How proactive personality can decrease turnover intention: A moderated mediation model of justice perception and career adaptability in Taiwanese nurses
探究積極性人格特質如何降低台灣護理師離職傾向：一項整合公平知覺與職涯適應力的調節式中介模式

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Abstract: The conservation of resources theory is advanced by a joint investigation of the mediating role of (a) justice perception in linking proactive personality with turnover intention and (b) the moderating role of career adaptability in influencing the mediation. Using Preacher, Rucker, and Hayes' (2007) moderated mediation framework, this research employs a sample of nurses from both district hospitals and medical centers (N = 200) who completed a questionnaire twice over an interval of seven days. The results indicate that justice perception mediates the relationships between proactive personality and turnover intention, and that career adaptability moderates the indirect effect among this relationship, such that the indirect effect is strong for individuals who have a high level of career adaptability. Theoretical and practical implications of our model are discussed.

Keywords: Career adaptability, justice perception, proactive personality, turnover intention, moderated mediation.

摘要：本研究是以資源保存理論(conservation of resources theory; COR)為基礎並同時探究(a).公平知覺對積極性人格特質與離職傾向之間關係的中介效果；及(b).職涯適應力對上述中介歷程的調節效果。本研究採用 Preacher, Rucker, and Hayes＇(2007)提出的調節式中介架構進行假設建立與驗證，並以台灣北部地區教學醫院及地區醫院的護理師為研究對象，採用二階段間隔法(間隔 7 天)進行問卷資料的蒐集，共蒐集有效問卷 200 份。研究結果顯示出，公平知覺對積極性人格特質與離職傾向之間關係具有中介效果，其次，職涯適應力對上述中介歷程具有強化的調節效果，亦即，只有當護理師具有較高的職涯適應力時，其積極性人格特質透過公平知覺對離職傾向的影響效果才會顯著。本研究亦針對理論與實務意涵及未來研究進行討論。

關鍵詞：職涯適應力、公平知覺、積極性人格特質、離職傾向、調節式中介。

1. Introduction

Turnover intention, defined as "the possibility of individuals changing their current jobs in a period of time," is prevalent in the nursing industry (Hong and Lee, 2016), and among nurses it has negative consequences on patients' quality of medical care and leads to higher healthcare costs (Gardner, Thomas-Hawkins, Fogg, and Latham, 2007; Kim, Kim, and Choi, 2016). It is influenced by several environment factors, such as poor cooperation, leadership quality, and low satisfaction with both welfare and salary (Alhamwan, Bt Mat, and Al Muala, 2015; Kudo *et al.*, 2006). In Taiwan, the working environments of nursing industry are dynamic, complex, stressful, and less friendly from the side of patients and colleagues) than other medical professions (Lee, Yen, Fetzer, and Chien, 2015). In fact, the country's nursing profession has long experienced difficulty in personnel retention. Although experimental studies have been performed in this field for many years and have identified many factors that active nurses follow with interest, the issue of turnover intention remains important and cannot be ignored in the nursing academy (Liu *et al.*, 2016). A

recent survey shows that 56.1% of nurses intend to leave their hospital (Lee *et al.*, 2017); moreover, over 40% of all registered nurses are non-practicing (Taiwan Union of Nurses Association, 2017). These findings suggest the need to perform in-depth studies to identify the reasons for their high levels of turnover intention.

Several studies to date have investigated the association between turnover intention and personality traits among nurses. Following a social comparison perspective, Meeusen, Van, Brown-Mahoney, Van Zundert, and Knape (2011) revealed that when the personality traits of easy-going and respect showed high scores and compassionate exhibited low scores, nurses reported higher levels of turnover intentions. Linzer, Tilley, and Williamson (2011) performed a study based on 16 personality factors and reported that nurses who had higher scales of social boldness are more fearless in social situations such as being assigned to new units or other stressful events. These studies have indicated that personality traits play an important role in the day-to-day activities of frontline nurses. Positive, optimistic, and agreeable features can and do help nurses to deal with conflict and provide additional assistance to colleagues (Whitworth, 2008). These features are particularly critical in the nursing profession (Erdenk and Altuntas, 2017). Thus, special attention should be paid to such features, and their vigorous and direct characteristics are summarized in the concept of proactive personality.

Proactive personality refers to the behavioral tendency of identifying opportunities and affecting environmental change, but presents mixed effects on turnover intention in past survey (Morgan, Walker, Wang, and Aven, 2012; Tang, Liu, Oh, and Weitz, 2014; Vandenberghe and Afife, 2013). Moreover, limited information is available about the proactive personality and work outcomes of nurses as well as how they may influence turnover intention. According to conservation of resources perspective, Prapanjaroensin, Patrician, and Vance (2017) proposed that loss of resources could cause burnout and affect work performance, leading to reduced alertness and quality of care among frontline nurses. This theory explains why the relationship between proactive personality and turnover intention has mixed results. In other words, nurses with proactive

traits sometimes cannot handle stressful incidents appropriately, eventually inviting terrible consequences. Although proactive personality has been studied in multiple contexts with multiple outcomes (Crant, 2000), most of the literature has focused on its influence on employee behavior and attitudes without knowing much about the influence process. Therefore, this study looks to identify and explain this relationship.

