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## **PSYCHOLOGICAL CONTRACT BREACH AFTER ACQUISITIONS AND ITS ASSOCIATIONS WITH ORGANIZATIONAL COMMITMENT: A MODERATED MEDIATION MODEL**

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**Master in Management**

Supervisor:

PhD Shaozhuang Ma, Associate Professor (with Aggregation)

Iscte – University Institute of Lisbon

September 2023





**BUSINESS  
SCHOOL**

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**Department of Marketing, Strategy and Operations**

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## Resumo

**Objetivo:** A pesquisa tem como objetivo explorar a associação entre quebra de contrato psicológico, identificação organizacional, comprometimento organizacional e justiça organizacional dos médicos de um hospital após a aquisição.

**Método:** Foi utilizada uma análise quantitativa com um inquérito a 208 médicos de um hospital após aquisição na cidade de Zhongshan, província de Guangdong, na China.

**Encontrar:** Os resultados sugerem que existe uma relação significativa e negativa entre a quebra de contrato psicológico e o comprometimento organizacional, com a identificação organizacional como um papel mediador entre eles. Para além disso, a justiça organizacional tem um efeito moderador na relação entre a violação do contrato psicológico e o compromisso organizacional. Especificamente, a relação negativa entre a violação do contrato psicológico e o empenhamento organizacional será mais fraca em níveis elevados de justiça organizacional.

**Conclusões:** A violação do contrato psicológico, a identificação organizacional, o empenhamento organizacional e a justiça organizacional constituem, em conjunto, um modelo de mediação moderado. A violação do contrato psicológico é a variável independente, o compromisso organizacional é a variável dependente, a identificação organizacional é a variável mediadora e a justiça organizacional é a variável moderadora.

**Palavras-chave:** violação do contrato psicológico, identificação organizacional, compromisso organizacional, justiça organizacional, médico

## Abstract

**Objective:** The research aims to explore the association between psychological contract breach, organizational identification, organizational commitment and organizational justice of physicians in a hospital after acquisition.

**Method:** A quantitative analysis was employed with a survey of 208 physicians in a hospital after acquisition in Zhongshan City, Guangdong province, in China.

**Finding:** The results suggest that there is a significant and negative relationship between psychological contract breach and organizational commitment, with organizational identification as a mediating role between them. Besides, organizational justice has a moderating effect on the relationship between psychological contract breach and organizational commitment. Specifically, the negative relationship between psychological contract breach and organizational commitment will be weaker at high levels of organizational justice.

**Conclusion:** Psychological contract breach, organizational identification, organizational commitment and organizational justice together constitute a moderated mediation model. Where psychological contract breach is the independent variable, organizational commitment is the dependent variable, organizational identification is the mediating variable, and organizational justice is the moderating variable.

**Keywords:** psychological contract breach, organizational identification, organizational commitment, organizational justice, physician

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## **1. Introduction**

### **1.1. Background**

Chinese medical resources have always been concentrated in public hospitals. According to the Statistical bulletin of China's health development in 2021, by the end of 2021, there were 11,804 public hospitals, accounting for 32.3% of the total. However, there were accounting for 84.2% of total patient visits in public hospitals (Department of Planning, Development and Information Technology, 2021). Public hospitals in many places are in trouble due to the lack of government financial input. Therefore, introducing social capital can solve the problem of funding shortage of public hospitals, at the same time, promote the reform of them (Wei et al., 2016).

Since 2009, Chinese government has implemented the medical reform, the policy supports social capital flowing into the medical industry and encourages social capital participating in the restructuring of public hospitals in various ways (Wei et al., 2016). However, when an acquisition occurs in the organization, employees will reconsider their future position in the organization and uncertainty about the future of the organization as well as their daily work which may result in employees' turnover behaviors (Cartwright and Cooper, 1993).

During and after the acquisition, it is important to recognize that change may have negative impacts on employees, and to identify those impacts and take action if necessary. In general, when a public hospital is acquired by a company and transformed into a private hospital, the first challenge it needs to face is the turnover of a large number of employees and even physicians. The flow of physicians will affect the stability of hospitals to some extent, and even restrict the development of hospitals (Zhang et al., 2016). Therefore, reducing the flow of physicians is the priority of human resource management after the acquisition of hospitals.

Organizational change, such as mergers and acquisitions, can have significant impacts on the psychological contract of employees in an organization. The psychological contract refers to the "unwritten contract" with implicit and mutual expectations between employees and employers (Levinson et al., 1962). These expectations, demands and obligations can be disrupted and even broken when great

changes occur in the organization (Drucker, 1997), leading to a perceived psychological contract breach and a variety of psychological and emotional reactions of employees. Researchers agreed with that employees are more likely experience psychological contract breach and the extent of breach may be greater during tremendous organizational changes (Robinson and Morrison, 2000; Turnley and Feldman, 1998). Several studies have proved that there is a positive relationship between the breach of psychological contract and employee turnover (Robinson & Rousseau, 1994; Guzzo et al., 1994; Langerud et al., 2022; Wibowo, 2022; Zacher & Rudolph, 2022; Hammouri et al., 2022). Moreover, there were sufficient research showed that psychological contract breach has profound influence on employee's work related outcomes, such as job satisfaction, organizational commitment, confidence toward the organization, task performance, and citizenship behavior. (Conway and Briner, 2005; Zhao et al., 2007; Ampofo, 2021).

Organizational identification refers to “a specific form of social identification where the individual defines him or herself in terms of his or her membership in a particular organization” (Mael and Ashforth, 1992). Researches show that organizational identification can improve the loyalty and organizational commitment of employee (Riketta, 2005; Ashforth et al., 2008). However, high level of organizational identification also makes employees resistant to change (He and Brown, 2013), which makes it easy for them to leave in the midst of change. A study shows that employees with higher organizational identification are more likely to care about the change process, while those with lower organizational identification are more likely to focus on the outcomes (van Knippenberg et al., 2006). Kreiner and Ashforth (2004) found a positive relationship between psychological contract breach and organizational disidentification, or in other word, a negative relationship between psychological contract breach and organizational identification. Therefore, we think that employees with higher organizational identification are more willing to stay in the organization, but at the same time, they are more resistant to organizational change. When major changes occur in the organization, employees experience psychological contract violations as well as reduced their identification toward the

organization.

Organizational commitment is one of the variables of greatest interest in the study of organizational behavior and human resource management because it affects job performance, turnover propensity, employee retention, etc., and is closely related to organizational interests (Meyer & Allen, 1991). In the context of economic globalization, mergers and acquisitions in organizations decrease organizational commitment of employees. For employees, it is difficult to define what the organization is and to whom they should commit (Qi & Zhu, 2007). Studies indicate that low levels of organizational commitment are associated with increased absenteeism, tardiness and turnover, which lead to increased expenses and lower productivity (Farrell & Stamm, 1988; Mathieu & Zajac, 1990; Meyer et al., 2004). In healthcare industry, a study supports that organizational commitment is a factor in turnover intention of nurses (Hayes et al., 2006).

Organizational justice is a judgment of employee about fairness of outcome distribution, processes in allocating outcomes and interpersonal relationships in the workplace (Greenberg, 1990). Early research emphasized the important impact of employees' perceptions of fairness on their acceptance of organizational change (Bansal, 2017; Greenberg and Cropanzano, 1993), and that perceptions can promote their cooperative behavior (Lind, 2001). One study found that perceived organizational justice can mitigate the emotional experience of psychological contract breach to an extent, such as anger and feelings of betrayal (Morrison & Robinson, 1997). Besides, several studies point out that organizational justice is positively related to organizational commitment (Korsgaard et al., 1995; Crow et al., 2012; Jameel et al., 2020).

Even in the years following an acquisition, the staff of these hospitals remain in a precarious state. Few studies have explored the psychological contract breach, organizational identification, organizational commitment, and organizational justice of physicians after hospital acquisitions. Therefore, the purpose of this study is to examine the level of psychological contract breach, organizational identification, organizational commitment, and organizational justice of physicians and the

relationships among them after hospital acquisitions.

## **1.2. Research Questions**

As mentioned above, in this study, we intend to get an understanding of the situation of psychological contract breach, organizational identification, organizational commitment and organizational justice of physicians in a hospital after acquisition. By doing so, we expect we can explore how to improve psychological contract breach and increase the levels of organizational commitment, organizational identification and organizational justice of the physicians in these hospitals after acquisition. Therefore, the current study aims to answer the following question:

- 1) What are the physicians' perceptions of psychological contract breach, organizational identification, organizational commitment and organizational justice in a post-acquisition hospital?
- 2) How are these variables related to each other? And how do they interact with each other?

## **1.3. Structure**

Following this chapter, we start by presenting the existing literature regarding psychological contract breach, organizational identification, organizational commitment, organizational justice and the relationship among them to develop the hypotheses of the present study. Chapter three describes the methodology used in the present study. Chapter four presents the results of our research and chapter five discuss the management implications, limitations of the study and suggestions for future research.

## **2. Literature Review**

This chapter introduces the concepts related to psychological contract, organizational identification, organizational commitment and organizational justice respectively. Through the social exchange theory and previous research results, we hypothesize the relationship between psychological contract breach, organizational identification, organizational commitment and organizational justice and propose a moderated mediation model that incorporates all the hypotheses.

### **2.1. Psychological Contract**

The concept of psychological contract was first proposed by Argyris (1960) to describe the relationship between foremen and employees in the factories. Levinson et al. (1962) described psychological contract as the sum of “unwritten contract” with implicit and mutual expectations between employees and employers. American scholar Schein (1965, 1978 and 1980) defined psychological contract as a set of unwritten expectations that exist between employees of an organization at all times. He divided psychological contract into individual and organizational levels and pointed out the importance of psychological contract in motivating organizational behavior.

