

**The Impact of Organizational Justice on Public University Teachers' Job
Performance: Evidence from Jiangxi Province, China**

Written By

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Declaration

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed *YanJun Wang*

Date OCT 2022

STATEMENT 1

This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used the extent and nature of the correction is clearly marked in a footnote(s). Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

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STATEMENT 2

I hereby give consent for my thesis, if accepted, to be available for deposit in the University's digital repository.

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Acknowledgement

Three years have passed in a flash. I still remember when I was alone in London for my 40th birthday when the COVID-19 pandemic was the most serious. Unfortunately, the world has changed dramatically due to viruses and wars. I am eager to return to the peaceful and prosperous international community in the past. Fortunately, when our life was full of uncertainty and challenges, I finally completed my dissertation.

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If I have seen further, it is by standing on the shoulders of giants. Special thanks to all the experts and researchers who contributed knowledge. The literature reading and study in the past three years not only helped me complete the doctoral dissertation, but also subverted my inherent concepts and broke my cognitive boundaries as a law major,

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Abstract

Organizational justice can effectively predict employees' attitudes and behaviours, it is a crucial factor affecting individual job performance. However, the impact mechanism of organizational justice on the job performance of university teachers, especially in China, has not been thoroughly and systematically studied. University teachers are high-level knowledge workers, and much research findings about the impact of organizational justice on employees' job performance in corporate contexts is not necessarily applicable in university contexts. Therefore, this study aims to develop a management framework for Chinese public universities from the organizational justice perspective to improve the teachers' job performance by revealing the impact mechanism of organizational justice on job performance.

To address the research problem comprehensively and deeply, a research philosophy of pragmatism has been adopted, which underpinned the methodological choice of sequential explanatory mixed methods. In this study, quantitative research is the main research method, and qualitative research is the supplementary research method. Before the formal collection of data, a pilot study has been conducted to improve the reliability and content validity of the scales. Quantitative data were collected via an anonymous online questionnaire survey, and 548 valid data responses were collected from 10 universities in Jiangxi Province and analyzed using SPSS. Based on the results of quantitative data analysis, qualitative data was collected through a focus group interview with eight participants, which was analyzed thematically.

The results of this study showed that the organizational justice dimensions did not have the same direct positive impact on the job performance of university teachers as they usually did in the context of economic organizations. Unexpectedly, distributive justice had a negative direct impact on research performance and social service performance. However, affective commitment functioned as a strong mediating role in the relationship between all organizational justice dimensions and all university teachers' job performance dimensions. In addition, collectivism did not moderate the relationship between organizational justice and job performance as hypothesized.

The findings opened the black box of how organizational justice affects university teachers' job performance, expanded the application of organizational justice theory in the field of job performance research. These findings also indicate that university and university administrators should change the traditional performance management philosophy and methods borrowed from enterprises, respect the identity of university teachers as senior knowledge workers, and take practical and effective measures to improve teachers' perception of organizational justice, enhance their affective commitment, and then improve their job performance. Meanwhile, the limitation and outlook of this study has been also mentioned at last.

Key words: organizational justice; affective commitment; university teachers' job performance; collectivism; social change theory; knowledge worker theory

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List of Abbreviation

AC	affective commitment
ANOVA	analysis of variance
AGFI	adjusted goodness-of-fit index
CFA	confirmatory factor analysis
CFI	comparative fit index
CMB	common method bias
CI	confidence interval
CV	collectivism
DF	degree of freedom
DJ	distributive justice
EPA	exploratory factor analysis
IPJ	interpersonal justice
IFJ	informational justice
JP	job performance
KWT	knowledge worker theory
OJ	overall justice
PJ	procedural justice
Quan	quantitative
Qual	qualitative
RP	research performance
SET	social exchange theory
SD	standard deviation
SPSS	Statistical Package for the Social Sciences
TP	teaching performance
VIF	variance inflation fact

Chapter One: Introduction

Organizational justice can effectively predict employees' attitudes and behaviours, it is a crucial factor affecting individual job performance. However, the impact mechanism of organizational justice on the job performance of university teachers, especially in China, has not been thoroughly and systematically studied. This study aims to develop a management framework for Chinese public universities from the organizational justice perspective to improve the teachers' job performance. This chapter will provide a concise introduction by first discussing the background and context, followed by the current research and statement of research problem, the research aims and objectives, research questions, the research significance and finally, the structure of the dissertation.

1.1 Research background

Human society is facing increased dilemmas and challenges, and the innovation and exploration of science and technology, culture and system are the key to breaking the tough situation. Innovation is driven by talents, and the cultivation of high-level talents mainly depends on higher education (Li, 2018; Salbiyah, Nuraini and Rosmaniar, 2019; Jabbar *et al.*, 2020). Higher education shoulders the functions of talent training, scientific research, and social services. The high-quality development of higher education significantly affects the development of economic society, and is directly related to the development prospects of the country and the common destiny of mankind (Li, Longjuan and Li, 2022). Therefore, all countries attach immense importance to the development of higher education, and the

quality of higher education is an important manifestation of a country's comprehensive national strength.

Since the expansion of university enrollment in 1999, the scale of higher education in China has expanded rapidly. In 2020, the gross enrollment rate reached 54.4%, and higher education has entered the popularization stage(Li, Longjuan and Li, 2022).After the quantity of higher education developed, both the people and the country began to pay more attention to the connotation and quality of higher education. In order to realize the "transformation from a big country in higher education to a strong country in higher education", the 14th Five Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of Vision Goals for 2035 proposed on March 11, 2021, to improve the quality of higher education. The quality of higher education will become an important task in the future in China. In fact, as early as 2015, the State Council issued the "Overall Plan for Promoting the Construction of World-Class Universities and First-Class Disciplines", which put forward the basic construction principle of "taking performance as leverage". Mobilizing teachers' enthusiasm, improving teachers' job performance, and thereby enhancing the overall performance of universities are the key to the development of higher education in China (Lin, 2018; Qin, 2019). According to the statistical results of the development of China's private higher education in 2020, China's public universities account for 71.84%, 1367. The education quality of China's public universities determines the quality of China's higher education. The job performance of public universities teachers is a leverage of education quality. Many scholars discussed the job performance of university teachers from the perspective of performance appraisal (Song,

2017; Wang and Chen, 2019; Zhang, 2019). There are also many from the influencing factors of job performance. Scholars have mostly discussed the influencing factors of university teachers' job performance from the aspects of the teacher's job satisfaction(Li, 2018), emotional intelligence(Chen, Li and Wang, 2016), and psychological capital(Li, Zheng and Liao, 2016), as well as from the leadership style of university administrators (Chen, Li and Wang, 2016) and the university's organizational culture(Zhang, 2019). However, the organizational justice that affects the exchange relationship between university teachers, universities, and administrators, and thus impacts the job performance has not been involved.

Chinese traditional culture emphasizes collectivism and harmony(Zhang, Huang and Xu ,2021), and the moral requirements of teachers emphasize dedication. However, with the reform and opening up, China has transformed successfully from a planned economy to a market economy. The economy has developed rapidly and the cake has grown, how to distribute has become the biggest issue (Qu, 2021). In addition, with the integration of Chinese and Western cultures, Western justice theories continue to impact the concept of justice in traditional Chinese culture (Feng, 2020), and people are paying more and more attention to the issue of justice (Francesco and Chen, 2004; Chen, Li and Wang, 2016; Qin, 2019). In an organization, justice is not only related to the economic interests of employees, but also the respect for employees' personality, the group's recognition of individual identity and value recognition, which can satisfy employees' various psychological needs and enhance their motivation to improve job performance (Li, 2014; Qin, 2019; Li, 2021).

University teachers are senior knowledge workers. Their core needs are a sense of mission, a sense of autonomy, a sense of honour and opportunities for growth (Drucker, 2012). Therefore, their desire for justice is particularly strong (Wang et al., 2010; Qin, 2019). If their justice needs are not met, it may affect their recognition of the university and their engagement in work, then ultimately affect their job performance, thereby affecting the long-term development of the university (Wang and Lu, 2015; Shan, Ishaq and Shaheen, 2015; Jameel, Ahmad and Mousa, 2020). At present, there are indeed some unfair and unjust phenomena in public universities, such as unfair distribution, unheard voice, and so on (Donglong et al., 2020). Therefore, how to enhance the overall performance of universities by improving the organizational justice level to promote university teachers' job performance has become a problem that needs urgent research.

1.2 Current research and gap

Organizational justice can effectively predict employee attitudes and behaviours (Colquitt, 2001), and is an effective indicator to measure the level of organizational management and reflect organizational competitiveness. Many empirical results showed a positive relationship between organizational justice and job performance in different fields and in different countries (Cohen-Charash and Spector, 2001; Colquitt *et al.*, 2013; Minibas-poussard and Roy, 2017; Jameel, Ahmad and Mousa, 2020). The influence mechanism of organizational justice on job performance can be direct in some cases (Shan, Ishaq and Shaheen, 2015; Krishnan *et al.*, 2018), but mostly indirect through mediators, such as organizational trust (Biswas and Kapil, 2017), organizational support (Jacobs, Belschak and

Den Hartog, 2014), and organizational commitment (Swalhi, Zgoulli and Hofaidhllaoui, 2017), and through moderators, such as socioeconomic conditions (Diehl, Richter and Sarnecki, 2018), Sociocultural influences(Mao et al., 2018),and so on.

With the accumulation of empirical studies exploring the relationship between organizational justice and job performance, there has been a problem of inconsistency in theories for different research backgrounds and different research objects. And the research has mainly concentrated on the context of economic organizations such as enterprises, while the impact of organizational justice on job performance in non-economic organizations, such as universities, is rarely involved.

A few researchers have studied the issue of organizational justice in higher education. Organizational justice was found to be a determining factor of work outcomes of national and expatriate academic staff in Malaysia (Hashim,2011). Mete and Sokmen (2019) also revealed that organizational Commitment played a mediating role in the organizational justice's effect on academic staff's job satisfaction and turnover intention. In China, Li (2014) did empirical research and found that organizational justice can reduce university teachers' job burnout by building affective commitment. Donglong (2020) drew a conclusion that organizational commitment had a mediating effect on the relationship between organizational justice and organizational citizenship behaviour of university teachers. The mechanism of organizational justice' impact on university teachers' job performance has not been studied comprehensively.

1.3 Research aim and objectives

In response to the research problem mentioned above, this study aims to develop a management framework for Chinese public universities from the organizational justice perspective to improve teachers' job performance. To achieve the research aim, several detailed and specific research objectives are set.

- i) To investigate the impact of organizational justice (distributive, procedural, interpersonal, and informational) on university teachers' affective commitment.
- ii) To investigate the impact of affective commitment on university teachers' job performance (teaching, research, and social service).
- iii) To explore the mediating role of affective commitment between organizational justice and university teachers' job performance.
- iv) To evaluate the moderating effect of collectivism as a cultural trait on the relationship between organizational justice and university teachers' job performance.
- v) To examine whether gender、age、educational level、title has an influence on university teachers' organizational justice perception, affective commitment collectivist value ,and job performance and find out the internal connection.

Therefore, this study attempts to integrate several of the above-mentioned variables into a single conceptual model to gain a more comprehensive understanding of how organizational justice affects the job performance of university teachers through the mediating role of affective commitment and the moderating role of collectivism, which will enrich job performance literature and management practice as well.

1.4. Research questions

To achieve the research aim and objectives above, several research questions need to be answered. The main research question is: How does organizational justice (distributive, procedural, interpersonal, and informational) impact public university teachers' job performance (teaching, research, and social service)? To answer the main research question properly and comprehensively, the sub-questions as follows need to be addressed:

- i) How does organizational justice impact public university teachers' affective commitment?
 - ii) How does affective commitment impact university teachers' job performance?
 - iii) How does affective commitment mediate the relationship between organizational justice and university teachers' job performance?
 - iv) How does collectivism moderate the relationship between organizational justice and university teachers' job performance as a cultural trait?
 - v) Whether the demographic characteristics of participants have influence on studied variables (organizational justice, affective commitment, collectivism, and job performance)?
- What is the internal connection between them?

1.5 Research methodology

The whole research idea and design follows the logic from macro to micro suggested by Saunders, Thornhill and Lewis (2016) and Easterby-Smith et al (2021). Research should not be methodology-oriented, and the choice of methodology should depend on the researcher's philosophical position and the research questions to be investigated (Easterby-Smith, Thorpe and Jackson, 2015). The complexity of the research questions in this study and a set

of assumptions based on the previous literature determine a research philosophy of pragmatism, which underpins the methodological choice of sequential explanatory mixed methods. Quantitative method is the main research method to verify the hypotheses, qualitative method is a supplementary method to explore some unexpected and interesting findings emerged in the quantitative study stage. A pilot quantitative study has been conducted to improve the reliability and content validity of the questionnaire before the formal data collection. Quantitative data were collected via an anonymous online questionnaire survey, and 548 valid data were collected from 10 universities in Jiangxi Province. The data has been refined before formal data analysis, EFA and CFA have been conducted to evaluate the reliability and validity of the scales.

Independent samples T-test and one-way ANOVA were used to make a judgment on how demographic variables affect the main variables studied in this study. Hypotheses of direct relationships between variables have been tested by multiple linear regression with SPSS, and hypotheses of mediation and moderation have been tested with model 5 of Process v3.3 developed by Hayes. Based on the results of quantitative data analysis, qualitative data was collected through a focus group interview of eight participants, which was analyzed thematically later. At last, quantitative results and qualitative results were integrated and discussed. Throughout the study, ethical issues were considered to ensure the confidentiality, dignity, and privacy protection of participants and the integrity and objectivity of the research results.

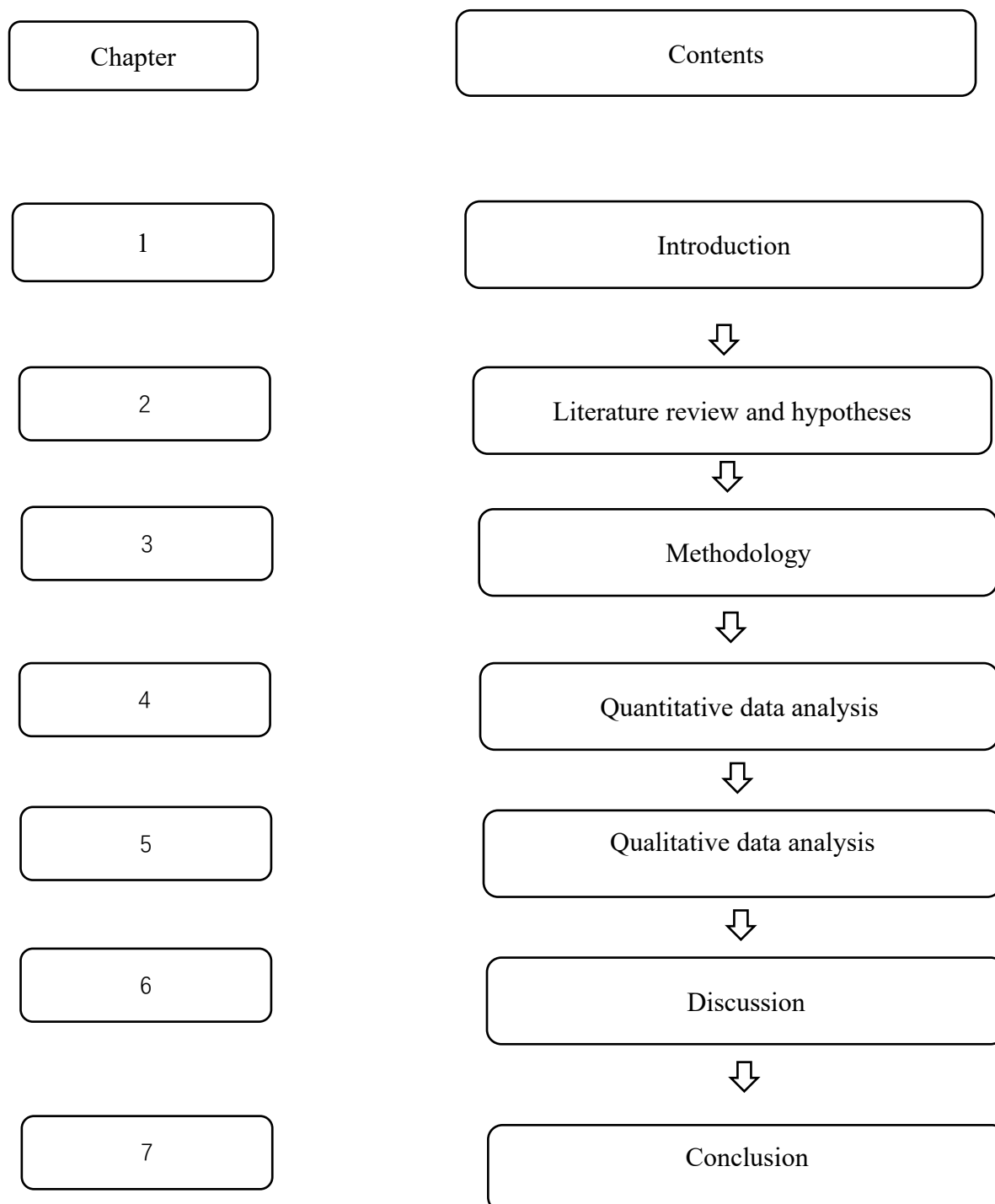
1.6 Research significance

Theoretical significance. This study integrates social exchange theory and knowledge worker theory to explain the proposed relationships of organizational justice and university teachers' job performance, finds the unique mediating role of affective commitment between the two variables, and will extend the limited research on the understanding of organizational justice and its influence on university teachers' job performance. Besides, collectivism is first introduced to explain the relationship between organizational justice and job performance of university teachers as a cultural trait in this study. In a word, this study will open the black box of the influence of organizational justice on job performance of university teachers, analyze the reasons why the influence mechanism of organizational justice on teachers' job performance in university is different from that of organizational justice on job performance of employees in the enterprise context, and expand the application of organizational justice theory in the field of job performance research.

Practical significance. This research will provide practical guidance and feasible measures for university and university administrators to improve teachers' perception of organizational justice, enhance their affective commitment, and then promote their job performance and thus enhance the overall competitiveness of universities.

1.7 Structure of the dissertation

Figure 1 Structure of the dissertation



Chapter Two: Literature Review and Hypotheses Development

2.1 Introduction

A critical literature review is the foundation of good research, which can not only help identify the research question but also help address it standing on the shoulders of giants (Saunders, Thornhill and Lewis, 2016; Hart, 2018). Peer-reviewed and highly cited articles relevant to the research topic in top journals in recent years (but theories traced back as far as possible) and classic books related have been selected through Google Scholar and universities' electronic libraries to ensure the depth and width of the literature. Then Mendeley Desktop software was used to manage them and maintain bibliographic records for efficient classification and processing of the literature carefully chosen.

This chapter first reviews justice in Chinese culture, and the origin, concept, dimensions, antecedents, and outcomes of key variables (organizational justice and university teachers' job performance) relevant to the topic to synthesize and gain a new perspective. To bridge organizational justice and job performance in the context of public universities in China, theories of social exchange, fairness heuristic, knowledge worker theory, and Maslow's hierarchy of needs are introduced and expounded based on the intrinsic relationship between the two variables and the characteristics of university teachers. Then the direct and indirect relationships between organizational justice and job performance are comprehensively evaluated to distinguish what has been done from what needs to be done and identify the best mediating and moderating factors to interpret the impact mechanism of organizational

justice on university teachers' job performance. Further, the mediator of affective commitment and the moderator of collectivism have been analyzed to help develop a management framework to improve university teachers' job performance from the perspective of organizational justice. Finally, by placing this research in a historical context, research gaps in theory, methodology and practice have been identified and the conceptual framework has been built too. Furthermore, hypotheses are proposed with the intention of answering the research questions and achieving the research objectives later.

2.2 Justice in Chinese Culture

Chinese traditional culture involves a lot of justice, represented mainly by Confucianism, Taoism, and Legalism (Huang, 2021). China's modern concept of justice is the product of the fusion of Chinese and Western ideas on the basis of inheriting and criticizing the traditional concept of justice and the Marxist concept of justice (Feng, 2020). Justice has always been rooted in Chinese culture, and justice and fairness are the eternal pursuits of the Chinese people.

2.2.1 Confucianism

“Wuchang” (five constant virtues) and “Sangang”(three cardinal guides) are the main content of Confucianism. “Wuchang” refers to benevolence, righteousness, manners, wisdom, and credit. “Sangang” refers to a ruler guides a subject, a father guides a son, and a husband guides a wife (Dun, 2020). According to such moral ethics, the Confucian concept of justice is a broad concept of justice (Huang, 2021) . Its logical structure is divided into three levels and aspects: First, survival justice based on the equal treatment of universal

human dignity. For example, the ruling class should exercise benevolent government towards the people and love the people. When selecting officials, the government should take talents as the only standard, and everyone should have the equal selection opportunities (Zhang and Qia, 2020) ; Second, the distributive justice of giving one his due and judicial justice based on the principle of difference and hierarchy; Third, the highest value and justice based on benevolence and righteousness of social resource sharing in the pursuit of ideal social life, The ultimate concern of Confucianism is to focus on the "justice" of interpersonal relations((Jia, 2016; Huang, 2019).As an ideological resource and political model, the three forms of "justice theory" of classical Confucianism have always run through Chinese society and have had a far-reaching impact on the shaping of people's ideas in the historical process (Huang, 2019) .

2.2.2. Daoism

Tao is the core of Taoism. Justice is the highest value pursued by Taoism (Li, 2016) . People's behavior should conform to the laws of nature as described in Tao. All things on heaven and earth should grow freely according to their nature and be treated equally. There is no difference in their status (Song, 2016). The rulers should conform to the way of heaven (nature) and rule by inaction. In addition, once the law is promulgated, both the monarch and the subjects should strictly abide by it. Once they break the law, they should also be punished by the law (Li, 2016). Furthermore, Taoism also advocates paying attention to vulnerable groups, such as protecting the rights and interests of the elderly and women. In the field of distribution, it emphasizes distribution according to work, criticizes the bad habits of laziness and relying on others to live, and opposes exploitation (Chen and Mei,

2006).

2.2.3 Legalism

Shang Yang(395 B.C-338 B.C) and Han Fei (280 B.C- 233 B.C) , the representatives of Legalism, advocated that people of any status or backgrounds are equal in the application of law, and there will be no difference in the application of law because of the different social status of behaviors(Ding, 2020). Legalism attached great importance to the necessity of establishing legal authority and raised it to the strategic heights of national strength. Legalists always emphasize "strict and fair law enforcement" and pay attention to "clear reward and punishment" (Zhou and Yu, 2020). Han Fei also creatively put forward the argument of "equalizing the rich and the poor", which required equal land ownership and the establishment of equal economic relations (Song, 2018). Legalism negated the hierarchical privilege of the enfeoffment system in patriarchal society and the differential treatment under the ritual system, which was a great advance in history(Cheng, 2019).

2.2.4 Contemporary Chinese View of Justice

The modern view of justice in Chinese society is the result of integrating the western concept of justice on the basis of critically inheriting Chinese traditional culture and the Marxist view of justice (Feng, 2020). Marxism believes that under the condition that the development level of social productive forces is not high and material wealth is not rich, distribution according to work is a distribution mode that adapts to the current material production mode and can reflect social justice(Li, 2021). Marx's distributive justice takes free labor as the direction, takes the realization of people's all-round development as the

goal, distributes according to the social unified scale of labor, and finally develops towards the free kingdom of human distribution according to needs. That is, to truly realize people's all-round development: Everyone's personality and potential are fully developed; Labor is no longer the dissimulatory force of being suppressed, but the need of human beings; Everyone can enjoy the complete freedom, creativity, and dignity of labor (Qu, 2021).

Through reform and opening up, China has successfully transformed from a planned economy to a market economy. The economy has developed rapidly, as the cake has grown huge. How to distribute it has become a primary and significant issue. The report of the 19th National Congress clearly states: One principle runs through it all. People must be placed in the supreme position and let the achievements of reform and development be more equitable and fairer to all (Li, 2021). Xi Jinping's theory of distributive justice adheres to the people centered theory, inherits and develops Marx's labor outlook and the theory of all-round development of human beings, and embodies Marx's consistent respect for the subjective, creative, and laborers' dignity of the people (Qu, 2021).

Xi Jinping's theory of generalized justice includes equality and harmony. The all-round concept of equality emphasizes not only the equality (fairness) of rights, opportunities, and rules, but also the fairness of wealth distribution. The generalized harmony theory emphasizes the overall social harmony between people, people and society, and people and nature (Li, 2021). In addition, with the integration of Chinese and Western cultures, western justice theories focusing on procedure and rights continue to impact the concept of justice in traditional Chinese culture, and people are paying more and more attention to the issue

of justice (Feng, 2020).