Savickas (1997) proposed the concept of career adaptability, which denotes the "readiness to cope with predictable task of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions" (p. 254). Thus, career adaptability as a resource enables nurses to deal with pressures in their work environments such as job demands and patient safety (Omar and Noordin, 2013; Tladinyane and Marna, 2016). Furthermore, career adaptability plays a major role for employees, because it facilitates the application of knowledge, skills, and competence (Brown, 2015), and it can be a crucial resource to support frontline nurses confronting a stressful workplace. Previous studies on career adaptability have examined its effect on turnover intention, but surprisingly found mixed results similar to those after analyzing proactive personality (Chan and Mai, 2015; Karatepe and Olugbade, 2017). According to the conservation of resources theory, for employees positioning themselves through selection in circumstances that fit their resources (Hobfoll and Jackson, 1991), their reason to leave may be determined by organizational factors rather than individual motives. Therefore, these organizational factors must be understood in order to improve the retention rate of nurses and coordinate the relationship between turnover intention and personal variables.

In summary, this study facilitates the understanding of the effect of organizational factors on a nurse's work environment through the conservation of resources approach. Organizational factors, such as inflexible working hours, high workload, poor job control, and high job demands, are directly associated with turnover intention among nurses (Campana and Hammoud, 2015); however, their working mood is rarely studied. Justice perception, which refers to whether

nurses are treated fairly, has repeatedly been shown to affect their behavior, emotions, and attitude (Sulander *et al.*, 2016). Our study supplements the relationship between proactive personality and turnover intention by adding justice perception and including an additional individual factor (i.e., career adaptability) to provide guidance for nurses' managers and supervisors.

We thus develop a moderated mediation model (e.g., Edwards and Lambert, 2007; Muller, Judd, and Yzerbyt, 2005; Preacher *et al.* 2007) that jointly examines justice perception as the mediating mechanism and career adaptability as the moderator, in order to enhance the theoretical validity and precision of the conservation of resources theory and to substantiate our model and the hypotheses associated with it. Using Preacher *et al.*'s (2007) analytical procedures, we report a moderated mediation test of our model that uses a sample of nurses from both district hospitals and medical centers in Northern Taiwan. This study establishes a theoretical framework to identify methods for improving turnover intention among Taiwanese nurses. Figure 1 presents our research model.
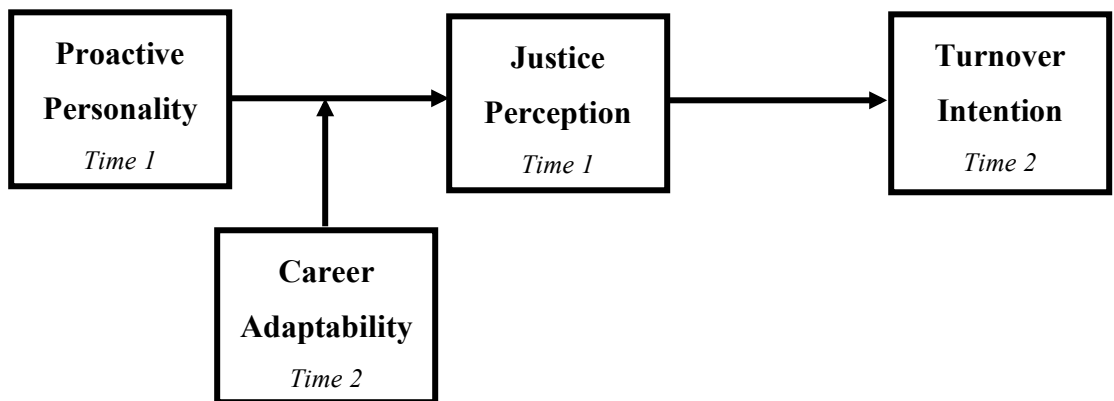

Figure 1
Hypothesized model in the present study.

2. Theoretical background and hypotheses

2.1 Proactive personality: Advantage of conserving resources

Proactive behaviors refer to the decisions or actions people take to influence their environment. Empirically, this process includes: (1) selection; (2) cognitive restructuring; (3) evocation; and (4) manipulation, which refers to people changing their own environment - that is, manipulating their responses to other people (Bateman and Crant, 1993). Bergeron, Schroeder, and Martinez (2014) evaluated organizational citizenship behavior and job behaviors and indicated that proactive personality is not positively related to any type of task behaviors. Thus, proactive personality is a stable trait that enables individuals to take personal initiatives and behave proactively according to the situation (Crant, 2000; Jara, Casas, and Ortegaruiz, 2017). This concept has been used to explore the relationships between work engagement, job satisfaction, and intention to remain in or leave a company (Dikkers, Jansen, de Lange, Vinkenburg, and Kooij, 2010; Prabhu, 2013) and originated from individual, organizational, and job characteristics. In other words, perceptions of norms and behavioral control are likely to encourage individuals to make proactive decisions about leaving or remaining in their job (Shin and Kim, 2015). Therefore, the effect of proactive personality in the workplace must be examined and understood.

