

## Collective psychological capital: Linking shared leadership, organizational commitment, and creativity

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### ARTICLE INFO

#### Keywords:

Taiwan's hotel industry  
Shared leadership  
Psychological capital  
Organizational commitment  
Creativity

### ABSTRACT

Drawing from a macro perspective of social exchange theory, the current study aims to examine the relationships between shared leadership, collective psychological capital, organizational commitment, and creativity at a collective level in Taiwan's hotel industry. We adopt three-stage time-lag design with a three-week in each stage to collect data. Data stem from 52 hotels and comprise 267 employees were used to test the hypotheses through structural equation modeling. We found that, the data fit the hypothesized model well, and collective PsyCap partially mediates the relationship between shared leadership and both organizational commitment and creativity. From these results, theoretical and practice implication are offered. We discuss the theoretical and practical implications of the findings and offer recommendations for future research.

### 1. Introduction

In response to the trend toward a more dynamic hospitality business environment and rapid changes in market needs (Chiang and Hsieh, 2012), we have recognized that employee creativity and innovation are key sources of a hospitality organization's competitive advantage that help the organization to deliver superior service quality and satisfy the customers' diverse needs (Chang and Teng, 2017; Hon, 2012; Hon and Lui, 2016; Li and Hsu, 2016). However, employee creativity and organizational innovation are destined to stagnate without the supervisors' positive support. Recent empirical studies have shown that leadership has been confirmed to have a significant and positive effect on employee attitudes and behaviors in a hotel workplace (Chen and Wu, 2017; Patiar and Wang, 2016; Wu and Chen, 2015). Thus, the leadership styles of hotel managers seem to have a subtle and creative influence in this competitive business context. Positive leadership from supervisors can boost morale, encourage employees to work harder for the organization and develop higher quality services (Testa and Sipe, 2012; Uen et al., 2012). In contrast, supervisors who fail to demonstrate charisma can dissipate their employees' positive mental energies, resulting in decreased work performance. Several studies have addressed the positive correlation between the various types of leadership, including transformational, transactional, and empowering leadership, and employee psychology and behavior (Bass et al., 2003; Wu and Chen, 2015). However, the issue of how hotel leaders can motivate

frontline employees – who have autonomy, a desire for self-achievement, and innovative thinking on how to encourage the employees' creativity in the workplace – is critical to hotels in maintaining sustainable competitive advantage.

According to the social exchange theory developed by Blau (1964), the social exchange process is based on the result of mutual reciprocation and trust. In addition, commitment and creativity are produced when exchange partners find a solution that results in maximum benefits for both partners. Katz and Kahn (1978) believed that when group members willingly and naturally support shared goals and influence others to do the same through shared leadership, their commitment to the organization increases, leading to enhanced organizational competitive advantages. Based on these statements, Carson et al. (2007) named this type of leadership, *shared leadership*. Even though a few prior studies have explored the relationship between shared leadership and its consequences, such as team performance, job satisfaction, and organizational commitment (e.g., Carson et al., 2007; Mathieu and Kukenberger, 2016; Mathieu and Kukenberger, 2015; Hoch and Kozlowski, 2014; Hoch, 2013; Liu et al., 2014), research on shared leadership and its potential effects on behavior and performance in the hotel workplace are rare.

We noticed that in recent years, the positive organizational behavior (POB) perspective proposed by Wright (2003) has received considerable attention in the field of organizational behavior. POB arose out of the theory of positive psychology (Seligman and Csikszentmihalyi,

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2000). Scholars developed the concept of psychological capital (PsyCap) and postulate that concepts and measurements of positive psychology and their applications to workplace issues cannot be ignored (Luthans and Youssef, 2004). PsyCap has gradually also been viewed a strategic resource that affects internal work performance within organizations (Ardichvili, 2011; Newman et al., 2014). PsyCap comprises four dimensions: self-efficacy, hope, optimism, and resilience and these four dimensions represent the cognitive nature and psychological states of positive development (Luthans et al., 2007). Based on the contributions of the aforementioned POB perspective to individuals and organizations, we believe that when the hotel industry as a whole urgently needs to increase their human capital to create competitive advantages, hotels will want to promote positive psychological states in their employees. Even though recent studies have addressed the antecedents and consequences of PsyCap at an individual level (e.g., Karatepe and Talebzadeh, 2016; Kim et al., 2017a, b; Bouzari and Karatepe, 2017), except for Heled et al. (2016), McKenny et al. (2013), and Walumbwa et al. (2011), rarely have studies explored PsyCap at a collective level. Therefore, there is a research gap regarding the mediating role of collective PsyCap between shared leadership and both organizational commitment and creativity in the hotel workplace. It would be valuable to conduct in-depth discussion and verification for enhancing the units' collective psychological state to strengthen further behaviors and attitude outcomes.

Based on the social exchange theory, we postulate that hotels seek employees with organizational commitment to the hotel and continued creativity to maintain or innovate new competitive advantages. Therefore, the purpose of the recent study is to examine the hypothesized model of collective PsyCap as related to shared leadership, organizational commitment, and creativity. We aim to make two significant contributions. First, we examine the relationship between shared leadership and its consequences at a collective level of analysis with the intent to expand the value and elaboration of shared leadership and collective PsyCap in the social exchange theory. Second, the mediating role of collective PsyCap can serve as a reference for making decisions on organizational behavior and human resources for research and practice on hotel human resource management. The remaining sections include theory and hypotheses, methods, data analyses and results, discussion, managerial implication, and limitations.

## 2. Theory and hypotheses

This research study takes place in Taiwan. For an overview of the current status and trends of Taiwan's hospitality industry, the 2017 statistical data of the Tourism Bureau of the Ministry of Transportation and Communications show that in the past ten years, the number of tourists in Taiwan has grown by approximately 70% and international tourism revenue has grown by approximately 53% (Tourism Bureau, 2017). The hospitality industry is no longer just the labor-intensive industry of the past. With the advances in information technology and the growing diversity of customer needs, service processes in these industries fit the pattern of knowledge-intensive industries (Wu and Chen, 2015). In the hospitality workplace domain, the frontline employees' service attitudes and behaviors are critical to the customers' impressions and consuming behavior. However, it is difficult to attract young frontline workers because of the lower wage structure and because the work value of the younger generation has been transformed in Taiwan's hospitality industry. This leads to higher labor turnover rate, and hotels employ cooperative education students, college or university interns, or part-time employees. Even though we see it is a reciprocal causation, it is a critical issue that hotels cannot rely on having full-time employees with organizational commitment to the hotels or creativity to accumulate human capital or knowledge advantages. Such a predicament has an impact on hotels with the risk of losing human capital. Hence, the impact of shared leadership on collective PsyCap, creativity, and organizational commitment is the primary issue examined in the

present study.