Empirical research (Robinson, Kraatz and Rousseau, 1994) showed that employees believe that the organization's obligations mainly include the following seven aspects: rapid advancement, high pay, pay based on the current level of performance, training, long-term security, career development and support with personal problems; the obligations of employees are: loyalty, to work extra hours, volunteering to do nonrequired tasks, accepting a transfer, refusal to support competitors, protection of proprietary information, advance notice before leaving, and spending a minimum of two years with the organization. However, the content of the psychological contract was influenced by a variety of factors such as personal, organizational, social, economic and cultural factors (Sparrow, 1998a), and the content of psychological contract has changed dramatically over time (Hiltrop, 1995).

Regarding the structure of psychological contract, some studies argued that the psychological contract includes two dimensions: transactional contract and relational



contract (Rousseau et al., 1993; Robinson et al., 1994; Tsui et al., 1997; Millward et al., 1998). Restubog et al. (2008) offered a useful distinction between transactional and relational contract types: transactional contracts represent employees' material interests, while relational contracts represent socioemotional goods. On the other hand, there are also many studies supported three-dimensional structure. Empirical researches showed that the psychological contract consists of three dimensions: transactional dimension, relational dimension and team member dimension (Rousseau & Tijorimala, 1996; Lee & Tinsley, 1999). Chinese scholar found that the psychological contract of Chinese enterprise employees consists of three dimensions: normative obligation, interpersonal obligation and developmental obligation (Li, 2002). The structure of the psychological contract needs multi-angle analysis and cross-cultural testing (Robinson, 1996; Sparrow, 1998b).

Morrison and Robinson (1997) proposed a developmental model of psychological contract breach, which suggested that employees would experience three stages of psychological contract breach: unfulfilled promise, breach of contract and violation of contract. Psychological contract fulfillment is defined as "the extent to which one party to the contract deems the other has met its obligations" (Lee et al. 2011). In contrast, psychological contract breach refers to the individual's perception that the organization has not fulfilled the obligations contained in the psychological contract. Psychological contract violation refers to the intense emotions and emotional experiences associated with an individual's perception that the organization has not fulfilled its psychological contract (Morrison and Robinson, 1997). However, another important point was that the perception of contract breach will not necessarily lead to psychological contract violation (Rousseau, 1989; Morrison and Robinson, 1997). Morrison and Robinson (1997) proposed that whether the cognitive perception of a breach leads to an emotional reaction, and the intensity of that reaction, depends on an interpretation process. When organizations fail to fulfill their promises, employees are expected to reduce their contributions to and hold negative attitudes towards the organization. Research confirmed that breach of psychological contract was positively associated with negative attitudes and withdrawal behaviors (Zhao et al., 2007).

Employees who suffer from psychological contract breach are more likely to engage in negative behavior as a form of revenge (Bordia et al. 2008; Restubog et al. 2010; Doden et al. 2018). Since the violation of psychological contract may be a serious consequence of psychological contract breach, in this study, we mainly focus on the effect of psychological contract breach.

## **2.2. Organizational Identification**

Organizational identification has developed from the concept of social identity, which Patchen (1970) defined as "a variety of separate but interrelated phenomena: (1) a sense of solidarity with the organization; (2) [attitudinal and behavioral] support for the organization; and (3) a perception of common characteristics with other organizational members." Patchen proposed that organizational identification mainly consists of three concepts: (1) similarity: the individual's perception of common goals and interests with other members of the organization; (2) membership: the degree to which the individual's self-concept is connected to the organization; and (3) loyalty: the individual's support and protection of the organization. This definition provided a broad foundation for subsequent research on organizational identification.

With the emergence of the social identity theory (Tajfel and Turner, 1986) and self-categorization theory (Turner et al., 1987), scholars have begun to define organizational identification from another perspective. Ashforth & Mael (1989) thought "Organizational identification is a special form of social identity." They stated that organizational identification is "a perceptual cognitive construct that is not necessarily associated with any specific behaviors or affective states". Dukerich (2002) suggested that the process of organizational identification is the experience of members identifying with the organization and the process by which the organization influences its members to form a self-definition. Xu et al. (2002) also proposed a definition of organizational identification as the process and result of individual self-definition. Individuals link their self-concept to organizational identification through the process of belonging to an organization, which in turn produces a categorization effect. There are many definitions of organizational identification, and

they vary greatly due to the different theoretical bases followed by scholars (Sun et al., 2009).

However, a controversy among scholars was that some scholars considered organizational identification to be synonymous with organizational commitment (Mowday et al., 1974; Griffin & Bateman, 1985; Mathieu & Zajac, 1990). Other scholars considered the most essential difference between organizational commitment and organizational identification is that organizational identification involves the self-defining of individuals while organizational commitment does not have this meaning. Organizational identification reflects individuals' sense of congruence and belonging to the organization, and they define themselves through their membership to the organization (Ashforth & Mael, 1989; Mael & Ashforth, 1992). Pratt (1998) believed that organizational identification emphasizes the extent to which the individuals define themselves in terms of the organization; whereas organizational commitment develops based on the exchange relationship between the individual and the organization. A meta-analysis on organizational identification also shows that there is a statistically significant difference in the mean outcomes between organizational identification and organizational commitment (Riketta, 2005).

Most scholars agreed that organizational identification is a multi-dimensional structure, including cognitive, affective, evaluative and behavioral dimensions. The most recognized of these is the cognitive dimension. Tajfel (1981) defines cognitive dimension as “an individual’s perception of belonging to a group”. The existence of cognitive dimension is also well-documented by empirical studies (e.g., Mael & Ashforth, 1992; Mael & Tetrick, 1992; Smidts, 2001).

### **2.3. Organizational Commitment**

The concept of organizational commitment was proposed by Becker (1960). He regarded it as a psychological phenomenon that employees are compelled to stay in the organization as their commitment to the organization increases. Mowday (1979) defined organizational commitment as an individual's attitude or positive internal disposition toward an organization, which means the relative degree of an individual's

emotional attachment to a particular organization and participation in that organization. Wiener (1982) argued that organizational commitment is an internalized norm of behavior. Employees are expected to do their best to comply with the norms instead of maximizing profits.

The three-factor model proposed by Meyer and Allen (1990) is accepted by most scholars and validated by several empirical studies, consists of three dimensions: affective commitment, continuance commitment and normative commitment. Affective commitment refers to the employee's affective dependence, affective identification and affective dedication to the organization, which is a positive psychological tendency (Meyer & Allen, 1984; Mahal, 2012). Employees are loyal to the organization and work hard, not because of material benefits, but because of their deep feelings towards the organization. Continuance commitment is a commitment that employees must stay in the organization in order not to lose his/her existing positions and benefits (Meyer & Allen, 1984; Singh & Gupta, 2015). It is a transactional commitment bases on economic principles. Allen and Meyer (1990) define normative commitment as the feelings of obligation engendered in an individual based on perceived attachment to organizational goals or loyalty to a profession. During the process of socialization, individuals are constantly indoctrinated and emphasized with the notion or norm that loyalty to the organization is a right behavior that will be appreciated and encouraged. All three forms of attachment may work simultaneously and independently on the individual's psyche, creating a complex mix of identification between employer and worker.

Researchers have classified organizational commitment into three different levels based on its strength: conformity, identification, and internalization (Reichers, 1985). A study in China found that organizational commitment changes cyclically with the tenure in the organizations, and can be classified into five stages: oscillation, recognition, stabilization, rumination, and consolidation (Han & Liao, 2005). These suggest that the formation of an employee's organizational commitment takes place over a relatively long developmental process. Chinese scholars believe that organizational commitment is based on social exchange relationships. Employees and

organizations form emotional ties in long-term successful exchange relationships, and affective and normative commitments are formed based on social exchange (Liu & Wang, 2001). Research found that organizational commitment can be the foundation for individual's self-realization and may have an impact on some work-related outcomes, such as turnover, absenteeism, job effort, job role, and performance (Ghazzawi, 2008; Tuna et al., 2011).

#### **2.4. Organizational Justice**

Organizational justice describes the individuals (or groups) perception of the fairness of the treatment received from an organization and their behavioral responses to that perception (James, 1993). Since the 1970s, the issue of organizational justice has become a hot topic in organizational management research in Europe and the United States. Researchers have conducted numerous studies on the effects of organizational justice on employee performance.

In the beginning, researchers identified Distributive Justice as an important dimension of organizational justice. According to the equity theory of Adams (1965), employees expect to be rewarded according to the extent of their input to the organization and perceive fairness of the distribution of outcomes by comparing their input-output ratios with those of others. Greenberg (1990) pointed out that equity and not equality are the basis of distributive justice. Equity means that the result is determined by an individual's initiatives and input (Qureshi et al., 2017).

Thibaut and Walker (1975) first brought out the concept of Procedural Justice, which referred to the fairness of the procedures used to make and implement appropriate decisions and policies. Procedural justice refers to how the results are allocated, not the results themselves (Jameel et al., 2020). Most employees want accurate, open, and honest processes for determining distribution outcomes, regardless of the outcome. The processes may be more important than the outcome itself (Greenberg, 1990). Researchers have argued that the determinant of perceived justice is not the final distributive outcome, but the process of implementing plans and decisions, which means that organizational justice is primarily determined by

procedural justice rather than by distributive justice (Thibaut and Walker, 1975; Korsgaard et al., 1995; Leventhal, 1980; Lind & Tyler, 1988; DeConinck and Stilwell, 2004). It follows that organizational justice includes two basic dimensions: distributive justice and procedural justice.

Bies and Moag (1986) introduced the concept of Interactional Justice, arguing that interactional justice focused on the interaction ways among people and the perception of justice, emphasizing that the employee's perception of justice in the process of procedure execution would be affected by the attitude of executors towards them and the way executors treated them. Interactional justice focus on the fairness of the partnership between managers and employees (Buluc and Gunes, 2014). Greenberg (1990, 1993) categorized it into interpersonal justice and informational justice. Interpersonal justice refers to the extent to which authority figures respectfully treat subordinates (Greenberg, 1990). Informational justice related to the amount, authenticity and clarity of information regarding outcome distributions and the procedures used to determine outcomes (Greenberg, 1990; Colquitt et al., 2001).