The conservation of resources theory mentions that resource acquisition, maintenance, and fostering are basic motivational goals that require the expenditure of other resources (Hobfoll, 1989). Thus, individuals and groups proactively cope by (1) striving to acquire and maintain their resource reservoirs, (2) acting early when the initial warning signs of an impending problem arise, and (3) positioning themselves through selection in circumstances that fit their resources or otherwise place them and their family or social group at an advantage (Hobfoll, 2001, p. 352). Although a high negative work mood could be perceived as a personal threat to these resources, not all individuals view it this way. A stressor is thought to only induce stress when it is perceived as a personal threat to the appraising individual (Lazarus and Folkman, 1984).

Individuals with high on proactive personality are expected to have an abundance of resources over those low on this trait, and so a high negative work mood may not be viewed as resource taxing (Haynie, Flynn, and Mauldin, 2017). Han, Wang, and Dong (2014) also suggested that proactive personality can serve as a coping resource that buffers the dysfunctional effects of role conflict. In addition, other proactive personalities, as seekers of resources and opportunities, may initiate more requests than others. Previous research has shown that highly proactive personalities dynamically engage with their surrounding environment and have a strong need to shape it (Bateman and Crant 1993).

One example is that higher proactive individuals will have more resources at their disposal than their less proactive colleagues. Although some resources are needed to perform the required job duties, additional resources are needed to engage in discretionary job behaviors, especially in stressful situations (Kisamore, Liguori, Muldoon, and Jawahar, 2014; Aybas and Acar, 2017). The following section explains that individuals with a proactive personality have more resources to survive in stressful work environments. All these reasons suggest that a proactive personality negatively correlates with turnover intention. However, personality is a stable trait that is difficult to manage or cultivate through education or other means; therefore, alternative sources must be identified to explain the relationship between proactive personality and turnover intention.

2.2 Justice perception as a mediator

Organizational justice is recognized as a basic requirement for the effective functioning of organizations and the personal well-being of the employees (Greenberg, 1990). Many studies have evaluated its impact on employee perceptions and workplace expectations, primarily focusing on delineating the role of fairness and its impact on job outcomes such as work satisfaction, behaviors, mental health, and turnover intention (Rai, 2015; Tourani *et al.*, 2016). Organizational justice includes three main measures: (1) distributive justice, which refers to fairness related to the distribution of resources and outcomes to

decisions made, which can be tangible or intangible (Ben-Shahar, 2015); (2) procedural justice, which focuses on processes such as decision-making procedures in the workplace that are used to determine outcomes such as conflicting solutions (Inoue, Kawakami, Eguchi, and Tsutsumi, 2016); and (3) interactional justice, which focuses on employees' perceptions of interpersonal behavior during the representation of decisions and procedures (Huang and Huang, 2016) and is used to describe and explain how individuals behave in their workplace (Faldetta, 2016).

Previous studies have suggested that the perception of organizational justice has a negative relationship with the passive traits of personality (Fabio and Palazzeschi, 2012; Henle, 2005) and turnover intention (Meisler, 2013). Accordingly, proactive personality may affect justice perception, because employees should restore justice as a resource, and a proactive personality can support that in a stressful environment (Krings and Facchin, 2009). Thus, organizational justice influences proactive personality on turnover intention for two reasons. First, employees who have a higher level of proactive personality are always related to turnover intention, but it is not stably positive or negative (Vandenberghe and Afife, 2013; Yang, Gong, and Huo, 2011). In other words, an important issue must affect the relationship between both for employees to decide to remain, and a more proactive person will perform adjustment behaviors to save resources in an unfriendly environment (Zhang, Liao, Yan, and Guo, 2014). Second, the relationship between personality and turnover intention is more important than many other dimensions in the working environment, such as procedure, interaction, and temporal dimensions (Usmani and Jamal, 2013). Thus, the following hypothesis is proposed.

Hypothesis 1. Justice perception mediates the relationship between proactive personality and turnover intention.

2.3 External resource: Career adaptability as a moderator

Although we argue that conservation of resources explains the relationship between proactive personality and turnover intention through justice perception,

studies have suggested that such processes can be counteracted or even eliminated (Khan, Abbas, Gul, and Raja, 2015; Lyu, 2016; Tourani *et al.*, 2016). Some studies have even confirmed that initiative behavior provides a better perception of organizational justice (López-Cabarcos and Vázquez-Rodríguez, 2015), but proactive personality as a trait cannot be changed. In other words, a person with a low level of proactive personality easily has feelings of unfairness due to a lack of resources and ultimately will resign. Because justice perception affects multiple spheres of the working environment (Zhang and Zhang, 2015), new resources must be added as required to improve employees' self-resources (Tuckey and Hayward, 2011).

Career adaptability refers to a person's willingness and ability to adapt to changing work environments - that is, the ridge (e.g., career disequilibrium or transition) that initiates interpersonal and intrapersonal processes guiding a goal-directed activity that are reached when the employee is not flexible or not willing to change and persists at routine activities (Savickas and Porfeli, 2012). The conservation of resources theory and various studies clearly explain why the effect of proactive personality on justice perception could depend on career adaptability in the hospital setting (Fiori, Bollmann, and Rossier, 2015; Yang, Guan, Lai, She, and Lockwood, 2015). For example, when resources are limited, individuals with less adaptability who are in conflict with their colleagues or supervisors are less likely to sense others' assistance and feel unfairly treated in a stressful environment (Brouer, Gallagher, and Badawy, 2016). By contrast, individuals with strong levels of career adaptability report more security in their workplace (Hees, Rottinghaus, Briddick, and Conrath, 2012) and recover better in a stressful environment (Barto, Lambert, and Brott, 2015) than those who do not. Likewise, the effect of low resources can be reduced when a new stronger resource emerges (Hirschi, 2014). Therefore, the effect of proactive personality on justice perception may be stronger among individuals with higher levels of career adaptability than those with lower levels. Thus, the second hypothesis is proposed.