In summary, although Chinese traditional culture contains a lot of justice, Confucianism has had the most profound impact on the development of Chinese society. Confucianism regards secular interpersonal "justice" as its ultimate value pursuit (Jia, 2016). Confucian fairness is fairness within the hierarchy and differential equality, emphasizing individual obligations and ignoring individual rights (Dun, 2020; Li, 2020). Chinese traditional law also emphasizes substantive justice over procedural justice (Jia, 2016). However, since the reform and opening up, with the in-depth dissemination of western justice theory, China's concept of justice has increasingly emphasized the protection of rights and procedural justice. Therefore, China's justice theory is becoming increasingly integrated with the justice theory of Western society, with the same content. Before the introduction of western organizational justice theory, China's justice theory was mainly reflected in national politics and law, but not applied in an organizational context.

2.3 Organizational justice

Organizational justice is the basic need for organizational harmony and employee satisfaction (Greenberg, 1990). A lot of studies have shown that organizational justice is related to individual behaviors in many organizations (Colquitt et al., 2001; Hosmer and Kiewitz, 2005; Cropanzano, Bowen and Gilliland, 2007; Tran, 2012; Swalhi, Colquitt et al., 2013; Zgoulli and Hofaidhllaoui, 2017), such as job performance, job satisfaction, organizational commitment, job involvement, organizational citizenship behavior, trust and so on. Colquitt and Bies (2001) examined and measured that there were four dimensions of

organizational justice (distributive justice, procedural justice, interpersonal justice, and informational justice), each of which had its own characteristics. Tran (2012) and other researchers also confirmed these findings that the construct validation of a measure of four dimensions of organizational justice was satisfactory. This section will expound the basic concept, dimensions, and outcome variables of organizational justice first, then have a critical assessment about them.

2.3.1 The Basic Concept of Organizational Justice

The philosophical study of justice is the origin of the study of organizational justice. As far back as ancient Greece, Aristotle has demonstrated two widely accepted principles of Justice – “particular justice’ (French ,1964) and "proportional equality"(Johnston, 2011). Confucius in China's Spring and Autumn Period clearly proposed the view of " people care more about inequality than poverty"(Zhang,2010). Generally, the term “justice” is used to mean “equality” “fairness" or "righteousness." However, it is difficult to reach an agreement on what justice should be (Colquitt,2001). Therefore, justice has always been an everlasting and controversial topic for philosophers, politicians, and jurists.

Before Greenberg first tried to explain the impact of organizational justice on organizational effectiveness and functioning in 1987, distributive justice (Homans, 1961; Adams, 1965; Deutsch, 1975) and procedural justice (Thibaut & Walker, 1975, Leventhal, 1980) were the focal points for understanding the nature and problems of organizational justice (French,1964). Greenberg (1987) proposed that organizational justice is an individual's subjective perception of justice in the organizational environment. Organization members

will form some views and feelings about their own treatment and that of others within the organization. These views and feelings vary from person to person and will affect an individual's behavior and attitude.

Organizational justice, according to James (1993), is the views of individuals and groups on fair treatment of organizations and their behavioral responses to such views. Some researchers thought organizational justice "is about the conditions of employment that lead individuals to believe they are being treated fairly or unfairly" (Folger and Cropanzano, 1998). Beugre (1998) also proposed that organizational justice is a subjective assessment of the perceived fairness of the social or economic transactions occurring within an organization and affecting how that person interacts with peers, superiors, and the organization. And organizational justice is a behavioral science concept, which describes employees' sense of fairness about the previous treatment of employees in the company (Hosmer and Kiewitz, 2005). The term "organizational justice" is also used to refer to the perception of fairness in the workplace. To what extent the employees believe that workplace practices, interactions, and decisions are fair in nature (Baldwin, 2006). Organizational justice has the potential to create significant interests for both organizations and employees (Cropanzano, Bowen and Gilliland, 2007). Furthermore, organizational justice is about the ways in which organizations treat employees (Yaghoubi et al., 2012).

From the previous scholars' definitions of organizational justice, organizational justice can be divided into two levels: the first is the objective state of organizational justice, the second

is the perception of organizational justice (subjective state). At an objective level, people can constantly improve and develop various organizational systems and establish corresponding procedures and measures to achieve organizational justice, but absolute and ultimate organizational justice is formidable to achieve (Colquitt et al., 2001). In the actual organizational context, organizational justice is defined by people's subjective feelings and judgments. If people think that a certain treatment is fair, it is fair. Individuals also act on work behavior according to this subjective perception (Colquitt et al., 2013; Zgoulli and Hofaidhllaoui, 2017). Therefore, this research adopts the concept of organizational justice at the subjective level.

2.3.2 The Dimensions of Organizational Justice

2.3.2.1 Distributive Justice

Homans (1958) mentioned distributive justice in his work on *social behavior as exchange*. He clearly demonstrated that distributive justice was a powerful influencing factor on behavior, which could be one of the conditions of organizational equilibrium, even though sociologists ignored it at the time. Until 1965, Adams, an American psychologist, first proposed that distributive justice is people's perception of justice about the outcomes of resource allocation that will impact people's behavior. According to his equity theory, based on a social exchange theory framework, Adams believed that when people perceive whether an outcome is fair or not, they will first calculate the ratio between their own contribution or input (such as talent, knowledge, skills, experience, etc.) and their output, and then compare their own ratio with the ratio of others, so as to draw a conclusion of whether their

distribution is fair or not, it's a subjective process (Adam,1965). However, there are still some rules (equity, equality, and need) for distributive justice (Leventhal,1980; Colquitt and Jackson, 2006).

The concept of economic rationality has a clear correlation with distributive justice, but its impact on procedural justice and interactive justice is not so obvious (Cropanzano *et al.*, 2001). Some researchers also found that distributive justice is more stable than interactional justice (Silva and Caetano, 2014). However, the high-quality leader member exchange and organizational support are highly related to the perception of distributive justice(Silva and Caetano, 2014).

2.3.2.2 Procedural Justice

As a legal aphorism says, “Justice must not only be done, but must also be seen to be done.” In 1975, Thibaut and Walker pointed out that people not only care about the fairness of outcomes, but also pay more attention to the fairness of process, and they put forward the concept of procedural justice.

They believe that the perceptions of procedural justice can be cultivated by providing individuals with two forms of control, namely, decision-making control and process control. Decision control provides individuals with the opportunity to make their own decisions. Process control enables individuals to express their views and opinions in the decision-making process(Colquitt and Jackson, 2006).Their research found that even if people face adverse decision-making results, they can accept the results if they think the decision-

making process is fair. In other words, if individuals believe that they can control the decision-making process (such as presenting their own evidence, having the opportunity to express their opinions, etc.), their perception of justice will improve. Appearance of organizational justice may be more important than actual justice according to some researchers' findings as well (Lee, 2001).

Although the concept of procedural justice was first introduced by Thibaut and Walker (1975), which was mainly focused on disputed reactions to legal procedures. Leventhal (1980) and his colleagues applied procedural justice in an organizational context. They proposed that there were 6 fundamentals of fair procedures: appropriateness, being unbiased, trueness, correctability in case of mistake, representing all related parties, and conformance with general morality. Colquitt and Jackson (2006) improved Leventhal's (1980) model with the following rules:

Consistency: Procedures should be consistent in terms of person and time.

Correctability: Procedures should have remedial measures to correct wrong decisions.

Accuracy: Procedures should be built on valid facts, information, and opinions.

Bias suppression: Procedures should not be biased and partial.

Ethicality: Procedures should stick to the standards of ethics and morality.

Representativeness: Procedures should represent the interests of all parties.

Blader and Tyler (2003) described a four-component model of procedural justice to underlie overall procedural justice evaluations, including two justice types (decision making and quality of treatment) and two justice sources (formal source and informal source). The former mainly refers to rules of the organization, the latter mainly refers to actions of the

supervisor(Blader and Tyler, 2003).

“Justice delayed is justice denied”, as a legal proverb says. Research findings also confirmed this truth in procedural justice that procedural timeliness is a very important aspect of decision-making procedure (Outlaw *et al.*, 2019).Distributive justice is more related to outcome satisfaction, while procedural justice is more related to system satisfaction(Greenberg, 1990). When there is a lack of information about the credibility of the authorities, people especially need procedural justice (van den Bos, Wilke and Lind, 1998). Findings also indicated that employees in low-quality leader member exchange perceived less distributive and procedural justice than their peers in high-quality leader member exchange (Lee, 2001).Based on social exchange theory, procedural justice applies more to the exchange between individuals and organizations. Therefore, procedural justice procedural justice is closely related to the subordinate's response to the superior management and organizational policies (Cropanzano, Prehar and Chen, 2002).

2.3.2.3 Interactional Justice

In the late 1980s, with the rise of western humanism, organizations began to pay more and more attention to the quality of the interaction between people and its influence on organizations. Bies and Moag (1986) first introduced the concept of interactional justice, which refers to people's fair feelings about each other's behavior in mutual communication, emphasizing the influence of interpersonal interaction on the perception of justice. However, whether interactional justice is an independent dimension has been controversial for a long time. Cropanzano and Greenberg (1997) believed that since interactional justice is only a

form of procedural justice, there is no need to separate interactional justice from procedural justice. But those who adhered to the theory of independent interactional justice found that when they examined procedural justice and interactional justice separately, the two types of justice had an independent impact on people's behavior and outcomes. Unlike procedural justice perceptions that affect organization-related outcomes, interactional justice perceptions affect supervisor-related outcomes (Masterson et al., 2000).

2.3.2.4 Interpersonal Justice and Informational Justice

Greenberg (1990,1993)further divided interactional justice into two types: interpersonal justice and informational justice. It is believed that interpersonal justice and informational justice should be separated because they have logical differences and independent effects.

Interpersonal justice reflects whether the authority or the management is polite to the subordinates, whether they consider the dignity of the subordinates, whether they respect the subordinates, etc. (Colquitt, 2001; Colquitt et al., 2001). Informational justice refers to whether or to what extent the supervisor can transfer relevant information to the employees within the organization or explain to the employees why some form of procedure should be used (Greenberg,1993). The role of interpersonal justice is to change people's responses to decision-making results because being respected and trusted can make people feel better about the results they do not like. Informational justice aims to change people's responses to the procedure because the interpretation provides some necessary information about the process and lets people accept the results more easily.

Colquitt (2001) conducted a test based on the four-factor theory to measure distributive, procedural, informational, and interpersonal justice. The results of confirmatory factor analysis found that the four-factor model fitted the data best, and further showed that the four justice dimensions could predict different results. The meta-analysis results of Colquitt et al. (2001) on the organizational justice literature in the past 25 years also showed that the four dimensions can be empirically distinguished.

Fischer *et al.* (2011) first evaluated these four dimensions comprehensively across thirteen cultures and religious groups worldwide. The most important finding is that the four-dimensional justice structure fits well, and they are actually empirically distinct. Karam et al. (2019) did a meta-analytic examination of leadership and organizational justice to illuminate the “face” of justice. They also confirmed that the four justice dimensions are widely applied in recent organizational justice research. Therefore, interpersonal justice and informational justice have been widely regarded as independent dimensions and have separate impact on individual attitudes and behaviors (Colquitt ,2001; Fischer *et al.*,2011; Karam et al2019) .

2.3.2.5 New Development Trend of Organizational Justice: Overall Justice

With the in-depth study of organizational justice, scholars found that only paying attention to the specific dimensions of justice is not enough to understand the connotation and depth of individual justice experiences. In the research of organizational justice, considering the influence of overall organizational justice (hereinafter referred to as overall justice) may

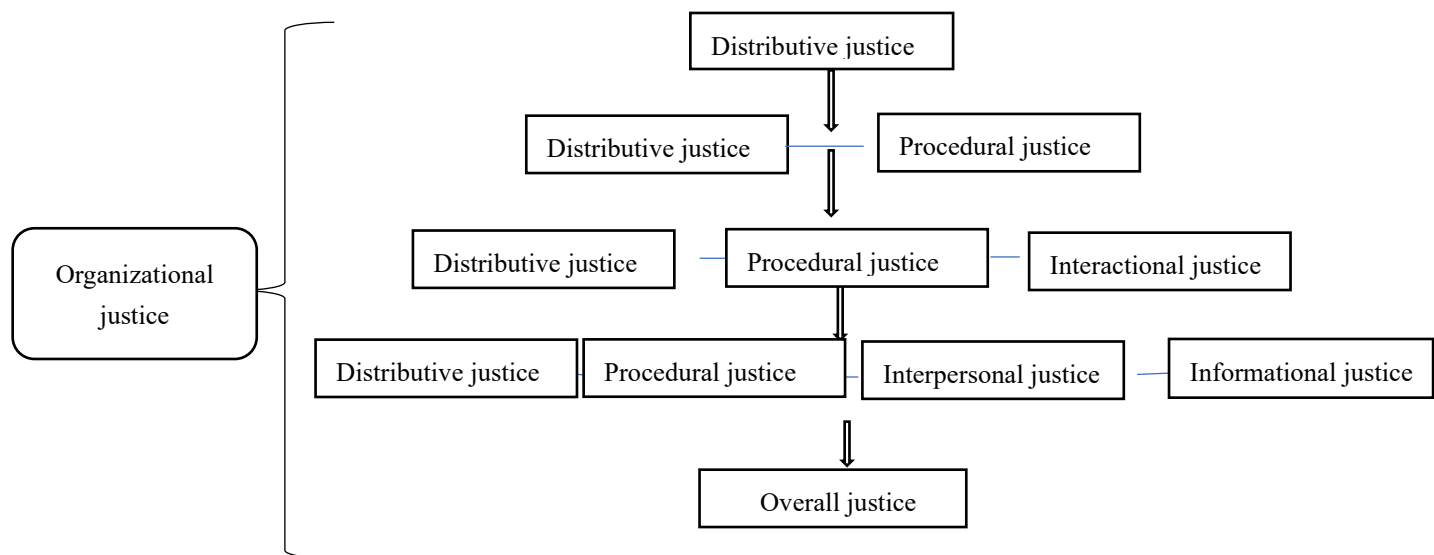
make people understand the whole problem of organizational justice more deeply and comprehensively (Ambrose & Arnaud, 2005; Hauenstein et al, 2001; Ambrose and Schminke, 2009; Holtz and Harold, 2009; Nicklin *et al.*, 2014; Schminke, Arnaud and Taylor, 2015; Soenen, Eib and Torrès, 2019).

Overall justice refers to the perception of overall fairness towards organizations or events based on the experience of individuals or others (Ambrose et al, 2005). Usually, people's perception of justice is a holistic perception, and the specific dimension of justice is meaningful only when it is related to overall justice (Tornblom and Vermunt, 1999; Greenberg, 2001). Lind (2001) also pointed out that the research on organizational justice had been broken into four independent subdimensions. However, in a real working context, what employees really feel is the overall justice conception. They think about justice in a holistic way to evaluate the organization and make responses. Blindly emphasizing the differences between the sub dimensions of justice does not accord with the employees' cognition, attitudes, and behavior to justice events. Moreover, analyses revealed that overall justice is probably an independent construct, which can be predicted from the facet measures of justice, and is not a second-order hierarchical construct (Colquitt, 2001; Ambrose and Schminke, 2009).

Subsequently, many researchers examined the impact of overall justice on individual's attitude and behavior (Becker *et al.*, 2018; Eib and Torrès, 2019), and some found mediating influence between overall justice and individual's attitude and behaviors (Aryee *et al.*,

2015). The results of Swalhi, Zgoulli and Hofaidhllaoui's research (2017) even demonstrated that overall justice's impact on affective commitment is greater than specific dimensions of justice's. The research of Nicklin *et al*(2014) found that there is a necessity for both overall justice and the four justice dimensions in a comprehensive model of organizational justice. The use of an overall justice measure can explicitly capture the “that’s not fair!” response that is expected to accompany violations of rules (such as fairness, consistency, accuracy, respect, authenticity, etc.) (Ambrose and Schminke, 2009).

Figure 2 The development of organizational justice (created by author)



2.3.3 Outcome Variables of Organizational Justice

The influence of organizational justice (including specific dimension and overall justice) on outcomes has been a popular research hotspots in recent decades((Colquitt *et al.*, 2001, 2013; Minibas-poussard and Roy, 2017; Outlaw *et al.*, 2019).

Table 1 Outcome variables of organizational justice

Outcome variables	Sample	Source
Job satisfaction, organizational commitment, and turnover	197 academic staff from 4 public universities in Malaysia	(Hassan and Hashim, 2011)

intentions		
Contextual performance, counterproductive work behaviors, and task performance	211 employees across nine organizations from the private and public sectors in a developing country in the Caribbean	(Devonish and Greenidge, 2010)
Affective commitment, normative commitment, task performance, interpersonal facilitation, job dedication	793 MBA students from China.	(Wang <i>et al.</i> , 2010)
Organizational commitment and turnover intention	350 employees from Dubai.	(Abu Elanain, 2010)
Project performance	Project team members from construction industry	(Unterhitzenberger and Bryde, 2019)
In-role performance and organizational cynicism, organizational trust	237 managerial-level employees and 156 of their immediate supervisors in India	(Biswas and Kapil, 2017)
Organizational citizenship behavior, Organization commitment	30 academicians in private higher learning institutions in Malaysia	(Rashid and Khan, 2012)
Turnover-intention	323 employees from the airline industry Jordan	(Suifan, Diab and Abdallah, 2017)
Job satisfaction, and self-perceived performance	793 Saudi and foreign employees in Saudi Arabia	(Elamin and Alomaim, 2011)
Affective and continuance commitment, job performance	500 full-time employees in developing country: UAE	(Suliman and Kathairi, 2013)
Affective commitment	725 from 10 companies in China	(Lee and Wei, 2017)
Work engagement	Teachers from 3 universities in Tianjin in China	(Song, 2017)
Perceived organizational support	520 professional managers working in two industries (manufacturing industry and service industry) in China	(Fu and Lihua, 2012)
Job satisfaction	420 staffs from a large-scale IT enterprise in China	(Ouyang <i>et al.</i> , 2015)
	329 employees from state owned enterprise (SOEs) and private Chinese companies	(Hao, Hao and Wang, 2016)
Innovative work behavior	235 employees from telecommunication sector of China.	(Akram, Haider and Feng, 2016)
Work engagement	254 teachers working in compulsory schools in eastern China	(Lyu, 2016)
Organizational citizenship behavior	257 university faculty members from one major university in Shandong Province	(Donglong <i>et al.</i> , 2020)
Job performance	455 supervisors and their subordinates from 4 medium-sized service sector organizations in China	(Aryee, Fred O. Walumbwa, <i>et al.</i> , 2015)
	265 Chinese employees	(Wang and Lu, 2015)
	942 teachers from public schools in three Turkish metropolitan cities	(Kalay, 2016)
	69 faculties from 15 public university libraries in Pakistan	(Shan, Ishaq and Shaheen, 2015)

From the above literature, it can be concluded that in recent years, research on the impact of organizational justice has always been popular in Chinese and Western academic circles. The outcomes of organizational justice are concentrated in several aspects such as job performance, organizational commitment, job satisfaction, organizational citizenship behavior, turnover-intention, etc. In general, organizational justice can promote individual positive attitudes and behaviors, but prevent negative attitudes and behaviors, thereby improving the overall interests of the organization. However, due to the different culture backgrounds and research objects in different countries, the mechanism of organizational justice's influence is also different. Take job performance as an example, Wang *et al.*(2010) investigated 793 employees from various industries in China and found that organizational justice didn't have a direct impact on job performance but have an indirect impact through leader member exchange and organizational commitment. Among the organizational justice dimensions, interactional justice had the best predicting effect. Colquitt *et al*(2012) reported that procedural justice had a significant direct impact on job performance while interpersonal and distributive justice only had significant indirect impact through trust based on an empirical research of 195 employees of a hospital network in United States. While Kalay(2016) ' s research results showed that only distributive justice had a positive and significant impact on job performance of public-school teachers in Turkey, the other aspects had no significant impact on job performance. Therefore, the influencing mechanism of organizational justice is very complicated and is affected by many factors such as research objects and culture, which is called for deep exploration (Colquitt *et al*,2012;

Unterhitzenberger and Bryde, 2019).

In summary, organizational justice theory has been constantly enriched and developed in research, from the initial distributive justice to the four-dimensional justice structure, and then to overall justice. In the past 60 years, organizational justice has been an interdisciplinary frontier research topic involving the fields of management, psychology, and sociology. It has been an enduring topic in the field of social science, which can explain many behaviors and phenomena in an organization.

2.4 University Teachers' job performance

Compared with a great quantity of profound and comprehensive enterprise employee job performance research, the research on the job performance of university teachers obviously falls behind. This section will first introduce the concept and dimensions of job performance, then the concept and dimensions of university teachers' job performance, and further the influencing factors. Finally, it is concluded that the impact of organizational justice on university teachers' job performance has rarely been studied.

2.4.1 The Concept of Job Performance

In ancient China, the word "performance" was recorded in the biography of Xia Houzi in the old Tang Dynasty. This is a way to record and preserve the political achievements of serving officials and measure the suitability of their positions according to these political achievements. China has realized the connotation of performance for a long time. With the development of western industrial society and the emergence of scientific management

theory, performance has been systematically studied and applied to the economic entities to assess the work efficiency of organization or individual. Later, under the influence of the in-depth development of the modern new public management theory, performance was gradually applied in the public sectors. For example, the British government adopted "performance" to evaluate the administrative execution efficiency of government departments, performance included economy, efficiency, and effectiveness (three Es) three main elements at that time(Pendlebury,1988).

At present, the cognition and understanding of performance connotation show the characteristics of diversity and richness. From the perspective of different objects of performance evaluation, performance have three levels: organizational performance, team performance and individual performance (Cameron ,1978).In terms of organization, it refers to profit, efficiency, productivity, absenteeism, resignation, growth, and adaptability; In terms of a group, it refers to morale, cohesion, efficiency, and productivity, and in terms of an individual, it refers to job completion, goal achievement, and personal adaptation. Researchers are more inclined to study individual performance, because individual performance is the important basis of team performance and organizational performance.

Based on the differences in individual performance evaluation perspectives, it is divided into several types:

The first one mainly focuses on what tasks have been completed, what outputs have been obtained , and what results have been achieved (William and Denisi,1988; Bernardin and

Beatty,1984).

The second emphasizes process and behavior and believes that behavior is the concentrated embodiment of performance (Campbell,1990; Rotundo and Sackett,2002).

The third believes that performance is about competence, it is neither a result nor a behavior. Competence is a bridge between behavior and outcome. This kind of view emphasizes people's competence and believes that performance is the concentrated embodiment of people's potential competence (Spencer,1993).

The fourth pays attention to both behavior and outcomes. This kind of view holds that performance includes behaviors and outcomes. Behavior is the process guarantee of realizing performance, while outcome is the effect guarantee of realizing performance.

The fifth is learning performance and innovation performance based on some new perspectives. Welbourne et al (1998) first proposed learning performance, which refers to a series of changes in learning behavior and competence development produced by learning activities in a given time. Innovation performance is the performance based on individual innovative behavior, leadership, individual problem-solving style, and work group relations are the main determinants (Scott and Bruce,1994). Janssen and Yperen (2004) further divided innovation performance into three dimensions, namely, the generation, promotion, and realization of innovative thinking.

In summary, job performance is an important basis for organizations to assess individuals' work efficiency and is the specific embodiment of the organization's goal refinement. Job performance has multiple attributes, which is a comprehensive embodiment of goals, behaviors, and outcomes based on multiple perspectives. This study holds that individual

job performance is the basis of organizational performance and team performance, it's critical for organizational development. Therefore, job performance in this research is at an individual level, which is a summary of a series of actions and behaviors taken by individuals based on organizational objectives and the outcomes created by their actions and behavior transmission.

2.4.2 Job Performance Dimension

Job performance dimension reflects the structure and content of different aspects of performance, and it is also an important approach to comprehensively explore the connotation of performance (Koopmans *et al.*, 2011). From the perspective of the development of job performance research, there are the following views on the division of performance dimensions:

First, a single structural dimension. Bernadine (1984) and Williams (1988) defined the connotation of performance from a single dimension of work results. Job performance refers to what tasks have been completed, what outputs have been obtained, and what outcomes have been achieved. Murphy (1987) and Campbell (1990) defined the single dimension of performance from the perspective of behavior. They thought the employees' behavior is embodiment of their performance.

Second, two-dimensional performance structure. According to Borman and Motowidlo (1993), job performance embraces two dimensions: task performance and contextual performance. Which was confirmed by Conway and James' research (1996) when they

analyzed the validity of task performance and contextual performance as independent components through confirmatory factor analysis. Finally, they had powerful evidence to verify that task performance and contextual performance are two distinct independent components of job performance. Task performance refers to all behaviors related to the core tasks in a specific job. It includes task proficiency and motivation to perform one's own tasks effectively (Van, Scotter, James, Motowidlo, & Stephan, et al. 1996). While contextual performance refers to individual voluntary dedication to the organization and behaviors unrelated to a specific task. It includes interpersonal skills, the motivation to maintain good working relationships and help others perform their tasks (Van, Scotter, James, Motowidlo, & Stephan, et al. 1996). They further proved that there are two separate facets of contextual performance: interpersonal facilitation and job dedication. Borman and Motowidlo (1997) also thought that contextual performance contained two elements: organizational citizenship behavior and prosocial organizational behavior. And personality is a critical predictor based on their research results.