### 2.1. Shared leadership

Tracing the evolution of the definition of leadership, leadership was conceptualized originally as an interaction within a group (Gibb, 1954). When group members willingly and spontaneously support shared goals and influence others to do the same through shared leadership, they increase their commitment to the organization through investing interpersonal and organizational resources in complex tasks, openly sharing mutual benefits with others, and sharing information. This commitment leads to enhanced competitive advantages for the organization (Katz and Kahn, 1978). Shared leadership in the present study is defined based on Carson et al. (2007) and Mathieu and Kukenberger (2016) that argued shared leadership is a process of interactive influence that distributes power and responsibility among group members to achieve group goals. However, shared leadership by its nature is a group asset that stems from the distribution of leadership influences across diverse team members. Furthermore, Carson et al. (2007), based on the concept of collective constructs (Morgeson and Hofmann, 1999), argued that shared leadership comprises three dimensions: shared purpose, social support, and voice and it is formed by individual group members who are committed to group activities. They influence the direction of the group, encourage, and support others. Through a series of interactions, the group members coordinate and share leadership responsibilities. In sum, shared leadership in this study emphasizes a kind of social structure that involves a value comprising shared purpose, social support, and voice within a group. Of course, leadership that is widely shared evolves and changes over time. Different members lead the team at different stages or times, resulting in shifts or changes to the shared leadership paradigm (Carson et al., 2007).

### 2.2. Collective psychological capital

According to Avolio and Luthans (2006), positive PsyCap can be viewed as answering the questions: "Who are you?" "What can you become in the team with positive development?" "What do you know?" "Who do you know?" and "What do you have?" Luthans et al. (2007) believed that four component dimensions of PsyCap have cognitive qualities and defined PsyCap as an individual's positive psychological state of development. The four dimensions are defined as (a) self-efficacy: possessing the confidence to strive for success in the face of challenges; (b) optimism: making positive attributions to present and future success; (c) hope: persevering toward goals, and when necessary, adjusting goals for success; and (d) resilience: possessing the ability to withstand setbacks and to find the will to continue in the face of failure. Past studies have examined individually these four dimensions but these four dimensions were not consolidated into one overall concept. After the concept of PsyCap was introduced, scholars have claimed that the combination of the four dimensions may be a more effective predictor of performance than any of the individual dimensions is because of the synergy among the dimensions (Luthans et al., 2007). Walumbwa et al. (2011, p. 6) referred to Bandura's (1997, 2006, 2008) work and defined the collective PsyCap as a "group's shared psychological state of development that is characterized by efficacy, hope, optimism, and resilience." Heled et al. (2016) also argued that psychological capital can be viewed as a team phenomenon. Therefore, collective PsyCap can be viewed as a synergy of the interaction and dynamic coordination between group members that comprises collective efficacy, collective optimism, collective hope, and collective resilience.

Regarding the relationship between leadership and PsyCap, based on Bandura's (2006) agentic theory, which postulates that leadership plays a role of collective interaction, shared leaders can analyze the internal and external information received and share this information with the group (Walumbwa et al., 2011). Scholars argued that the PsyCap of hotel salespersons and flight attendants was affected by the

concept of servant leadership (Bouzari and Karatepe, 2017; Karatepe and Talebzadeh, 2016). When a group supports the ideas of its members, the members feel that their abilities and ideas are appreciated. This produces increased confidence and self-efficacy (Kirkman and Rosen, 1999). Furthermore, the nature of hope emphasizes goal-oriented strategies and planning; this way of thinking is a crucial foundation of problem solving. Therefore, because shared leadership produces shared goals in a group, group members are more likely to understand and identify with the goals and with the reasons for the goals. This generates hope regarding the achievement of these goals among group members. In addition to explaining group goals and vision, shared leaders are responsible for supporting and helping the members understand the importance of the goals and success. Through this, leaders can influence group members to adopt more optimistic attitudes in learning and facing future challenges (Heled et al., 2016). Therefore, we assumed that when leaders respond to problems with optimism in the form of proactive, adaptive, and positively oriented attitudes and steps, the work attitudes and atmosphere of the shared leadership model will affect the group members and increase optimism among the group. Of course, in terms of group resilience, shared leadership emphasizes a group culture that provides members with social support and encouragement to voice their opinions. The trust that group members have in their leaders becomes an important psychological resource that strengthens their resilience and supports members in enduring hardships and challenging times. Based on the statement above, we propose the first hypothesis,  $H_1$ , that shared leadership is significantly and positively correlated with collective PsyCap.

### 2.3. Organizational commitment

A principle of organizational commitment implies that employees make a decision to stay or leave the organization (Meyer et al., 1993). Organizational commitment can be used to infer whether an employee will choose to continue his membership in the organization (Allen and Mayer, 1996). It refers to a psychological state that describes the relationship between an employee's work and the organization. Hotel group members' organizational commitment is critical for personnel and organizational outcomes because it serves as a channel between the hotel and the customers (Patiar and Wang, 2016). If the members' organizational commitment decreases, their work passion and engagement is likely to be reduced. Some studies have examined the relationship between leadership behaviors and organizational commitment in hospitality workplaces (e.g., Patiar and Wang, 2016; Peachey et al., 2014). Power and resource sharing not only improves the perception of empowerment but increases organizational commitment also (Kim et al., 2012; Raub and Robert, 2013). Therefore, organizational commitment is more likely to increase when group members can perceive shared vision and support from shared leaders. Hence, we propose  $H_{2a}$ , that shared leadership is significantly and positively correlated with organizational commitment.