Hypothesis 2. Career adaptability moderates the relationship between

proactive personality and justice perception, such that the relationship is stronger under a high level of career adaptability than under a low level of career adaptability.

Career adaptability overall may provide a strong psychological resource suitable for stressful jobs and thus prevent employees from feeling unfairly treated. Likewise, career adaptability may moderate the relationship between proactive personality and justice perception. However, our model herein extends beyond those of Zacher (2014) and Koen, Klehe, and Van Vianen (2012) by examining career adaptability as a moderator to mediate relationships between proactive personality, justice perception, and turnover intention rather than only as a moderator of the direct relationship between proactive personality and justice perception.

Consistent with the conservation of resources theory, four psychosocial resources of career adaptability (career concern, career control, career curiosity, and career confidence) may be available for individuals to integrate functions that help guide their thoughts, reflections, and perceptions at work and increase perceptions of meaning in the workplace that are consistent with their proactive personality. Thus, these resources can strengthen the justice perception formation and accentuate the motivational processes underlying the proactive personality–turnover intention link (via justice perception). For instance, a greater source of resilience for individuals in the construction of their careers with greater career adaptability is likely to encourage proactive individuals to act in advance of a future situation, take control, and make things happen (Coetzee and Stoltz, 2015), which should strengthen the role of justice perception in explaining the relationship between proactive personality and turnover intention. The model proposed herein represents the first stage of a moderated mediation model. To examine the moderated mediation effect implied the model, the following formal hypothesis is proposed.

Hypothesis 3.   Career adaptability moderates the indirect effect of proactive personality on turnover intention through justice perception, such that

the indirect effect is strong and positive among individuals with higher career adaptability and weak or null among those with lower career adaptability.

3. Method

3.1 Participants and procedures

In order to avoid common method variance (CMV) and building upon Podsakoff, MacKenzie, Lee, and Podsakoff's (2003) recommendations, we collected independent and mediated variables in time1 and dependent and moderated variables in time2. In total, 247 Taiwanese registered nurses working at acute wards, intensive units, and other departments were recruited from several hospitals including district hospitals and medical centers in Northern Taiwan. The nurses first received and completed a survey that enquired about their personality traits and justice perception. One week after completing the survey, participants received a second survey regarding their experience of career adaptability and turnover intentions.

In the final sample (n = 200; total response rate of 81%), nurses were mostly female (95%), unmarried (87%), and university graduates (82%), with an average age of 26 years (standard deviation = 6.32). On average, respondents reported having 1-2 years of experience as a nurse and had been at their current job for approximately 1-2 years. Common departments reported were medical ward, surgical ward, intensive care unit, emergency room, operating room, and delivery room.

3.2 Measures

The data used for this study were part of a wider data collection effort, and our study is the first to use this series. Chinese versions were established for all measures following the commonly used translation-back translation procedure (Brislin, 1970). All measures used the same response scale, ranging from 1 (strongly disagree) to 6 (strongly agree). The measures presented in the following sections are the focus of this study's research question and its

associated analyses.

3.2.1 Proactive personality

The shortened version of the Proactive Personality Scale developed by Seibert, Crant, and Kraimer (1999) was employed by this study. This 10-item measure is used to estimate a person's personality trait. Sample items include "I am constantly on the lookout for new ways to improve my life" and "Nothing is more exciting than seeing my ideas turn into reality." Cronbach's alpha for the scale is .82.

3.2.2 Justice perception

The Perception Overall Justice scale simplifies the inventory of organizational justice scale developed by Ambrose and Schminke (2009). It is a 6-item measure to assess an individual's perception of organizational justice. Sample items include "Overall, I'm treated fairly by my organization" and "In general, I can count on this organization to be fair." The scale has construct validity with procedure justice, distributive justice, and interpersonal justice. Cronbach's alpha for the scale is .83.

3.2.3 Career adaptability

The Career Adapt-Abilities Scale (CAAS) was developed in Taiwan (Tien, Wang, Chu, and Huang, 2012). The 24-item CAAS measures participants' career adaptability. It has four subscales: concern (6 items; e.g., "Thinking about what my future will be like"), control (6 items; e.g., "Keeping upbeat"), curiosity (6 items; e.g., "Exploring my surroundings"), and confidence (6 items; e.g., "Performing tasks efficiently"). Cronbach's alpha for the scale is .96. The internal reliability coefficients for the present sample are .86 (concern), .89 (control), .90 (curiosity), and .92 (confidence).

3.2.4 Turnover intention

The Nurse's Turnover Intention Questionnaire was based on the study by

Taunton *et al.* (1997). It contains four items to estimate the trend of turnover intention among nurses. Sample items include "How do you feel about your future in the hospital overall" and "Do you expect to move to another job in the hospital in the near future". Cronbach's alpha for the scale is .86.