## **2.5. Research Hypotheses and Research Model**

Social exchange refers to a reciprocal act in which one party provides help, support, etc. to another party so that the other party has an obligation to reciprocate. However, it is not known whether and when the other party will reciprocate, so there is uncertainty and risk in this type of exchange relationship (Blau, 1956). According to social exchange theory, the establishment of an employee-organization relationship is that employees exchange their individual labor for the compensation of the organization, and exchange their individual loyalty to the organization for the organization's concern and support for the individual; on the other hand, through the hard work of the employees, the organization will have greater development. The formation of interdependence between employees and the organization is a kind of social exchange relationship (Rhoades & Eisenberger, 2002).

Psychological contract breach is one of the key concepts of Social Exchange Theory (Conway and Briner, 2005). Blau (1964) defines social exchange as actions

that occurs when others reciprocate and stops when others cease to reciprocate. Therefore, we believe that if employees think that the organization is not fulfilling their obligations, they will cease to contribute their loyalty to the organization. Kickul & Lester (2001) suggested that psychological contract breach can significantly affect organizational commitment, especially affective commitment. Knights and Kennedy (2005) showed that psychological contract violation was strongly and negatively related with organizational commitment, indicating that as the level of psychological contract violation increased, the levels of organizational commitment decreased. Studies found that compared with transactional obligation, breach of relational obligations will result in a lowering of organizational commitment (Rousseau, 1990; Guzzo & Noonan, 1994; Robinson et al. 1994). Thus, we hypothesize the following:

*H1: Psychological contract breach is negatively related to organizational commitment.*

According to social exchange theory, the exchange between between individuals and organizations is not only material, but also psychological, such as support, trust and self-esteem. Pratt (1988) believes that the reason why individuals identify with social groups is that the groups satisfy their socio-emotional needs, such as status, security, self-esteem, belonging and love. Drawing on the norm of reciprocity (Gouldner, 1960), we argue that the employees of organizations that break their promises and obligations are less likely to identify with their organizations. A study demonstrated a positive correlation between employee psychological contract breach and organizational disidentification (Gibney et al., 2011). Studies show that psychological contract breach reduces employees' organizational identification (Bordia et al. 2008; Wei & Si 2013). Psychological contract breach is a signal to employees that they are not a valued member of the organization and therefore they tend to disidentify with the organization (Zagenczyk et al., 2011). Thus, we hypothesize the following:

*H2: Psychological contract breach is negatively related to organizational identification.*

Organizational identification has been frequently confused with organizational commitment (Allen & Meyer, 1990; Mowday, Steers & Porter, 1979), but researches confirmed that they are two separate constructs (e.g., Mael & Tetrick, 1992; Riketta, 2005). According to the meta-analysis of Riketta (2005), organizational identification is correlated positively with organizational commitment. Some studies believe that identification with the organization is a predictor of the individual's organizational commitment (Nelson and Quick, 2005; Tuna et al., 2016). Some studies show that organizational identification significantly predicted affective commitment, whereas the reverse was not true (Bergami and Bagozzi, 2000; Marique and Stinglhamber, 2011). Just as employees are unlikely to identify with an organization which breaks their promises and breaches psychological contract, they are also unlikely to become deeply attached to an organization that does so. Thus, we hypothesize the followings:

*H3: Organizational identification is positively related to organizational commitment .*

*H4: Organizational identification mediates the relationship between psychological contract breach and organizational commitment.*

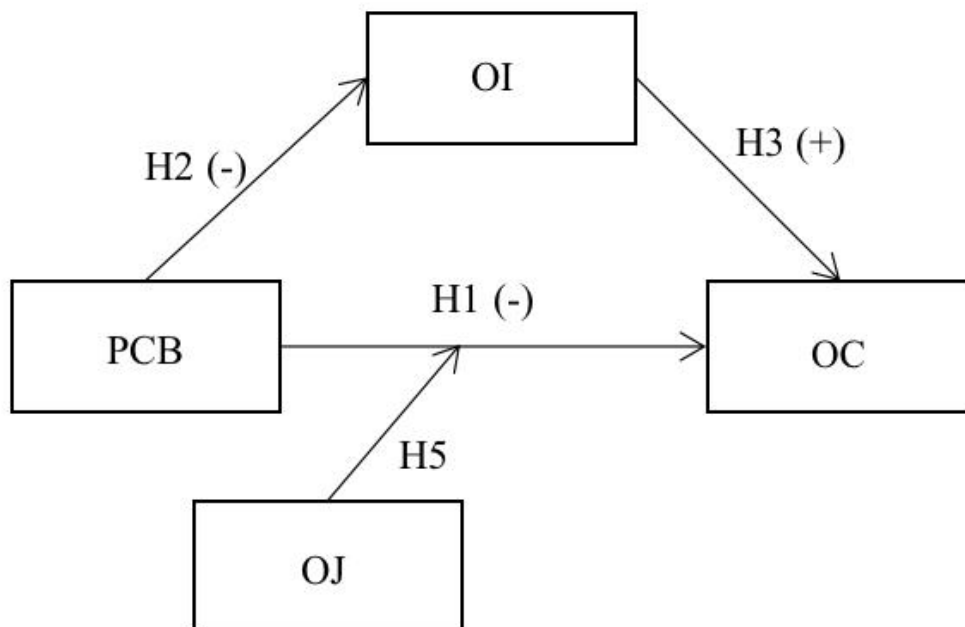
Several studies pointed out that organizational justice was positively related to organizational commitment (Korsgaard et al., 1995; Crow et al., 2012; Jameel et al., 2020). Fairness perceptions is one important factor in the experience of psychological contract breach. Morrison and Robinson (1997) emphasized employee's perceived justice as an important input into the sense-making process of psychological contract breach. Further study showed that procedural and interactional justice have been found to mitigate against a breach being experienced as a contract violation, for example the feelings of anger and betrayal (Morrison & Robinson, 1997). Research on procedural justice suggests that the justice of the organizational decision-making process influences the way employees respond to receiving unfavorable outcomes (Turnley & Feldman, 1998). In conjunction with the previously mentioned



relationship between psychological contract violation and organizational commitment, we hypothesize the following:

*H5: Organizational justice and psychological contract breach will have an interactive effect on organizational commitment. Specifically, the negative relationship between psychological contract breach and organizational commitment will be weaker at high levels of organizational justice.*

This is the moderated mediation model that incorporates all the hypotheses above:



**Figure 1. Proposed model**

### 3. Methodology

This chapter describes the research methodology of the study, which includes the population of the study, the scales used in the questionnaire, and the data analysis methods and tools.

#### 3.1. Procedure and Sample

The subjects of this study were physicians in a general hospital in Zhongshan City, Guangdong Province, which was reorganized by an acquisition three years ago. This hospital, originally a tertiary public hospital, was acquired three years ago by a Hong Kong firm, and the local government only retained ownership of the building and other fixed assets. During the acquisition, many physicians and nurses chose to resign because of the staffing of public institution and compensation issues. Although the hospital recruited a large number of new staff as well as carried out organizational changes to reposition the hospital, some of senior physicians still choose to leave every year. We distributed the questionnaire via the Internet (mainly WeChat). Data were collected in July 2023, and 235 responses were received. After excluding invalid questionnaires, there were 208 valid complete questionnaires.

#### 3.2. Measurement Scale

The research questionnaire consists of 5 parts: Psychological Contract Breach, Organizational Identification, Organizational Commitment, Organizational Justice and Demographic Information.

**Psychological Contract Breach:** We use and translate a 6-item scale of Lester *et al.* (2002) to measure psychological contract breach. A sample item is: “*I have a good employment relationship*”. Responses were made on a 5-point scale ranging from 1 = ‘*Receive much more than promised*’ to 5 = ‘*Receive much less than promised*’. A higher score means a greater degree of psychological contract breach. The Cronbach’s  $\alpha$  of this scale was 0.721.

**Organization Identification:** We use a 6-item scale developed by Mael and Ashforth (1992) to measure employees’ OI. There are 6 questions (e.g. “*When I talk*

about my organization, I usually say 'we' rather than 'they'" and "When someone praises my organization, it feels like a personal compliment"), on a response scale of 1 ("Strongly disagree") to 6 ("Strongly agree"). A higher score means a greater organizational identification. The Cronbach's  $\alpha$  of this scale was 0.717.

**Organizational Commitment:** A revised 6-item scale was adopted from a part of Organizational Commitment Scales (OCS) developed by Meyer *et al.* (1993). We only use the Affective Commitment Scale (ACS) to measure OC (e.g. "I do not feel 'emotionally attached' to my organization" and "I really feel as if this organization's problems are my own"). A 6-point Likert-type scale was used in order to measure respondents' level of agreement with each item (1="Strongly disagree";6="Strongly agree"). A higher score means a greater organizational commitment. The Cronbach's  $\alpha$  of this scale was 0.887.

**Organizational Justice:** A 11-item scale was adopted from a part of Colquitt's (2001) measure of organizational justice. The scale consists of 4 for distributive justice (eg., "My performance evaluation is justified, given my performance") and 7 for procedural justice(eg., "The procedures used in my organization are free of bias"). Respondents are requested to use a 6-point Likert scale of 1 ("Strongly disagree") to 6 ("Strongly agree"). A higher score means a greater degree of organizational justice. The Cronbach's  $\alpha$  of this scale was 0.913.

**Socio-demographics:** Variables include gender, age, marital status, education background, position, department, professional tenure and organization tenure.

### 3.3. Data Analysis

SPSS 26.0 and SPSS plug-in PROCESS (version 3.5) were used to analyze the collected data. Descriptive analysis was used to understand the demographic characteristics of the participants. Principal Component Analysis (PCA) with Varimax rotation was conducted to examine the underlying components and the construct validity of the scales we cited in questionnaire. Bartlett's test and KMO analysis tested if the data were suitable for PCA in advance. After PCA, we confirmed the factors and deleted some items. And we computed the coefficients alpha internal

consistency reliability.