### 2.4. Creativity

Regarding employee creativity, Amabile (1988) asserted that creativity is the production of a useful idea that is both novel and promising. The idea must both be novel and useful; therefore, creativity comprises technical skill, creative skill, and motivation. A greater intersection of the three components results in greater creativity in an individual. In the workplace, creativity is a set of creative and useful ideas proposed by employees regarding products or services, progress, or workflows (Amabile, 1988; Oldham and Cummings, 1996). It is a process of challenging and questioning (Hirst et al., 2009). Regarding creativity at the group level, Dong et al. (2017) defined group creativity as a development and integration of innovative and useful ideas by a team. The group members' innovative ideas, information, and views are collected to derive an eventual creative result. In the hotel context,

innovative menus and new dishes are critical to enable the food and beverage department to satisfy customers with diverse and changing needs; therefore, hotels need creative ideas and innovation to improve service quality. In addition, in order to increase the rate of room occupancy and revenue, the marketing department needs creative ideas also to generate new programs to attract the customer's attention and increase their willingness to buy, in order to increase the rate of room occupancy.

The positive effect of shared leadership on creativity has been studied by some recent empirical research work (e.g., Lee et al., 2015; Wu and Cormican, 2016; Gu et al., 2016) that reveals that the vital antecedents of innovations in teams include team cohesion, conflict, vision, and support for innovation (Dong et al., 2017; Hülsheger et al., 2009). In other words, under higher level of shared goals, better support between group members, and good communication and coordination, group members are likely to share knowledge and contribute unique and innovative ideas to other group members. When the hotels' unit leaders respect the diverse ideas and give members room for flexibility, respect, and appropriate feedback for their ideas, they are even more likely to generate new ideas. Based on the statement above, we propose  $H_{2b}$ , that shared leadership is positively correlated with creativity.

### 2.5. Collective PsyCap and its consequences

Despite the research work regarding the topic, at the group or organization level, PsyCap represents an emerging topic of research and published studies are scarce (Newman et al., 2014). We found some prior studies that examined hospitality employees' PsyCap and its related consequential attitude or behaviors variables at the individual level, including the work of Karatepe and Karadas (2014), who postulated that positive PsyCap can decrease conflicts between work and family and curtail turnover intentions; the work of Jung and Yoon (2015), who addressed that the positive relationship between PsyCap and organizational citizenship behaviors; further work of Karatepe and Karadas (2015), who noted work engagement mediates PsyCap and attitude outcomes; the work of Hsiao et al., (2015), who asserted that servant leadership can effectively increase positive PsyCap among employees; and the work of Kim et al. (2017a, b), who addressed that the relationship between PsyCap and quality of work life, turnover intentions, and service recovery performance; and the work of Bouzari and Karatepe (2017), who examined the relationship between servant leadership, PsyCap, and employees' attitude and behavior outcomes. Obviously, a higher level of PsyCap is beneficial for increasing organizational commitment, enhancing employees' willingness to continually stay in organizations (Larson and Luthans, 2006; Kim et al., 2017a, b; Peak et al., 2015). Based on the interpretation above and the previous work on the topic, we propose  $H_{3a}$ , that collective PsyCap is positively related to organizational commitment.

Next, regarding the relationship between collective positive PsyCap and creativity, past studies have shown that individuals with broad, deep, and complex psychologies and experiences representative of the trait *openness to experience* have more positive mental states and are more optimistic. They are willing to consider all views and opinions and seek opportunities for new knowledge (Lepine and Van Dyne, 2001). They are willing also to interact with others to exchange knowledge or information and pursue new knowledge and innovation through these interactions (Raymark et al., 1997). Efficacy acts as a core cognitive factor in motivation. It refers to an assessment and judgment to complete a specified task independently; therefore, collective efficacy particularly enhances people's learning of innovate ideas. Hope represents a higher degree of goal-oriented behaviors among the group members: they are more willing to communicate ideas and perspectives with others to improve the current situation. Therefore, this mental state is more likely to stimulate innovation and creativity. In addition, regarding resilience, when group members can honestly and straightforwardly withstand setbacks and find the will to continue in the face of

failure, or even view failure as the foundation of the next success, they can be open to learning from their failures and can gain new innovative knowledge from the learning process (Yeo et al., 2009). Although there is limited research regarding the relationship between PsyCap and innovation or creativity (Newman et al., 2014), some studies argued that PsyCap and creativity or service innovation are positive correlated (e.g., Abbas and Raja, 2015; Heled et al., 2016; Kim et al., 2017a, b). Therefore, as Avey et al. (2011) asserted, those with high PsyCap have strong willpower and produce multiple solutions to problems, make internal attributions to form positive expectations about results, and respond positively to difficulties and frustrations by persevering. Hence, we propose that those possessing higher collective PsyCap can face failure with positivity and view failure as an opportunity for learning, leading to increased innovation and creativity. Therefore, we propose H<sub>3b</sub> that collective PsyCap is positive related to creativity.

### 2.6. Mediating roles of collective PsyCap

Regarding the social structure in a group or unit from a macro view, in Blau (1964)'s social exchange theory, shared value in a social structure provides a mechanism that involves a shared standard for interacting and exchanging by participants within a social structure. Hence, the macro view in social exchange theory was adopted in this study to elaborate the indirect exchange mechanism in our theoretical model.

With regard to the aforementioned relationships and combination of H<sub>1</sub>, H<sub>2a</sub>, H<sub>2b</sub>, H<sub>3a</sub>, and H<sub>3b</sub>, there is an implication of a partial mediating role of collective PsyCap between shared leadership and both organizational commitment and creativity. Even though Bouzari and Karatepe (2017) highlighted the full mediating effect of PsyCap on the relationship between servant leadership and employees' intention to remain with the organization, lateness attitude, and other outcomes, Kim et al. (2017a, b) argued that PsyCap partially mediates psychological contract breaches and service innovation behavior. Studies proving PsyCap at collective level having a partial mediating role are rare. Collective PsyCap should not be ignored in the path of the direct effect between shared leadership and both organizational commitment and creativity. Based on exchange and interaction logic, collective PsyCap is influenced by shared purpose, social support, and voice with a group social structure; thus, collective PsyCap is a collective psychological state to affect further organizational commitment and creativity. Overall, shared leadership creates a culture characterized by sharing, openness, and support. These cultural characteristics are conducive to developing positive collective psychological states of efficacy, optimism, hope, and resilience among a group. More importantly, positive mental states encourage the entire group to be creative and have a will to stay employed. In interactions, such as in brainstorming meetings, colleagues will more proactively share their knowledge to broaden their perspectives based on their positive collective PsyCap. When the goal is not only to find a solution to the current difficulty or problem but also for the group to absorb new knowledge that leads to changes and updates their existing insights, creativity is thus produced. Therefore, we propose H<sub>4a</sub> that collective PsyCap partially mediates shared leadership and organizational commitment and H<sub>4b</sub> that collective PsyCap partially mediates shared leadership and creativity. According to the aforementioned previous discussion, the hypothesized relationships formed through social exchange theory and related empirical studies are developed in the hypothesized model in Fig. 1.