3.3 Data analyses

Before hypothesis testing, we conducted confirmatory factor analysis (CFA) at the item level using Mplus 8 (Muthén and Muthén, 1998–2017) to evaluate the distinctiveness of the constructs. First, following CFA, this research deleted items and compressed dimensions. Career adaptability totaled 24 questions within four sub-dimensions. Following Marsh and Hocevar (1985), by calculating the target coefficient this study compares CFA of the first order and the second order to decide the fitness with data. A target coefficient (T) closer to 1 implies that the second-order CFA can replace the first-order CFA, making the model more precise. The target coefficient (T) of career adaptability is 0.96, or very close to one in this study. The fitness index of second-order CFA of career adaptability reveals the fitness is good. Therefore, this study takes the results of second-order CFA to implement structural model analyses.

Second, adhering to Hooper, Coughlan, and Mullen (2008), items with factor loadings greater than 0.45 were retained in the final result. However, there are some items with factor loadings below the cut-off value. Three items were excluded from further analysis for proactive personality and one for justice perception and turnover intention respectively. As shown in Table 1, the CFA results suggest that the expected 4-factor model fits the data significantly better ($\chi 2$ = 265.35, p < .001, df = 146, CFI = .92, RMSEA = .07, SRMR = .07) than a three-factor model combining justice perception and career adaptability ($\chi 2$ = 331.87, p < .001, df = 149, CFI = .76, RMSEA = .11, SRMR = .10), a two-factor model combining proactive personality, justice perception, and career adaptability ($\chi 2$ = 346.87, p < .001, df = 151, CFI = .74, RMSEA = .11, SRMR = .10), and a one-factor model in which all variables are set to load on a single factor ($\chi 2$ = 816.97, p < .001, df = 152, CFI = .53, RMSEA = .16, SRMR = .13).

These findings support discriminant validity of the research variables. Table 1 reports the confirmatory factor analysis results comparing the fit of models.

Table 1

Confirmatory factor analysis results for comparing the fit of models

Model	X^2	df	RMSEA	SRMR	CFI
Four-factor	265.35	146	.07	.07	.92
Three-factor	331.87	149	.11	.10	.76
Two-factor	346.87	151	.11	.10	.74
One-factor	816.97	152	.16	.13	.53

Note.   Four-factor model: turnover intention, justice perception, career adaptability, and proactive personality; three-factor model: turnover intention, the amalgamation of justice perception and career adaptability, and proactive personality; two-factor model: turnover intention, the combination of justice perception, career adaptability and proactive personality; one-factor model: merging the all independent variables and dependent variables.

4. Result

Table 2 presents descriptive statistics, bivariate correlations, and Cronbach's alphas for all the variables. We use hierarchical multiple regression to test Hypothesis 2 (moderation) and utilize PROCESS, a SPSS macro (Hayes, 2013; Preacher *et al.* 2007), to examine Hypothesis 1 (mediation) and Hypothesis 3 (moderated mediation). All terms are mean-centered to reduce multicollinearity.

Hypothesis 1 predicts that justice perception mediates the relationship between proactive personality and turnover intention. An important indication of mediation within the analysis of Preacher and Hayes (2004) procedure is the significance level of the indirect effect from proactive personality to turnover intention through justice perception, as indicated by the p-value or the bias-corrected bootstrap intervals. To derive the significance of the mediated moderating effect (indirect effect), we take the bootstrapping approach, whereby

we bootstrapp 5,000 samples to obtain bias-corrected 95% confidence intervals. This parameter resampling approach has advantages when dealing with the violation of normal distribution assumptions (Shrout and Bolger, 2002). The SPSS macro PROCESS is utilized to conduct the analyses.

As Table 3 shows, the total effect of proactive personality on turnover intention is significant (β = -.28, with a 95% CI = [-.47, -.09]). In addition, the indirect effect of proactive personality on turnover intention via justice perception is also significant (β = -.17, with a 95% CI = [-.28, -.07]). Given that none of the CIs contain zero, the results partially support Hypotheses 1. Moreover, given that the direct effects of proactive personality on turnover intention are non-significant (β = -.11, with a 95% CI = [-.31, .08],) the combination of indirect effects noted above suggest the possibility of full mediation. Thus, Hypothesis 1 is supported.

We further test Hypothesis 2 by involving the interaction between proactive personality and career adaptability on justice perception. To test the moderated relationship, the control variables (i.e., gender, marital, age, education, tenure, and current tenure) are entered in the first step and regressed on justice perception. In the second step, proactive personality and career adaptability are entered, and the interaction term of these two variables is entered in the final step. Table 4 presents the ordinary least square regression tests for Hypothesis 2.