Next, the correlation was measured. ANOVA test was performed to examine the differences in key variables among participants with different demographic characteristics of this study.

Lastly, regression analysis was performed to test the hypothesis. And plug-in PROCESS (version 3.5) was used to test the mediating effect and moderating effect in the model. Model 4 was used to test the mediating effect of organizational identification between psychological contract breach and organizational commitment. Model 5 was used to test the moderating effect of organizational justice on the basis of the mediating effect of organizational identification.

## **4. Result**

This chapter reports the results of this study in detail, including descriptive and inferential statistics results. First of all, we describe demographic information of participants and report the reliability and validity of the scales. Then we report the results of the correlation analysis and the ANOVA analysis. At last, we verify the hypotheses and the model.

### **4.1. Demographic of the participants**

Questionnaires were distributed in a general hospital in Zhongshan city, Guangdong province, which had acquired and restructured three years ago. The target population for this study is only physicians. At last, a total of 235 questionnaires were recovered, after excluding invalid questionnaires, leaving 208 effective questionnaires.

Table 1 reports physicians' demographic information. Of 208 respondents, there were 116 males (55.8%). Nearly half of the participants were in the 31-40 years old range (47.6%) and the vast majority of participants were married (77.4%). Regarding education background, most participants had bachelor's degree (54.3%) and also a significant number participants had master's degree or above (37.0%). The proportion of respondents' positions were relatively balanced, with chief physicians (9.1%), associate chief physician (25.0%), attending physician (27.4%) and resident physician (38.5%). A half of the respondents had >10 years professional tenure (n=111) and nearly half of respondents have worked in this hospital for less than 5 years (43.8%).

**Table 1. Demographic characteristics of participants**

<b>Measure</b>	<b>N=208</b>	<b>%</b>
<b>Gender</b>		
Male	116	55.8
Female	92	44.2
<b>Age</b>		
18-30 years old	45	21.6
31-40 years old	99	47.6
41-50 years old	41	19.7
>50 years old	23	11.1
<b>Marital Status</b>		
Unmarried	47	22.6
Married	161	77.4
<b>Education Background</b>		
College or below	18	8.7
Bachelor degree	113	54.3
Master or above	77	37
<b>Position</b>		
Chief physician	19	9.1
Associate chief physician	52	25
Attending physician	57	27.4
Resident physician	80	38.5
<b>Professional Tenure</b>		
1-10 years	97	46.6
> 10 years	111	53.4
<b>Organization Tenure</b>		
≤ 10 years	138	66.3
>10 years	70	33.7

## 4.2. Factor Analysis and Internal Consistency

### 4.2.1. Psychological contract breach

The result of KMO was 0.687 indicating a reasonable sample adequacy. Bartlett's test of sphericity was also significant (Chi-Square = 275.932,  $df = 15$ ,  $p < 0.001$ ). Thus, we continued to use PCA to test the structure of Psychological Contract Breach Scale. The Kaiser's criterion indicated 2 principal components which cumulatively accounting for 60.749% of total variance of the 6 original items.

Using Varimax Rotation obtained 2 rotated components and each original item's loading greater than 0.5 on their belonging factors. Component 1 comprehended PC3 to PC6 four items about work and relations. Thus, the proposed name for the first component could be "Relational Contract Breach" (RCB). The PC1 and PC2 items were contained in Component 2 which were about psychological contract of benefits or salaries. Thus, the proposed name for the second component could be "Transactional Contract Breach" (TCB) (see Table 2). The Cronbach's alpha was 0.721.

**Table 2. Factor analysis result after rotation of psychological contract breach scale**

Item	Issue	Component 1 (RCB)	Component 2 (TCB)
PC3	A job that provides high autonomy	0.730	
PC4	Advancement opportunities	0.726	
PC6	Being treated fairly	0.673	
PC5	Resource support	0.563	
PC2	Pay tied to the individual's performance		0.901
PC1	Overall benefits		0.871
Rotation Eigenvalues		1.902	1.743
% of Variance		31.695	29.054
Cumulative %		31.695	60.749

\*Extraction Method: Principal Component Analysis.

### 4.2.2. Organizational identification

The result of KMO was 0.755 and Bartlett's test was also significant (Chi-Square = 224.757,  $df = 15$ ,  $p < 0.001$ ) suggesting appropriate for factor analysis. A principal

component analysis (PCA) was carried out and the Kaiser’s criterion indicated one principal component only. This solution accounted for 42.501% of total variance which was a huge loss of information. Then we check the Communalities of these items and delete items which level of communalities was too low. We delete the item OI2 and OI3 and retain four items explaining 52.424% of the total variance (see Table 3). The Cronbach’s alpha was 0.717.

**Table 3. Factor analysis result of organizational identification scale**

<b>Item</b>	<b>Issue</b>	<b>Component 1</b>
OI6	If a story in the media criticized my organization, I would feel embarrassed.	0.793
OI1	When someone praises my organization, it feels like a personal compliment.	0.726
OI5	This organization's successes are my successes.	0.693
OI4	When I talk about my organization, I usually say "we" rather than "they".	0.678
Eigenvalues		2.097
% of Variance		52.424
Cumulative %		52.424

\*Extraction Method: Principal Component Analysis.

#### **4.2.3. Organizational commitment**

First the data adequacy was examined by KMO test, with a result of 0.887 and Bartlett’s test  $p < 0.001$  (Chi-Square = 660.284,  $df = 15$ ), suggesting correlation matrix was appropriate for factor analysis and PCA was adequate.

The principal component analysis was conducted to extract items according to Kaiser’s criterion. The results showed only one factor with eigenvalues  $> 1$ , indicating the extraction of one principal component and accounting for 65.175% of total variance of the 6 original items (see Table 4). We only use the Affective Commitment Scale (ACS) to measure organizational commitment in this study. It showed that this 6-items scale was parsimonious and meaningful. The Cronbach’s alpha was 0.887.



**Table 4. Factor analysis result of organizational commitment scale**

Item	Issue	Component 1
OC3	I do feel like part of the family at my organization.	0.862
OC6	I do feel a strong sense of belonging to my organization.	0.84
OC1	I would be very happy to spend the rest of my career with this organization.	0.817
OC5	This organization has a great deal of personal meaning for me.	0.809
OC4	I do feel emotionally attached to this organization.	0.771
OC2	I really feel as if this organization's problems are my own.	0.739
Eigenvalues		3.911
% of Variance		65.175
Cumulative %		65.175

\*Extraction Method: Principal Component Analysis.

#### 4.2.4. Organizational justice

The structure of Organizational Justice Scale was examined using exploratory factor analyses. KMO of 0.861 indicated a good sample adequacy and Bartlett's test of sphericity was also significant (Chi-Square=1861.265, df =28,  $p < 0.001$ ) suggesting appropriate for factor analysis.

Through repeated factor analysis and comparison, we decided to delete item OJ6 which had the lowest communalities with other items. In addition, cross-loading phenomenon appeared on item OJ7 and OJ8, and the loading value are too close on both components. After deleting these three items, a new principal component analysis was carried out using the varimax rotation, 2 components were extracted by Kaiser's criterion, explaining 80.767% of the total variance.

Table 5 shows the rotated component matrix result of organizational justice scale. It shows that 2 rotated components and each original item's loading greater than 0.5 on their belonging factors. Component 1 comprehended OJ1 to OJ4 four items about "Distributive Justice". Four items (OJ5 and OJ9 to OJ11) contributed to Component 2 named "Procedural Justice". But cross-loading phenomenon appeared on item OJ4

and OJ5, which means these two items were both explained by C1 and C2 at the same time. Although OJ5 had factor loading  $> 0.4$  both on the C1 and C2 component, the factor loading on C2 was much greater than it on C1. So, we still categorize it as C2. The Cronbach's alpha was 0.913.

**Table 5. Factor analysis result after rotation of organizational justice scale**

<b>Item</b>	<b>Issue</b>	<b>Component 1 (DJ)</b>	<b>Component 2 (PJ)</b>
OJ3	The evaluation of my performance assesses what I have contributed to the organization.	0.954	
OJ2	The evaluation of my performance provides an appropriate assessment of the work I have completed.	0.949	
OJ1	The evaluation of my performance provides a good assessment of the effort I have put into my work.	0.930	
OJ4	My performance evaluation is justified, given my performance.	0.912	0.320
OJ11	I have influence over the assessments made as a result of my organization's procedures.		0.856
OJ9	I am able to appeal the assessments made by procedures used in my organization.		0.774
OJ10	The procedures used in my organization uphold ethical and moral standards.		0.753
OJ5	I am able to express my views and feelings about my organization's procedures.	0.4	0.709
Rotation Eigenvalues		3.775	2.687
% of Variance		47.181	33.585
Cumulative %		62.827	80.767

\*Extraction Method: Principal Component Analysis.

### **4.3. Correlation Analysis**

Table 6 reports the Pearson correlation coefficients results. These findings provide the preliminary support for the proposed research model. The results indicate that there were significant correlations between the four variables (and the dimensions in which they are included) measured in this study, except for RCB, the "Relation Contract Breach", which was not significantly correlated with organizational identification.

Additionally, among the demographic factors, age, education background, position, professional tenure and organizational tenure shows significant correlations with organizational identification, organizational commitment, organizational justice and procedural justice, while position and professional tenure also had significant correlations with distributive justice.