Third, three-dimensional performance structure. Rotundo and Sackett (2002) proposed 3 broad components of job performance based on a review of research: task, citizenship, and counterproductive performance. Citizenship performance is individual voluntary behaviors that go beyond the normal scope of work and are beneficial to the organization. Counterproductive performance means any behavior that the individual shows or has the potential to intentionally harm the legitimate interests of the organization or its stakeholders (Ng and Feldman, 2009). Martin *et al.* (2016) have done a meta-analysis that examined the impact of leader–member exchange (LMX) relationship quality on task, citizenship, and

counterproductive performance. The results showed a positive impact of LMX on task performance and citizenship performance, but a negative impact on counterproductive performance. Allworth and Hethketh (1997) updated the two dimensions of job performance (task performance and contextual performance) to include adaptive performance. Adaptive performance is the response behavior to adapt to the rapid change of the organization. It refers to the ability of individuals to adjust their behavior in time according to the changes of work requirements and environment.

Fourth, some researchers included overall performance as well as specific types of job performance in their studies. From previous literature, Dalal and Fiset (2014) have concluded that the specific job dimensions include the following: task performance, organizational citizenship behavior, counterproductive work behavior, proactive behavior, creative behavior, and adaptive performance.

In summary, the two-dimensional classification of job performance (task performance and contextual performance) has been widely recognized and applied among the academic community (Shen, Benson and Huang, 2014; Jyoti and Bhau, 2016; Jyoti and Kour, 2017). Task performance is also known as "in-role performance." It is the act of completing one's duty which is directly related to the work content of a specific position (Edwards et al., 2008). Contextual performance is also considered extra-role performance, known as organizational citizenship behavior and prosocial organizational behavior which is voluntary and benefits for organizations but not compulsory (Grant & Mayer, 2009). These two dimensions well cover most of the content of job performance and can be applied in

different organizational contexts.

2.4.3 The Concept of University Teachers' Job Performance

Research on the performance of university teachers has shown an increasing trend in recent years, but the research is more focused on the fields of performance evaluation and assessment, and the concept of university teachers' performance is much less explored. Some scholars have proposed that university teachers' performance is the work outcome, effect, and efficiency achieved by university teachers when they complete a task. The forms of expression are diverse and are embodied in three aspects: work efficiency, the quality and quantity of work results (Gao and Yi, 2006). Some scholars also put forward that the performance of university teachers is the embodiment of teachers' work results, behavior and future potential (Hu, 2010). Liu and Li (2013) also put forward that the job performance of university teachers is the observable and evaluable behavior and results related to the organizational objectives of the university. From the expression of the connotation of university teachers' performance by the previous scholars, they all agree that there is diversity in university teachers' performance, which not only needs to reflect the impact of performance process and behavior, but also needs to reflect the final goal or achievement after the implementation of performance behavior, which is a diversified comprehensive manifestation. According to the above logic, this study focuses on the task performance of university teachers and defines the performance of university teachers as an individual performance, which is a summary of individual tasks and job responsibilities to realize the functions and goals of universities under the guidance of the overall strategic

objectives. It is the comprehensive manifestation of the actions, behaviors, and achievements taken by university teachers in talent training(teaching), academic research, and social services(Xiao, 2019).

2.4.4 The Dimensions of University Teachers' Job Performance

There are two mainstreams on the dimension of university teachers' job performance in the existing literature. The first is learning from the research ideas of enterprise employees' job performance and studying it from two aspects: task performance and contextual performance (Jian *et al*,2016). The second is building an independent dimensional model of university teachers' job performance based on the three functions of universities: teaching, research, and social service (Chen, Li and Wang, 2016).

First, to study university teachers' job performance from two aspects: task performance and contextual performance. Jian *et al*.(2016) examined the influence of strength of human resource management on the task performance and contextual performance of research-oriented university teachers. Li, Zheng and Liao(2016)conducted a questionnaire survey on 718 university teachers from 8 universities in China, analyzed the relationship between university teachers' professional psychological capital and task performance and contextual performance, and found that professional psychological capital had a positive impact on both. Li (2018)studied the impact of salary structure on university teachers' job performance and examined the mediating role of job satisfaction. They also divided university teachers' job performance into task performance and contextual performance. In the above studies,

task performance included teaching performance and research performance, and contextual performance mostly included interpersonal promotion and work dedication.

Second, to study university teachers' job performance from teaching, research, and social service performance. Liao, Li and He(2016) examined the impact of organizational citizenship behavior on university teachers' three dimensions of job performance. Li, Zhang and Su(2016)studied the impact of salary structure on university teachers' job performance from three dimensions and examined the mediating role of job satisfaction. The results revealed that job satisfaction had a mediating effect between salary structure and research performance and social service performance but had no mediating effect between salary structure and teaching performance. Based on 288 valid questionnaires from university teachers, Chen, Li and Wang(2016) summarized the main factors affecting university teachers' teaching performance, research performance, and social service performance through factor analysis, and used multiple regression analysis to examine the influence degree of various factors. Anggraeni (2014) also proposed that university teachers' professional ability and competence in mastering teaching content affect their teaching performance. Li (2018)investigated 310 randomly selected university teachers and found that well-being had a strong predictive effect on university teachers' teaching performance, research performance, and social service performance. And psychological capital played a partial intermediary role between well-being and university teachers' three job performance dimensions.

To sum up, the three-dimensional job performance (teaching, research, and social service)

is the core content of the university teachers' job performance. Many scholars who adopted task performance and contextual performance dimensions also believed that task performance included teaching and research performance (Jian *et al.*;2016). Therefore, three-dimensional performance can fully reflect the content of university teacher performance, and it is also consistent with the overall organizational goals of the university. Therefore, this article adopts the perspective of three-dimensional performance.

2.4.5 The Influencing Factors of University Teachers' Job Performance

Table 2 The influencing factors of university teachers' job performance

Influencing factors	Source
Positive psychological ability, university system and external resources, leadership and team support, material and spiritual motivation, individual knowledge and skills, organizational commitment	(Chen, Li and Wang, 2016)
Organizational citizenship behavior	(Liao, Li and He, 2016)
Affective commitment	(Tolentino, 2013)
Personality characteristics	(Jiang, Sun and Jiang, 2017)
Stress	(Ali <i>et al.</i> , 2014)
Job satisfaction/dissatisfaction	(Afshar and Doosti, 2016) (Li, 2018) (Yee, 2018)
Emotional intelligence	(Mohamad and Jais, 2016)
Professional psychological capital	(Li, Zheng and Liao, 2016)
Leadership style (transformational), organizational commitment and organizational citizenship behavior	(Jyoti and Bhau, 2016)
Work motivation, competence, and organizational climate	(Jusmin <i>et al.</i> , 2016) (Salbiyah, Nuraini and Rosmaniar, 2019)
Motivation, emotional intelligence, organizational culture and transformational leadership	(Anwar, Chandrarin and Darsono, 2017).
Participative decision making and academic rank	
Organizational communication effect	(Tahir, Haming and Bijaang, 2017)
Effect of Administrative Practices	(Jabbar <i>et al.</i> , 2020)

From the above literature, scholars have mostly discussed the influencing factors of university teachers' job performance from the aspects of the teacher's personality, emotional

intelligence, psychological capital, and abilities, as well as from the leadership style of university administrators and the university's organizational culture. However, the organizational justice that affects the exchange relationship between university teachers and universities, and thus impacts the job performance of university teachers has not been involved.

To sum up, compared with a great quantity of profound and comprehensive enterprise employee job performance research, the research on the job performance of university teachers obviously falls behind. Meanwhile, reviewing the relevant literature of university teachers' job performance research, it is found that the existing papers still mainly focus on performance evaluation or assessment (Al-masri, Drus and Aldalaïen, 2019). However, with the deepening of research and the emergency of management practice problems, only the evaluation of university teachers' job performance cannot achieve the aim of university teachers' job performance management—that is, to enhance the overall performance of the university by improving the job performance of each teacher. Therefore, it is particularly significant to study the impact mechanism of university teachers' job performance. Scholars have explored the influencing factors of university teachers' job performance from the aspects of personal characteristics, leadership, and organizational culture (Anwar, Chandrarin and Darsono, 2017; Jusmin *et al.*, 2016; Jyoti and Bhau, 2016), but the impact of organizational justice on university teachers' job performance has rarely been studied. Therefore, to examine and explore the mechanism of the organizational justice's influence on university teachers' job performance is of great significance in practice.

2.5 The Impact of Organizational Justice on Job Performance

Many empirical results show a positive relationship between organizational justice and job performance in different fields and in different countries (Cohen-Charash and Spector, 2001; Colquitt *et al.*, 2013; Minibas-poussard and Roy, 2017). The influence mechanism of organizational justice on job performance can be direct in some cases (Shan, Ishaq and Shaheen, 2015; Krishnan *et al.*, 2018), but mostly complexly indirect through mediators, such as organizational trust (Biswas and Kapil, 2017), organizational support (Jacobs, Belschak and Den Hartog, 2014), and organizational commitment (Swalhi, Zgoulli and Hofaidhllaoui, 2017), and through moderators, such as equity sensitivity (Scott and Colquitt, 2007), emotional intelligence (Devonish and Greenidge, 2010), and so on.

This section will comprehensively comb the direct and indirect impact of organizational justice on job performance, then analyze the moderating factors between the two variables.

2.5.1 The Direct Impact of Organizational Justice on Job Performance

Many Western empirical studies have revealed that, compared with other justice dimensions, procedural justice has the strongest direct impact on job performance. Job performance and counterproductive work behaviors were found to be mainly related to procedural justice (Cohen-Charash and Spector, 2001). Colquitt, Noe and Jackson (2002) proved that the average procedural justice perception within the team had positive effect on team performance. In a survey of 277 undergraduates in the United States demonstrated that procedural justice predicted task performance, while interpersonal justice was not significantly related to task performance (Zapata-Phelan *et al.*, 2009). An empirical study in

Taiwanese high-tech organizations also found that procedural justice was positively related to task performance (Chien et al., 2010).

The influence mechanism of organizational justice on job performance can be influenced by culture, and the influence of each dimension is different under different cultural backgrounds. A survey of 69 faculties from 15 public university libraries in Pakistan revealed that three kinds of organizational justices (distributive , procedural, and interactional) all had a direct impact on job performance, especially the interactional justice, which had the strongest one (Shan, Ishaq and Shaheen, 2015). A study in China also had the same result, that interactional justice was the best predictor of job performance (Wang *et al.*, 2010).The findings of Suliman and Kathairi (2013) showed that procedural and interactional justice both positively and significantly impact on job performance in the case of a developing country like the UAE. The results based on the data from 211 employees across nine organizations from the private and public sectors in a developing country in the Caribbean also revealed that all three justice dimensions(distributive, procedural, and interactional justice)had significant effects on task performance, contextual performance (Devonish and Greenidge, 2010). A comparative study based on Saudi and foreign employees found that there was no relationship between justice dimensions and self-perceived performance for the Saudi employees, but for the foreign employees, all justice dimensions had a significant impact (Elamin and Alomaim, 2011). The findings of an empirical study in Malaysia also showed that distributive justice was the best predictor of employees' job performance compared to procedural justice and interactional justice (Krishnan *et al.*, 2018). A survey of academic staff at public universities in Iraq showed that

distributive justice and interactional justice had a positive influence on academic performance and ability to increase performance, while procedural justice had no influence (Jameel, Ahmad and Mousa, 2020).

The traditional view of the impact of organizational justice can basically be summed up as: employees with a high conception of organizational justice are employees with better performance. However, the reality is complicated. Usually, there may be four kinds of relationship combinations: low conception of organizational justice and low performance; high conception of organizational justice and high performance; high conception of organizational justice but low individual performance; low conception of organizational justice but high individual performance (Li, Liu and Li, 2013). Therefore, the direct influence of organizational justice (including specific dimension) on job performance can be different based on different cultural backgrounds and the professional characteristics and needs of research objects.

2.5.2 The Impact of Organizational Justice on Job Performance Through Mediating Factors

Numerous studies have confirmed the different direct impact of organizational justice on job performance. However, the influence of organizational justice on job performance was mostly indirect (Wang *et al.*, 2010; Swalhi, Zgoulli and Hofaidhllaoui, 2017), which needs more in-depth research and exploration. Hence, scholars further focused their research on exploring its internal influence mechanism. The current research is mainly conducted from the perspective of social exchange theory. They believe that organizational justice will make

individuals feel emotionally attached, respected, and trusted by the organization, then individuals will improve their job performance. The mediating factors between organizational justice and job performance are as follows:

Organizational Trust. A study on full-time employees of a public sector organization in India revealed that trust in the supervisor fully mediated the relationship between interactional justice and task performance (Aryee, Budhwar and Chen, 2002). The results of a field study in a hospital system in United States also revealed that the trust variables (both affect and cognition based) mediated the relationships between procedural, interpersonal, and distributive justice and job performance (Colquitt *et al.*, 2012).

Organizational commitment. An empirical study of Chinese industry employees demonstrated that organizational commitment had a stronger mediating effect than leader member exchange did between distributive, procedural, and interactional justice and job performance (Wang *et al.*, 2010). The results of a survey about some French small-and medium-sized enterprises also supported the mediating role of affective commitment between organizational justice (distributive, procedural and interactional) and job performance (Swalhi, Zgoulli and Hofaidhllaoui, 2017)

Intrinsic motivation. Intrinsic motivation partly mediated the relationship between procedural justice and task performance, but had no mediating effects between interpersonal justice and task performance in a survey of undergraduates in the United states (Zapata-Phelan *et al.*, 2009).

Leader–member exchange. Data from the study by Burton, Sablinski and Sekiguchi (2008) demonstrated that LMX fully mediates the relationship between interactional justice and performance. An empirical study of Chinese industry employees also revealed that the impact of organizational justice on work performance was mostly indirect, mediated by LMX (Wang *et al.*, 2010).

In addition to these intermediary variables mentioned above, a survey in Pakistan found that whether individuals reacted quickly to emergencies while carrying out their work mediated the relationship between procedural justice and enhanced job performance (Clercq and Azeem, 2020). A meta-analysis of justice based on social exchange theory demonstrated that the indicators of social exchange quality (organizational trust, organizational commitment, leader-member exchange, and perceived organizational support) significantly mediated the positive influence of organizational justice on job performance (Colquitt *et al.* 2013).

2.5.3 Moderating Factors Between Organizational Justice and Job Performance

Organizational justice is a social and cultural phenomenon, its effects were proved influenced by individual difference, such as trait, value (Fischer and Smith, 2006). Power distance moderated the relationship between perceived justice and performance in a US background study (Simon, John and Samuel, 2002). Scott and Colquitt (2006, 2007) found that exchange ideology, trust propensity, risk aversion, and morality played a significant moderating role in several organizational justice-outcomes relationships, including justice-

job performance. Two studies to examine the moderating effect of gender on the justice–outcome relationships showed that gender didn’t have any moderating influence between organizational justice and job performance (Cynthia and Farh, 1999). Emotional intelligence moderated the relationship between procedural justice and contextual performance, but failed to moderate other justice–performance relationships based on the data collected in a developing country in the Caribbean (Devonish and Greenidge, 2010). Affective and continuance commitment usually play a mediating role between the relationships of justice—outcomes, but the findings of a survey in the United Arab Emirates revealed that both affective and continuance commitment had moderating effect on the relationships between procedural and interactional justice and job performance (Suliman and Kathairi, 2013).

An empirical research showed that positive emotions consistently moderated the relationship between overall justice and performance (Barclay and Kiefer, 2014). Job embeddedness was found to serve as a boundary condition between interactional fairness and job performance based on data from a field and a scenario study (Collins and Mossholder, 2017). A meta-analysis of 279 studies involving 315 samples from 31 countries revealed that poor socioeconomic conditions (weak rule of law, low human development, and high income inequality) increased the strength of the relationship between organizational justice and task performance (Diehl, Richter and Sarnecki, 2018). Two experimental studies, with a student sample and an employee sample, were conducted. Results confirmed that participants in positive affective states perceived higher levels of distributive and procedural justice than those in negative affective states (Mao *et al.*, 2018).

Under distinct cultural backgrounds, organizational justice can promote positive individual attitudes and behaviors to improve the overall interests of the organization. However, the interacting mechanism between these two factors is different, so organizations should pay attention to sociocultural influences on employees' perceptions of justice (Silva and Caetano, 2016). Sociocultural influences can be viewed through two lenses: personal relevance and group context, with personal relevance (such as affect and value) being more sensitive and malleable in practice (Mao et al., 2018). Therefore, greater emphasis on contextual factors (especially individual differences) should be placed on closing the macro–micro gap in the literature on the relationship between organizational justice and job performance (Diehl, Richter and Sarnecki, 2018).

To sum up, organizational specific justice can have a positive impact on an individual's behavior directly, but mostly indirectly. From the theoretical lens of social exchange theory, the mediating factors between justice and performance include organizational trust, organizational commitment, intrinsic motivation, and leader-member exchange. Meanwhile, the relationship between organizational justice and job performance is moderated by sociocultural factors from two aspects: personal relevance and group context (Mao *et al.*, 2018). Distinct cultural backgrounds and research objects have different indirect influence mechanisms. The selection of mediating variables and moderating variables between organizational justice and job performance should take into account the economic and cultural background of the research and the characteristics of the research object, so as to more accurately reveal the internal operating mechanism of mediation and moderation, and

to better understand the influence mechanism of organizational justice on individual job performance under the specific research background, which can provide practical guidance for organizational performance management.

2.6 The theories in this research

From the above literature review of organizational justice and university teachers' job performance, it can be seen that both are complex concepts. Hence, the impact mechanism of organizational justice on university teachers' performance can be very complicated too. At present, many studies on the relationship between organizational justice and job performance are based on quantitative research methods from a single perspective of social exchange theory (Aryee, Fred O. Walumbwa, *et al.*, 2015; Swalhi, Zgoulli and Hofaidhllaoui, 2017), which has some limitations. An in-depth understanding of the impact of organizational justice on university teachers' performance needs to integrate a variety of different theories based on the research questions and research object. Therefore, theoretical perspectives of this research include theories about organizational justice (social exchange theory and fairness heuristic theory) and theories about university teachers (Maslow's hierarchy of needs, knowledge worker theory).

2.6.1 Social Exchange Theory

Social exchange theory is one of the most popular and influential theories explaining human behaviors (Emerson, 1976; Dustin and Bricker, 2017). It originated from the utilitarian economics of the 18th century, the functional anthropology of the 19th century, and the behavioral psychology of the 20th century (Cropanzano *et al.*, 2017). Its core view is that

human beings are driven by self-interest, they exchange with others for mutual benefit, meanwhile, to maximize their own interests in the exchange process (Cropanzano and Mitchell, 2005). Homans and Blau are outstanding representatives of social exchange theory. The theory of the former is called "individual behavior-exchange", and the latter is called "social structure-exchange". The former focuses more on social exchange at the level of individual behavior in the microstructure, while the latter develops the exchange theory from the microstructure to the macrostructure, examining social exchanges in more complex social situations from the perspective of collectivism (Homans,1958; Homans,1961; Homans,1974; Blau,1963). Social exchange theory has become the theoretical basis for a large number of empirical studies in the sociology field in recent decades, especially in organizational management (Cropanzano and Mitchell, 2005; Casimir *et al.*, 2014; Cropanzano *et al.*, 2017; Roch *et al.*, 2019).

2.6.1.1 The Philosophical Origin of Social Exchange Theory

Adam Smith initially proposed the idea of social exchange in his classic work *The Wealth of Nations: An Inquiry into the Nature and Causes of the Wealth of Nations* in 1776 (Smith, 2010). Adam Smith believed that social exchange was an instinct of human beings for survival. In addition, social exchange is also the result of the social division of labor. Everyone is born to care about himself first, he cares about himself more than anyone else. In the process of exchange, people can maximize their benefits while at the same time benefiting others, forming a mutually beneficial relationship. As a result, the total wealth of society has also increased. Smith has been considered to have created a "historical precedent" in social exchange theory.

2.6.1.2 Homans' Social Exchange Theory

In 1958, in his classic work *Social Behavior as Exchange*, Homans initially tried to explain social behavior based on the elementary forms of social behavior in small groups, which inherited his previous research results in *The Human Group*. Another masterpiece of Homans' is *Social Behavior: Its Elementary Forms* (1961). He further clarified that to explain social behavior profoundly in individualistic and structural sociological approaches, psychological propositions should be stated. He had articulated five general propositions based on several sets of relative concepts, such as reward and punishment, deprivation and satiation, cost and profit, aggression, and approval. From Homan's perspective, social behavior is an exchange of material and spiritual interests between individuals. It should be fair. His social exchange theory has been widely accepted but also accompanied by some criticisms because of its unclarity and ponderous reading. So Homans (1974) restated his proposition lucidly and logically to further interpret the mechanism of social behavior.

Table 3 A summary of Homans' propositions of social exchange theory (Homans, 1974)

Preposition	Summary
Success Proposition	If the individual gets more rewards for a certain behavior, the individual is more likely to do such behavior.
Stimulus Proposition	If the behavior of the individual caused by the past stimulus is rewarded, then the individual will be more likely to do such behavior based on similar stimulus.
Value Proposition	For an individual, the more valuable the results of his behaviors, the more likely he is to do such behavior.
Deprivation-Satiation Proposition	The more a person has recently received a particular reward, the less valuable any other unit of that reward will be to him.
Aggression-Approval Proposition	Part a: When an individual's behavior does not get the reward he expected, or is punished he did not anticipate, he will be angry; he becomes more likely to do aggressive behavior, and the results of this behavior are more valuable for him. Part b: When an individual's behavior gets the reward he expected, especially a reward greater than what he expected, or does not get any punishment he expected, he feels happy; he will be more likely to do such an approved behavior, and this behavior's result is more valuable for him

Rationality Proposition	When an individual is making choices, he will choose behaviors that are easier and have better results.
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In short, Homans focused on interaction between individuals. He regarded all human behavior as an exchange process for its own benefits. According to Homans' theory, human behavior can be predicted based on the consequences of past behavior. What has been reinforced by past experiences has a great degree of influence on people. What has been reinforced under similar circumstances in the past may be the main determinants of current behavior. Once you perceive stimuli like those in the past in your current environment, you will naturally conduct the same behaviors that are reinforced by past experiences (Cropanzano and Mitchell, 2005; Cropanzano *et al.*, 2017). Homans was inclined to psychological reductionism, believing that the explanation of individual behavior leads to the explanation of all group behaviors. However, not all social interactions are equal and fair, interpersonal relationship can be interactive and unilateral. Activities in complex organizations cannot be fully explained by the psychological reductionist exchange theory (Emerson, 1976; Cropanzano *et al.*, 2017).

2.6.1.3 Blau's Social Exchange Theory

Blau's social exchange theory is explained in his book *"Exchange and Power in Social Life"* (Blau, 1963). In this book, Blau inherited and developed Homans' theory of social exchange. Different from Homans' perspective of analyzing the exchange behavior of individuals in small groups, Blau helps people understand the social structure by analyzing the social processes that govern the relationship between individuals and groups. The focus of his research is not the structure of social behavior but the structure of social interaction.

In Blau's view, social exchange broadly includes relations among individuals as well as those among groups, which embody in the process of social integration, social support, conflict and cooperation, differentiation of power, legitimation of power, opposition, etc. He further divided rewards into intrinsic and extrinsic rewards. Intrinsic rewards refer to love, honor, social status, the pursuit of beauty, etc. and extrinsic rewards mainly refer to money, services, commodities, etc. Blau believes that social exchange between people begins with social attraction. The process of social attraction leads to the process of social exchange. Providing mutual rewards will maintain mutual attraction and encourage continued communication between people. Not all social exchanges are equal, based on mutual attraction and equal exchange. Interpersonal relationships can be interactive or unilateral. Unequal obligations in social interaction will make one party gain power while the other party loses social independence. Blau sees power as the ability of individuals or groups to impose their will on others. The strategy of obtaining and maintaining power is to prevent others from choosing any conditional plan for maintaining social independence and, at the same time, to force others to obey, so that others know that only obedience can obtain what they need.

At the macro-social level, he found that the exchanges between groups have similarities with those between individuals: exchanges between groups are also driven by the desire to pursue rewards; the principle of fairness in interpersonal exchanges also applies to exchanges between groups. There is also a difference between the exchange in the macro structure and the exchange in the microstructure. In the macro structure, person-to-person exchanges are

mostly indirect, and the link between cost and reward is remote. Blau believes that common value can be used to convey the relationship structure between people, because common value provides a set of common standards for the complex exchange of insights in the macro structure, so that all parties can exchange with the same scenario definition. In addition, the macro-complex structure requires formal procedures and coercive means to maintain order.