## 3. Method

### 3.1. Sampling procedure

In July 2016, purposive sampling was used to collect data from frontline employees in the food and beverage and marketing departments of 52 tourist hotels: 35 four-star and 17 five-star from 75

international tourist hotels in Taiwan (Tourism Bureau, 2017). Some Taiwan's hotels are susceptible to seasonal factors that affect the number of customers. Such seasonal factors drive hotels to use innovative ideas or creativity to evaluate and adjust further their strategy for attracting customers. The reason for choosing the food and beverage and marketing departments as targets is that the restaurants in hotels must check and analyze their customer demographic data to catch consumption trends and habits, and thus continually adjust their menus and offer innovative menu items. Similarly, the marketing department must be flexible and innovative to be able to offer new marketing strategies in response to different seasons to attract and stimulate spending. In addition, Frontline employees were asked to complete questionnaires regarding their true perceptions about their workplace. The reason that this study selects frontline employees who work in the front of the house operations is because they face the customer directly; therefore, the degree of the psychological state affects employees' emotion, attitude, and behavior.

Prior to the survey, we telephoned food and beverage and marketing departments supervisors at the tourist hotels and asked for their assistance with the survey. After receiving consent from a supervisor, the current research team visited the hotel to explain the survey procedure to the employees and to ensure that employees understood the purpose and contents of the questionnaire. In order to reduce the potential common method variance (CMV) (Podsakoff et al., 2012), three-stage time-lag design was used with a three-week in each stage to collect data. The questionnaire was coded to confirm that the three-stage data was collected from the same employee. Shared leadership was measured at stage 1, collective PsyCap was measured at stage 2, and organizational commitment and creativity were measured at stage 3. In both stages, frontline employees were assured anonymity in completing the questionnaires and confidentiality of their responses. In addition, employees were asked to complete questionnaires after they were off duty to avoid the inevitable influence during their working time. Confounding factors such as these would affect the quality of responses. All participants were requested to submit the questionnaires by post in sealed envelopes when they were completed.

### 3.2. Measurement

Because the questionnaire was self-reported by employees, CMV introduced by single source bias is unavoidable (Podsakoff et al., 2003). To reduce this bias, and to ensure that the Chinese translation of an English scale was faithful to the original, we employed a back-translation procedure (Brislin, 1970). In addition, to ensure that the questionnaire items were valid in the hotel workplace environment, we asked three department managers of tourist hotels to assist in assessing the relevance of the questionnaire before the survey was implemented formally. The questionnaire examined four variables: shared leadership, collective PsyCap, organizational commitment, and creativity. All the responses were scored using a 7-point Likert scale. The participants were asked to choose one of seven responses, ranging from strongly disagree to strongly agree, based on their actual perceptions about their work.

#### 3.2.1. Shared leadership

Shared leadership was assessed using the scale developed by Carson et al. (2007). The scale contains eight items in three dimensions: shared purpose, social support, and voice. Sample items include: "In my team, I can discuss our team's main tasks and objectives to ensure that we have a fair understanding." and "In my team, I can give encouragement to team members who seem frustrated."

#### 3.2.2. Collective PsyCap

Collective PsyCap was assessed using the scale developed by Luthans et al. (2007). The scale contains 24 items in four dimensions: self-efficacy, optimism, hope, and resilience. Sample items include: "I

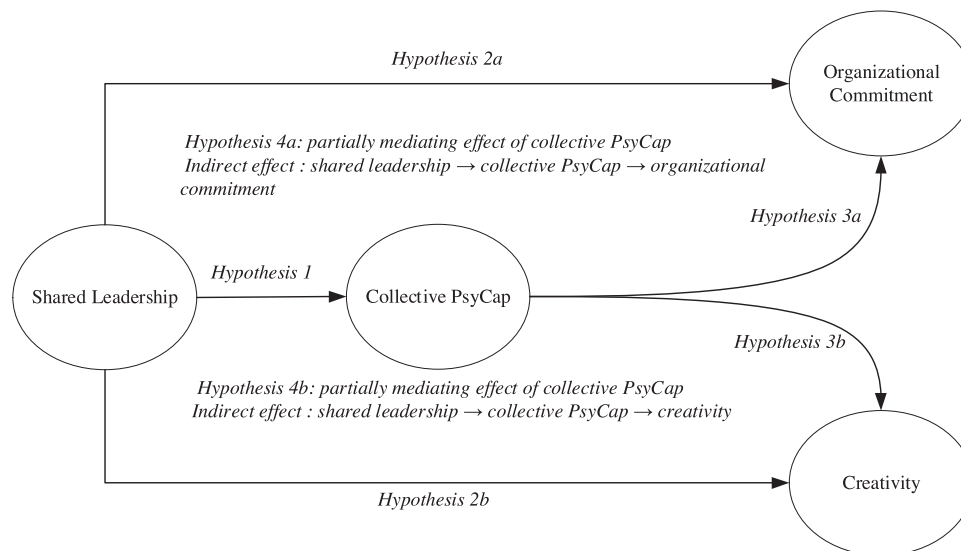


Fig. 1. hypothesized model.

feel confident analyzing a long-term problem to find a solution” “If I should find myself in a jam at work, I could think of many ways to get out of it.”

### 3.2.3. Organizational commitment

Organizational commitment was assessed using a slightly modified version of the scale developed by Meyer et al. (1993). The scale contains six items; a sample item is “This organization has a great deal of personal meaning for me.”

### 3.2.4. Creativity

Creativity was assessed using the scale developed by Zhou and George (2001). We choose eight items that fit the hotel frontline employee workplace context and sample items include: “I can suggest new ways to achieve goals and objectives.” and “I can exhibit creativity on the job when given the opportunity to.”