**Table 6. Correlations**

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Age	/	/													
2 Education	/	/	-.459**												
3 Position	/	/	-.757**	.366**											
4 Professional Tenure	/	/	.731**	-.353**	-.748**										
5 Organizational Tenure	/	/	.794**	-.480**	-.760**	.701**									
6 PCB	3.20	0.321	-.032	.054	.077	-.061	-.041								
7 RCB	3.25	0.445	.091	-.020	-.092	.041	.075	.750**							
8 TCB	3.17	0.348	-.103	.087	.166*	-.111	-.105	.906**	.399**						
9 OI	4.18	0.488	.393**	-.191**	-.477**	.403**	.437**	-.288**	-.112	-.328**					
10 OC	3.83	0.592	.525**	-.332**	-.602**	.478**	.571**	-.376**	-.201**	-.393**	.697**				
11 OJ	3.95	0.555	.242**	-.150**	-.335**	.285**	.266**	-.591**	-.485**	-.509**	.529**	.585**			
12 DJ	3.87	0.735	.112	-.076	-.212**	.194**	.134	-.600**	-.553**	-.477**	.407**	.490**	.920**		
13 PJ	4.03	0.521	.358**	-.212**	-.415**	.334**	.379**	-.413**	-.253**	-.410**	.553**	.554**	.832**	.548**	

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Note: PCB = Psychological Contract Breach; RCB = Relation Contract Breach; TCB = Transactional Contract Breach; OI = Organizational Identification; OC = Organizational Commitment; OJ = Organizational Justice; DJ = Distributive Justice; PJ = Procedural Justice.

#### 4.4. Analysis of Independent samples T-Test

Table 7 shows the summary of the difference of the key variables on age, professional tenure and organizational tenure by using Independent samples T-Test analysis. It should be noted that variables psychological contract breach, relation contract breach and transactional contract breach were not significant for the T-Test analysis, and thus not reported in the table.

**Table 7. T-Test Results of Key Variables**

Variables	OI Mean (SD)	OC Mean (SD)	OJ Mean (SD)	DJ Mean (SD)	PJ Mean (SD)
<b>Age</b>					
18 - 40 years old (n=144)	4.07 (0.46)	3.66 (0.50)	3.88 (0.51)	3.82 (0.68)	3.93 (0.48)
>40 years old (n=64)	4.43 (0.46)	4.23 (0.59)	4.11 (0.62)	3.98 (0.83)	4.24 (0.55)
F	1.103	6.176	5.651	0.770	10.116
Sig.	.000	.000	.008	.135	.000
<b>Professional Tenure</b>					
1-10 years (n=97)	3.97 (0.45)	3.51 (0.42)	3.79 (0.51)	3.73 (0.68)	3.85 (0.47)
>10 years (n=111)	4.36 (0.45)	4.11 (0.58)	4.09 (0.56)	3.99 (0.76)	4.18 (0.51)
F	2.326	14.572	0.956	0.369	7.477
Sig.	.000	.000	.000	.011	.000
<b>Organizational Tenure</b>					
≤ 10 years (n=138)	4.05 (0.44)	3.62 (0.44)	3.85 (0.51)	3.79 (0.69)	3.91 (0.46)
> 10 years (n=70)	4.44 (0.47)	4.25 (0.63)	4.14 (0.60)	4.02 (0.80)	4.26 (0.55)
F	1.949	18.983	4.472	0.129	11.061
Sig.	.000	.000	.001	.034	.000

Note: OI = Organizational Identification; OC = Organizational Commitment; OJ = Organizational Justice; DJ = Distributive Justice; PJ = Procedural Justice.

Sig. = Sig (2-tail)

Table 7 shows that there is a significant difference on the levels of organizational identification regarding physician's age between young physicians (18 - 40 years old)

and senior physicians (>40 years old). The senior respondents in the sample showed a higher level of organizational identification (Mean = 4.43, SD = 0.46) than the younger (Mean = 4.07, SD = 0.46). Likewise, The older respondents in the sample reports higher level of organizational commitment (Mean = 4.23, SD = 0.59) than the younger respondents (Mean = 3.66, SD = 0.50). Besides, we can also find that older physicians show higher organizational justice and procedural justice.

Additionally, significant difference exists on the level of organizational identification between 1-10 years and more than 10 years professional tenure. The result shows that physicians with longer professional tenure have a higher organizational identification (Mean = 4.36, SD = 0.45) than those with shorter professional tenure (Mean = 3.97, SD = 0.45). Likewise, physicians with longer professional tenure have a higher organizational commitment (Mean = 4.11, SD = 0.58) than those with shorter professional tenure (Mean = 3.51, SD = 0.42). Besides, physicians with longer professional tenure report a higher organizational justice value (Mean = 4.09, SD = 0.56) than those with shorter professional tenure (Mean = 3.79, SD = 0.51). The two dimensions of organizational justice, distributive justice and procedural justice also report the similar pattern.

Lastly, regarding organizational tenure between those with  $\leq 10$  years and those with  $> 10$  years, it shows physicians with longer organizational tenure have higher level of organizational identification and organizational commitment than with shorter tenure. Findings also show physicians with longer organizational tenure have higher degrees of organizational justice, distributive justice and procedural justice.

#### 4.5. Analysis of ANOVA Test

Table 8 and 9 are the summaries of the difference of the key variables on education background and position respectively by using analysis of variance (ANOVA). It should be noted that variables psychological contract breach, relation contract breach, transactional contract breach, organizational justice and distributive justice were not significant for the ANOVA analysis, and thus not reported in the tables.

**Table 8. ANOVA Results of Key Variables by Education Background**

	Organizational Identification	Organizational Commitment	Procedural Justice
College or below (n=18)	4.47 <sup>a</sup> (0.57)	4.48 <sup>d</sup> (0.60)	4.29 <sup>g</sup> (0.54)
Bachelor degree (n=113)	4.19 <sup>b</sup> (0.45)	3.85 <sup>e</sup> (0.52)	4.07 <sup>g</sup> (0.49)
Master or above (n=77)	4.09 <sup>b</sup> (0.50)	3.66 <sup>f</sup> (0.59)	3.91 <sup>h</sup> (0.54)
F	4.616*	16.256**	4.913*

Mean values are reported with standard deviations in parentheses.

Means with the different superscript letter (a or b) are significantly different at the 0.05 level by post hoc LSD test.

Means with the different superscript letter (d,e,f) are significantly different at the 0.05 level by post hoc LSD test.

Means with the different superscript letter (g or h) are significantly different at the 0.05 level by post hoc LSD test.

\*p<0.05, \*\*p<0.001.

Table 8 shows that, there is a significance of the level of organizational identification, organizational commitment and procedural justice between different “College or below”, “Bachelor degree” and “Master or above” groups.

Physicians with master or above degree in the sample reported a lowest organizational identification (Mean = 4.09, SD = 0.50) while physicians with college or below degree the highest (Mean = 4.47, SD = 0.57), with the bachelor degree group (Mean = 4.19, SD = 0.45) in the middle, showing a tendency of higher education degree, lower organizational identification. However, the significant differences only exist on the relationship between respondents with college or below degree and other

two groups.

Likewise, physicians with master or above degree in the sample reported a lowest organizational commitment while physicians with college or below degree the highest, with the bachelor degree group in the middle. Significant differences exist among the three types education background.

Similarly, physicians with higher education shows higher sensitivity to procedural justice compared with lower education group. But the significant differences only exist in the relationship between respondents with master or above degree and other two groups.

**Table 9. ANOVA Results of Key Variables by Position**

	Organizational Identification	Organizational Commitment	Organizational Justice	Procedural Justice
Chief physician (n=19)	4.71 <sup>a</sup> (0.49)	4.26 <sup>a</sup> (0.68)	4.29 <sup>c</sup> (0.76)	4.55 <sup>i</sup> (0.57)
Associate chief physician (n=52)	4.39 <sup>b</sup> (0.39)	4.15 <sup>b</sup> (0.50)	4.14 <sup>f</sup> (0.49)	4.20 <sup>j</sup> (0.50)
Attending physician (n=57)	4.11 <sup>c</sup> (0.41)	3.76 <sup>c</sup> (0.43)	3.94 <sup>g</sup> (0.53)	3.97 <sup>k</sup> (0.45)
Resident physician (n=80)	3.97 <sup>d</sup> (0.45)	3.49 <sup>d</sup> (0.43)	3.75 <sup>h</sup> (0.48)	3.83 <sup>l</sup> (0.45)
F	20.846**	39.649**	8.624**	14.894**

Mean values are reported with standard deviations in parentheses.

Means with the different superscript letter (a,b,c,d) are significantly different at the 0.05 level by post hoc LSD test.

Means with the different superscript letter (e,f,g,h) are significantly different at the 0.05 level by post hoc LSD test. (except ef, fg)

Means with the different superscript letter (i,j,k,l) are significantly different at the 0.05 level by post hoc LSD test.(except kl)

\*\*p<0.001.

From Table 9, it can be seen that there is a significant difference in the level of organizational identification, organizational commitment, organizational justice and procedural justice among different position groups.

Physicians with higher positions had higher level of organizational identification than those with lower positions. Chief physician reports the highest level of



organizational identification (Mean = 4.71, SD = 0.49), followed by associate chief physician (Mean = 4.39, SD = 0.39), attending physician (Mean = 4.11, SD = 0.41) and resident physician (Mean = 3.97, SD = 0.45). Significant differences exist among the four types of position groups. Likewise, physicians with higher positions had higher level of organizational commitment than those with lower positions. And significant differences also exist among the four types of position groups.

In addition, Chief physician in the sample had the highest organizational justice (Mean = 4.29, SD = 0.76), followed by associate chief physician (Mean = 4.14, SD = 0.49), attending physician (Mean = 3.94, SD = 0.53) and resident physician (Mean = 3.75, SD = 0.48). However, there is no significant difference between the relationship of chief physician and associate chief physician, associate chief physician and attending physician. Similarly, we find the same regularity in procedural justice which is physicians with higher positions had higher procedural justice than those with lower positions. Significant differences exist among the four types of position groups except between attending physician and resident physician.