2.6.1.4 Social Exchange Theory and Organizational Justice

The emergence of organizational justice theory has been based on social exchange theory (Blau, 1964). At the same time, in the studies of organizational justice, the framework of social exchange theory has been often applied to explain the impact of organizational justice on employees' behavior (Lavelle, Rupp and Brockner, 2007; Colquitt and Rodell, 2011).

According to social exchange theory, feeling obligated and committed after being treated fairly is key to explaining why justice perceptions impact behaviors that are very crucial to organizations, such as job performance, retention, and so on (Roch *et al.*, 2019). Roch *et al.* had found that the theoretical role of felt obligation in the social exchange theory well explains how distributive, procedural, and interactional justice perceptions can promote employee behaviors beneficial for organizations. Masterson *et al.* (2000) examined the influence of procedural and interactional justice on work-related outcomes from the perspective of social change theory, it was revealed that interactional justice perceptions impact supervisor-related outcomes while procedural justice perceptions affect organization-related outcomes.

However, according to some researchers (Lam *et al.*, 2002; Westwood *et al.*, 2004), social

exchange theory may not be adapted to explain the attitudes and behaviors of employees in countries like China. They argued that in countries with high power distance and collectivism, employees are more likely to be motivated to comply with the obligations of their defined social roles than with obligations that originated from social exchange. Nevertheless, the findings of Casimir *et al.* (2014) provided obvious evidence for explaining the attitudes and behaviors of employees in China based on social exchange. Leader-member exchange and perceived organizational support have interactive effects on affective commitment to the organization. This shows that the workplace attitudes of Chinese and Western employees are the same, and the theory of social exchange is also applicable to China. Chinese scholars have already applied the framework of social exchange theory to analyze the impact of organizational justice on employees' creativity and engagement in private enterprises and universities, the results support the good explanation ability of social exchange theory in China too (Song, 2017; Jin, 2018).

To sum up, social exchange theory is premised on the assumption that human behavior has the nature of exchange. The object of exchange can be material (tangible) things or spiritual (intangible) things. Hence, the basic form of exchange includes transactions and relationships (Cropanzano and Mitchell, 2005). Unlike pure economic exchange, social exchange is more complicated, especially in an organizational context, since there are changes among individuals and between individuals and groups, face-to-face and distanced. However, social exchange theory is still one of the most influential and effective lenses to explain employees' attitudes and behaviors in organizations (Emerson, 1976; Dustin and Bricker, 2017). Although few have studied the relationship between organizational justice

and university teachers' performance from the perspective of social exchange theory, many scholars in the West and China have studied the influence of organizational justice on employees' creativity, retention, and job performance in the corporate context based on the theory of social exchange. Its good explanatory power has also been demonstrated (Song, 2017; Jin, 2018; Roch *et al.*, 2019). Therefore, social exchange theory can be a good framework to analyze the impact of organizational justice on university teachers' performance in this study.

2.6.2 Fairness Heuristic Theory

Fairness heuristic theory mainly focuses on the two issues of why people value justice and how justice perceptions are formed (Lind, 2001; Van den Bos, 2001; Cropanzano *et al.*, 2015). According to the relational model of justice (Tyler and Lind, 1992), individuals in organizations often come across the "fundamental social dilemma". When individuals cooperate with organizations, which can bring satisfactory results in the long run, it also increases the risk of being exploited. To solve this dilemma, individuals use a psychological shortcut – "fairness heuristic" to decide whether to cooperate with authorities or not.

Trust is critically important between individuals and organizations when facing the fundamental social dilemma (Lind, 2001). Unfortunately, the trustworthiness of authorities cannot be easily judged since it depends on the estimation of such abstract concepts like capability and benevolence. On the contrary, fairness perceptions depend on concrete and observable facts such as correct procedural and respectful treatment (Colquitt *et al.*, 2006). The fairness heuristic theory argues that the fairness heuristic is shaped rapidly when the

fairness information is initially gathered or most identifiable during the “judgmental phase” (Van de Bos and Wilke, 1997). Once the heuristic has been shaped, the individuals will apply it as a proxy for trust to direct their daily behaviors, this period is called the “use phase” (Lind, 2001; Van den Bos, 2001). Individuals keep on using the heuristic until a “phase shifting event” happens, such as a tremendous change like a change of leadership. Then individuals will form new fairness conceptions based on the change.

Therefore, the fairness heuristic is pretty subjective, which has a primary effect and a substitutability effect, once formed, it's very difficult to change (Cropanzano *et al.*, 2015). Fairness heuristic theory plays a vital role in understanding organizational justice comprehensively and profoundly.

2.6.3 Maslow's Hierarchy of Needs

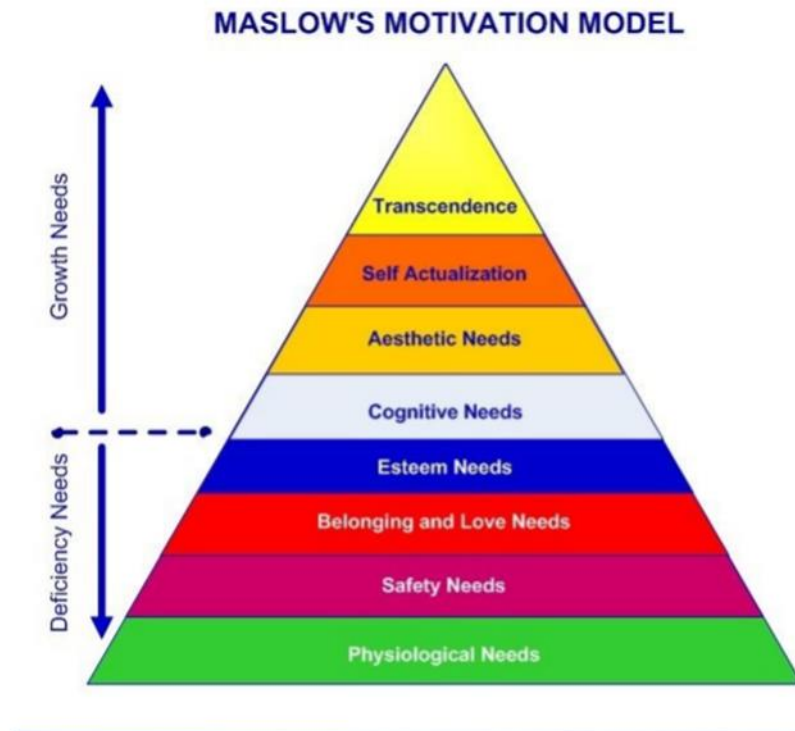
Maslow's hierarchy of needs theory is one of the most referenced and accepted motivation theories and has been playing an important role in modern behavioral science (Wahba and Bridwell, 1976; Lester, 2013; Jerome, 2013). Maslow (1943, 1954) had proposed that human needs are divided into five levels. After a basic lower-level need fulfilled, a higher new need will be generated. As we all know, the hierarchy of human needs is usually described as a pyramid. From the bottom upwards to the top, the needs are psychological needs, safety needs, belongings and love needs, self-esteem needs, and self-actualization needs. Psychological needs are human survival demands, such as food, water, warmth, rest, etc. The safety needs comprise personal security, life stability, freedom from pain, threats,

diseases, etc. These belongings and love need include intimate relationships, friendships, etc. The self-esteem requirements include prestige and a sense of accomplishment. The self-actualization needs comprise achieving one's full potential, including creative activities, etc.

With the deepening of his research, Maslow's five-level model of human needs has been expanded to eight levels, including cognitive and aesthetic needs (Maslow, 1970a) and later transcendental needs (Maslow, 1970b). The cognitive needs refer to knowledge and understanding, curiosity, exploration, the need for meaning and predictability. Aesthetic needs include appreciation and searching for beauty, peace, etc. The transcendence needs mean that individual is stimulated by spirits which transcend beyond himself, for example, mystical experiences, devotion, religious pursuit and so on. The first four lower needs are known as deficiency needs, they are produced because of deprivation, and when they are unfulfilled, motivation increases fiercely. The last four upper ones are known as growth needs or being needs, when they're fulfilled, motivation increases (McLeod, 2007).

Maslow (1943) first stated that before entering the higher stage growth needs, lower stage deficit needs must be satisfied. However, he later explained that satisfying a need is not to be "all-or-none." Individuals do not always move through the pyramid of hierarchy linearly in one direction, they may move up and down between different hierarchies based on different life experiences (1987, p. 69).

Figure 3 Maslow's motivation model



Source from (McLeod, 2007)

Maslow's hierarchy of needs theory has been criticized constantly for lack of clear evidence due to the difficulties in testing it (Wahba and Bridwell, 1976; Lester, 2013). However, it's still widely accepted in theory and practice (Jerome, 2013; Noltemeyer *et al.*, 2021). Gambrel and Cianci (2003) examined Maslow's hierarchy of needs theory and related literature to figure out whether it applied in collectivism culture, like China. The results showed that Maslow's hierarchy of needs theory also applied in China but differed from the original model. Belonging was the basic need, self-esteem was excluded, and self-fulfillment was obtained when social development needs were met. Nearly twenty years have passed, with the rapid development of China's economy and integration with the Western world, the social structure and people's perceptions have undergone tremendous changes in China, people's needs are changing as well.

2.6.4 Knowledge Worker Theory

In 1959, Peter F. Drucker initially coined the concept of “knowledge worker” in his book- *The Landmarks of Tomorrow*. Drucker defined knowledge workers as high-level workers who provide products and services by applying complex theoretical and analytical knowledge. Knowledge workers cannot be supervised like manual workers, they have a high degree of autonomy and consciously pursue benefits. At that time, knowledge workers refer to managers. Nowadays, knowledge workers are those who focus on information analysis, problem solving, and knowledge production (Thompson and Heron, 2005; Fleming et al., 2004). Their core task is not simply repetitive work, but comprehensive and complex work that needs high quality of logical thinking, judgement, creativity, ideas, and syntheses (Fisher and Fisher, 1998; Horibe, 1999). Therefore, knowledge workers are key organizational assets, and how to retain and motivate them is a critical issue for organizational development and survival. (Alvesson, 2004; Iazzolino and Laise, 2018)

Knowledge workers usually have a good education and their work is really intellectual, creative, and influential, so their values and psychological needs are different from those of manual workers (Jiang et al., 2017). Drucker pointed out in his book- *Management Challenges for the 21st Century*, that knowledge workers can only exert their potential when they are aware of their own particularities and are properly and effectively managed (Drucker, 2012). Therefore, it is essential to clarify the characteristics of knowledge workers to manage them effectively (Horwitz, Heng and Quazi, 2003).

- **Autonomy.** Knowledge workers tend to manage themselves. They are willing to complete

the tasks according to their own wishes and methods, rather than telling them in detail how to do it (Huang, 2011).

- ***Creativity.*** Knowledge workers with innovative ideas can use their knowledge and learning ability to innovate and create (Shujahat *et al.*, 2019).
- ***Mobility.*** In today's highly competitive era, when knowledge becomes a key asset for an organization, those organizations will not hesitate to hire talents with high salaries, leading to increased mobility of knowledge workers (Jiang *et al.*, 2017).
- ***Complexity.*** The intellectual work of knowledge workers can happen at anytime and anywhere, so the work process is difficult to monitor. In addition, the performance of knowledge workers is an intellectual result, which is difficult to measure directly by quantity like manual labor, and their performance is often teamwork and long-term. Therefore, it is very difficult to use traditional methods and ways to manage job performance of knowledge workers (Iazzolino and Laise, 2018).
- ***Pursuit of self-fulfillment and self-growth.*** According to Maslow's hierarchy of needs model, the hierarchy of human needs is just like a pyramid. Due to the characteristics of knowledge workers, they tend to meet high-level needs, Special knowledge workers like teachers sometimes skip low-level needs and directly pursue higher-level needs (Heidary Dahooie, Ghezel Arsalan and Zolghadr Shojai, 2018).

“The most valuable asset of a 21st-century institution (whether business or non-business) will be its knowledge workers and their productivity” (Drucker, 1999,2002). Hence, how to improve knowledge workers' productivity and performance is a vital issue for any organization. Drucker (1999) proposed that there are six major factors that determine the

productivity of knowledge-workers:

- “What is the task?” should be figured out first.
- Knowledge workers have a high degree of autonomy and must manage themselves, so responsibilities for their productivity should be imposed on them.
- The core of knowledge workers’ tasks and responsibilities is continuing innovation.
- Continuous learning and continuous teaching are the requirements for knowledge workers’ task accomplishment.
- Quality is as important as quantity when measuring the productivity of knowledge workers.
- The knowledge worker should be both seen and treated as an “asset” rather than a “cost.”

Then they will want to work for the organization in preference to all other opportunities.

In a word, university teachers are senior knowledge workers. How to improve their productivity is a crucial issue related to the survival and development of every university. Traditional performance incentives and management will fail in managing them, so how to enhance their productivity according to their characteristics as knowledge workers is significant for all universities(Li, Zheng and Liao;2016; Li, 2018; Yee, 2018; Drucker,2018).

In summary, from the above analysis, it can be seen that social exchange theory is one of the most effective frameworks to explain how organizational justice impacts university teachers’ job performance through the transactions and relationships between teachers and universities (Emerson, 1976; Dustin and Bricker, 2017). The fairness heuristic theory helps to dig out how university teachers respond to justice issues and form justice conceptions deeply. Maslow’s hierarchy of needs theory and knowledge worker theory help to analyze the research question from the characteristics of the special object (university teachers) in

this research.

2.7 Affective Commitment as a Mediator

Based on a review of 75 high quality related texts and peer-reviewed articles in past 15 years, Mercurio (2015) proposed that affective commitment is a principal core of organizational commitment. The earliest definition of organizational commitment was initiated by the American management scientist Becker (1960), who believed that organizational commitment is a psychological tendency that employees have to stay in the organization as their unilateral investment in the organization increases, which is known as the "side-bet theory." If the employees leave the organization, they will suffer great losses. This section will first introduce affective commitment in organizational commitment, then analyze its antecedents and outcomes, and finally evaluate its mediating role in organizational management researches.

2.7.1 Affective Commitment in Organizational Commitment

Based on previous research, Meyer & Allen (1991) concluded that organizational commitment has three independent factors. Affective commitment refers to the emotional attachment to the organization, which implies that employees love to stay, also called attitudinal commitment. Continuous commitment refers to a perceived cost if leaving implies that employees need to stay. Normative commitment refers to a responsibility to the organization which implies that employees must stay. Continuous commitment and normative commitment, also called behavioral commitment (Benson and Brown, 2007).

Meyer & Allen further argued that a deep understanding of employees' relationships with organizations would be gained if all three dimensions of organizational commitment were considered together. Consequently, they proposed a 3 component model of organizational commitment, and a large number of empirical studies later proved that the model has good reliability and validity (Meyer and Allen, 1993, 1996; Eisinga, Teelken and Doorewaard, 2010; Somers, 2017), although there was some overlap between normative and affective commitment (Allen and Meyer, 1990) and a conceptual inconsistency (Solinger, Olffen and Roe, 2007).

Furthermore, many studies have also shown that the relationship between antecedents and affective commitment is stronger than that between continuous commitment and normative commitment (Meyer & Allen, 1997; Fornes and Wollard, 2008) and the impact of affective commitment on performance outcomes is stronger as well (Mercurio, 2015), especially for knowledge workers (Benson and Brown, 2007). Further, Benson and Brown also found that knowledge workers' affective commitment, which is mainly determined by organizational facts, such as organizational justice, is obviously higher than non-knowledge workers. The antecedents of affective commitment for knowledge workers are different from non-knowledge workers in many aspects, which is worthy of deep exploration. Thus, based on social exchange theory, in this research, affective commitment is selected to explain the relationship between organizational justice and university teachers' performance since affective commitment has been considered as one of the most important and influential bridges between individuals' attitudes and behaviors and organizational management practice (Mercurio, 2015), especially for knowledge workers (Jayasingam, Govindasamy

and Garib Singh, 2016).

2.7.2 Affective Commitment and Its Antecedents

It's very important to examine the antecedent variables of affective commitment because it allows us to better understand the formation mechanism of affective commitment and provide theoretical support for management practices. Affective commitment has always been an extremely popular and vigorous topic of organizational behavior, and scholars have continued to explore its influencing factors from multiple perspectives.

Table 4 Affective commitment as a dependent variable

Antecedents	Sample	Source
Supervisory mentoring	228 highly qualified white-collar employees in Eastern Canada	(Lapointe and Vandenberghe, 2017)
Empowerment, engagement	Community health service workers	(Albrecht, 2015)
Responsible leadership	200 full-time Australian employees	(Haque, Fernando and Caputi, 2019)
Servant leadership	239 full-time employees in the Chinese public sector	(Zhou and Miao, 2014)
Transformational leadership	476 Turkish healthcare professionals	(Ribeiro, Yucel and Gomes, 2018)
Ethical leadership	176 bank employees in Macau	(Loi <i>et al.</i> , 2015)
Authentic leadership	212 Portuguese employees	(Ribeiro, Daniel and Shaji, 2018)
Organizational clan culture, Transformational leadership	Full-time employees of the Gwangju Metropolitan City government in South Korea	(Kim, 2014)
Abuse in the workplace	Two samples from a field study and an experiment	(Tillman <i>et al.</i> , 2018)
Employees' perceptions of high-performance work practices, person-organization (PO) fit	487 Dutch university employees	(Kooij and Boon, 2018)
Employer brand	209 employees	(Fernandez-Lores <i>et al.</i> , 2016)
Knowledge-sharing culture, task orientation autonomy, workplace value identity, unfair promotion, practices management support	522 knowledge workers	(Jayasingam, Govindasamy and Garib Singh, 2016)
Knowledge sharing	Gen Y employees (born between	(Naim and Lenka,

	1980 and 2000) working in 2017) software organizations in India.	
Job involvement	405 Italian working adults	(Scrima <i>et al.</i> , 2014)
Diversity management	10,976 Dutch public sector employees	(Ashikali and Groeneveld, 2015)
Corporate social responsibility	1,084 employees from 17 countries	(Mueller <i>et al.</i> , 2012)
	6,710 Norwegian and Swedish employees	(Ditlev-Simonsen, 2015)
	161 employees who work in private and public organizations in Tunisia	(Bouraoui <i>et al.</i> , 2019)
Organizational identification	Employees from 3 automobile dealers in a major city in central China	(Lam and Liu, 2014)
Perceived organizational support and procedural justice	349 nursing staff working in public healthcare institutes in Uttarakhand	(Sharma and Dhar, 2016)
Distributive justice	198 French nonprofit employees in health and social services	(Ohana and Meyer, 2016)
Distributive justice and procedural justice	706 university employees across China, South Korea and Australia	(Jiang, Gollan and Brooks, 2017)
Distributive justice, procedural justice, and interactive justice	725 employees from 10 companies in China	(Lee and Wei, 2017)
Organizational justice	272 bank employees in Istanbul, Turkey	(Minibas-poussard and Roy, 2017)

As can be seen from the above table, there are three main levels of influence factors: individual level, job level, and organizational level. Individual level antecedents include cultural values, beliefs, agreeableness, intrinsic motivation (Jayasingam, Govindasamy and Garib Singh, 2016), and so on. Job level antecedents include job choice, job expectations, and job involvement (Scrima *et al.*, 2014; Albrecht, 2015). The antecedent variables related to the organization are the most in-depth and extensive. There are leadership styles (Ribeiro, Yucel and Gomes, 2018; Haque, Fernando and Caputi, 2019), supervisory mentoring (Lapointe and Vandenberghe, 2017), human resource management practices (Ashikali and Groeneveld, 2015), corporate social responsibility (Bouraoui *et al.*, 2019), organizational

support(Sharma and Dhar, 2016), identification(Lam and Liu, 2014), justice (Jiang, Gollan and Brooks, 2017), etc. Some of these factors have a negative effect on affective commitment, like abuse in the workplace (Tillman *et al.*, 2018), unfair promotion (Jayasingam, Govindasamy and Garib Singh, 2016). Most of the examined factors, particularly those at the organizational level, such as organizational support (Sharma and Dhar, 2016), identification(Lam and Liu, 2014), and justice(Lee and Wei, 2017), are positively related to affective commitment. Although university teachers' affective commitment has been rarely discussed, the influencing factors of affective commitment for university teachers as knowledge workers are different from those of non-knowledge workers in many aspects, which creates challenges for university management(Benson and Brown, 2007). Therefore, it is significant to explore comprehensively university teachers' affective commitment since it can exert a good influence on organization. From the above literature, we can propose hypotheses as follows:

H1a	<i>Distributive justice has a positive impact on university teachers' affective commitment.</i>
H1b	<i>Procedural justice has a positive impact on university teachers' affective commitment.</i>
H1c	<i>Interpersonal justice has a positive impact on university teachers' affective commitment.</i>
H1d	<i>Informational justice has a positive impact on university teachers' affective commitment.</i>

2.7.3 Outcomes of Affective Commitment

Affective commitment affects individual attitudes and behaviors, and then affects the development of the entire organization. Therefore, the outcome variables of affective commitment are also hot topics in psychology and organizational behavior research.

Table 5 Affective commitment as an independent variable

Outcomes	Sample	Source
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Turnover intentions	Community health service workers 200 full-time Australian employees	(Albrecht, 2015) (Haque, Fernando and Caputi, 2019)
Withdrawal intention	Two samples from a field study (n209) and an experiment (n427) were	(Tillman <i>et al.</i> , 2018)
Organizational citizenship behavior	Full-time employees of the Gwangju Metropolitan City government in South Korea	(Kim, 2014)
Turnover intentions, job search behavior, work withdrawal (absenteeism and lateness) and job stress	288 hospital nurses	(Somers, 2017)
Key knowledge sharing, organization-based psychological ownership	293 employees from 31 high-technology firms in China	(Li <i>et al.</i> , 2015)
Individuals' knowledge exploration and exploitation activities	Employees from a Spanish commercial bank	(Cegarra-Navarro <i>et al.</i> , 2018)
Development of competencies, export performance	134 exporting organizations located in the south of the Netherlands	(Bloemer, Pluymaekers and Odekerken, 2013)
Moving forward from project failure	A total of 585 research scientists were chosen randomly from the websites of 12 different research institutes in a region of Germany	(Shepherd and Wolfe, 2011)
Job performance	349 nursing staff working in public healthcare institutes in Uttarakhand 476 Turkish healthcare professionals	(Sharma and Dhar, 2016) (Ribeiro, Yucel and Gomes, 2018)

Compared with the antecedent variables, the outcome variables of affective commitment are much less, and generally conducted at the individual level. Affective commitment can inhibit negative behaviors, such as turnover intention (Albrecht, 2015; Haque, Fernando and Caputi, 2019), withdrawal intention (Tillman *et al.*, 2018), and counterproductive performance (Somers, 2017). While it can also promote positive behaviors like organizational citizenship behavior (Kim, 2014), knowledge sharing and exploration (Li *et al.*, 2015), job performance (task performance and contextual performance) (Sharma and Dhar, 2016; Ribeiro, Yucel and Gomes, 2018), etc. However, how affective commitment impacts university teachers' performance (teaching, research, and social

service) is still not fully examined since affective commitment based on desire is stronger and more stable, which fits the high-quality pursuit of spirit of university teachers as knowledge workers, so I would like to propose the below hypotheses based on the above literature review:

H2a	<i>Affective commitment has a positive impact on teaching performance.</i>
H2b	<i>Affective commitment has a positive impact on research performance.</i>
H2c	<i>Affective commitment has a positive impact on social service performance.</i>

2.7.4 Affective Commitment as a Mediator

Colquitt *et al* (2012) introduced trust as a mediator of relationship between performance and justice based on social exchange theory. Their research results demonstrated that a comprehensive model of mediation can help better understand the complicated mechanism of the impact of organizational justice on job performance. Colquitt *et al.* (2013) had done a meta-analytic of social exchange to examine individual reactions to organizational justice. The results showed that social exchange quality (such as organizational commitment and perceived organizational support) mediated the relationship between specific justice perceptions and task performance and citizenship behavior. Many recent studies have also applied affective commitment as a mediator to explore the relationship between organizational facts and the employees' attitudes and behaviors through the theoretical lens of social exchange theory.