### 3.3. Strategy of data analysis

This study proceeded to test the reliability and validity of the measurements and our hypotheses using the two-step structural equation modeling method proposed by Anderson and Gerbing (1988). In the first step, we performed a confirmatory factor analysis (CFA) to assess the reliability, convergent validity, and discriminant validity. In addition, since we defined the level of analysis as the collective level, aggregate data may be suspected of producing a nonindependence bias (Kenny and Judd, 1986). Therefore, prior to applying the aggregates or means of individual scores to the group level, we must first test the validity of these aggregates or means (Klein and Kozlowski, 2000). After clarifying the level of analysis and verifying the feasibility of data processing, in the second step, we condensed multiple items into a factor and used structured equation modeling to examine each proposed hypothesis.

## 4. Data analyses and results

### 4.1. Sampling distribution and aggregation statistics

We distributed 520 questionnaires, 10 questionnaires in each hotel; 267 valid questionnaires were collected for an effective return rate of 51.35%. Regarding the distribution of the collected samples, the majority of respondents were female (67.5%) and unmarried (68.2%). A relatively high number of the respondents were younger than 25 years

of age (41%). Most of the respondents had a university level of education (74%), and had less than three years of work experience (61.2%).

Regarding aggregation statistics, this study collected data from 267 employees in 52 tourist hotels. Therefore, prior to applying the aggregates or means of individual scores to the hotel collective level, we first tested the validity of these aggregates or means (Klein and Kozlowski, 2000). We defined standards of Rwg greater than or equal to 0.7, ICC(1) greater than 0.05, and ICC(2) greater than 0.6 (Bliese, 2000) to test whether employees from the same tourist hotel had consistent perceptions regarding shared leadership, positive PsyCap, organizational commitment, and creativity, and whether employees from different hotels had disparate perceptions regarding these four variables. Results showed that the average Rwg values were 0.82, 0.72, 0.86, and 0.94 for shared leadership, collective positive PsyCap, organizational commitment, and creativity, respectively, indicating that employees from the same hotel had consistent perceptions regarding the four research variables. The ICC(1) and ICC(2) values ranged from 0.24–.31 and 0.62–.68, respectively, indicating that the aggregates and means were appropriate. As a result, 52 aggregated data in a collective level were used for subsequent statistical analysis.

### 4.2. Reliability and validity analysis

Cronbach’s  $\alpha$  and composite reliability were used to test reliability in this study. According to Kerlinger (1999), a Cronbach’s  $\alpha$  value above 0.7 indicates good reliability. The reliability analysis results showed (as shown as Table 1) that the Cronbach’s  $\alpha$  values for all variables were greater than 0.7 and the overall Cronbach’s  $\alpha$  value was greater than 0.8. In addition, as expected, shared leadership positively correlated with collective PsyCap, organizational commitment, and creativity ( $r = 0.45, 0.46, 0.49$ , respectively,  $p < 0.01$ ); collective PsyCap positively correlated with organizational commitment and creativity ( $r = 0.61, 0.67$ , respectively,  $p < 0.01$ ); and organizational commitment positively correlated with creativity ( $r = 0.48, p < .01$ ).

CFA was used for testing validity, including assessing whether all variables possessed sufficient convergent and discriminant validity. Before validity testing, we performed a first order CFA and excluded all items with factor loadings of less than 0.5. Next, we began convergent and discriminant validity testing. The CFA results showed that 5 items in the positive PsyCap scale and 1 item in the creativity scale had low factor loadings that did not reach 0.5. These items were deleted and we performed another CFA. CFA results as shown in Table 2 demonstrate

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

Variable	Mean	s.d.	Shared leadership	Collective PsyCap	Organizational commitment	Creativity
Shared leadership	5.47	1.04	<b>0.92</b>			
Collective PsyCap	5.09	0.71	0.45**	<b>0.95</b>		
Organizational commitment	4.90	1.06	0.46**	.61**	<b>0.95</b>	
Creativity	5.11	0.72	0.49**	.67**	0.48**	<b>0.90</b>

Note: The correlations and internal reliabilities (Cronbach's alpha) are based on  $N = 52$  collective hotels. All values of Cronbach's alpha are provided along the diagonal in parentheses. \* $P < 0.01$ .

**Table 2**  
Confirmatory factor analysis results.

Factor	standardized loading	t-value	Cronbach's alpha	CR	AVE
<i>Share purpose</i>			0.864	0.869	0.689
SL1	0.860	–			
SL2	0.857	15.580			
SL3	0.771	13.405			
<i>Social support</i>			0.804	0.793	0.561
SL4	0.803	–			
SL5	0.736	11.982			
SL6	0.705	11.624			
<i>Voice</i>			0.888	0.892	0.676
SL7	0.696	–			
SL8	0.864	11.952			
SL9	0.866	11.982			
SL10	0.850	11.788			
<i>Efficacy</i>			0.889	0.892	0.580
PC1	0.706	–			
PC2	0.733	10.407			
PC3	0.836	11.816			
PC4	0.811	11.480			
PC5	0.689	9.797			
PC6	0.781	11.069			
<i>Optimism</i>			0.830	0.841	0.570
PC7	0.741	–			
PC8	0.790	11.534			
PC9	0.802	11.725			
PC10	0.682	9.902			
<i>Hope</i>			0.851	0.851	0.536
PC11	0.766	–			
PC12	0.621	8.449			
PC13	0.791	10.419			
PC14	0.774	10.229			
PC15	0.694	9.322			
<i>Resilience</i>			0.805	0.842	0.640
PC16	0.793	–			
PC17	0.815	12.887			
PC18	0.792	11.736			
<i>Organizational commitment</i>			0.947	0.948	0.754
OC1	0.741	–			
OC2	0.822	12.819			
OC3	0.903	14.260			
OC4	0.905	14.370			
OC5	0.909	14.308			
OC6	0.916	14.492			
<i>Creativity</i>			0.902	0.867	0.569
C1	0.811	–			
C2	0.763	13.057			
C3	0.741	12.163			
C4	0.751	12.350			
C5	0.774	12.665			
C6	0.704	11.647			
C7	0.743	12.604			

Model fit statistics:  $\chi^2 = 1435.886$ ,  $DF = 743$ ,  $\chi^2/df = 1.933$ ,  $CFI = .936$ ,  $GFI = .912$ ,  $IFI = .937$ ,  $SRMR = .043$ ,  $RMSEA = 0.053$ .