Consistent with Hypothesis 2, as Model 3 in Table 4 indicates, the interaction between proactive personality and career adaptability is significantly associated with justice perception (β = .15, SE = .05, p < .05) (unused dummies variables) as well as (β = .12, SE = .05, p < .1) (used dummies variables). To further test the direction of Hypothesis 2, we conduct a simple slope analysis (Aiken and West, 1991; Dawson and Richter, 2006) on high levels (1 SD above the mean) and low levels (1 SD below the mean) of career adaptability. As expected, the simple slope test suggests that the positive relationship between proactive personality and justice perception is significant when career adaptability is high (simple slope = .38, t = 2.13, p < .05), but not when it is low (simple slope = .02, t = .09, p = .93, ns.). We plot this interaction at the values of

Table 2

Descriptive statistics and bivariate correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1.Gender	.06	.23	-									
2.Marital	.14	.34	.10	-								
3.Age	26.33	6.32	.03	.68***	-							
4.Education	2.94	.40	.09	.02	.22**	-						
5.Tenure	2.51	1.34	.02	.54***	.83***	.18*	-					
6.Current Tenure	2.36	1.33	.00	.55***	.81***	.15*	.92***	-				
7.PP	4.18	.67	.09	.05	.15*	.15*	.10	.14+	(.81)			
8.CA	4.84	.57	.02	.00	.11	.23**	.06	.12+	.51***	(.96)		
9.JP	3.95	.89	-.07	-.07	.03	.32***	-.02	.01	.39***	.42***	(.83)	
10.TI	3.35	.96	-.12+	-.18**	-.35***	-.24**	-.29***	-.29***	-.29***	-.22**	-.39***	(.86)

Note. $^+ p < .1$ $^* p < .05$. $^{**} p < .01$. $^{***} p < .001$ Coefficient alphas are on the diagonal. PP: Proactive Personality; CA: Career Adaptability; JP: Justice Perception; TI: Turnover Intention

Gender: (0 = female, 1 = male). Marital: (0 = unmarried, 1 = married). Education: (1 = below the senior high or junior college student of five-year program, 2 = senior high or junior college of five-year program, 3 = university above). Tenure and Current tenure: (1= below 1 year, 2 = 1-4 year, 3 = 5-6 year, 4 = older than 6 year).

Table 3
Bootstrapping with mediation model

	β	SE	LLCI	ULCI
Total effect of proactive personality on turnover intention	-.28	.10	-.47	-.09
Direct effect of proactive personality on turnover intention	-.11	.10	-.31	.08
Indirect effect of proactive personality on turnover intention via justice perception	-.17	.05	-.28	-.07

Note. β, unstandardized regression coefficients; SE, standard error; LLCI, lower limit confidence interval; ULCI, upper limit confidence interval.

1 SD above and below the mean of organizational identification in Figure 2 (Aiken and West, 1991). Thus, Hypothesis 2 is also supported.

Finally, to test Hypothesis 3 we examine the conditional indirect relationship between proactive personality and turnover intention through justice perception at higher (mean +1 SD) and lower (mean -1 SD) values of career adaptability. As Table 5 shows, a PROCESS analysis with 5,000 bootstrap samples indicates that the conditional indirect relationship between proactive personality and turnover intention via justice perception is significant when career adaptability is high (indirect effect = .16, $p < .05$), but not when it is low (indirect effect = -.06, $p > .05$). Therefore, Hypotheses 3 is supported.

5. Discussion and conclusion

This study has demonstrated that justice perception mediates the relationship between proactive personality and turnover in the workplace. A more proactive personality influences justice perception to a greater extent, thus decreasing the level of turnover intention. Career adaptability moderates the relationship between proactive personality and turnover intention. The relationship appears to be stronger among nurses who have higher career adaptability. Nurses who perceive that managers, supervisors, and colleagues behave unjustly towards them (i.e., through poor cooperation or inconsistent

demands) tend to have increased turnover intention. These findings suggest that managers and supervisors should help improve the effect of justice perception by providing supporting behavior (i.e., verbal encouragement) and assigning colleagues to share workloads. Furthermore, managers can provide a series of training programs for frontline nurses to encourage them to remain in their current workplace.

5.1 Theory implication

This study is based on the idea that more than one aspect may explain the relationship between proactive personality and turnover intention. Although this relationship has been explored using various objective workplace factors, such as job complexity and job satisfaction (Chung-Yan and Butler, 2011; Joo, Hahn, and Peterson, 2015), varying results have been reported (Vandenberghe and Afife, 2013). Thus, additional factors may influence this relationship. This study adopts the conservation of resources theory to understand and explain how nurses' perceptions of justice influence the association between proactive personality and turnover intention. We set up a conceptual model and test it in order to better comprehend this relationship. The results indicate that proactive personality is positively associated with favorable justice perception, which in turn is negatively associated with turnover intention. Moreover, nurses with high levels of career adaptability exhibit less turnover intention. Overall, these results suggest that the conservation of resources theory is another aspect to realize the relationship between proactive personality and turnover intention.