Table 6 Mediating effect of affective commitment

Mediated relationship	Sample	Source
Organizational identification and turnover intention	158 automobile dealership employees in central China	(Lam and Liu, 2014)
Ethical leadership and work engagement, employees' creativity	233 Chinese public sector employees	(Asif <i>et al.</i> , 2019)
Experienced workplace incivility	221 job incumbents who were attending	(Taylor, Bedeian and

and citizenship performance	classes at a land-grant university located in a large urban area of the southeastern USA	Kluemper, 2012)
Responsible leadership and intention to quit	200 full-time Australian employees	(Haque, Fernando and Caputi, 2019)
Personality and organizational citizenship behavior	300 employees of an Indonesian foreign-invested cement factory with seven plants located in West Java	(Purba <i>et al.</i> , 2015)
Psychosocial mentoring and employee turnover intention	109 IT employees in the Information Services Division	(Craig <i>et al.</i> , 2013)
Nursing climate and quality care	268 nurses working in 28 long-term care facilities	(Woznyj <i>et al.</i> , 2019)
Organizational justice and job performance	343 employees working within French small-and medium-sized enterprises	(Swalhi, Zgoulli and Hofaidhllaoui, 2017)
Justice perceptions and behaviors important to organizations (task performance and OCB)	160 university alumni and their supervisors	(Roch <i>et al.</i> , 2019)

It can be seen from the above research results, according to social exchange theory, good organizational actions and fact (e.g., ethical leadership and organizational justice) can make employees emotionally attach to and trust the organization (e.g., affective commitment) and then positively affect their behaviors and performance, which is beneficial to the development of the entire organization, but not vice versa. Therefore, I propose the following hypotheses:

H3-1a	Affective commitment plays a mediating role between distributive justice and teaching performance.
H3-1b	Affective commitment plays a mediating role between distributive justice and research performance.
H3-1c	Affective commitment plays a mediating role between distributive justice and social service performance.
H3-2a	Affective commitment plays a mediating role between procedural justice and teaching performance.
H3-2b	Affective commitment plays a mediating role between procedural justice and research performance.
H3-2c	Affective commitment plays a mediating role between procedural justice and social service performance.
H3-3a	Affective commitment plays a mediating role between interpersonal justice and teaching performance.
H3-3b	Affective commitment plays a mediating role between interpersonal justice and research performance.
H3-3c	Affective commitment plays a mediating role between interpersonal justice and social service performance.
H3-4a	Affective commitment plays a mediating role between informational justice and teaching performance.
H3-4b	Affective commitment plays a mediating role between informational justice and

<i>H3-4c</i>	research performance. Affective commitment plays a mediating role between informational justice and social service performance.
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To sum up, affective commitment is a core component of organizational commitment, which has been widely applied to explore the relationship between individuals and organizations based on the theory of social change (Mercurio, 2015), and it's also proved good reliability and validity (Meyer et al., 2002). Organizational level good actions can improve individuals' affective commitment (Kim, 2014; Loi et al., 2015; Ribeiro, Yucel and Gomes, 2018; Haque, Fernando and Caputi, 2019). Previous research results also showed that organizational justice has a positive impact on individual's affective commitment (Andrews et al., 2008; Eisinga, Teelken and Doorewaard, 2010; Ohana and Meyer, 2016), which in turn promotes individuals' behaviors that are beneficial to the organization, like job performance (Sharma and Dhar, 2016; Ribeiro, Yucel and Gomes, 2018). University teachers, as knowledge workers, have higher requirements for emotion, respect, and trust (Drucker, 2012). Therefore, affective commitment is supposed to function as a social bridge between organizational justice and university teachers' job performance.

2.8 Collectivism as a Moderator

“Management” is a word invented by Americans, so both management theories and management practices are constrained by American cultural background. When they are applied to different cultural backgrounds, they have different manifestations (Hofstede, 1993; Beugelsdijk, Maseland and Hoorn, 2015). Individual attitudes and behaviors in

organizations are affected by national values in a lot of empirical research((Kirkman, Lowe and Gibson, 2006; Kirkman *et al.*, 2017). Hence, in studying the application of organizational justice in China, it is particularly important to consider the local cultural influences (Soares, Mizerski and Mizerski, 2007; Gorodnichenko and Roland, 2013). This section will first introduce the origin and concept of collectivism, then evaluate its moderating effects as a cultural trait.

2.8.1 The Origin and Concept of Collectivism

Hofstede (1984) proposed that there are four main dimensions of cultural differences among countries in his most cited book *Culture's Consequences*: individualism-collectivism, power distance, uncertainty avoidance, femininity -masculinity. Among these, individualism-collectivism(I-C) has received particular attention to explain the influence of different culture values on individuals' attitudes and behaviors (Earley and Gibson, 1998; Jackson *et al.*, 2006;Brewer and Chen, 2007; Soares, Mizerski and Mizerski, 2007; Kirkman *et al.*, 2017).

Individualism means that the connection between individuals is not close, people are more concerned about their own interests. Collectivism means that people are closely connected. And people are accustomed to living in a group and are willing to sacrifice their own personal interests for the collective benefit (Frank, Hofstede and Bond, 1991; Hofstede and Minkov,2005). From the perspective of social exchange, individualism emphasizes the psychological and economic self-interest of individuals involved in social exchange (Blau 1964; Homans, 1961). Collectivism emphasizes the importance of social needs. In the view

of collectivists, society is the purpose of their own existence, and individual existence serves the interests of society (Levi-Strauss, 1974).

In the early days, some scholars understood collectivism and individualism as opposite dimensions and merged the two into one, thinking that the culture of a society is either individualistic or collectivistic (Hofstede ,1984; Harry Hui, 1986).With the deepening of research, many scholars believed that individualism and collectivism existed in different cultural backgrounds and were also reflected in the different behaviors of individuals. Individualism-collectivism is a multidimensional concept. They are not bipolar structures, but two independent dimensions (Singelis *et al.*, 1995; Hofstede, 2011).

Singelis *et al.*(1995) further proposed a model of horizontal and vertical dimensions of individualism and collectivism. According to their division, there are four types of individualism and collectivism: horizontal individualism (HI), vertical individualism (VI), horizontal collectivism (HC) and vertical collectivism (VC). The constructs of HI, VI, HC and VC has been theoretically defined and empirically supported later in Triandis and Gelfand's(1998) research. The HI type emphasizes individual uniqueness and independence, just doing their own things, rather than comparing with others. The VI types is especially concerned about comparison with others, believes that competition is the law of nature, and hopes to stand out in all competitions. The HC type is closely united with ingroup members (such as family, tribe, or work group). Ingroup harmony and welfare are particularly important to them. They emphasize common goals and sociality but do not easily obey authority. On the contrary, the VC type prefers to obey authority , Even for collective goals,

individual goals and interests can be sacrificed to support the competition between members of the group and members outside the group (Triandis, Chen and Chan, 1998; Voronov and Singer, 2002; Green, Deschamps and Páez, 2005).

2.8.2 Collectivism's Moderating Effects as a Cultural Trait

Marcus and Le (2013) did a meta-analysis of large samples and examined the influence of levels of individualism–collectivism (I–C) on cooperation and other outcomes at work. I–C was studied on 3 levels (individual, organizational, and societal). They found that the correlation between individual-level I–C and cooperation/performance was stronger in collectivistic as opposed to individualistic societies. Results also indicated that individual-level I–C was moderately related to study outcomes, and it may be a better predictor of outcomes in collectivistic as opposed to individualistic societies. In some studies in the Chinese context, collectivism has been proved to moderate some relationships between individuals and organizations. Francesco and Chen(2004) revealed that the relationships between organizational commitment and job performance were found to be weaker for those with higher level collectivism, which provided important implications for the foreign companies in China. At that time, collectivistic individuals regarded organizations as in-groups, so they felt obligated to serve organizations without considering the level of personal organizational commitment. If the enterprise strengthens the education of employees' collectivist values and improves the level of collectivist values, it can improve the performance of employees. However, this situation has changed in recent years. Tong identified that collectivism played a moderating role in the effect of transformational

leadership on organizational emotional competence. When the collectivism level is higher, the effect of transformational leadership on organizational emotional competence is stronger. Another study showed that collectivism positively moderated the relationship between humble leadership behavior and resource sharing (Dai, Lei and Su, 2019). Zhang, Huang and Xu (2021)'s research also demonstrated that the collectivism tendency of employees played a positive moderating role in the relationship between team member exchange and workplace mentality. The above latest research results show that at the current stage, based on social exchange, if the organization or leader is not good to employees, even employees with high collectivism tendencies will not act in favor of the organization. When the organization is friendly to employees, employees with high collectivism tend to behave more favorably for the organization. People's collectivism is shifting from vertical collectivism to horizontal collectivism. Unlike people with vertical collectivism can sacrifice personal interests under any conditions for the interests of the organization, while people with horizontal collectivism emphasize common goals and sociality but do not easily obey authority. They pursue collective interests and well-being, but also pay attention to individual rights and treatment.

In summary, justice is a value rooted in culture. If we want to deeply understand organizational justice and its influence, we must integrate it with the cultural background of the organization (Greenberg, 2001; Crawshaw, et al.2013). From the above analysis, it can be concluded that with the improvement of people's education level and individual awareness and the influence of Western culture, the connotation of collectivism and its influence on people's behavior have also changed. Therefore, to examine the moderating

effect of collectivism on the relationship between organizational justice and university teachers' job performance, I propose the following hypotheses:

<i>H4-1a</i>	Collectivism plays a moderating role between distributive justice and teaching performance.
<i>H4-1b</i>	Collectivism value plays a moderating role between distributive justice and research performance.
<i>H4-1c</i>	Collectivism plays a moderating role between distributive justice and social service performance.
<i>H4-2a</i>	Collectivism plays a moderating role between procedural justice and teaching performance.
<i>H4-2b</i>	Collectivism plays a moderating role between procedural justice and research performance.
<i>H4-2c</i>	Collectivism plays a moderating role between procedural justice and social service performance.
<i>H4-3a</i>	Collectivism plays a moderating role between interpersonal justice and teaching performance.
<i>H4-3b</i>	Collectivism plays a moderating role between interpersonal justice and research performance.
<i>H4-3c</i>	Collectivism plays a moderating role between interpersonal justice and social service performance.
<i>H4-4a</i>	Collectivism plays a moderating role between informational justice and teaching performance.
<i>H4-4b</i>	Collectivism plays a moderating role between informational justice and research performance.
<i>H4-4c</i>	Collectivism plays a moderating role between informational justice and social service performance.

2.9 Conclusion

2.9.1 Research Gap Identified

Through the combing, analysis, and critical evaluation of the literature on organizational justice, job performance, organizational commitment, collectivism, social exchange theory, and knowledge worker theory in recent years, it can be found that there are some research gaps in the field of the relationships between organizational justice and university teachers' job performance.

In theory, with the accumulation of empirical studies exploring the relationship between

organizational justice and job performance, there has been a problem of inconsistency in theories for different research backgrounds and different research objects. And the research has mainly concentrated on the context of economic organizations such as enterprises, while the impact of organizational justice on job performance in non-economic organizations, such as universities, is rarely involved.

The concept of justice has always been rooted in Chinese culture. Whether in politics or in the workplace, Chinese people have the same desire for fair treatment as everyone else in the world. In particular, university teachers as knowledge workers are more sensitive to justice (Wang et al., 2010). Although there are many articles discussing the relationships between organizational justice and job performance, few empirical studies comprehensively examine the impact of organizational justice on the job performance of university teachers in teaching, scientific research, and social services. Not to mention the in-depth exploration of the internal mechanism of organizational justice on the performance of university teachers from the perspective of organizational commitment based on social exchange theory. In addition, many researches have shown that social cultural factors and individual differences will also have an impact on the perception of organizational justice and its influence (E. Rupp, 2011; Herr *et al.*, 2015; Guo and Giacobbe-Miller, 2015; Diehl, Richter and Sarnecki, 2018). Therefore, starting from China's special cultural background and combining the characteristics of university teachers as knowledge workers, this study will incorporate collectivism as a moderator variable into the analytical framework, which will help to reveal the impact mechanism of organizational justice on university teachers' job performance in China's special context.

In methodology, all studies about the impact of organizational justice on job performance have applied quantitative research methods that use questionnaires and surveys to collect data. It is an efficient way to conduct research in a relatively short time and achieve good results. However, it is not the best approach to address the research question and explain the different results in different contexts. There are some limitations to using quantitative methods to explain the impact of organizational justice on job performance. Because individuals' understanding and perception of organizational justice is quite personal and subjective based on distinct cultural contexts and personal experiences (Deborah, 2011). It is not enough to measure research variables on objective scales merely, qualitative research methods should be supplemented to explore the unclear and novel issues presented in quantitative analysis. Implicating mixed methods in the same study will strengthen the advantages of the two research methods and weaken their respective weaknesses (Creswell, 2014), improve the effectiveness and generality of the results as well as the potential theoretical contribution.

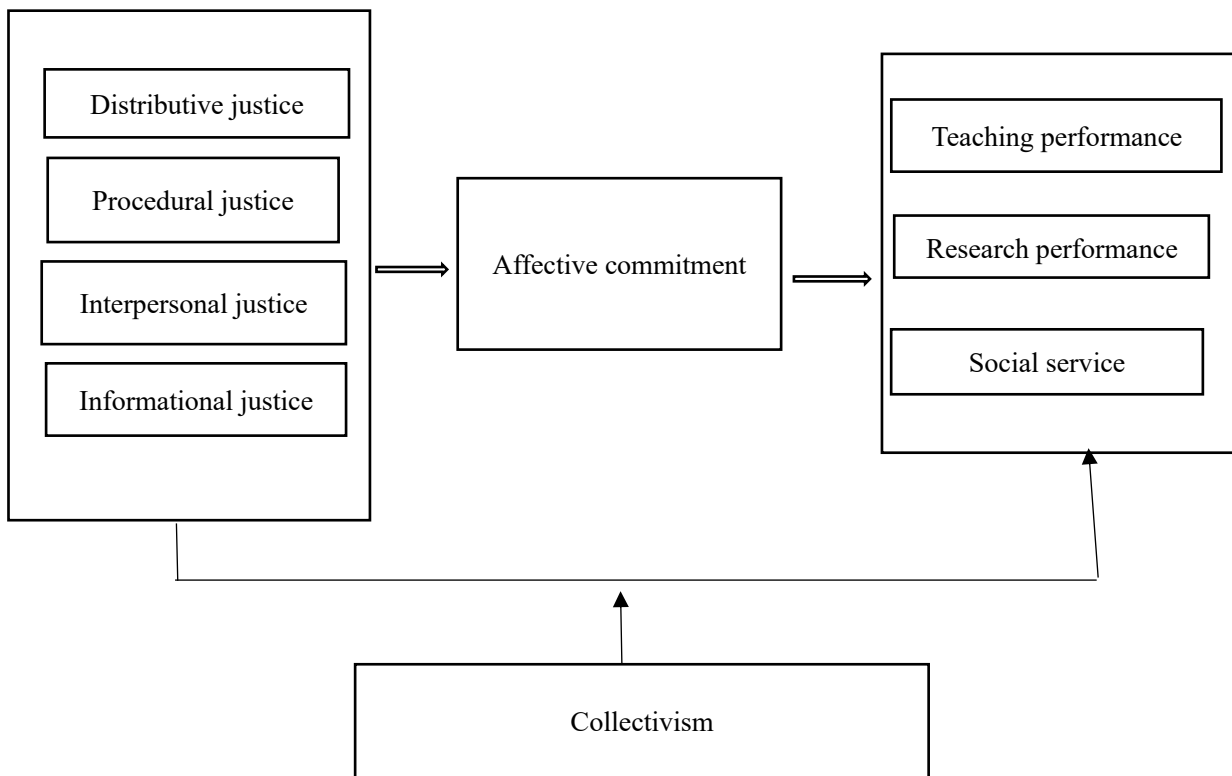
In practice, "Education is the foundation for the development of a nation, the key to education is teacher. "said Deng, Xiaoping, Chief Planner of China's Reform and Opening-up in 1977. China's higher education is mainly based on public university education. Public universities are not only important organizations for cultivating diverse types of senior specialized talents in China, but also important strategic places for rejuvenating the country through science and technology education. Teachers are the most important and core resource of universities, as well as the precious wealth of national higher education. The

progress and development of higher education are inseparable from this group of people with rich knowledge and wisdom (Li, 2014).

Therefore, how to improve the job performance of higher education teachers is related to the quality of higher education and the development and progress of the country. Many scholars have explored how to improve the performance of university teachers by studying the relationships between work pressure (Liu *et al.*, 2020), job satisfaction (Li, Zhang and Su, 2016), occupational well-being (Li, 2018) and university teachers' performance. They have achieved certain outcomes. However, it is rare to discuss how to improve university teachers' job performance from the perspective of organizational justice, which is an important organizational element that affects individual behaviour. Therefore, the research on the mechanism of organizational justice's influence on university teachers' job performance can provide important decision-making references for universities to improve the management practice of teachers' job performance.

2.9.2 Conceptual Framework

Figure 4 Conceptual framework



2.9.3 Hypotheses Summary

Table 7 Hypothesis summary

Number	Hypotheses	Research objectives
<i>H1a</i>	Distributive justice has a positive impact on affective commitment.	To investigate the impact of organizational justice on university teachers' affective commitment
<i>H1b</i>	Procedural justice has a positive impact on affective commitment.	
<i>H1c</i>	Interpersonal justice has a positive impact on affective commitment.	
<i>H1d</i>	Informational justice has a positive impact on affective commitment.	
<i>H2a</i>	Affective commitment has a positive impact on teaching performance.	To examine the impact of affective commitment on university teachers' job performance
<i>H2b</i>	Affective commitment has a positive impact on research performance.	
<i>H2c</i>	Affective commitment has a positive impact on social service performance	
<i>H3-1a</i>	Affective commitment plays a mediating role between distributive justice and teaching performance.	To explore how organizational justice impact university teachers' job performance through mediator-affective commitment
<i>H3-1b</i>	Affective commitment plays a mediating role between distributive justice and research performance.	

<i>H3-1c</i>	Affective commitment plays a mediating role between distributive justice and social service performance.	
<i>H3-2a</i>	Affective commitment plays a mediating role between procedural justice and teaching performance.	
<i>H3-2b</i>	Affective commitment plays a mediating role between procedural justice and research performance.	
<i>H3-2c</i>	Affective commitment plays a mediating role between procedural justice and social service performance.	
<i>H3-3a</i>	Affective commitment plays a mediating role between interpersonal justice and teaching performance.	
<i>H3-3b</i>	Affective commitment plays a mediating role between interpersonal justice and research performance.	
<i>H3-3c</i>	Affective commitment plays a mediating role between interpersonal justice and social service performance.	
<i>H3-4a</i>	Affective commitment plays a mediating role between informational justice and teaching performance.	
<i>H3-4b</i>	Affective commitment plays a mediating role between informational justice and research performance.	
<i>H3-4c</i>	Affective commitment plays a mediating role between informational justice and social service performance.	
<i>H4-1a</i>	Collectivism plays a moderating role between distributive justice and teaching performance.	To evaluate the moderating effect of collectivist value on the relationship of organizational justice and university teachers' job performance
<i>H4-1b</i>	Collectivism plays a moderating role between distributive justice and research performance.	
<i>H4-1c</i>	Collectivism plays a moderating role between distributive justice and social service performance.	
<i>H4-2a</i>	Collectivism plays a moderating role between procedural justice and teaching performance.	
<i>H4-2b</i>	Collectivism plays a moderating role between procedural justice and research performance.	
<i>H4-2c</i>	Collectivism plays a moderating role between procedural justice and social service performance.	
<i>H4-3a</i>	Collectivism plays a moderating role between interpersonal justice and teaching performance.	
<i>H4-3b</i>	Collectivism plays a moderating role between interpersonal justice and research performance.	
<i>H4-3c</i>	Collectivism plays a moderating role between interpersonal justice and social service performance.	

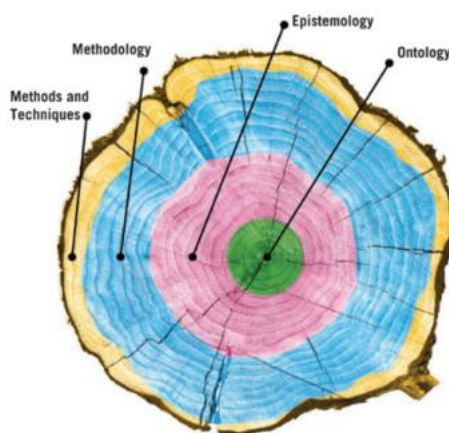
<i>H4-4a</i>	Collectivism plays a moderating role between informational justice and teaching performance.		
<i>H4-4b</i>	Collectivism plays a moderating role between informational justice and research performance.		
<i>H4-4c</i>	Collectivism plays a moderating role between informational justice and social service performance.		
	Hypotheses verification + qualitative exploration		To develop a management framework from the perspective of organisational justice to help Chinese public universities improve their teachers' job performance.

Chapter Three: Research Methodology and Design

3.1 Introduction

Research should not be methodology-oriented, and the choice of methodology should depend on the researcher's philosophical position and the research questions to be investigated (Easterby-Smith, Thorpe and Jackson, 2015). The complexity of the main research question— 'how does organizational justice impact on university teachers' job performance' in this study and a set of assumptions based on the previous literature determine a research philosophy of pragmatism, which underpins the methodological choice of sequential explanatory mixed methods. Proper research strategy, data collection techniques, ethic consideration, and analysis procedures aim to achieve the research objectives are explained in detail as well. The whole research idea and design follows the logic from macro to micro suggested by Saunders, Thornhill and Lewis (2016) and Easterby-Smith et al (2021).

Figure 5 The truck of the tree: ontology, epistemology, and methods and techniques



Source from (Easterby-Smith et al., 2021, p 71)

3.2 Research Philosophy

There is not a best research philosophy suitable for every research question, it depends on the research question and social science phenomenon to be investigated (Saunders, Thornhill and Lewis, 2016). The research philosophy encompasses the realities of the research (ontology) as well as prepositions about human knowledge acquisition (epistemology), which will provide solid logical support for the future methodological choice and research strategy (Creswell, 2014). In order to better address the research question, pragmatism is the best research philosophy choice in this study.

3.2.1 Ontology

Ontology is concerned with the nature of the world (Saunders, Thornhill and Lewis, 2016; Easterby-Smith, Thorpe and Jackson, 2015; Easterby-Smith et al., 2021). According to different views on the nature of reality, there are two opposite positions: realism and nominalism. Realism holds that the nature of reality is objective, which means there is only a single truth. Facts exist objectively and are not subject to human will but can be revealed by human behavior. Nominalism believes that the nature of reality is subjective and irrational, which means there is no truth of reality, facts are all created by human beings (Saunders, Thornhill and Lewis, 2016; Easterby-Smith et al., 2021). Between the two extreme positions, there are two moderate ones: internal realism and relativism. Internal realism insists that truth exists but is obscure. Facts are concrete but cannot be measured easily and precisely. Relativism believes that there are many “truths” from different

perspectives, and facts are defined by different individuals (Easterby-Smith, Thorpe and Jackson, 2015).

Based on the literature review, the relationship between organizational justice and job performance has been revealed in many situations. However, some inconsistent results showed up, especially there were rare research investigating the impact of organizational justice on university teachers' job performance. The known results are not necessarily applicable to the organizational background of the university, because university teachers as knowledge workers have their own uniqueness, which is worthy of deep study. Hence, the ontology of this research is internal realism.

3.2.2 Epistemology

Epistemology is about how human beings explore the nature of the world, that is, how to generate and acquire knowledge (Saunders, Thornhill and Lewis, 2016; Easterby-Smith et al., 2021), which is determined by ontological assumption (Creswell, 2017). Different views on ways of acquiring knowledge generate two opposing positions on how to conduct social science research (research paradigms): positivism and social constructionism (Easterby-Smith, Thorpe and Jackson, 2015), which are also called objectivism and subjectivism (Saunders, Thornhill and Lewis, 2016), or positivism and interpretivism (Myers, 2019).

Ontologically, the positivism is rooted in realism, as in the saying of the nineteenth-century French philosopher Auguste Comte: "All good intellects have repeated, since Bacon's time, that there can be no real knowledge but that which is based on observed facts." The main

philosophical assumptions of positivism in organization and management include: the reality is objective, the researcher should keep independence from what is being investigated; Human beliefs and interests should be avoided; Hypotheses generated from previous studies intend to test the causality between variables; The concepts need to be defined for being measured; Quantitative data selected randomly from large numbers is going to check the statistical probability for theory verification (Easterby-Smith, Thorpe and Jackson, 2015; Myers, 2019). Compared with positivism, social construction is rooted in nominalism ontologically, the main philosophical assumptions of social construction in organization and management include: The researcher is part of what is being studied who cannot be totally independent; Human beliefs, values, and other interests are the driving force for research, especially for social science; Social phenomena are complicated, and it's hard to understand the whole picture just from the causality of predetermined hypothesis; In-depth mining of qualitative data can better reveal the essence and overall picture of social phenomena and generate theory (Saunders, Thornhill and Lewis, 2016; Myers, 2019).

However, the actual organizational behaviour research practice, like this research: the impact of organizational justice on university teachers' job performance. Due to the complexity of the research targets and context, neither quantitative methods based on positivism nor qualitative methods based on social constructionism can explain the intrinsic relationship between organizational justice and job performance of university teachers solely.