Notes: CR = composite reliability; AVE = average variance extracted.

that the measurement model fit the data adequately [ $\chi^2 = 1435.886$ ,  $DF = 743$ ,  $\chi^2/df = 1.933$ , goodness of fit index (GFI) = 0.912, comparative fit index (CFI) = 0.936, incremental fit index (IFI) = 0.937,

standardized root mean residual (SRMR) = 0.043, root mean square error (RMSEA) = 0.053]. All composite reliability values were greater than 0.7 and higher than 0.6 value suggested by Fornell and Larcker (1981), indicating that the scale used in this study possessed a good internal consistency. In addition, all the standardized loading values were above 0.5 and their t-values were significant. The average variance extracted by each latent variable was above 0.5, indicating that convergent validity was examined (Anderson and Gerbing, 1988; Fornell and Larcker, 1981). To examine the discriminant validity, we compared goodness of fit indices for different measurement models to test whether sufficient discriminant validity existed among the latent variables in this study. The results in Table 3 show that compared with the other three models, the baseline model that incorporates all the four factors produced CFI, IFI, and GFI values that were substantially superior. In particular, because  $\Delta\chi^2$  was statistically significant ( $\chi^2 = 3.841$ ,  $p = 0.05$ ), discriminant validity was clearly present among the factors (Anderson and Gerbing, 1988). In addition, because the data came from the same source, we examined whether the CMV is significant by adopted Harman's single-factor test to compare the single factor to the four-factor model in this study. The result reveals that the four-factor model (baseline model) demonstrated a better fit than the one-factor model, indicating that the possibility of CMV is not significant in this study.

### 4.3. Hypotheses testing

Structured equation modeling (SEM) was adopted for model assessment in this study. The primary reason for this is that the purpose of this study is to examine the hypothesized model and test the fitness of the theoretical model, not to develop and explore theory. Second, all latent variables in this study belong to reflective indicators (Story et al., 2013; Diamantopoulos and Winklhofer, 2001). Therefore, SEM is more appropriate than other regression related techniques.

Parameters were estimated using the method of maximum likelihood and the goodness of fit indices used were  $\chi^2$ ,  $\chi^2/df$ , CFI, GFI, IFI, SRMR, and RMSEA. SEM analysis resulted in  $\chi^2 = 506.718$  ( $p = 0.000$ ),  $\chi^2/df = 2.499$ ,  $CFI = 0.933$ ,  $GFI = 0.902$ ,  $IFI = 0.934$ ,  $SRMR = 0.049$ ,  $RMSEA = 0.072$ . These results indicated that the goodness of fit between the data and theoretical model was acceptable. The standardized path coefficient results in Fig. 2 show that shared leadership had a positive effect on collective positive PsyCap ( $\beta = 0.607$ ,  $t = 6.87$ ,  $p < .001$ ); therefore,  $H_1$  was supported. This result indicates that collective positive PsyCap is increased and its positive development is promoted when team members maintain a superior state of coordination and interactions under the influence of shared leadership. Next, shared leadership had a positive effect on organizational commitment ( $\beta = 0.319$ ,  $t = 3.93$ ,  $p < .001$ ), as did collective positive PsyCap ( $\beta = 0.448$ ,  $t = 5.08$ ,  $p < .001$ ). Therefore,  $H_{2a}$  and  $H_{3a}$  were both supported. These results indicated that organizational commitment is increased when shared leadership influences a team and when its members are in a positive psychological state. The relationships between shared leadership or collective positive PsyCap and creativity were as predicted by our hypotheses. Shared leadership produced a positive effect on creativity ( $\beta = 0.235$ ,  $t = 2.16$ ,  $p < .05$ ) and