The theoretical implications of our empirical investigation are threefold. First, to empirically assess the study relationships, the data obtained from district hospitals and medical centers in Northern Taiwan yield a relatively comprehensive collection in the field of proactive personality–turnover intention research. Most empirical studies have not focused on the relationship between proactive personality and turnover intention among frontline nurses. Because nurses are the main actors in the realization of medical behavior and ensuring patients' safety (Brunetto *et al.*, 2016), they are important members of the

Table 4

Regression results for testing moderation and the comparison model between used and unused dummies variables

Variable	Unused dummies variables						Used dummies variables					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
Gender	-.11	.31	-.13†	.31	-.12†	.30	-.13*	.33	-.14*	.33	-.14†	.32
Marital	-.05	.28	-.04	.28	-.04	.27	-.04	.29	-.04	.28	-.05	.28
Age	.00	.02	-.02	.02	-.01	.02	-.07	.02	-.09	.02	-.07	.02
Education	.33**	.18	.30**	.18	.24**	.18						
(dummy1)							.21*	.22	.20*	.22	.17*	.21
(dummy2)							.41**	.40	.47**	.40	.30**	.40
Tenure	-.35†	.14	-.26	.14	-.20	.14						
(dummy1)							-.53**	.39	-.47*	.39	-.45*	.39
(dummy2)							-.25*	.40	-.20	.39	-.19	.40
(dummy3)							-.34*	.58	-.30*	.57	-.24†	.57
(dummy4)							-.24	.78	-.19	.77	-.10	.76
Current Tenure	.35†	.14	.25	.14	.18	.13						
(dummy1)							.34†	.36	.27	.35	.27	.36
(dummy2)							.26*	.44	.19†	.44	.13	.44
(dummy3)							.26†	.60	.22†	.59	.19	.58
(dummy4)							.18	.75	.14	.73	.06	.72
PP			.23**	.07	.08	.08			.20**	.07	.08	.08
CA					.31**	.08					.27**	.09
PP x CA					.15*	.05					.12†	.05
R^2	.13		.18		.24		.21		.24		.29	
ΔR^2	-		.05		.06		-		.04		.04	
Adjusted R^2	.10		.15		.20		.15		.18		.22	
F	4.60**		10.77**		7.44**		3.57**		8.34**		5.23**	

Note. PP = proactive personality. CA = career adaptability. β, standardized regression coefficient. SE, standard error.
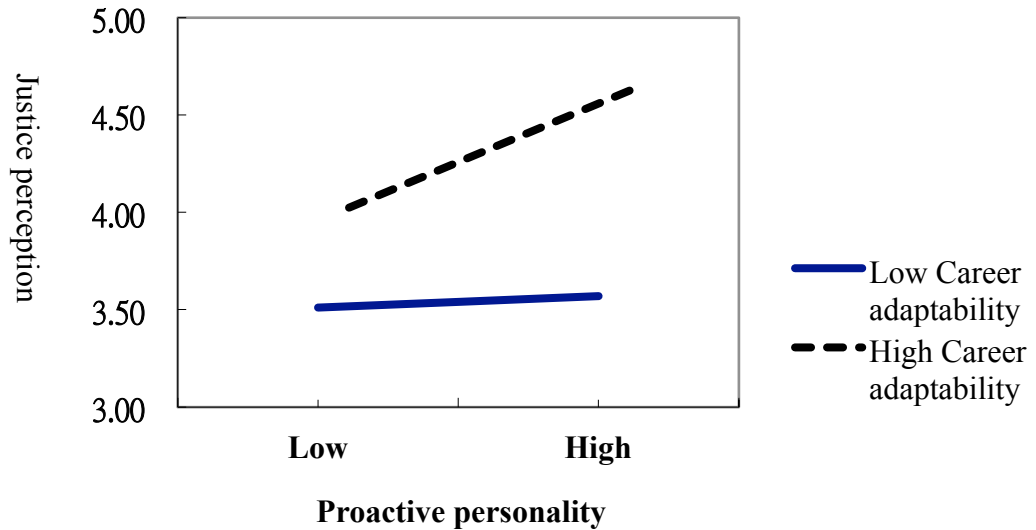
*p < .05. **p < .01. †p < .10.

Figure 2

The interaction between proactive personality and career adaptability on justice perception.

Note. High and low levels represent 1 *SD* above and below the mean

medical team and provide assistance in various procedures through their behaviors (e.g., information exchange and assistance; Yang *et al.*, 2011). The empirical findings shed light on the role of proactive personality in enhancing the careers of nurses. Our study's results support those of a previous one (Hwang, 2015).

Second, this study contributes to the literature by investigating the relationship between proactive personality and turnover intention and testing the effects of justice perception as a mediator of proactive personality on turnover intention, as manifested by distributive, procedural, and interactional justice. This is important, because few studies have attempted to identify the key factor that determines whether nurses decide to leave or stay (Chen, Perng, Chang, and Lai, 2016; Chen and Chen, 2018).

Table 5

Conditional indirect effect of proactive personality on turnover intention via justice perception

Moderator level	Turnover intention			
	Conditional indirect effect	SE	Boot z	p
Low	-.06	.06	-.38	.70
Mean	.11	.05	.98	.33
High	.16	.05	2.27	.02
Range of values				
-.84	-.03	.05	-.08	.84
-.57	-.06	.06	-.38	.70
-.28	-.09	.05	-.65	.57
0	.11	.05	.98	.33
.28	.14	.05	1.63	.05
-.57	.16	.05	2.27	.02
.84	.19	.06	2.89	.00

Note. Bootstrap sample size =5000. Mean = 0.00. High = 1.00(+1 SD). Low = -1.00(-1 SD). Range of values: the range of career adaptability's values.