3.2.3 Philosophical Choice -Pragmatism

The two opposing positions of epistemology (positivism and social constructionism) have strengths and weaknesses when inquiring into the nature of the world (Kelemen and Rumens, 2012; Creswell and Creswell, 2017; Ishtiaq, 2019). The main strengths of positivist paradigm include: Quantitative research can be economical and efficient; The empirical verification from large samples is generalizable and replicable, which can better convince policy-makers (Easterby-Smith, Thorpe and Jackson, 2015; Creswell, 2021). For weakness, the quantitative methods of the positivist paradigm may generate artificial and irrelevant results, which cannot help policymakers to solve the real problem, and they focus more on the past than on the future, which is not helpful for foreseeing the changes in the future (Terrell, 2012; Almalki, 2016). The strengths of social constructionist paradigm are that it's flexible to adjust to change over time, and the qualitative data is natural and rich which can create deeper insights on social and organizational phenomenon (Myers, 2019). However, the weaknesses of the social constructionist paradigm are also obvious. It's very time-consuming because of the poor control of pace and progress. And policy-makers may not be influenced by apparently 'subjective' opinions easily to some extent (Easterby-Smith, Thorpe and Jackson, 2015).

To avoid the weaknesses of the two opposite positions of epistemology and make the most of their strengths, in recent years, more and more social research, especially for organization and management research, has combined the two traditions in line with pragmatism (Doh, Stumpf and Tymon, 2012). Pragmatism holds that any research should aim at solving real-

world problems, abstract concepts don't make any sense when they are not relevant to real-world practice (Kelemen and Rumens, 2012; Creswell, 2021). For a pragmatist, research is initiated by real doubt and problems, and aims to find out practical and useful solutions that instruct future practice. The values and interests of research is the driving force behind inquiring into the real world flexibly and reflectively, and it will lead to practice guidance and theoretical innovation when the research problem has been solved (Elkjaer and Simpson 2011). As pragmatists focus on practical solutions, not abstract concepts and distinctions, their research will not be restricted by a single subjectivism or objectivism paradigm. The research problem is the lifeline that runs through the entire research, which is the most crucial factor for the research design and strategy. In turn, the research question would be likely to embrace the pragmatist emphasis of practical results (Remenyi *et al.*, 2004; Saunders, Thornhill and Lewis, 2016). Pragmatists believe that there are many different approaches to inquiring, understanding, and conducting research in the real world, that no single extreme worldview can ever outline the entire complete picture, and that there are multiple realities from multiple perspectives (Kelemen and Rumens 2008).

The main research question of this study is how organizational justice impacts on university teachers' job performance, which aims to develop a management framework for universities to enhance the teachers' job performance from the perspective of organizational justice. Based on the existing literature, the positive correlation between organizational justice and job performance has been widely verified in many studies in the context of companies and other economic organizations (Zapata-Phelan *et al.*, 2009; Shan, Ishaq and Shaheen, 2015; Krishnan *et al.*, 2018). However, the existing research findings also showed that the impact

of specific organizational justice dimension on job performance varies in different groups and cultures, and the influencing mechanism is different as well. Individual understanding and perception of organizational justice is quite personal and subjective based on distinct cultural contexts and personal experience. Furthermore, universities as public organizations are much different from pure economic organizations, and university teachers as senior knowledge workers are also distinctive from ordinary employees. Hence, to address this practical research question comprehensively and deeply, a single research paradigm can't fulfil this purpose.

For a pragmatist, “starting with a problem and aiming to contribute practical solutions that inform future practice” (Saunders, Lewis, and Thornhill, 2016, p143). Since subjectivism and objectivism have their advantages and disadvantages, there is no need to waste time arguing about pure philosophical issues and abstract concepts. A researcher should study what he or she is interested in and significant to respond to real-world problems (Saunders, Thornhill, and Lewis, 2016). University teachers as senior knowledge workers, their desire for justice is particularly strong (Wang et al., 2010). If their justice needs are not met, it may have an impact on their affective commitment to university and engagement at work, which in turn has an impact on their job performance, thereby affecting the university's long-term development. The researcher in this study is a university law teacher and a part-time practicing lawyer as well, who is extremely sensitive to fairness issues. At present, there are indeed some unfair and unjust phenomena in public universities (Donglong et al., 2020). Therefore, how to enhance the overall performance of universities by improving

organizational justice to promote teachers' job performance has become a problem that needs urgent research.

The existing research about the relationship between organizational justice and job performance has been traditionally conducted in line with the assumptions of positivism and quantitative methods (Chien et al., 2010; Swalhi, Zgoulli and Hofaidhllaoui, 2017; Diehl, Richter and Sarnecki, 2018). However, positivist research cannot explain the entire picture and different findings well and comprehensively, except for causality. There should be deeper and richer content worth exploring. Therefore, pragmatism is the best philosophical choice for this research, which can provide a mixed research method that focuses on problem-solving and results exploring (Biesta, 2015; Creswell, 2015).

3.3 Methodological Choice- Sequential Explanatory Mixed Methods

Methodology is about how to conduct research in detail on the basis of ontological and epistemological assumptions, including specific research techniques and procedures, such as data collection and data analysis (Antwi and Kasim, 2015; Saunders, Thornhill and Lewis, 2016). Research should not be methodology-oriented, and the choice of methodology should depend on the researcher's philosophical position and the research questions to be investigated (Remenyi *et al.*, 2004; Saunders, Thornhill and Lewis, 2016).

3.3.1 The Definition of Mixed Methods Research

Mixed method research is becoming an attractive and pragmatic research approach in the fields of education, health science, psychology and management in recent years (Johnson, Onwuegbuzie and Turner, 2007; Meissner *et al.*, 2013; Guetterman and Creswell, 2015; Creswell and Clark, 2017), which has been considered the third main research method, alongside quantitative and qualitative methods. The quantitative method is in line with the ontology of realism and the epistemology of positivism. The qualitative method is in line with ontology of nominalism and epistemology of social constructivism (Creswell, 2014; Easterby-Smith, Thorpe and Jackson, 2015). The quantitative method uses questionnaires or surveys to collect data, follows the path of deductive reasoning, and then tests the hypotheses. The qualitative method uses observations or interviews to collect data, follows the inductive approach, and then generates theory (Kelemen and Rumens, 2012; Saunders, Thornhill and Lewis, 2016). At an early stage, there are many different terms used for mixed methods research, such as multiple operationalism, multimethod research, and triangulation (Johnson, Onwuegbuzie and Turner, 2007). Until the beginning of the 20th century, mixed methods research had become the most popular term used to describe the approach of combining of quantitative and qualitative method (Bryman, 2006; Ivankova, Creswell and Stick, 2006). Mixed methods research is in line with the research philosophy of pragmatism to combine quantitative and qualitative methods to collect and analyse data, then integrate the data at one or more phases in the process of a single research project to dig out the entire picture of the research problem (Morgan, Madill and Morgan, 2008; Creswell, 2014).

3.3.2 The Choice of Mixed Methods

‘We see methodologies as tools that will get us somewhere, rather than ends in themselves’(Kelemen and Rumens, 2012, P11). The choice of methodology is determined by the researcher’s philosophical position and the social science phenomenon (research question) to be investigated (Remenyi *et al.*, 2004; Saunders, Thornhill and Lewis, 2016).

The methodological choice of mixed methods in this research is determined by the philosophical choice of pragmatism. As discussed in the research philosophy section, the best philosophical choice to address the research question in this study is pragmatism. Pragmatists avoid pointless debates and arguments about opposing philosophical positions by viewing them as either ends of a continuum, allowing them to choose research methods more flexibly to effectively pursue research objectives (Tashakkori and Teddlie, 2010). For pragmatists, the most important determining factors for an appropriate methodological choice are the research problems, the research context, and research outcomes (Tashakkori and Creswell, 2007). Hence, mixed methods are valued by pragmatists to inquire into the particular nature of the research (Saunders, Thornhill and Lewis, 2016).

First, mixed methods are chosen in this research because they can maximize the strength of both quantitative and qualitative methods and minimize the weaknesses of both approaches. The strength and weaknesses of quantitative and qualitative methods based on the two opposite philosophic positions of positivism and social constructionism have been discussed in the chapter of research philosophy. Mixed methods can obtain two different perspectives

to collect objective data and subjective data to understand the research question and research context more comprehensively and deeply (Easterby-Smith, Thorpe and Jackson, 2015), and the findings of mixed research methods are more convincing (Saunders, Thornhill and Lewis, 2016). Because in mixed method research, preliminary exploration (qualitative research) for individuals can confirm whether the research tools, measurement variables and interventions (quantitative research) used are truly suitable for the research question and research context. In turn, the details of background and personal experience (qualitative research results) will help the researcher better understand and interpret the quantitative research results (Creswell, 2014; Creswell and Creswell, 2017). In short, mixed methods can avoid the subjectivity of qualitative research and the rigidity of quantitative research.

Second, mixed methods are chosen in this research because it is the best approach to answer the research question. The main research question of this study is how organizational justice impacts university teachers' job performance, which aims to develop a management framework for universities to enhance the teachers' job performance from the perspective of organizational justice. Based on the existing literature, the positive correlation between organizational justice and job performance has been widely verified in many studies in the context of companies and other economic organizations (Zapata-Phelan *et al.*, 2009; Shan, Ishaq and Shaheen, 2015; Krishnan *et al.*, 2018). However, many contradictions or incongruent findings in different groups and cultures need to be further explored. Furthermore, the pilot study results have rejected some hypotheses. Individual understanding and perception of organizational justice is quite personal and subjective based on different cultural contexts and personal experience. Hence, to address this practical

research question comprehensively and deeply, a single research approach cannot fulfil this purpose.

Third, mixed methods were chosen in this research because of the researcher's personal experience (Creswell, 2014; Ishtiaq, 2019). The researcher has been trained in systematic qualitative and quantitative research methods at the first stage of doctoral program, and the researcher has a wide range of interests, curiosity, and open mind. In addition, the supervisory team also recommended mixed research methods to better inquiry into the research question.

3.3.3 The Choice of Sequential Explanatory Mixed Methods

According to Creswell's continuous dedication (2003, 2014, 2017) to mixed research methods, there are three main basic types: convergent parallel mixed methods, explanatory sequential mixed methods, and exploratory sequential mixed methods. The other advanced mixed approaches are just integrated into above basic forms.

Convergent parallel mixed methods combine quantitative and qualitative data together to analyse and explain the research problem more comprehensively. In this design, the researcher collects quantitative and qualitative data synchronously and then combines the data to interpret the entire set of results in the round (Creswell, 2014). Sequential explanatory mixed methods are to collect and analyse quantitative data at the first stage and then to collect and analyse qualitative data to further explain the quantitative research results. Exploratory sequential mixed methods' implementation procedures are the opposite of those

of explanatory sequential mixed methods. In this approach, the researcher first conducts qualitative research to gain personal views and experience to develop a better instrument that fit the research object, then turns to the quantitative phase (Creswell, 2014). The sequential explanatory is the most straightforward and popular mixed research method (Morgan, Madill and Morgan, 2008; Creswell, 2014). It includes two phases: the researchers first collect and analyse the quantitative data, then collect and analyse qualitative data based on the initial quantitative results.

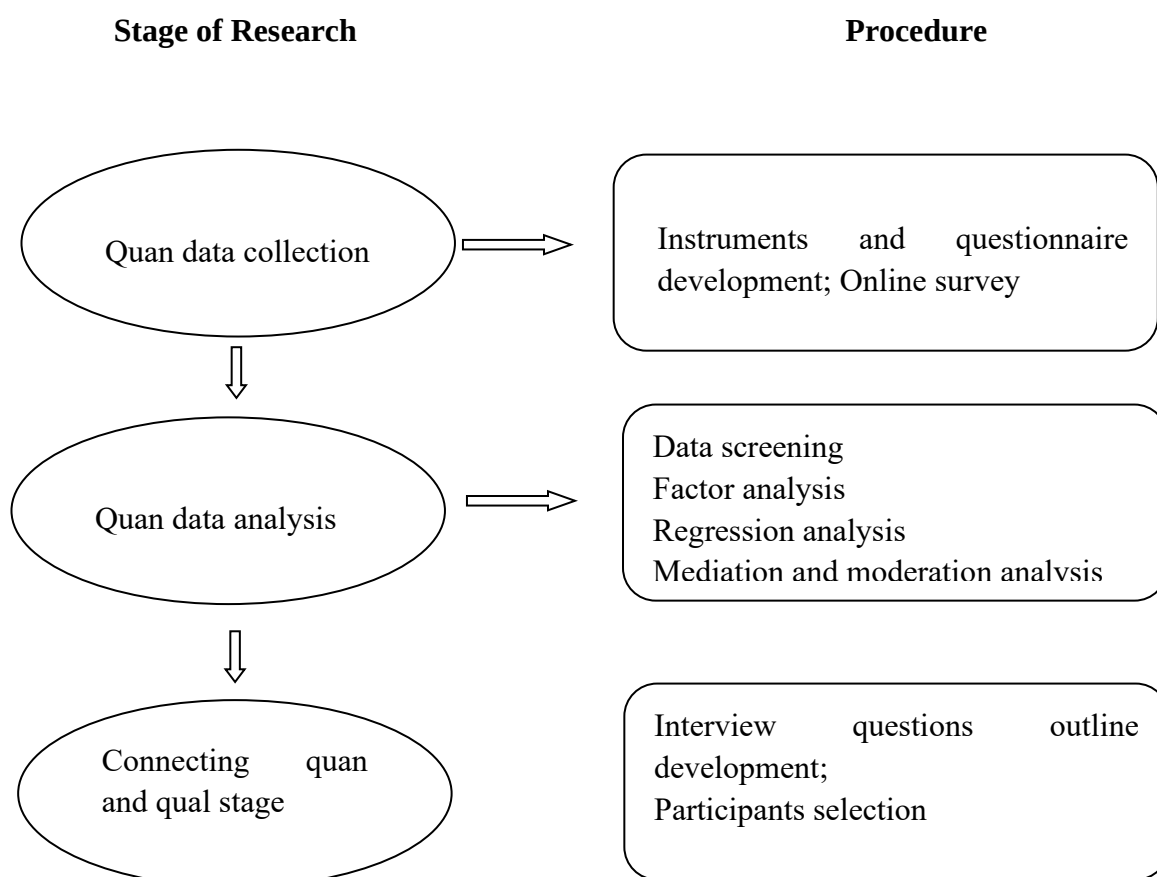
The sequential explanatory strategy is the best choice to investigate the nature of research questions in this study. It can be seen from the literature review chapter that the relationship between organizational justice and job performance already has a large amount of research literature and a theoretical basis suitable for quantitative research. However, when contradictions and inconsistencies in the results of different research with different backgrounds show up, the sequential explanatory strategy can be especially useful when unexpected results arise from a quantitative study (Caruth, 2013; Terrell, 2012). But most previous researchers have just explained it from literature and the researchers' own personal experience (Wang *et al.*, 2010; Swalhi, Zgoulli and Hofaidhllaoui, 2017). It's not enough to address the whole problem properly. Furthermore, there are relatively few studies to investigate the impact mechanism of organizational justice on public university teachers' job performance in the context of China. Therefore, in this study, the quantitative research method is in the first and main position, qualitative research method is supplementary, it is necessary to explore the adaptability of the theory in different groups and cultural backgrounds while verifying the hypotheses.

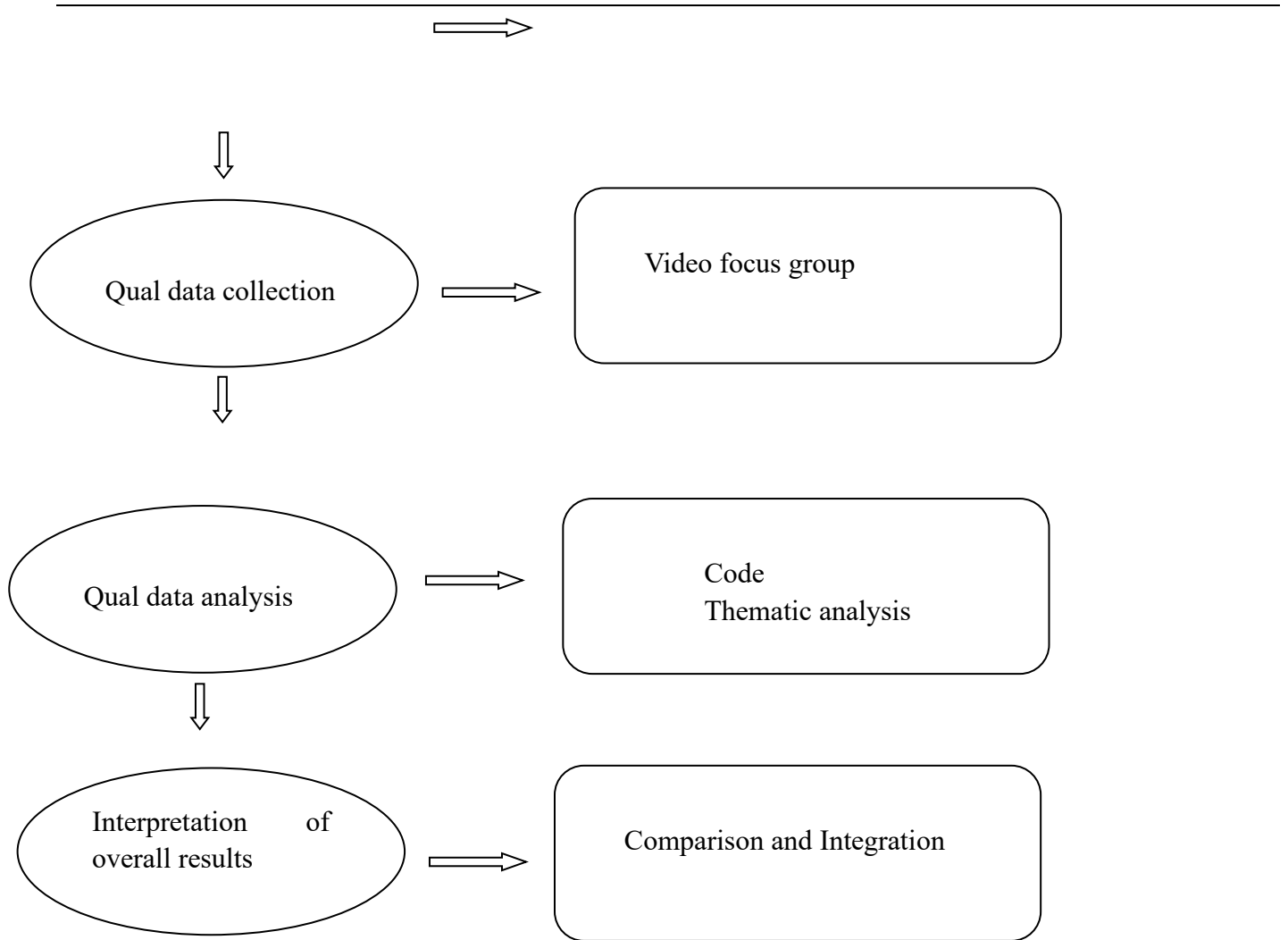
3.3.4 Sequential Explanatory Mixed Methods Design

Sequential explanatory mixed methods have two sequential phases of data collection and analysis. The quantitative stage comes first, and then the qualitative follows based on the initial quantitative results. To address the research question properly, quantitative research methods play a key role in revealing causal relationships between the variables to test hypotheses. The qualitative research methods play a complementary role in interpreting the unexpected results emerging from quantitative research (Creswell, 2014; Mayoh and Onwuegbuzie, 2015; Creswell and Clark, 2017) .

The following is a visual diagram for the sequential explanatory mixed methods applied in this research. Quan is short for quantitative, qual is short for qualitative.

Figure 6 The visible path of the sequential explanatory mixed methods in this study





3.4 Time Horizon- Cross-Sectional

According to the time horizon, the research is divided into two forms: cross-sectional and longitudinal. Cross-sectional research involves the study of a specific phenomenon at a specific time. Longitudinal research involves the study of research objects within a certain period (Thorpe and Jackson, 2015). Cross-sectional research usually uses survey strategies, which are often applied to describe the incidence of a phenomenon or explain the relationship between different factors in different organizations, However, qualitative, or mixed methods research strategies will be applied too. For example, focus group interviews can be conducted in short period of time (Saunders, Thornhill and Lewis, 2016).

This study is to investigate the impact of organizational justice on university teachers' job performance. Cross-sectional research is suitable to address it properly. Furthermore, this research is undertaken for a DBA program with time constraints and no financial support. Therefore, cross-sectional research is the most effective and realistic choice (Saunders, Thornhill and Lewis, 2016).

3.5 Quantitative Approach

3.5.1 Survey as Strategy of Inquiry in This Research

Strategies of inquiry are about where and how to get the data, which has been termed approaches to inquiry (Creswell, 2014). According to Easterby-Smith et al (2015), the main strategies of inquiry in quantitative research are surveys, observations, and secondary data. Observational strategy is applied to view, record, describe, analyse, and interpret people's behaviour (Saunders, Thornhill and Lewis, 2016) which is unusual in business and management research and is only useful in the study of very complex and interactive organizational behaviour, such as team-working and negotiation. The secondary data strategy is to use archival sources of secondary data collected by other people, provided that the data is available and suitable for the research question (Easterby-Smith, Thorpe and Jackson, 2015).

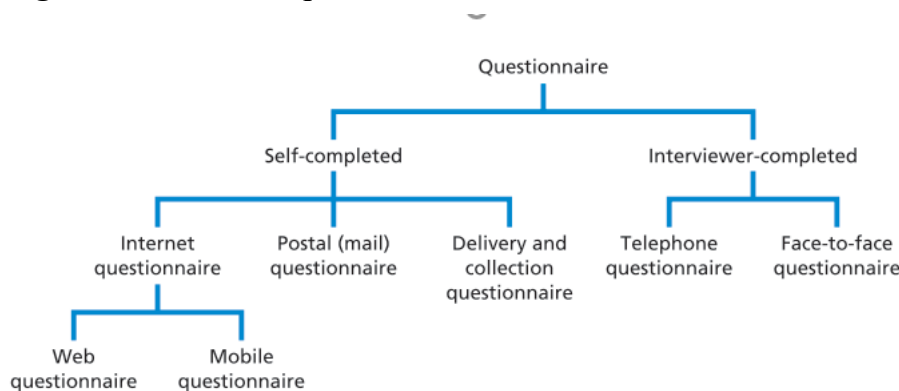
The survey strategy is a very attractive strategy in business and management research and is often used to collect data about the attitudes, opinions, and behaviours of a large number

of people (Easterby-Smith, Thorpe and Jackson, 2015). The research question in this study is how organizational justice impacts the public university teachers' job performance in China. To address this research question, it's necessary to collect the data of university teachers' attitudes and opinions toward organizational justice and their behaviours regarding performance. In addition, the survey strategy is economical, and most people think it is authoritative in general, and it is easier to understand and interpret (Saunders, Thornhill and Lewis, 2016).

3.5.2 Self-completed Questionnaire as form of Survey in This Research

Self-completed questionnaires and interviewer-administered questionnaires as two main types of surveys have been introduced in Easterby-Smith et al.'s book of *Management and Business Research*. The survey strategy, which uses self-completed questionnaires, is popular because it allows standardized data to be collected from large populations in a very economical way so that comparisons can be easily made (Saunders, Thornhill, and Lewis, 2016). Many studies in top journals also used self-completed questionnaires as the predominant method of data collection (Podsakoff, Mackenzie and Podsakoff, 2012).

Figure 7 The kind of questionnaires



(Saunders, Thornhill, and Lewis, 2016, P 440)

This research uses structured and closed ended self-completed questionnaires to collect quantitative data based on these considerations. First, this research attempts to examine the causal relationship between organizational justice and university teachers' job performance to verify hypotheses and explain the impact mechanism, it's an explanatory research which is suitable for questionnaires to collect data (Saunders, Thornhill and Lewis, 2016). Second, this research attempts to collect some sensitive information from participants, such as perceptions of organizational justice, affective commitment to the university they work at, collectivist value, and job performance. When the respondents give answers that they do not want others to know, questionnaires managed by face-to-face interviewers can make them feel embarrassed. However, self-completion questionnaires that can be answered anonymously can avoid such embarrassment, and it is considered a suitable way to collect data on sensitive issues, such as attitudes and personal behaviours (Sekran & Bougie, 2016). Third, the researcher hopes that the data collected will be consistent, which is convenient for analysis. Since the questionnaire can restrict the respondent to only responding to the given alternatives, this provides consistency of the data collected (Saunders, Thornhill and Lewis, 2016). Fourth, using self-completed questionnaires can be a convenient way to collect data from more respondents with limited time and resources (Sekran & Bougie, 2016). The researcher is a university teacher who has personal contact with some teachers in other universities. Therefore, self-completed questionnaires are the most appropriate choice for collecting quantitative data in this study.

3.5.3 Samples Selection

In most research, it's not possible and impractical to collect data from the entire population because of budget and time constraints. Hence it's very necessary to select an appropriate sample, which can speed up data collection and reduce costs (Saunders, Thornhill and Lewis, 2016; Singh and Masuku, 2014). Many researchers have argued that good samples can enable the researcher to answer the research question better (Barnett 2002; Saunders, Thornhill and Lewis, 2016). Because sampling can collect more in-depth details and can save the researcher's time and effort at the stage of collecting data, the researcher can then focus on checking and analysing the data later.

