undertake risks and lead to changes in the status quo. Our findings recall findings from [Kabat-Farr and Cortina \(2017\)](#), [Kleine et al. \(2020\)](#), and [Zhang et al. \(2022\)](#), who all reported that thriving at work can promote creative behaviors. Furthermore, our study verifies that when the learning and vitality of hotel employees are enhanced to the point that a strong psychological state of thriving is established, these employees are induced to engage in change-oriented OCB with more initiative and thereby increase the service innovation performance of the hotel. These new findings represent novel theoretical contributions to the research on hotel workplace psychology and behaviors, and they also highlight and verify the effects of thriving at work during the COVID-19 pandemic. That is, hotel employees who were psychologically thriving at work were still willing to proactively engage in extra-role behaviors (e.g., change-oriented OCB) in times of difficulty, which led them to provide services and engage in behaviors that exhibited high levels of innovativeness and initiative and help their organizations to overcome challenges.

## 5.2. Practical implications

The practical implications of this study are two-fold. First, to leverage the effects of LMX on change-oriented OCB, hotel managers can strive to understand their subordinates' needs and potential, such that their subordinates feel valued and place more trust in their managers' decision-making process, thereby leading to a closer manager-

subordinate relationship ([Akgunduz et al., 2021](#)). Furthermore, managers must also fully acknowledge the crucial roles of professional competence and caring, particularly in the context of gaining the trust and support of their subordinates. In practice, LMX has their pros and cons. We have addressed the pros of LMX in the previous sections of this study. With respect to cons, managers must be careful about allocating specific attention or resources to specific individuals in a manner that leads to the development of cliques, factions, or conflicts within their organizations. The resulting adverse interactions may also lead to a vicious cycle of organizational distrust ([Hirvi et al., 2020](#)).

Second, our results also indicated that learning and vitality, both of which constitute thriving at work, play key roles in increasing change-oriented OCB. As such, hotel organizations should consider how to encourage learning at work. A recommended method is organizational learning. Deutero-learning is based on the outcomes of Argyris and Schon (1978) for single-loop and double-loop learning, and it refers to the in-depth review of past learning processes and experiences to develop new learning strategies and mechanisms. Deutero-learning allows organizations to further consolidate their existing learning outcomes and effectively improves their organizational learning and problem-solving abilities. This learning cycle allows a hotel organization to reflect on their problems and propose innovative solutions in a turbulent environment, thereby leading to improvements in their service performance through continual change. Sample practices include (1) creating an open and equitable team culture ([Lai & Cai, 2022](#)) in a stress-free and nonjudgmental workplace environment; (2) assisting employees in resolving non-work problems to improve their sense of well-being and encourage extra-role OCBs; (3) encouraging managers and coworkers to pay immediate attention to and reassuring hotel employees who develop negative emotions; (4) establishing suitable career development paths for employees through measures such as subsidized training programs to foster thriving at work ([Huo, 2021](#)); (5) offering training courses and seminars on systems thinking and improving mental models to encourage employees to reexamine and recontextualize themselves through spiritual or value transformation; (6) providing training mechanisms outside of professional competence, such as yoga and meditation. According to [Srivastava and Gupta \(2022\)](#), the above-mentioned practices support employees to prioritize the overall interests and goals of the organization and be as less self-centered as possible. It would help employees have a high degree of vitality and continuous learning in the workplace, so as to create a higher thriving. These suggestions are expected to facilitate thriving at work and encourage change-oriented OCB that can lead to the increase of service innovation performance.

## 5.3. Limitations and suggestions for future research

First, to reduce CMV, our questionnaire administration and data collection were conducted in two phases. Unfortunately, the timing of data collection was during the COVID-19 pandemic. To verify the dynamic changes between thriving at work and the other variables through continuous and long-term data that are collected in a stable environment, a longitudinal study should be conducted in the future after the pandemic when everything back to normal. Second, although thriving at work was verified through our theoretical models as a mediating variable in the effects of LMX and coworker support on change-oriented OCB, further investigations are required to verify whether this mediating effect can be altered by the inclusion of other mediating variables, such as mindfulness ([Wu & Chen, 2019](#)) or psychological ownership ([Lee et al., 2019](#)). Third, despite the environmental effects of COVID-19, environmental dynamics and other similar moderating variables were not included in our theoretical model. Future studies can consider adding moderators such as environmental stability or environmental dynamics to verify their possible effects on the main effects in our model.



## Declaration of competing interest

None.

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