**Table 3**  
Comparison of measurement models.

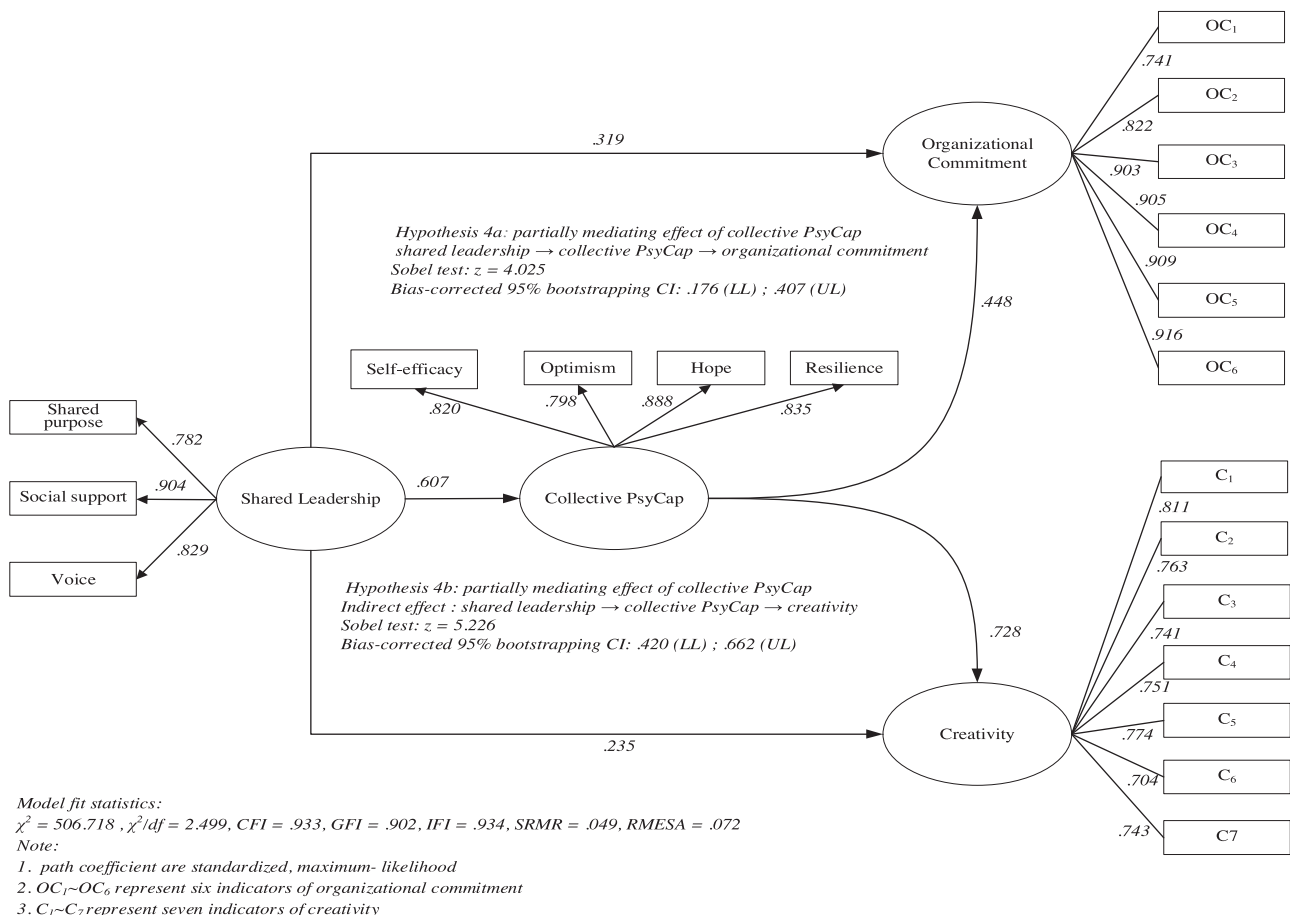
Model		$\chi^2$	df	$\Delta\chi^2$	CFI	IFI	GFI
Baseline model	Four factors: Shared leadership, collective PsyCap, organizational commitment, creativity	503.8	224	–	0.936	0.937	0.919
Model 1	Three factors: Shared leadership, collective PsyCap, organizational commitment and creativity were combined into one factor	1132.5	227	628.7	0.723	0.737	0.678
Model 2	Two factors: Shared leadership and collective PsyCap were combined into one factor	1389.1	229	885.3	0.702	0.701	0.618
Model 3	One factor: Shared leadership, collective PsyCap, organizational commitment, and creativity were combined into one factor	1494.2	230	988.4	0.634	0.642	0.592
Null model		4238.3	253	3734.5	0.000	0.000	0.000

collective positive PsyCap had a highly significant positive effect on creativity ( $\beta = 0.728, t = 6.61, p < .001$ ). Therefore,  $H_{2b}$  and  $H_{3b}$  were supported. These results indicated that both shared leadership and collective positive PsyCap can inspire and promote creativity.

Next, we examine whether collective PsyCap acts as a mediator in the relationship between shared leadership and organizational commitment, and between shared leadership and creativity. According to the recommendation of MacKinnon et al. (2002) and other prior research work (e.g., Peak et al., 2015; Kim et al., 2017a, b), the Aroian version of the Sobel test (as suggested by Baron and Kenny, 1986) and the Preacher and Hayes (2004) method for bootstrapping were adopted. The Sobel test result showed that collective positive PsyCap had a partial mediating effect on the relationship between shared leadership and organizational commitment ( $z = 4.025, p < .001$ ) and on the relationship between shared leadership and creativity ( $z = 5.226, p < .001$ ). Both results meet the standard, proposed by MacKinnon et al. (2002) and Preacher and Hayes (2004), of a z value greater than 1.96, indicating that collective PsyCap had a mediating effect on the relationship between shared leadership and both organizational

commitment and creativity. In the bootstrapping method, 95% bias-corrected CI was estimated using 2000 bootstrapped samples. The indirect effect of collective PsyCap between shared leadership and organizational commitment is equal to 0.272 ( $p < .01; CI [LL: 0.176; UL: 0.407]$ ), the indirect effect of collective PsyCap between shared leadership and creativity is equal to 0.442 ( $p < .001; CI [LL: 0.420; UL: 0.662]$ ), showing that 95% CI did not include zero, indicating also that collective PsyCap had a mediating effect on these two paths.

Combining the results of the Sobel test and bootstrapping method, we found that collective PsyCap mediates the effect of shared leadership between both organizational commitment and creativity. Because shared leadership directly and significantly influences organizational commitment and creativity, both analyses of mediating effects indicated that collective PsyCap partially mediates the relationship between shared leadership and organizational commitment and shared leadership and creativity. Based on the finding,  $H_{4a}$  and  $H_{4b}$  are supported.



**Fig. 2.** Structural equation modeling results for hypothesized model.

## 5. Discussion

A sample of 267 individuals from 52 hotels employed as frontline employees at 4- or 5-star hotels in Taiwan were used to examine the causal relationships between shared leadership, collective PsyCap, organizational commitment, and creativity. The results showed a good fit between the hypothesized model and the data, and noted further that shared leadership was positively and significantly correlated with collective PsyCap, organizational commitment, and creativity. Collective PsyCap was positively and significantly correlated with organizational commitment and creativity also. More importantly, collective PsyCap plays an important partial mediating role in the relationships between shared leadership and organizational commitment, and between shared leadership and creativity. Although our findings regarding the effect of PsyCap are similar to the results of some past literature (e.g., Bouzari and Karatepe, 2017; Jung and Yoon, 2015; Kim et al., 2017a, b; Peak et al., 2015), in this study, we provide a new insight that explores PsyCap at a collective level. This, indeed, filled a research gap and declared the effect of collective PsyCap on commitment and creativity within a hotel. In addition, it is not difficult to find that when shared leaders articulate clearly a shared vision and goals that receive the approval of the hotel members and when the leaders create an atmosphere with the essential characteristics of shared leadership, including supporting and encouraging members to voice their suggestions and original ideas, the team members can interact and exchange information and consider jointly how to reach a consensus and develop innovative solutions. The hotel members' belief in the shared leadership modeled by their leaders builds gradually their perception that each team member has an essential strength and is indispensable to the hotel operations. This perception increases the positive PsyCap of the team; in other words, the mental states of the team members tend toward higher collective efficacy, collective hope, collective optimism, and collective resilience. Furthermore, organizational commitment and creativity can be improved under the influence of shared leadership.