3.5.3.1 Research Target Population and Sampling Framework in This Study

“The sample selected is related to the population that is highlighted in the research question and objectives” (Saunders, Thornhill and Lewis, 2016, p275). It is very important to define the research population properly and clearly when doing research. Population is the totality of subjects under consideration, or the whole interest group. The target population is all subjects in the study that the researcher attempts to generalize the findings from. The research problem of this research is how organizational justice impacts university teachers' job performance and aims to develop a management framework for university teachers' job performance from the perspective of organizational justice. The research target population is public university teachers in Jiangxi province, which is more manageable and easier to access (Saunders, Thornhill and Lewis, 2016). A list of target population is required and important to ensure the sampling frame is complete, accurate, and up to date (Bell, Bryman,

and Harley, 2018).According to the National Bureau of Statistics of the People's Republic of China (<http://data.stats.gov.cn/easyquery.htm?cn=E0103>, in 2021, the number of teachers in public universities in Jiangxi Province was 26732. So, the sampling frame is those teachers in 23 public universities in Jiangxi.

3.5.3.2 Sample Size

When the data can't be collected from the entire target population, there is a need to sample. The sample size is a compromise between sufficient statistical power and the constraints of time and costs (Saunders, Thornhill and Lewis, 2016). Some scholars suggest that the sample size is determined by the number of measurement items, and it is satisfactory that the number of samples is more than 5 times the number of measurement items (Osborne and Costello, 2004).According to Singh and Masuku(2014), there are many ways to determine the sample size: imitate the sample size of authoritative similar researches in top journals, apply wildy used formulas to calculate the sample size. The sample size of researches in most top journals about the relationship between organizational justice and job performance is about 300(Ambrose and Schminke, 2009; Devonish and Greenidge, 2010; Zhang and Buckman, 2014; Swalhi, Zgoulli and Hofaidhllaoui, 2017). According to Saunders et al (2016), there is a formula to calculate the sample size as follows:

Table 8 Sample size for different size of target population at a 95% confidence level

Target population	Margin of error			
	5%	3%	2%	1%
50	44	48	49	50
100	79	91	96	99
150	108	132	141	148
200	132	168	185	196
250	151	203	226	244
300	168	234	267	291
400	196	291	343	384
500	217	340	414	475
750	254	440	571	696
1 000	278	516	706	906
2 000	322	696	1091	1655
5 000	357	879	1622	3288
10 000	370	964	1936	4899
100 000	383	1056	2345	8762
1 000 000	384	1066	2395	9513
10 000 000	384	1067	2400	9595

The target population is 26732, a sample size of more than 383 is appropriate at 95% confidence in this study .

3.5.3.3 Sampling Techniques

Sampling techniques roughly include two main types: probability sampling and non-probability sampling (Easterby-Smith, Thorpe and Jackson, 2015; Saunders, Thornhill and Lewis, 2016). Probability sampling, also known as random sampling, refers to sampling based on the theory of probability and randomness that has the same probability of being selected for each unit in the target population. Non-probability sampling does not strictly follow the principle of random sampling. The investigator selects samples according to his own convenience or subjective judgment (Bell, Bryman, and Harley, 2018).

According to Saunders et al (2016), there are five main probability sampling techniques: simple random, systematic random, stratified random, cluster, and multi-stage. There are four main non-probability sampling techniques: quota sampling, purposive sampling, volunteer sampling, and convenience sampling. Non-probability sampling is easy, low cost, and timesaving. However, because the subjectivity of the sampler cannot be ruled out, and the representativeness of the sample cannot be controlled and objectively measured, the non-probability sample does not have the nature of inferring the population (Bell, Bryman and Harley, 2018). Non-probability sampling is mostly used for exploratory research, preliminary research, and qualitative research (Easterby-Smith, Thorpe and Jackson, 2015). Therefore, the samples for the pilot study were selected through convenience sampling effectively.

Simple random sampling is a sampling method that randomly selects n units from a total of N units so that each possible sample has an equal probability of being selected. System random sampling refers to a sampling technique in which the whole units are sorted according to a certain standard, and then the sample units are randomly selected at a certain interval. Cluster sampling refers to a sampling method that divides the population into several parts according to a certain characteristic, and then each part becomes a group, which selects several groups randomly and selects all the units in these groups. Multi-stage sampling refers to a sampling method in which samples are drawn from the population in two or more stages according to the affiliation or hierarchical relationship of the sampled individuals when selecting samples. Stratified random sampling is a sampling technique in which a target population is first divided into various strata according to a certain standard,

then a sample is drawn from each strata according to the random principle (Saunders, Thornhill and Lewis, 2016).

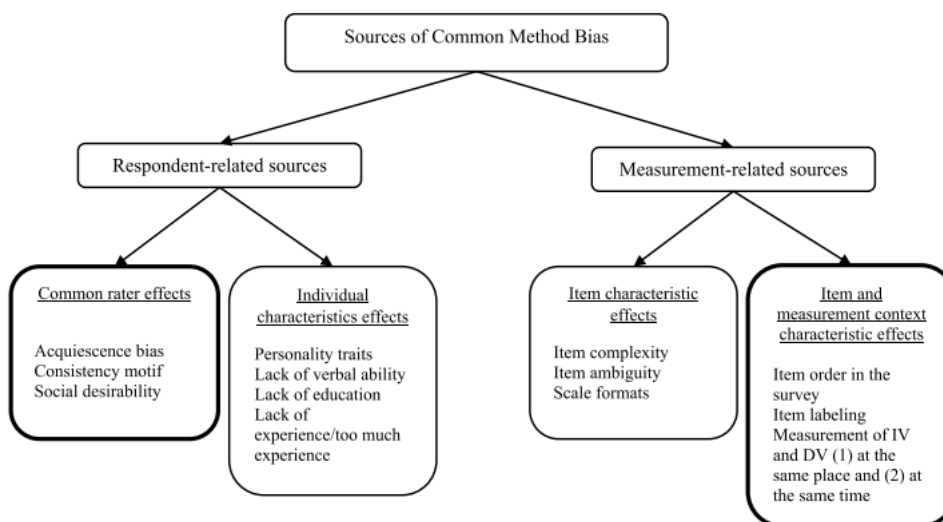
Probability sampling is often used to answer quantitative research questions, while the specific choice of probability sampling technique is influenced by the structure of the sampling frame, the sample size, and the ease with which the technique may be explained to the support workers (Saunders, Thornhill and Lewis, 2016).

To obtain a representative sample in this study, stratified random sampling will be applied. Stratified random sampling is an effective technique to collect data when the target population is heterogeneous. The population is divided into a number of strata, then samples are randomly selected from each strata. The sample size in each strata is different based on the relative significance of that strata in the population. Sampling will then be undertaken separately in each strata (Easterby-Smith, Thorpe and Jackson, 2015). Stratas are selected because it's proved that the stratas are related to the outcome. The choice of strata will be based on the conditions of area, local conditions, time, and costs (Singh and Masuku, 2014). For this study, stratified random sampling is the best choice for sampling. Firstly, the sampling frame is all the teachers from 23 universities, which is already divided into a number of subsets. Each university is a strata. Secondly, the sample size is at least 383 at 95% confidence level. Random sampling from each university is more operational because the researcher has personal contact to assist with the sampling work in some universities. Thirdly, a simple random sampling can be easily explained to the support assistants to conduct the sampling more effectively.

3.5.4 Common Method Bias Control

This study uses self-completed surveys as the method of quantitative data collection, which may bring threats of common method variance and common method bias, thereby affecting the reliability and validity of the empirical results and the covariation between latent constructs (Podsakoff *et al.*, 2003; Podsakoff, Mackenzie and Podsakoff, 2012; Kock, Berbekova and Assaf, 2021). The common method variance is the systematic error variance, which is derived from the common method used to measure the research construct. When common method variance affects the relationship between the measured variables, there is a common method bias (CMB) (Podsakoff, Mackenzie and Podsakoff, 2012). According to Podsakoff, Mackenzie and Podsakoff (2012), there are several sources of CMB in existing literature.

Figure 8 The sources of common method bias



(Source from Podsakoff, Mackenzie and Podsakoff, 2012, P2)

As CMB has negative impacts on research results, several measures have been taken in this study to control the CMB. Firstly, procedural remedies. Implementing procedural remedies

in the very beginning of the questionnaire design is very important and necessary, because only statistical remedies afterwards may be too late and not enough. For this purpose, clear instructions were given on the cover page to guide the respondents to complete the survey (Podsakoff *et al.*, 2003). Fortunately, the respondents in this study are university teachers, who are well-educated; The anonymity of responses is ensured to dispel the respondents' worries about privacy and make true answers (Podsakoff, Mackenzie and Podsakoff, 2012); The items were revised many times based on the advice from experts to make sure they are simple, clear, and concise for easy understanding. For example, jargon, colloquialisms, and leading questions were avoided (Easterby-Smith, Thorpe and Jackson, 2015); all the variables in the questionnaire were dispersed and the title of each variable was removed from the questionnaire design to avoid respondents' perception of any connection between the variables and to avoid the respondents' being implied by the title and having preconceived ideas, then fill in the answers with high consistency in order to meet the expectations of the investigators. At last, a pilot study was conducted to adjust to the problems that emerged (Kock, Berbekova and Assaf, 2021). Secondly, statistical remedies. Harman's single factor test is the most popular technique to detect common method bias (Fuller *et al.*, 2016; Podsakoff *et al.*, 2003). Exploratory and confirmatory factor analysis are employed at the stage of data analysis to detect common method bias in this study (Podsakoff, Mackenzie and Podsakoff, 2012).

3.5.5 Measurement Scales

Most of the measurement scales used in this study are derived from the existing literature, and a few are created by the researcher based on the related theories and combined with the

specific Chinese context. There are four main variables in this study: independent variable-organizational justice, dependent variable-university teachers' job performance, mediating variable-affective commitment, and moderate variable- collectivism. The measurement scales use a Likert five-point scale ranging from "1= strongly disagree" to "5 = strongly agree". In addition, the demographic characteristics of the respondents are also used in the questionnaire.

3.5.5.1 Independent Variable: Organizational Justice

The scale of organizational justice dimensions developed by (Colquitt, 2001) has been most frequently cited (Silva and Caetano, 2016). For example, Minibas-poussard and Roy's (2017) study used this scale to measure interactional justice. In a study of explaining the relationship between justice and performance, Colquitt et al.(2012) used Colquitt's (2001) scales to measure justice dimensions. They found the coefficient alpha for procedural justice was 0.90, the interactional justice was 0.95, and the distributive justice was 0.96. In an exploratory research of organizational justice measurement invariance across thirteen cultures, including Chinese culture, it was proved that the perceptions of organizational justice were universal. Colquitt's (2001) four- dimensional organizational justice model worked well across the samples in different cultures, which has been proved by the results of confirmatory factor analysis and multigroup analysis. Guo and Giacobbe-Miller(2015) analysed the concept and dimensions of the organizational justice construct in China and found that the conceptualization of organizational justice in the West and China shared a lot of similarities. However, it also revealed an important exception: in China, justice concepts and management practices are influenced by specific circumstances, social relations,

cultural values, and institutional environment. In particular, the perception of organizational justice is based on social comparisons between individuals. Based on the above considerations, to improve the application of Colquitt's (2001) four-dimensional organizational justice in China, some items have been revised and added. For example, whether the outcome is justified, given the education, training, work experience, and qualifications the university teachers' have gotten. Whether the outcome is fair, compared with other teachers in the same university or other universities and the administrative staff in the same university. These self-created items are not only derived from existing literature, but also consulted by university teachers and experts on organizational justice. The scale of overall justice used in this study was developed by Ambrose and Schminke (2009), which is also the most cited scale to measure overall justice in recent years, Aryee *et al.*(2015) studied the influence of overall justice on job performance, and applied Ambrose and Schminke's (2009) scale, the alpha reliability in that study was 0.87.

Table 9 Scales of organizational justice

Constructs	Items	Source
Distributive justice	My outcome reflects the effort I have put into my work.	(Colquitt, 2001)
	My outcome is appropriate for the work I have completed.	
	My outcome reflects what I have contributed to this university.	
	My outcome is justified, given my performance	
	My outcome is justified, given my education and training.	Self-created based on relative deprivation theory (Smith, Pettigrew, 2015) and the meaning of organizational justice in China (Guo, and
	My outcome is justified, given my work experience and qualifications.	
	My outcome is justified compared with other teachers in the same university who do similar jobs.	
	My outcome is justified compared with the administrative staff of this university.	
	My outcome is justified compared with teachers from other universities of the same type and level.	

		Giacobbe-Miller, 2015)
Procedural justice	I have been able to express my views and feelings during those procedures. I have influence over the (outcome) arrived at by those procedures. I have those procedures been applied consistently. Those procedures have been free of bias. Those procedures have been based on accurate information. I have been able to appeal the (outcome) arrived at by those procedures. Those procedures have upheld ethical and moral standards.	(Colquitt, 2001)
Interpersonal justice	(He/She) has treated me in a polite manner. (He/She) refers to the authority figure who enacted the procedure). (He/She) has treated me with dignity. (He/She) has treated me with respect. (He/She) has refrained from improper remarks or comments. (He/She) has a harmonious relationship with me, expressed concern for me and provided the needed help. (He/She) has valued my rights as a university teacher.	(Colquitt, 2001) Self-created based on (Guo, and Giacobbe-Miller, 2015)
Informational justice	(He/She) has been candid in (his/her) communications with me. (He/She) has explained the procedures thoroughly. (His/Her) explanations were regarding the procedures reasonable. (He/She) has communicated details in a timely manner. (He/She) has seemed to tailor (his/her) communications to individuals' specific needs.	(Colquitt, 2001)
Overall justice	Overall, I'm treated fairly by my university. Usually, the way things work in this university are not fair. In general, I can count on this university to be fair. In general, the treatment I receive around here is fair. For the most part, this university treats its teachers fairly. Most of the teachers who work here would say they are often treated unfairly.	(Ambrose and Schminke, 2009)

Self-report measures of organizational justice are applied since the difference in the objective qualities of treatment can be truly seized by subjective evaluation (Colquitt *et al.*,

2012). There are three types of evidence to support this argument. Firstly, a strong relationship between objective manipulations of justice concepts and self-reported manipulation checks has been shown in previous laboratory studies (Cremer and Tyler, 2007; Lavelle, Rupp and Brockner, 2007). Secondly, the relationship between justice and its outcomes assessed by self-reported justice measures in field studies and by manipulated justice in laboratory studies were very similar in the meta-analysis (Cohen-Charash and Spector, 2001). Finally, research on the atmosphere of justice shows that multiple employees in the work unit have similar evaluations of how their supervisor or organization treats the work unit (Naumann and Bennett, 2002). In view of the above arguments, self-reported responses are appropriate to measure university teachers' organizational justice perceptions in this study.

3.5.5.2 Dependent Variable: University Teachers' Job Performance

The three-dimensional job performance (teaching, research, social service) is the core content of university teacher job performance, which is also consistent with the overall organizational goals of the university (Narasuci, Setiawan and Noermijati, 2018). The job performance of university teachers in this study will be measured from the perspectives of teaching, research, and social service in the context of Chinese higher education. The items of teaching and research performance are from Chen, Li and Wang (2016), which has been developed based on previous studies and has good reliability and validity. The items of social service are from Chen and Liu (2016) and Liao, Li and He (2016). These items have been applied in Liao, Li and Qu's (2017) study on the relationship between university

teachers' individual accountability behaviour and job performance, and the Cronbach's α coefficients of the three dimensions are all greater than 0.8.

Table 10 Scales of university teachers' job performance

Constructs	Items	Source
Teaching performance	I prepare the lesson carefully and am familiar with the content of the lesson. I continue to improve teaching methods to enhance teaching effects. I take the initiative to enrich the course content, use advanced teaching materials to explain the frontier new trends of the subject and connect with reality to ensure the quality of teaching. I try my best to fully mobilize students' learning enthusiasm and improve the effect of classroom learning. I am good at discerning the new direction of the subject and actively constructing new courses. I often overcomplete the teaching tasks set by the university. My "Student Evaluation for Teaching" score is high.	Chen, Li and Wang(2016)
Research performance	I often attend academic conferences at home and abroad for scientific exchange. I actively carry out research work and have a considerable number of high-level papers or works. I devote a lot of energy to scientific research and get high-level awards for scientific research achievements. I try to make the scientific research achievements have good social application prospects and economic benefits. I actively apply for scientific research projects, and the number and level of scientific research projects exceeded the average. I try my best to apply cutting-edge academic theories, technologies, and methods to scientific research.	Chen, Li and Wang(2016)
Service to community	I actively participate in other work of serving university and community. I often participate in technical exchange or management consulting activities of enterprises. I often preside over or participate in horizontal projects of enterprises. Undertake some production, teaching and research projects or offer lectures and training often. I have served the government, corporates, and other NGOs in recent years.	Chen and Liu(2016)and Liao, Li and He(2016)

Although self-report bias may be a threat to the validity of the research in some ways (Donaldson and Grant-vallone, 2002), measures for controlling self-report bias have been

discussed in the part of common method bias control. Besides, self-report scales will be applied to measure the university teachers' job performance in this study for these reasons. Firstly, university teachers, as senior knowledge workers, the nature of their job performance (intangibility and complexity) determines that it is difficult to evaluate the job performance of university teachers objectively and quantitatively (Iazzolino and Laise, 2018). Secondly, studies have shown that self-reports should not be automatically assumed to be the inferior source of data in organizational behaviour research, and the argument that colleagues' or supervisors' reports must be better than self-reports is suspicious (Donaldson and Grant-vallone, 2002), because the co-workers' or supervisors' reports are also based on their subjective judgements, which also don't meet the objective criteria (Hu and Mo, 2004; Ramos-Villagrasa et al., 2019). Finally, it's shown that an individual can observe and appraise his/her own performance better than co-workers or supervisors because self-appraisals are less affected by halo effects (Fox and Dinur, 1988; Koopmans *et al.*, 2013; Ramos-Villagrasa *et al.*, 2019).

3.5.5.3 Mediating Variable: Affective Commitment

Affective commitment refers to the emotional attachment to the organization, which implies that employees love to stay, also called attitudinal commitment (Meyer & Allen, 1991). The scale of affective commitment developed by Allen and Meyer (1990, 1993) with 6 items will be applied in this study. It is a widely cited and influential scale of affective commitment. Ditlev and Simonsen (2015) studied the relationship between employees' perception of corporate social responsibility and affective commitment in Norway and Sweden, the scales

of affective commitment developed by Allen and Meyer, with a Cronbach alpha of .851. The measurements of affective commitment in a study to examine the mediating effect of affective commitment between workplace incivility and organizational citizenship behavior in China (Liu, Zhou and Che, 2019) was from Allen and Meyer (1993) too, the Cronbach's α coefficients was .96. A lot of evidence has also showed in the literature review part (Kim, 2014; Jayasingam, Govindasamy and Garib Singh, 2016; Naim and Lenka, 2017; Haque, Fernando and Caputi, 2019), the scales of affective commitment developed by Allen and Meyer (1990, 1993) are very appropriate to measure the teachers' affective commitment to university.

Table 11 Scales of affective commitment

Construct	Items
Affective commitment	I would be very happy to spend the rest of my career with this university. (Allen and Meyer, 1990; Meyer and Allen, 1993; Allen <i>et al.</i>, 1996) I really feel as if this university's problems are my own. I do not feel a strong sense of belonging to my university. I do not feel emotionally attached to this university. I do not feel like part of the family at my university. This university has a great deal of personal meaning for me.

3.5.5.4 Moderate Variable: Collectivism

In China, the organization is often taken as an in-group. For collectivistic individuals who take the organization as an in-group, they will feel that they have to follow the performance standards set by the organization, regardless of their individual perception of organizational justice (Francesco and Chen, 2004). According to the model of horizontal and vertical dimensions of individualism and collectivism (Singelis *et al.*, 1995; Triandis and Gelfand, 1998), the collectivism in China is horizontal collectivism (HC), which emphasizes

common goals and sociality but does not easily obey authority, especially for knowledge workers (Triandis and Gelfand, 1998). Therefore, the scale of HC from Singelis *et al*, (1995) will be applied to measure the collectivist value of university teachers in this study. A study to examine the moderating effects of collectivism on the relationship between organizational commitment and employee job performance in China (Francesco and Chen, 2004) has used the scales of HC from Singelis *et al*, (1995) and showed good reliability with alpha 0.75. Vargas and Kimmelmeier(2013) also used the four dimensional individualism and collectivism scale developed by Singelis *et al* (1995) to investigate the horizontal-vertical individualism-collectivism in the context of ethnicity and contemporary American culture.

Table 12 Scales of collectivism

Construct	Items	Source
Collectivism	The well-being of my coworkers is important to me If a coworker gets a prize, I will feel proud. If a relative were in financial difficulty, I would help within my means. It is important to maintain harmony within my group. I like sharing little things with my neighbors. I feel good when I cooperate with others. My happiness depends very much on the happiness of those around me. To me, pleasure is spending time with others.	Singelis, Triandis, Bhawuk, and Gelfand (1995)

3.5.5.5 Control Variables

The inclusion or exclusion of control variables and the process implemented to make these decisions have an important impact on the substantive research conclusions(Bernerth and Aguinis, 2016). In this study, demographic variables will be used as control variables due to theoretical and practical considerations. Bernerth and Aguinis (2016) have done a critical review of control variable usage in ten of the most popular research domains of organizational research, including organizational justice, organizational commitment, and

task performance. It's found that gender, tenure, age, and education-related controls are the most frequently used control variables in organizational research in recent years.

It's empirically proven that demographic characteristics, such as gender, tenure, and age, might impact on treatment and judgement of organizational justice because of self-interest, or egocentric bias (Kulik, Lind and Maccoun, 1996; Cohen-Charash and Spector, 2001; Caleo, 2016 ;Jayasingam, Govindasamy and Garib Singh, 2016). Except for the above demographic characteristics, taking into account the characteristics of the work of university teachers, many studies about university teachers include control variables: education level and title (Jyoti and Bhau, 2016; Tahir, Haming and Bijaang, 2017). Therefore, gender, age, education level, and title will be selected as control variables in this study.

All the English scales have been translated into Chinese since the respondents are Chinese university teachers. Fortunately, there are already many authoritative related Chinese versions, such as scales of organizational justice (Chen and Liu, 2016; Jin, 2018), affective commitment (Yu, 2013; Lv, 2017) and collectivism (Wang and Shi, 2003; Huang, Abela and Leibovitch, 2014). The scales of this study are formed based on the mature Chinese scales translated and verified by previous researchers, and combined with the specific situation of university teachers, and have been reviewed and corrected by English experts and organizational behaviour experts.

3.5.6 Pilot Study

In order to improve the reliability and content validity of the questionnaire, it is indispensable to conduct a pilot test before data collection (Creswell and Creswell, 2017;Saunders, Thornhill and Lewis, 2016). A pilot study provides a good opportunity to identify and eliminate potential problems in advance. Saunders, Thornhill, and Lewis (2016) suggested asking experts for comments on the representativeness and suitability of the questions to improve the content validity. Therefore, two experts in organizational behaviour from the Economic and Management Department at Jiujiang university, where the researcher works, were asked to give their comments on the questionnaire initially. The revised questionnaire based on expert opinions was then distributed to 104 colleagues (all university teachers) based on convenience sampling techniques (Saunders, Thornhill, and Lewis, 2016) applicable to doing pilot exploratory research. Finally, pilot data was analysed to check whether the research questions could be answered. The list of all feedback and adjustments is as follows:

Table 13 Feedback and adjustment of the pilot study

Feedback from experts	Adjustments
It was suggested that the scales of Chinese version translated from English should be given more context information about this study.	The scales of the Chinese version were amended accordingly.
It was suggested that “outcome” in distributive and procedural justice should be explained in detail, such as income, bonus, and promotion, which are familiar to university teachers.	The introductory sentences of the distributive and procedural justice scales were amended accordingly.
It was suggested that individual organizational justice perceptions are influenced by social comparisons in China,	Items like “Whether the outcome is fair, compared with other teachers in the same university or other universities and the administrative staff in the same university” were added.

items reflecting Chinese unique culture and context should be included.	
It was suggested that the time to complete the questionnaire be given so that the respondents have psychological expectations so that they can fill it out patiently.	“This questionnaire may take you about 15 minutes” was added.
Feedback from respondents	Adjustments
Too many questions	Only scales of affective commitment were left, scales of normative affective and continuous commitment were cancelled accordingly.
It's better to put the demographic questions at the end of the questionnaire.	It's amended accordingly.
Some expressions can be clearer and more concise.	The items were amended accordingly.
Feedback from pilot study data analysis	Adjustments
The constructs of overall justice and procedural justice overlapped.	The construct of overall justice will be deleted.
The three dimensions of organizational commitment were not clearly distinguished, especially for normative commitment and continuous commitment.	Only affective commitment left to be discussed.