## 4.6. Hypothesis Testing

### 4.6.1. Hypothesis 1

To test the hypothesis “*psychological contract breach is negatively related to organizational commitment*”, we used a linear regression analysis to see if there is a significant relationship between psychological contract breach and organizational commitment.

Table 10. Regression Analysis (Psychological Contract Breach and Organizational Commitment)

Independent variable	Organizational Commitment (dependent variable)					
	R	R <sup>2</sup>	B	$\beta$	t	Sig.
Psychological Contract Breach	0.376	0.142	-0.694	-0.376	-5.827	.000

It is shown in Table 10, psychological contract breach is significantly related to organizational commitment ( $B=-0.694$ ,  $\beta = -0.376$ ,  $p < 0.001$ ), which means psychological contract breach is negatively related to organizational commitment. Therefore hypothesis 1 is supported.

### 4.6.2. Hypothesis 2

To test the hypothesis “*psychological contract breach is negatively related to organizational identification*”, we conducted a linear regression analysis to check if a significant relationship between psychological contract breach and organizational identification.

Table 11. Regression Analysis (Psychological Contract Breach and Organizational Identification)

Independent variable	Organizational Identification (dependent variable)					
	R	R <sup>2</sup>	B	$\beta$	t	Sig.
Psychological Contract Breach	0.288	0.083	-0.438	-0.288	-4.321	.000

As shown in Table 11, psychological contract breach is significantly related to organizational identification ( $B = -0.438$ ,  $\beta = -0.288$ ,  $p < 0.001$ ), which means psychological contract breach is negatively related to organizational identification. Therefore, hypothesis 2 is also supported.

### 4.6.3. Hypothesis 3

To test the hypothesis “*organizational identification is positively related to organizational commitment*”, a simple linear regression analysis was conducted to see the relationship between organizational identification and organizational commitment.

Table 12. Regression Analysis (Organizational Identification and Organizational Commitment)

Independent variable	Organizational Commitment (dependent variable)					
	R	R <sup>2</sup>	B	$\beta$	t	Sig.
Organizational Identification	0.697	0.486	0.846	0.697	13.944	.000

Table 12 presents the regression analysis result between organizational identification and organizational commitment. A significantly positive correlation was found ( $B = 0.846$ ,  $\beta = 0.697$ ,  $p < 0.001$ ), and thus the hypothesis 3 was fully supported.

### 4.6.4. Hypothesis 4

To test the hypothesis “*organizational identification mediates the relationship between psychological contract breach and organizational commitment*”, SPSS plug-in PROCESS (version 3.5) Model 4 was used for this analysis. And position was used as a control variable.

Table 13. Regression results for mediation analysis (n=208)

Outcome	Predictors	B	SE	t	LLCI	ULCI
OI	constant	6.066	0.294	20.656**	5.487	6.645
	position	-0.223	0.029	-7.752**	-0.279	-0.166
	PCB	-0.384	0.090	-4.289**	-0.561	-0.208
	R <sup>2</sup> =0.291, F=42.064, p<0.001					
OC	constant	3.399	0.459	7.41**	2.495	4.303
	position	-0.216	0.029	-7.438**	-0.274	-0.159
	PCB	-0.397	0.083	-4.773**	-0.561	-0.233
	OI	0.559	0.062	9.006**	0.437	0.682
R <sup>2</sup> =0.622, F=111.742, p<0.001						

LLCI, Boot CI lower limit; ULCI, Boot CI upper limit. \*  $p < 0.05$ , \*\*  $p < 0.001$ .

Note: OI = Organizational Identification; OC = Organizational Commitment.

As shown in Table 13, psychological contract breach can significantly and negatively predict organizational commitment and organizational identification ( $B = -0.397$ ,  $SE = 0.083$ ,  $t = -4.773$ ,  $p < 0.001$ ;  $B = -0.384$ ,  $SE = 0.090$ ,  $t = -4.289$ ,  $p < 0.001$ ), and organizational identification can significantly and positively predict organizational commitment ( $B = 0.559$ ,  $SE = 0.062$ ,  $t = 9.006$ ,  $p < 0.001$ ). Therefore, organizational identification plays a mediating role between psychological contract breach and organizational commitment.

In addition, bootstrap analysis results showed that the direct effect and indirect effect between psychological contract breach and organizational commitment do not contain 0 between the upper and lower limits of the 95% bootstrap confidence interval (95% CI = [-0.797, -0.427], 95% CI = [-0.561, -0.233], 95% CI = [-0.341, -0.098]). This showed that organizational identification as a mediating variable plays a significant role in Model 4; that is, organizational identification plays the part of a mediating role between psychological contract breach and organizational commitment. Moreover, the mediating effect of organizational identification accounted for 35.130% (see Table 14). Thus, our hypothesis 4 was fully supported.

Table 14. Direct and indirect effects of Psychological Contract Breach on Organizational Commitment

Effect	B	Boot SE	Boot LLCI	Boot ULCI	Relative effect size
Total effect	-0.612	0.094	-0.797	-0.427	
Direct effect	-0.397	0.083	-0.561	-0.233	64.870%
Indirect effect	-0.215	0.062	-0.341	-0.098	35.130%

LLCI, Boot CI lower limit; ULCI, Boot CI upper limit.

#### 4.6.5. Hypothesis 5

To test the hypothesis “*Organizational justice and psychological contract breach will have an interactive effect on organizational commitment. Specifically, the negative relationship between psychological contract breach and organizational commitment will be weaker at high levels of organizational justice*”, we continued to use plug-in PROCESS (version 3.5) for this analysis. On the basis of the significant mediating effect of organizational identification, organizational justice was added as a moderating variable. Model 5 was used for this analysis. Position was used as a

control variable.

The results showed that organizational justice had a negative moderating effect on the relationship between psychological contract breach and organizational commitment. ( $B = -0.286$ ,  $SE = 0.100$ ,  $t = -2.864$ ,  $p < 0.05$ ). (see Table 15)

Table 15. Regression results for mediating moderation analysis (n=208)

Outcome	Predictors	B	SE	t	LLCI	ULCI
OI	constant	4.838	0.090	54.046**	4.661	5.014
	position	-0.223	0.029	-7.752**	-0.279	-0.166
	PCB	-0.384	0.090	-4.289**	-0.561	-0.208
	R <sup>2</sup> =0.291, F=42.064, p<0.001					
OC	constant	2.485	0.312	7.963**	1.869	3.100
	position	-0.187	0.029	-6.494**	-0.244	-0.130
	PCB	-0.239	0.096	-2.483*	-0.428	-0.049
	OI	0.447	0.066	6.815**	0.318	0.576
	OJ	0.257	0.066	3.878**	0.127	0.388
	PCB*OJ	-0.286	0.100	-2.864*	-0.483	-0.089
	R <sup>2</sup> =0.653, F=75.926, p<0.001					

LLCI, Boot CI lower limit; ULCI, Boot CI upper limit. \* p<0.05, \*\* p<0.001.

Note: OI = Organizational Identification; OC = Organizational Commitment; PCB = Psychological Contract Breach; OJ = Organizational Justice.

The moderating effect of organizational justice was further analyzed using a simple slope test. The adjustment variables were grouped according to the mean score of organizational justice plus or minus one SD. The mean plus one SD was designated the high organizational justice group, and the mean minus one SD was designated the low organizational justice group (see Table 16).

Table 16. The moderating effect of OJ on the relationship between PCB and OC at different levels of moderator variable OJ (n=208)

Predictor	OJ	Effect	Boot SE	t	Bootstrap 95% CI	
					LLCI	ULCI
PCB	-0.555	-0.080	0.110	-0.730	-0.296	0.136
	0.000	-0.239	0.096	-2.483*	-0.428	-0.049
	0.555	-0.397	0.112	-3.536**	-0.619	-0.176

LLCI, Boot CI lower limit; ULCI, Boot CI upper limit. \* p<0.05, \*\* p<0.001.

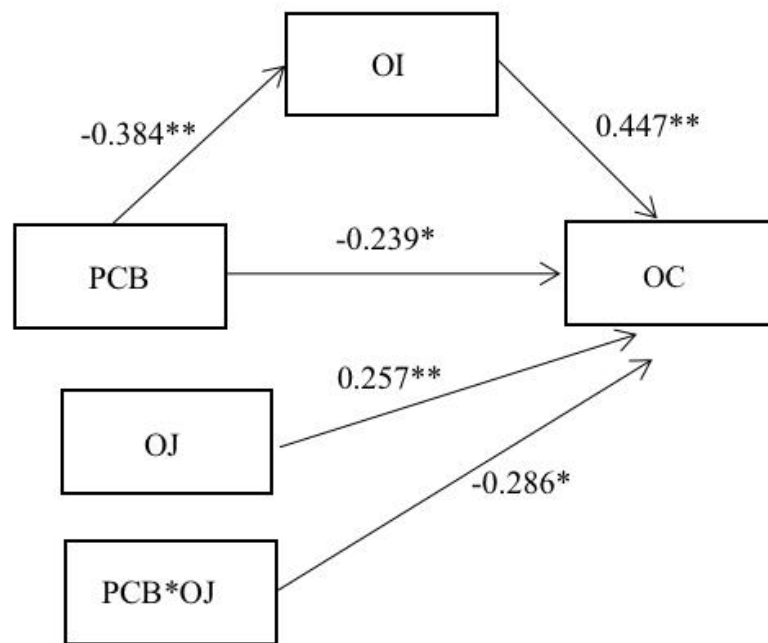
Note: PCB = Psychological Contract Breach; OJ = Organizational Justice; OC = Organizational Commitment.

Bootstrap analysis results showed that the effect of low organizational justice group on the relationship between psychological contract breach and organizational

commitment do contain 0 between the upper and lower limits of the 95% bootstrap confidence interval (95% CI = [-0.296, 0.136]). So, we can conclude that when the level of organizational justice was low, there is no significance moderating effect of organizational justice on the relationship between psychological contract breach and organizational commitment.