Our findings corroborate that of Walumbwa et al. (2011) who found that leadership can increase collective PsyCap. However, we highlighted the positive effect of a new leadership model – shared leadership – on collective PsyCap. Even though the finding that shared leadership promotes creativity is similar to some prior studies (e.g., Lee et al., 2015; Wu and Cormican, 2016; Gu et al., 2016). In this study, we find that the indirect effect of shared leadership on creativity was stronger than the direct effect, indicating that collective PsyCap had a strong partial mediating effect in the relationship between shared leadership and creativity. In other words, in the relationship between shared leadership and creativity, with collective PsyCap serving a partially mediating role, the degree of the influencing effect of shared leadership on creativity will be stronger. Therefore, a hotel in a state of higher collective PsyCap is more likely to generate creativity.

In summary, our findings provide four contributions to the theory. First, we adopted a macro perspective based on the social exchange theory to develop a hypothesized model and elaborate the relationships among research variables. This finding declares that shared leadership can be able to formulate a sharing and supportive culture within a social structure; thus, not only does it promote commitment and creativity but it also highlights the mediating effect of collective PsyCap, especially regarding the exchange relationship on creativity. Therefore, such empirical evidence of a hypothesized model expands social exchange theory to hotel research domain and expands the generalization of the theory. Second, we claimed that the importance and value of collective PsyCap in the relationships between shared leadership and organizational commitment and between shared leadership and creativity constitute a different mechanism than the trust and mutual benefit principles emphasized by the social exchange theory. Instead, it highlights the importance of collective PsyCap, which has received relatively less attention in the past. Under the influence of shared leadership, collective PsyCap can strengthen commitment to the

organization and stimulate development of creativity among hotel employees. Third, regarding the level of analysis of PsyCap, Newman et al. (2014) stated that studies at the collective level are relatively rare. We collected and transformed individual data into aggregate data for analysis at the collective level. Our findings can broaden the scope of PsyCap research at the collective level. Fourth, studies of the application of collective PsyCap to the tourism and hospitality industry have been limited. We introduced the benefits of collective PsyCap for hotels seeking to create new advantages and found that collective PsyCap is an important partial mediating variable in the exchange relationship between a leader and a team. These findings, in addition to stimulating discussion in applied organizational psychology research in the field of hotels, may serve as a source of reflection and reference for the tourism and hospitality industry in management decisions or education and training.

## 6. Managerial implications

Regarding the practical managerial implications, based on the above discussion and summary of the findings, we emphasized the positive benefits of shared leadership on organizational behaviors. At the same time, we corroborated and expanded upon research into the effect of collective PsyCap in the hotel field. Based on this, we provide the following three practical suggestions. First, hotels should make proper use of the shared leadership model: Traditional vertical or authoritarian leadership models were once perhaps effective and valuable in an appropriate environment. However, as service and customer conscious business structures have emerged, frontline employees need to display adaptation and creative thought. In today's competitive hotel industry, employees that lack these features may cause their hotels to lose customers and lower the rate of room occupancy; it may even affect a hotel's survival. Therefore, hotels should consider building a culture of shared leadership. Hotels should list shared leadership qualities as one of the necessary criteria in the selection mechanism for hiring managers and should design management training courses to promote shared leadership behaviors. Through these policies, hotels can create a work environment that supports and encourages their employees to voice their opinions.

Second, hotel managers should appreciate the importance of collective PsyCap on organizational commitment and creativity. We knew that frontline employees with higher level of PsyCap can enhance their work engagement (Karatepe and Karadas, 2015). This implies that frontline employees are important assets to hotels and their mental states affect their service attitudes and behaviors toward customers. In particular, hotel staff members are affected inevitably by the negative emotions of customers, colleagues, and supervisors during the busy and strenuous peak tourism seasons. Based on our empirical finding that collective PsyCap can enhance organizational commitment and creativity, department or unit managers in hotels may wish to consider carefully mechanisms to strengthen collective PsyCap to improve organizational commitment and creativity within their unit. These measures can decrease effectively members' turnover, but more importantly, they can impart creativity to the products and service offered by the hotel. Regarding the practical implementation of positive PsyCap, employee retreats are unique in that they emphasize spiritual and mental rest by offering off-site training programs in spiritual growth or mindfulness meditation (Kabat-Zinn, 1994), thus, further buffering any negative effects from employees, resulting in superior service for the customers. The benefits of these retreats would be lower turnover and higher occupancy rates and revenue resulting from creative inspiration among the employees. Therefore, hotel managers should review and update the existing training designs to match actual employee needs.



## 7. Limitations and future research

Although the present study, like other empirical studies, strove for rigor and perfection in theoretical deductions, research design, and statistical analysis, some limitations still existed. First, even though a back-translation procedure, collecting data in the multiple time, and the post hoc Harman's single-factor test were employed to try to reduce and examine the risk of CMV introduced by bias error, all survey data were collected from a single source in this study. In addition, creativity measures are self-rated by employees also drive the concern about CMV. Therefore, future researchers need to conduct collecting data from different source. Second, data collection and statistical testing were limited to the tourism hospitality industry. To strengthen and verify the generalization of the proposed theoretical model, future researchers need to investigate further the model in other industries. Third, our hypothesized model tested the relationships between shared leadership, collective PsyCap, organizational commitment, and creativity at a collective level. However, creativity is susceptible to task interdependence (Dong et al., 2017; Li et al., 2016). Therefore, we suggest future studies include task interdependence as control variable for a more comprehensive clarification of the causal relationships of the variables in the proposed theoretical model.

## 8. Conclusion

Shared leadership is a contemporary leadership model that is getting more attention gradually. Because shared leadership research is still scarce in the hospitality research domain, we present a hypothesized model that integrates shared leadership, collectivePsyCap, organizational commitment, and creativity based on a macro perspective of social exchange theory. We acquired empirical evidence to support hypotheses concerning the relationship between these variables. The findings show that especially, collective PsyCap partially mediates the relationship between shared leadership and both organizational commitment and creativity. The findings highlight that shared leadership and collective PsyCap have critical roles in enhancing organizational commitment and creativity in the hotel field. In sum, the hypothesized model provides the stage for future research and provides a valuable reference for future research on shared leadership and collective PsyCap.

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