As implied by the conservation of resource theory, resource possession is important for managing and translating work-related stress. A lack of resources, as well as their gain and loss, is a pivotal factor for interpreting and predicting both positive and negative impacts of stress, such as turnover intention (Chen, Westman, and Hobfoll, 2015). Based on this reasoning, nurses can employ proactive personality as a resource to help them face work-related stress. However, the factors influencing frontline nurses to determine whether to leave their job remain unknown. Justice perception must be added as a resource reservoir to complete this relationship (Robinson, Magee, and Caputi, 2016). Among nurses with low justice perception, this reservoir is broken and easily damaged. Therefore, justice perception enables them to plan work-related

possibilities in their current workplace and helps their colleagues or supervisors to focus on various strategies that result in the achievement of turnover rate goals. These results are in agreement with existing research suggesting that high justice perception can make nurses more confident in their organization and decrease their turnover intention (Fathabad, Yazdanpanah, Hessam, Chimeh, and Aghlmand, 2015; Kuokkanen *et al.*, 2014; Chou and Chen, 2016).

Third, this study also contributes to the literature by examining the importance and outcomes of career adaptability as an external resource. In other words, this study responds to recent calls to perform studies on the role and outcomes of career adaptability (Guan, Zhou, Ye, Jiang, Zhou, 2015). As in previous studies, we take turnover intention as an attitudinal outcome of career adaptability (Karatepe and Olugbade, 2017). Nurses are not independent in the medical environment, and they may require additional resources to manage work-related stress and avoid a reduction in their resource reservoirs (Zhu *et al.*, 2013). This suggests that career adaptability may be a key area of resources for improving the turnover intention of nurses in high job demand and low control work environments (Tian and Fan, 2014).

5.2 Implications for nursing management

The results of this study provide useful guidance for managers, supervisors, and colleagues of nurses to improve the workplace environment. First, managers and supervisors should focus on promoting organizational justice, because this plays a vital role in helping nurses determine whether to remain in their current organization. As indicated by Sulander *et al.* (2016), justice perception (distributive, procedural, and interactional justice) improves satisfaction with and commitment to the organization. Nurses' colleagues assistance through information exchange, workload sharing, and mental support can be developed using friendly measures (Campana and Hammoud, 2015). Overall, the results indicate that justice perception is a crucial factor effecting nurses turnover intention. Poor justice perception leads to turnover and increases the frequency of job hopping.

Second, nurses require psychological assistance to address stress and recover from frustration (Feng, 2016; Reyes, Andrusyszyn, Iwasiw, Forchuk, and Babenko-Mould, 2015). Specifically, career adaptability and proactive personality enhance nurses' ability to manage difficult and stressful situations, whereas a lack of resources and support results in poor justice perception. Psychological resources can be classified as external and internal. Internal resources such as personality are difficult to change, but other internal resources such as professional identification can be improved by offering personal advancement programs. By contrast, an external resource such as career adaptability requires a supportive work environment. Such an environment should promote support from colleagues, managers, and supervisors. To achieve this, supervisors can arrange additional training programs or counseling about nursing careers for frontline nurses; colleagues can also provide more direct mental support by offering assistance, thus promoting social support in the workplace.

Third, according to Dysvik and Kuvaas (2010), turnover intention has the strongest direct negative relationship with intrinsic motivation, supporting individual fulfilment of the needs for autonomy, competence, and relatedness. Thus, providing frontline nurses with personal requirement, such as emotional support and professional development, may reduce turnover intention. Our study obtains similar results, in which establishing and maintaining a supporting environment by offering training and rewards, promoting teamwork, and enhancing career opportunities can enable managers to facilitate career satisfaction and reduce turnover intention. Incidentally, this result contradicts most studies that evaluated turnover, burnout, and workload among nurses in Taiwan. Thus, the inwardness of turnover intention among Taiwanese nurses must be better understood.

5.3 Limitations

This study has several limitations. First, the association between research variables was not examined using a rigorous longitudinal design, thus preventing

an exploration of the change effects of the key constructs over time, which is theoretically important yet empirically understudied. Second, although this study has examined directional associations between proactive personality and turnover intention with a time-lagged design, a causal relationship is not unequivocally established between them. Third, the hypotheses were tested among nurses from district hospitals and medical centers in Northern Taiwan. Although this approach permits the findings to be generalized to Taiwanese nurses, it does restrict the appearance of individual characteristics related to medical centers and district hospitals or wards and intensive care units. Therefore, researchers should replicate this study in medical centers or at other levels of hospitals for comparative purposes. Fourth, because the National Health Insurance system is implemented in Taiwan, medical personnel may have been influenced by cultural effects such as the compensation system, working pattern, and even professional identity. Thus, the validity of the findings in other cultural contexts should be explored to verify their generalizability. Finally, we focus on three variables, personality, career, and workplace environment, which cannot depict the complete picture of the association between the studied variables among Taiwanese nurses. For example, although the model includes personality, career, and workplace environment, sufficient evidence is not available to demonstrate the importance of these variables. Thus, the absence of mental health data for employees is a significant limitation, and findings related to nurses' perceptions of their workplaces have limited value. To extend this theory through an identification perspective, future studies are encouraged to examine whether this perspective can also be applied to understand the associations between turnover intention, personality, and other types of self-perception.

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