However, when the level of organizational justice was high, it is able to moderating negatively the relationship between psychological contract breach and organizational commitment (Effect = -0.397,  $t = -3.536$ ,  $p < 0.001$ ).

Figure 2 shows the specific relationships between psychological contract breach, organizational identification, organizational commitment and organizational justice in this model.

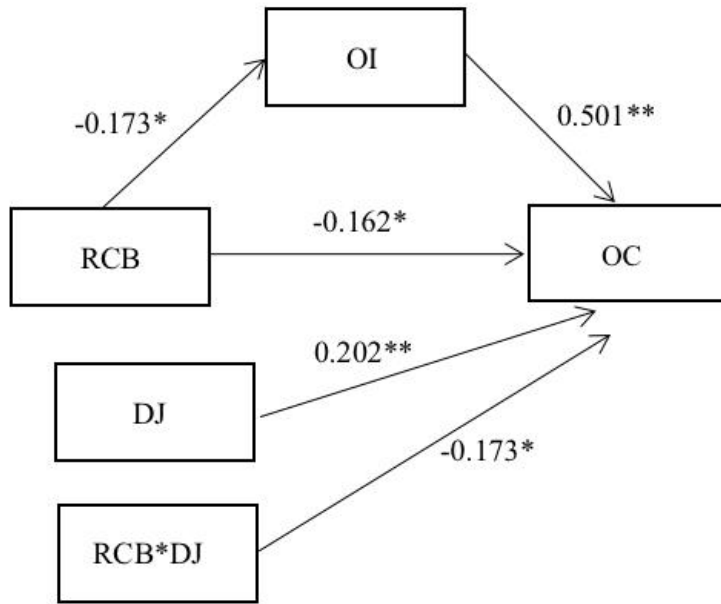


**Figure 2. Moderated Mediation Model**

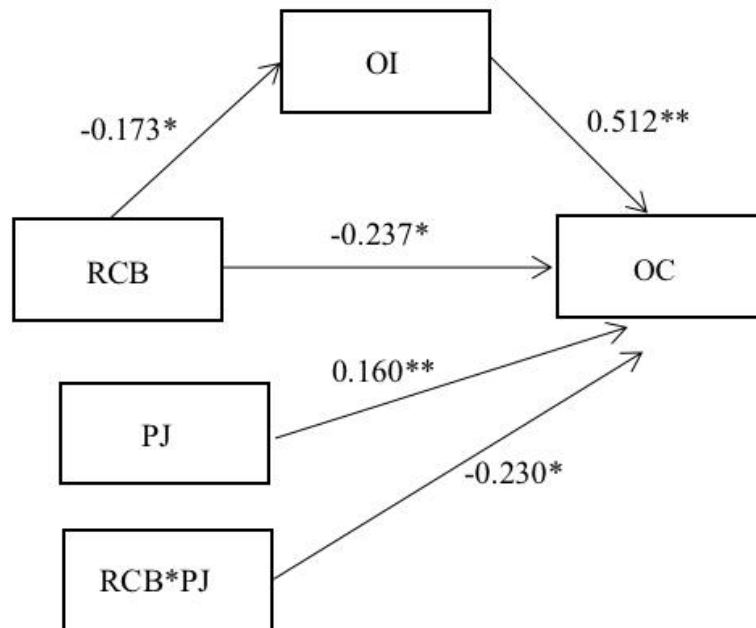
#### **4.7. Further Analyses**

To further explore the moderated mediation model of psychological contract breach, organizational identification, organizational commitment and organizational justice, we divided psychological contract breach into transactional contract breach and relational contract breach as well as organizational justice into distributive justice and procedural justice and continued to use plug-in PROCESS (version 3.5) for this analysis.

The results show that the mediated moderation effect can hold only when relational contract breach is entered into the model as the independent variable. Thus, we can get two models, one with distributive justice as the moderating variable and one with procedural justice. We can see that when we add distributive justice and procedural justice as moderating variables to the model separately, distributive justice has a greater direct effect on organizational commitment ( $B=0.202$ ,  $p<0.001$ ) than procedural justice ( $B=0.160$ ,  $p<0.001$ ), but conversely, the interaction of procedural justice and relational contract breach on organizational commitment ( $B=-0.230$ ,  $p<0.05$ ) is stronger than the interaction of distributive justice and relational contract breach on organizational commitment ( $B=-0.173$ ,  $p<0.05$ ). (see figure 3 and 4)



**Figure 3. DJ as a moderating variable**



**Figure 4. PJ as a moderating variable**



## **5. Discussion and Conclusions**

In this chapter we discuss the results of the previous chapter and draw implications from the discussion. Finally, we conclude this study, point out the limitations and give some suggestions for future research.

### **5.1. Discussion**

This study investigated the relationship between several key concepts in the fields of management and organizational behavior: psychological contract breach, organizational identification, organizational commitment, and organizational justice. In addition, we also explored the effect of physicians' age, education background, position, professional tenure and organizational tenure on these variables. First, we tested the relationships between psychological contract breach and organizational commitment, psychological contract breach and organizational identification, and organizational identification and organizational commitment. Secondly, we examined the mediating role of organizational identification in the relationship between psychological contract breach and organizational commitment. Finally, we also examined the moderating role of organizational justice in the relationship between psychological contract breach and organizational commitment. The results are discussed below.

These descriptive results indicate that the participants in this sample reported the medium level of psychological contract breach (mean = 3.20; SD = 0.32), relational contract breach (mean = 3.25; SD = 0.45) and transactional contract breach (mean = 3.17; SD = 0.35). All three scores are greater than 3, suggesting that physicians in this sample believed they received less than the organization promised. However, the level of organizational identification (mean = 4.18; SD = 0.49), organizational commitment (mean = 3.83; SD = 0.59) and organizational justice (mean = 3.95; SD = 0.55) were not very low, with all three scores being greater than 3.5, indicating that physicians in this sample identify with the hospital to a certain extent, are emotionally attached to the hospital, and they also believe the organization treat them in a fair way. One possible reason for this is that physicians who have gone through the acquisition and still stayed in the hospital are likely to have higher levels of organizational

identification, organizational commitment and perceived organizational justice. Although they think what they received is less than the organization promised, they still identify with and are emotionally attached to the hospital. There is another possible reason is that psychological contract breaches occur so often, physicians have become accustomed to the situation.

According to the ANOVA analysis, there is a significant difference on the level of organizational identification and organizational commitment between the physicians' age, professional tenure and organizational tenure in this sample - the longer the organizational tenure, the higher the organizational identification and organizational commitment. Likewise, age and professional tenure show the same pattern. The meta-analysis study of Ricketta (2005) suggests that age and organizational tenure are positively related to organizational identification. Empirical research show that age has a positive effect on organizational commitment (Freeborn, 2001; Heponiemi et al., 2011; Kuusio et al., 2010). Generally, the longer the time spent in the organization, the higher the employee's commitment and identification with the organization. A finding of a study shows that physician at later career stages may be at a higher level of organizational commitment, perhaps due either to avoid the greater risks for moving to a new hospital or because they have received benefits over time from existing organization that produce stronger levels of attachment (Hoff et al., 2021). It accords with with what happened in this study. Even after experiencing the psychological contract breaches even violations associated with M&A, these physicians (with long organizational tenure) at later career stages did not choose to leave the hospital and organizational commitment remained at a high level.

And there are positive relationships between age, professional tenure and organizational tenure. Therefore, we believe that commonality exists in the differences on organizational identification and organizational commitment between these three variables.

According to the hypothesis 1, our sample reports a significant and negative relation between psychological contract breach and organizational commitment. Several studies have substantiated this negative relationship between psychological

contract breach and organizational commitment. For instance, Knights and Kennedy (2005) found a strong negative correlation between psychological contract violation and organizational commitment. As the level of perceived breach increases, employees are more likely to distance themselves emotionally from the organization. This reduced commitment can manifest in lower job satisfaction and increased turnover intentions.

In the hypothesis 2, we examined the relationship between psychological contract breach and organizational identification. And we found that psychological contract breach has a negative effect on organizational identification in our sample. The hypothesis 2 is supported. As the literature review suggests, a negative relationship between psychological contract breach and organizational identification. Gibney et al. (2011) found a positive correlation between psychological contract breach and organizational disidentification. When psychological contract breach occurs, employees may no longer perceive themselves as integral parts of the organization and may question their alignment with its values and goals (Zagenczyk et al., 2011).

Our findings in this study fully supported Hypothesis 3. There was a significant positive correlation between organizational identification and organizational commitment. Studies have consistently shown a positive relationship between organizational identification and organizational commitment. For example, Bergami & Bagozzi (2000) and Marique & Stinglhamber (2011) found that organizational identification significantly predicted affective commitment. This indicates that when employees strongly identify with their organization, they are more likely to exhibit affective commitment, characterized by emotional attachment and loyalty.

The fourth hypothesis of our study tested the mediating effect of organizational identification on the relationship between psychological contract breach and organizational commitment. The result shows that organizational identification plays partial mediating role between psychological contract breach and organizational commitment. That means psychological contract breach can affect organizational commitment not only directly, but also indirectly through organizational identification. Although there are few studies to prove that organizational identification plays a

mediating role between psychological contract breach and organizational commitment. It is not difficult to deduce that as employees perceive that the organization has failed to uphold their psychological contract, they may no longer identify with the organization or its values. This weakened identification, in turn, contributes to reduced organizational commitment, particularly in terms of affective commitment.

The hypothesis 5 of our study examined the effect of organizational justice which was added as a moderating variable between psychological contract breach and organizational commitment. The result suggests that organizational justice as a moderating variable can negatively influence how psychological contract breach affects organizational commitment. However, it is important to note that the perception of organizational justice can mitigate the negative impact of psychological contract breach on organizational commitment, only when it is at a high level. In other words, when employees perceive high levels of organizational justice, the negative impact of psychological contract breach on organizational commitment may be mitigated. It fully supported our hypothesis 5 and some studies, suggesting that organizational justice can mitigate the intense emotional experiences associated with breaches, such as anger and feelings of betrayal. For example, the research conducted by Morrison and Robinson (1997) underscored the critical role of employees' perceived justice in how they interpret and respond to instances of psychological contract breach. Specifically, when employees perceive that the organization follows fair procedures and treats them with respect and transparency, they are less likely to believe that the organization was intentionally breaching the psychological contract. Consequently, this increases their acceptance of unfavorable outcomes and reduces the negative emotional responses associated with psychological contract breach, and does not reduce organizational commitment.

Finally, we do further analyses for this moderated mediation model. This study found that when transactional contract breach was added as an independent variable to this moderated mediation model, the model did not hold whether distributive justice or procedural justice was used as the moderating variable; however, when relational contract breach was added as an independent variable to the model, the model could

hold whether distributive justice or procedural justice was used as the moderating variable. Thus we can infer that the psychological contract breach that can be moderated by high level of organizational justice should be the breach of the relational contract rather than transactional contract. One possible reason is that they feel angrier and more betrayed by transactional contract breach than relational contract breach. On the other hand, we also find that procedural justice moderates relational contract breach and organizational commitment more than distributive justice. Specifically, the negative relationship between relational contract breach and organizational commitment will be weaker at high levels of procedural justice. This result supports a study, which suggested that procedural justice can mitigate against a breach being experienced as a contract violation, for example the feelings of anger and betrayal (Morrison & Robinson, 1997).

## **5.2. Implications for management**

Since the sample of this study is more special, 43.8% of the respondents have worked in this hospital for less than five years, which proves that nearly half of physicians were recruited after the acquisition. We present the implications for this study in two parts.

Firstly, we should focus on the young physicians' perceptions of identification and commitment to the organization. As mentioned above, physicians (with long organizational tenure) at later career stages did not choose to leave the hospital and both organizational identification and organizational commitment remained at high levels. In other side, nearly half of physicians were recruited after the acquisition. Most of these new recruits are young physicians and have low levels of organizational identification and commitment. If young physicians cannot be convinced to identify meaningfully with organizations over time, issues such as increased turnover, reduced job satisfaction, and greater burnout (Hoff et al., 2021). Therefore, exploring how to increase the levels of organizational identification and organizational commitment of the young physicians is one of the aims of this study. The study supports a positive correlation between organizational identification and organizational commitment as

indicated by previous studies. Management should invest in training the new staff and promoting the values and culture of the hospital, to encourage employees to align with the organization's values and goals to enhance commitment levels. On the other hand, we also found that physicians with high level education (often young physician) usually show more sensitivity in organizational justice than those with lower degree education. Management should encourage open and honest discussions during decision-making, allowing young physicians to voice their opinions and concerns. Moreover, creating clear and accessible channels for them to raise concerns, report grievances, or seek resolution for workplace issues is also important. Physicians will have confidence to use these procedures only if they are assured of being fair, confidential and free from retaliation.

Secondly, we need to focus on the old employees, who have been with this organization for a long time and have been impacted by the acquisition. This type of physician may develop a strong psychological contract breach even violation, which leads to a decline in organizational identification and commitment. In the process of organizational changes, it is inevitable that organizations will break the expectations of employees and the contacts between the organization and employees. We believe that the fair decision-making procedure and reward and punishment system can effectively reduce the negative impact of psychological contract breach. Organizations should ensure that all organizational policies and procedures are transparent and readily accessible to physicians. This includes policies related to compensation, performance evaluations, promotions, and conflict resolution. And ensure that compensation structures are competitive and fair, considering factors such as experience, performance, and market benchmarks. When employees perceive fairness and respect in how their concerns are addressed, the negative impact of contract breaches can be mitigated. In the other side, management also can leverage the loyalty of senior physicians by offering opportunities for mentorship and leadership roles. By recognizing and rewarding the contributions of long-tenured physician, organizations can reinforce their commitment and create a positive work environment.

Lastly, we can get some useful implications from the further analyses. On the one hand, management must ensure that physicians' basic salary and benefits which is the transactional psychological contract. On this basis, they should pay attention to and try to satisfy the content of the physicians' relational psychological contract. On the other hand, for managing employees' emotions about the psychological contract breach, procedural justice is prioritized to mitigate the negative impact of psychological contract breach on organizational commitment. Some suggestions for procedural justice have been mentioned above and will not be repeated here.

### **5.3. Conclusions**

The aim of this study is to investigate the relationship between psychological contract breach, organizational identification, organizational commitment and organizational justice of physicians in the hospital after acquisition. It can be concluded from the overall findings that the psychological contract breach of physicians will significantly influence their organizational identification and organizational commitment, and organizational identification plays part of a mediating role between psychological contract breach and organizational commitment. At the same time, perceived organizational justice can somewhat mitigate the negative effect of psychological contract breach. Among them, procedural justice is more effective than distributive justice in moderating the negative effects of psychological contract breach.

### **5.4. Limitation and Further Studies**

There are several limitations in the study. First, we only collected the data from physicians in one hospital in Guangdong province in China. So, the representativeness of the study sample is limited. Therefore, further study should consider collecting the data from similar hospitals. Secondly, because of the cross-sectional data, this study is affected by the likely influence of response bias, and it is impossible to draw conclusions about the direction of causality. Future studies need to focus on the longitudinal study to test the casual direction.

Despite the limitations, the present study is one of the few studies focus on physicians in hospital in China after an acquisition. The results of this study may shed some light on the future reform of public hospitals into private hospitals in China.



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## Appendix: Questionnaire

The questionnaire focuses on physicians’ feelings about the working environment in hospitals and their personal thoughts about their careers. This questionnaire will be collected anonymously. All information will be kept strictly confidential and will only be used for the research of this thesis. There are no right or wrong answers to all questions in this questionnaire! Please answer truthfully based on your personal feelings. Thank you very much for your time and participation. Have a wonderful day!

### I. Instructions for completing this survey

The survey consists of four sections. There will be one instruction at the beginning of each section. Follow the instructions to choose the answer.

A. PSYCHOLOGICAL CONTRACT BREABH						
What is the actual obtainment of the following promises which made to you by your organization?						
		Receive much more than promised	Receive more than promised	Receive equal to promised	Receive less than promised	Receive much less than promised
1	The overall benefits provides	1	2	3	4	5
2	Pay tied to my performance	1	2	3	4	5
3	A job that provides high autonomy	1	2	3	4	5
4	Advancement opportunities	1	2	3	4	5
5	Resource support	1	2	3	4	5
6	A good employment relationship	1	2	3	4	5

B. ORGANIZATIONAL IDENTIFICATION							
To what extent do you agree or disagree with the following statements about your organization?							
		Strongly disagree	Disagree	Some-what disagree	Some-what agree	Agree	Strongly agree
7	When someone praises my organization, it feels like a personal compliment.	1	2	3	4	5	6
8	I'm very interested in what others think about my organization.	1	2	3	4	5	6
9	When someone criticizes my organization, it feels like a personal insult.	1	2	3	4	5	6
10	When I talk about my organization, I usually say "we" rather than "they".	1	2	3	4	5	6
11	This organization's successes are my successes.	1	2	3	4	5	6
12	If a story in the media criticized my organization, I would feel embarrassed.	1	2	3	4	5	6

C. ORGANIZATIONAL COMMITMENT							
To what extent do you agree or disagree with the following statements about your organization?							
		Strongly disagree	Disagree	Some-what disagree	Some-what agree	Agree	Strongly agree
13	I would be very happy to spend the rest of my career with this organization.	1	2	3	4	5	6
14	I really feel as if this organization's problems are my own.	1	2	3	4	5	6
15	I do feel like part of the family at my	1	2	3	4	5	6

	organization.						
16	I feel emotionally attached to this organization.	1	2	3	4	5	6
17	This organization has a great deal of personal meaning for me.	1	2	3	4	5	6
18	I feel a strong sense of belonging to my organization.	1	2	3	4	5	6

D. ORGANIZATIONAL JUSTICE							
To what extent do you agree or disagree with the following statements about your organization?							
		Strongly disagree	Disagree	Some-what disagree	Some-what agree	Agree	Strongly agree
19	The evaluation of my performance provides a good assessment of the effort I have put into my work.	1	2	3	4	5	6
20	The evaluation of my performance provides an appropriate assessment of the work I have completed.	1	2	3	4	5	6
21	The evaluation of my performance assesses what I have contributed to the organization.	1	2	3	4	5	6
22	My performance evaluation is justified, given my performance.	1	2	3	4	5	6
23	I am able to express my views and feelings about my organization's procedures.	1	2	3	4	5	6
24	The procedures used in my organization have been applied	1	2	3	4	5	6

	consistently.						
25	The procedures used in my organization are free of bias.	1	2	3	4	5	6
26	The procedures used in my organization are based on accurate information.	1	2	3	4	5	6
27	I am able to appeal the assessments made by procedures used in my organization.	1	2	3	4	5	6
28	The procedures used in my organization uphold ethical and moral standards.	1	2	3	4	5	6
29	I have influence over the assessments made as a result of my organization's procedures.	1	2	3	4	5	6

## II. Respondent's information

1. Gender  male  female
2. Age \_\_\_\_\_ years old
3. Marital status  Unmarried  Married
4. Educational background  College or below  
 Bachelor's degree  
 Master or above
5. Position  Chief physician  
 Associate chief physician  
 Attending physician  
 Resident Physician
6. Department  Surgery  
 Internal Medicine  
 Gynecology and Obstetrics

- Pediatrics
- Traditional Chinese Medicine
- Ophthalmology
- Otolaryngology
- Stomatology
- Emergency
- ICU
- Other departments

7. Professional Tenure

- 1-10 years

- >10 years

8. Organizational Tenure

- <5 years

- 5-10 years

- 10-15 years

- 15-20 years

- >20 years