3.5.7 Data Collection and Analysis Strategy

3.5.7.1 Data collection strategy

This data collection uses "questionnaire stars" (<http://www.sojump.com/>), which is one of the most popular questionnaire collection websites in China, to disseminate and fill in the questionnaires and collect information. The questionnaires in the Chinese version are disseminated through multiple channels, such as WeChat, QQ, and email. The researcher is a law teacher at a university. Because of the conferences and forums she has participated in in recent years, she has contact with some teachers from other universities in Jiangxi. Therefore, an assistant can be found to help distribute the questionnaire at each university. Finally, ten teachers from ten universities agreed to help at last. Initially, the assistants will be instructed to distribute the questionnaire and select samples randomly. A nice cover letter

is used to help explain the purpose of the investigation as well as informed the confidentiality and privacy protection (Creswell and Creswell, 2017;Saunders, Thornhill and Lewis, 2016). The whole data collection lasted for more than 2 months, from the beginning of August ,2021 to the middle of October, 2021. 601 questionnaires were were returned at last.

3.5.7.2 Quantitative data analysis strategies

Before formal data analysis, the data will be refined by managing missing values, unengaged responses, and outliers. Then normal distribution and common method bias will be assessed to decide further data analysis method. Through EFA and CFA, the scales used in this research to collect data can be proved to have good reliability and validity. An independent samples T-test and one-way ANOVA will be used to make a judgment on how demographic variables affect the main variables studied in this study. Finally, hypotheses of direct relationships between variables will be tested by hierarchical regression, and hypotheses of mediation and moderation will be tested by model 5 of Process v3.3, developed by Hayes.

Table 14 Quantitative data analysis plan

Step	Analysis	Tool
1.Data preprocessing	Missing data, ungagged response, outliers, normality.	SPSS
2.Reliability and validity analysis	Exploratory factor analysis, confirmatory factor analysis. Harman's single factor analysis.	AMOS SPSS
3.Descriptive statistics analysis	Demographic characteristics of the sample	SPSS
4.Correlation analysis	Pearson	SPSS
5. Control variable effects	Independent samples t-test and one-way ANOVA	SPSS

6.Hypotheses test	Multicollinearity	SPSS
	Multiple linear regression analysis	
	Mediation analysis	Hayes'
	Moderation analysis	process macro

3.6 Qualitative Approach

There are some limitations to using quantitative methods to explain the impact of organizational justice on the job performance of university teachers. Because of the different cultural backgrounds and personal experiences, their understanding and perception of organizational justice are, to some extent, personal and subjective (Rupp, 2011). To help explain and explore the results and new issues presented in the first phase of quantitative analysis, qualitative research methods will be supplemented (Ivankova, Creswell and Stick, 2006; Tashakkori and Creswell, 2007).

3.6.1 Focus Group Interview as Strategy of Inquiry

A focus group is a form of interview method, it's a small group discussion in a structured and organized way with a facilitator present to keep the discussion focused for in-depth and useful insights on a specific topic (Powell and Single, 1996;Guo and Giacobbe-Miller, 2015). In the past few decades, the use of focus group discussions in qualitative research has been increasing, both in academia and applied research (Gundumogula, 2020). The experience of conducting focus group interviews shows that smaller groups are easier to manage, and groups composed of strangers need more facilitator intervention. However, as a strategy of qualitative data collection, focus group interviews are a rich source of information that is less costly and less time-consuming (Mclafferty and Mclafferty, 2004; Tracy, 2013). In a

phenomenon known as the "group effect" (Carey, 1994), focus group participants are more likely to open and generate insightful self-disclosure when interacting with other people similar to them. This is difficult to do in one-on-one interviews. Unexpected discoveries can be generated from free group discussions sometimes (Saunders, Lewis and Thornhill, 2016). Therefore, focus groups can effectively explore emotional experiences and allow participants to take part in discussions more relaxedly (Qu and Dumay, 2011), which is very suitable for implicit and introverted Chinese in this study.

3.6.2 Participants

Regarding the number of participants in a focus group, most researchers believe that a minimum of three and a maximum of twelve are reasonable (Tracy, 2013; Gundumogula, 2020). Too few participants are not conducive to obtaining enough in-depth information. But when there are more than twelve participants, it is difficult to maintain the focus and thoroughness of the discussion. Therefore, to conduct a focused and thorough discussion, eight participants will be carefully selected in this study.

It's very crucial to select the right participants for a focus group. The demographic factors should be considered to make the sample representative. In addition, participants should have experience and interest in specific topics and be willing to contribute information to the discussion (Tracy, 2013; Gundumogula, 2020). Because the qualitative research is based on the results of quantitative research, according to the sequential explanatory mixed method, the participants should be selected among quantitative respondents. Due to confidentiality and privacy protection considerations, the personal information of respondents from other

universities has not been kept. Fortunately, the researcher is a teacher at a university, and it is convenient to invite some colleagues who have completed the questionnaire survey to participate in the focus group interview. To ensure the sample representative and interest in the topic, participants were individually invited on purpose by phone and informed in advance of the research topic and purpose by email, meanwhile, they were also informed of the anonymity and confidentiality. In the last, except some refuse because of busy work or other considerations, eight teachers agreed to participate, their demographic characteristics are very representative, and they have good ability and interest to take part in this activity.

Table 15 Participants of focus group

Participant	Gender	Age	Educational level	Title
1	Female	27	Master	Assistant
2	Female	35	Doctor	Lecturer
3	Female	43	Doctor	Associate professor
4	Female	50	Master	Professor
5	Male	29	Doctor	lecture
6	Male	35	Doctor	lecturer
7	Male	45	Doctor	Professor
8	Male	54	Master	Associate professor

3.6.3 Interview Design

A semi-structured interview is a form of interview in which only a few predetermined questions are asked by the interviewer and the interviewees can discuss freely the guide, which is the most popular of all qualitative research techniques (Qu and Dumay, 2011). For these reasons, a semi-structured focus group interview will be used in this study. First, the research topic is the impact of organizational justice perception on university teachers' job performance. It is about people's perceptions of justice. According to Barriball & While (1994), the semi-structured interview is suitable for studying people's perceptions, opinions, and sensitive issues. In a semi-structured interview, it's possible to focus on the issues that

are meaningful for the participants, allowing diverse perceptions to be expressed (Cridland et al. 2015; H *et al.*, 2016). Second, the first phase of quantitative research has gained a comprehensive and adequate understanding of the research questions, the previous knowledge can help formulate a good semi-structured interview guide (H *et al.*, 2016).

The semi-structured interview guide is to be determined based on the results of quantitative research. Because the sequential explanatory strategy can help explore the adaptability of the theory in different groups and cultural backgrounds while verifying the hypotheses (Creswell, 2014). And it can be especially useful when unexpected results arise from a quantitative study (Caruth, 2013; Terrell, 2012). There are indeed some unexpected and interesting quantitative results that have emerged. This part will be elaborated on in the qualitative data analysis chapter to make the qualitative analysis more coherent.

3.6.4 Data Collection and Analysis Strategy

Considering the current epidemic situation, the focus group interview will be conducted through video conference (WeChat group), which also provides greater flexibility for time and place arrangements. Another advantage of an audiovisual focus group is greater participation of diverse people (Flynn, Albrecht and Scott, 2018). The online focus group interview will last approximately 2 hours, as suggested by Longhurst, R. (2003) to ensure that the interviewees are focused, and the discussion is effective. The confidentiality and privacy of participants will be well protected, and informed consent will be issued. At the beginning, a warm-up introduction of the researcher and the purpose of the interview will be conducted. The researcher is a university teacher, a part-time lawyer, and has rich

experience in organizing discussions. The whole discussion will be conducted in Mandarin. With the permission of the participants, it will be recorded for further data analysis and promised to be used only for this research and not be open to any third parties.

Thematic analysis is a widely used qualitative analytic method for “identifying, analysing, and reporting patterns (themes) within data” (Braun and Clarke, 2006,p79) in social science research (Liamputtong, 2009). Following the recommendations of Braun and Clarke (2006), five steps will be used to analyse qualitative data in this study. First, transcribe the data from audio to text and from Chinese to English, get familiar with the data, and note down initial ideas. Second, generate initial codes across the whole data set, sort out data relevant to each code. Third, search for potential themes, sorting out the data relevant to each potential theme. Fourth, review themes, check whether the themes are related to the code extraction and the whole data set, and generate a thematic "map" for analysis. Finally, define and name the themes, then discuss the quantitative results together.

The qualitative research method is only a supplementary method to this study to find out the reasons for some unexpected results in the quantitative research. The number of participants in the focus group interview is only eight, and the interview content is not too difficult to manage. So the computer-assisted programs for qualitative data analysis will not be applied since the programs can't analyse the data automatically, which just helps do all the jobs faster (Liamputtong, 2009).

3.7 Ethic Consideration

Research ethics refers to the behavioural standards that guide the behaviour of researchers, involving the rights of the participants or people or organizations affected by the research (Saunders, Thornhill and Lewis, 2016). There are two major forms of research ethics: procedural ethics and ethics in practice. The former is about seeking approval from a relevant ethics committee to conduct research properly. The latter is about ethical issues that need to be paid attention to in the process of conducting research (Guillemin and Gillam, 2004).

Prior to the start of any research, the ethical approval of the Research Ethics Committee at UWTSD has been obtained. The ethical policy of the Research Integrity and Ethics Code of Practice of the University of Wales Trinity St. David has been strictly followed during the research period. The dignity of research participants is fully respected and no harm comes to any participant (Easterby-Smith, Thorpe and Jackson, 2015). First, a fully informed consent of all participants is ensured (Saunders, Thornhill and Lewis, 2016). There is a brief overview and consent notice related to this research on the first page of the e-questionnaire. Participants can only continue the survey after reading it and expressing their consent. Participants have the right to quit at any time during the survey. The participants of the focus group are also informed of the purpose of the research and related rights. Second, the privacy and anonymity of all participants and universities is well protected. The data of all respondents in this study is anonymous and will not be disclosed to any third party. When presenting research results in any way, the code numbers will replace the real names. Third,

the confidentiality of research data is fully ensured (Easterby-Smith, Thorpe and Jackson, 2015). All the data collected and stored in a password-protected personal computer of the researcher will be used only for research purposes. In addition, misleading or false reporting of research results is strictly avoided.

3.8 Conclusion

Doing research is like peeling an onion. Starting from a macro philosophical foundation, proceeding layer by layer, and finally focusing on specific research strategies and methods at the micro level, in order to finally solve research problems and achieve research objectives (Saunders, Thornhill and Lewis, 2016). The complexity of the research problem “how organizational justice impacts on university teachers’ job performance” is consistent with the viewpoint of pragmatism. Pragmatism is not only a philosophical position, but also a set of philosophical tools which can be applied to deal with complex real problems (Easterby-Smith et al, 2021). The methodological choice of sequential explanatory mixed research methods is used to make full use of quantitative and qualitative research methods to answer the research questions (Creswell and Clark, 2017). The quantitative method of a questionnaire survey is used to examine the hypotheses generated from the previous literature about organizational justice and job performance. The qualitative method of focus group interview is used to further explore the quantitative research results. When conducting data collection, ethical issues should be considered to ensure the confidentiality, dignity, and privacy protection of participants and the integrity and objectivity of the research results.

Chapter Four: Quantitative Data Analysis and Results

4.1 Introduction

Before formal data analysis, the data has been refined by managing missing values, unengaged responses, and outliers. Then, to determine the next data analysis method, the normal distribution and common method bias were tested. Through item analysis, EFA and CFA, the scales used in this research to collect data, have been proved to have good reliability and validity. Independent samples T-test and one-way ANOVA were used to make a judgment on how demographic variables affect the main variables studied in this study. Finally, hypotheses of direct relationships between variables have been tested by hierarchical regression with SPSS, and hypotheses of mediation and moderation have been tested with model 5 of Process v3.3 developed by Hayes.

4.2 Data Preprocessing

There is a Chinese proverb that says, “Sharpening your axe will not delay your job of cutting wood.” Data preprocessing before formal data analysis is like the foundational construction of a building. Whether the foundation is solid or not will affect the quality of subsequent projects. Therefore, to improve the validity and accuracy of data analysis results, it is essential to carry out thorough and good data preprocessing (Wen, Huang and Tang, 2018). In this part, missing value, unengaged responses, and outliers will be handled at the beginning, then normal distribution, and common method bias will be tested.

4.2.1 Missing Value Handling

Missing values may affect whether the data you have collected is representative of the population, which may cause poor and biased results, reduce the model fit and affect the statistical power (Saunders, Thornhill and Lewis, 2016). The data of the questionnaire in this study has been collected through the Internet. The questionnaire stipulates that the respondents can withdraw at any time if they are unwilling to answer certain questions. And if the respondents do not answer a certain question, they cannot submit the answers to the whole questionnaire at the end. In addition, the questionnaire data has been directly exported through the system of the online questionnaire site, avoiding manual operation errors and the problem of missing data to the greatest extent. After importing the data into SPSS software, no missing values has been found.

4.2.2 Unengaged Responses Handling

Unengaged responses mean that some respondents gave the same or very similar answers ('linear' answers) to all questions because of carelessness, indifference, or even malicious intent. Unengaged responses will distort the real relationship between the variables and affect the results of the study (Michalopoulou, 2017). To avoid the harmful effect of unengaged responses, data screening for unengaged responses was performed. First, the responses of the whole questionnaire, which were completed within four minutes, were deleted. Second, standard deviation was applied to figure out the unengaged responses, the standard deviation of responses less than 0.5 was deleted as well (Chyung *et al.*, 2017). Finally, 26 responses within four minutes and 18 responses with a standard deviation of less

than 0.5 have been removed.

4.2.3 Outliers Handling

Outliers refer to the individual values in a sample whose values deviate significantly from most of the observations. When there are many outliers or the anomaly is larger, outliers can distort the correlation between X and Y, regression, etc., leading to false conclusions. Therefore, it is necessary to deal with outliers before data analysis (Denis and Sylvain, 2010; Leys *et al.*, 2019). In this study, following Tabachnick and Fidell's (2013) suggestion, SPSS was applied to detect univariate and multivariate outliers.

First, dealing with univariate. The standardized score (z score) of the data has been calculated to find the z scores greater than 3.29, following the advice of Tabachnick and Fidell(2013, p73), data with a z score greater than 3.29 is outlier. Then 9 outliers were detected and removed from the dataset. Second, dealing with multivariate. Chi square distribution can be used to evaluate the Mahalanobis distance of each data, which is a measure of multivariate distance (Tabachnick and Fidell,2013). If the criterion for multivariate outliers is Mahalanobis distance at $p < .001$, The correlation cutoff value of the five independent variable datasets is 13.823. No cases were identified as multivariate outliers of the Mahalanobis distance. Therefore, 548 effective data have been left at last for further analysis.

4.2.4 Normal Distribution Test

The normal distribution is a prerequisite for many analytical methods. Various statistical methods such as t-test, variance analysis, correlation, and regression analysis all require the data to obey the normal distribution assumption. It is generally believed that when the absolute value of skewness is less than 3 and the absolute value of kurtosis is less than 10, it indicates that the sample basically obeys the normal distribution (Kline, 1998). It can be seen from Table 16 that most of the absolute values of skewness and kurtosis are both less than 1, only one is 1.100. Furthermore, the results of the residual normality test showed that the residuals are approximately normally distributed. It can be considered that this sample data obeys the normal distribution and can be further analyzed. Moreover, for medium and large samples, most non-normal distributions have little effect on ANOVA and regression analysis (Yockey, 2018).

Table 16 Skewness and Kurtosis

Variable	Mean	Std. Deviation	Skewness		Kurtosis	
			Statistic	Std. Error	Statistic	Std. Error
DJ	3.00	.83	-.034	.104	-.744	.208
PJ	2.84	.84	-.098	.104	-.416	.208
IPJ	3.24	.80	-.249	.104	-.088	.208
IFJ	2.91	.86	.000	.104	-.473	.208
TP	4.15	.50	-.285	.104	.876	.208
RP	2.97	.76	.018	.104	-.204	.208
SP	3.24	.77	.082	.104	-.427	.208
AC	3.44	.77	-.275	.104	.269	.208
CV	4.03	.45	-.021	.104	1.100	.208
Valid N (listwise)	548					

4.2.5 Common Method Bias Test

This study used the same source survey to collect data, although procedural remedies were employed in the research design and data collection to avoid potential common method biases (Chang, Witteloostuijn and Eden, 2010; Podsakoff, MacKenzie and Podsakoff, 2012), which were discussed in the methodology chapter. And while some researchers believe that the threat of CMB to the validity of research findings might be overestimated (Fuller *et al.*, 2016), it is still necessary to evaluate common method bias to ensure that there is no significant common method bias that could affect the research results. Harman's single-factor test is necessary to detect the CMB (Chang, Witteloostuijn and Eden, 2010). An unrotated exploratory factor analysis was performed on all items of the study variables. It was found that there were 9 common factors (9 variables studied in this research) with eigenvalues greater than 1 extracted from the factor analysis, and the variance explained of the greatest common factor was 31.36%, which was less than 40% (Chang, Witteloostuijn and Eden, 2010; Fuller *et al.*, 2016). It is clear that common method bias is not present in this study.

4.3 Reliability and Validity Evaluation

The scale development for each variable in this study was based on mature and well-established scales at home and abroad. Self-created items also had theoretical underpinnings and expert advice. However, due to the different backgrounds and objects of the scale application, it is still necessary to evaluate the reliability and validity of the scale. In this paper, EPA and CFA were carried out on the scale of each variable, which proved that the

whole scale had good reliability and validity, and the collected data could reflect the research problem well.

4.3.1 Organizational Justice Scale

4.3.1.1 Exploratory Factor Analysis

Exploratory factor analysis was performed on 27 items by principal component analysis. The results showed that the sampling adequacy was very good ($KMO = 0.96$). The results of Bartlett's test of sphericity ($\chi^2 = 6358.44$, $df = 351$, $P < 0.001$) also indicated that the data is suitable for factor analysis (Easterby-Smith, Thorpe and Jackson, 2015). There are four factors whose eigenvalue is greater than 1, and the cumulative variance explained rate is 66.51%. The degree of commonality of all items ranged from 0.50 to 0.84, and the standardized factor loadings ranged from 0.51 to 0.95, which indicates that the variable can be explained to a high degree by the factor. The results are shown in Table 17.

Table 17 Exploratory factor analysis results of organizational justice

Item	degree of commonality	Factor loadings			
		DJ	PJ	IJ	IFJ
DJ1	0.76	0.89			
DJ2	0.82	0.95			
DJ3	0.82	0.95			
DJ4	0.80	0.88			
DJ5	0.71	0.82			
DJ6	0.77	0.86			
DJ7	0.53	0.71			
DJ8	0.58	0.51			
DJ9	0.50	0.63			
PJ1	0.60		0.72		
PJ2	0.56		0.67		
PJ3	0.70		0.79		
PJ4	0.71		0.78		
PJ5	0.71		0.74		
PJ6	0.67		0.89		
PJ7	0.70		0.74		
IPJ1	0.81			0.96	

IPJ2	0.84			0.95	
IPJ3	0.82			0.94	
IPJ4	0.49			0.62	
IPJ5	0.73			0.75	
IPJ6	0.75			0.63	
IFJ1	0.76				0.72
IFJ2	0.76				0.84
IFJ3	0.83				0.81
IFJ4	0.82				0.90
IFJ5	0.72				0.86
Eigenvalues		14.19	2.62	1.42	1.03
variance explained (%)		52.54	9.69	5.26	3.80
Total variance explained (%)		52.54	62.23	67.49	71.28

4.3.1.2 Confirmatory Factor Analysis

Confirmatory factor analysis was performed using Amos23.0, and the results showed that the model had a good fit ($\chi^2/df=2.83$, RMSEA=0.08, CFI=0.91, IFI=0.91, TLI=0.91).

Table 18 Confirmatory factor analysis results of organizational justice

Construct	Items	Parameters Significance Estimation			Factor Loading	Item Validity	Cronbach's alpha	Composite reliability	Convergent Validity
		Unstd.	SE	t value					
DJ	DJ1	1.000			0.836	0.699	0.930	0.930	0.599
	DJ2	0.995	0.054	18.347***	0.865	0.748			
	DJ3	0.955	0.051	18.682***	0.874	0.764			
	DJ4	0.974	0.052	18.688***	0.875	0.766			
	DJ5	0.809	0.057	14.188***	0.732	0.536			
	DJ6	0.834	0.056	14.907***	0.758	0.575			
	DJ7	0.772	0.057	13.453***	0.705	0.497			
	DJ8	0.756	0.064	11.810***	0.639	0.408			
	DJ9	0.696	0.060	11.592***	0.630	0.397			
PJ	PJ1	1.000			0.757	0.573	0.929	0.930	0.654
	PJ2	1.165	0.078	14.937***	0.838	0.702			
	PJ3	1.111	0.079	14.146***	0.801	0.642			
	PJ4	1.185	0.079	15.077***	0.845	0.714			
	PJ5	1.057	0.074	14.235***	0.805	0.648			
	PJ6	1.130	0.079	14.267***	0.807	0.651			
	PJ7	0.995	0.070	14.267***	0.807	0.651			
IJ	IPJ1	1.000			0.854	0.729	0.931	0.932	0.699
	IPJ2	1.059	0.049	21.546***	0.920	0.846			
	IPJ3	1.040	0.050	20.885***	0.905	0.819			
	IPJ4	0.719	0.057	12.671***	0.664	0.441			
	IPJ5	0.863	0.049	17.711***	0.827	0.684			
	IPJ6	0.979	0.056	17.502***	0.822	0.676			
IFJ	IFJ1	1.000			0.851	0.724	0.936	0.937	0.748
	IFJ2	1.044	0.054	19.457***	0.876	0.767			

IFJ3	1.028	0.052	19.773***	0.884	0.781
IFJ4	1.035	0.051	20.349***	0.898	0.806
IFJ5	0.970	0.057	17.058***	0.813	0.661

Note: $N=548$, $p < .05$; ** $p < .01$; *** $p < .001$. DJ=Distributive justice, PJ=Procedural justice, IJ=Interpersonal justice, IFJ=Informational justice, SMC=squared multiple correlations, AVE= Average variance extracted.

4.3.2 Affective Commitment Scale

4.3.2.1 Exploratory Factor Analysis

The results of exploratory factor analysis showed that the sampling adequacy was good ($KMO = 0.86$). The results of Bartlett's sphericity test ($\chi^2 = 1011.44$, $df = 15$, $P < 0.001$) also indicated that the data was suitable for factor analysis. There was one factor whose eigenvalue was greater than 1, and the variance explained rate is 68.03%. The degree of commonality of all items ranged from 0.57 to 0.76, and the standardized factor loadings ranged from 0.76 to 0.87, which indicated that the variable can be explained to a high degree by the factor. The results are shown in Table 19.

Table 19 Exploratory factor analysis results of affective commitment

Item	degree of commonality	Factor loadings
AC1	0.67	0.82
AC2	0.57	0.76
AC3	0.64	0.80
AC4	0.71	0.84
AC5	0.75	0.86
AC6	0.76	0.87
Eigenvalues		4.08
variance explained (%)		68.03

4.3.2.2 Confirmatory Factor Analysis

The results of confirmatory factor analysis showed the model fit was not very good ($c2/df=7.34$, $RMSEA=0.15$, $CFI=0.95$, $IFI=0.95$, $TLI=0.91$). According to the revised

indicators, after deleting the item AC3, the confirmatory factor analysis model had a better fit Exploratory factor analysis ($c2/df=3.57$, $RMSEA=0.09$, $CFI=0.99$, $IFI=0.99$, $TLI=0.97$). The standardized factor loading of all items was between 0.630 and 0.920, so item AC3 was deleted, and 5 items were retained finally. The internal consistency reliability of this scale was 0.898; the composite reliability was 0.900, which was greater than 0.7; the convergent validity is 0.647 ($AVE>0.5$). Therefore, the scale has good reliability and validity (Hair *et al.*, 2014) . The results are shown in Table 20.

Table 20 Confirmatory factor analysis results of affective commitments

Items	Parameters Significance Estimation			Factor Loading	Item Validity	Composite reliability	Convergent Validity
	Unstd	SE	t value	Std.	SMC	CR	AVE
AC1	1.000			0.776	0.602	0.900	0.647
AC2	0.963	0.086	11.208***	0.651	0.424		
AC4	1.013	0.074	13.637***	0.769	0.591		
AC5	1.262	0.077	16.490***	0.900	0.810		
AC6	1.355	0.082	16.458***	0.898	0.806		

4.3.3 Collectivism

4.3.3.1 Exploratory Factor Analysis

The results of exploratory factor analysis showed that the sampling adequacy was good ($KMO = 0.82$), the results of Bartlett's test of sphericity ($\chi^2 = 755.26$ $df = 28$, $P < 0.001$) also indicated that the data could be subjected to factor analysis. There are 2 factors whose eigenvalue was greater than 1, and the cumulative variance explained rate was 61.85%. Considering the characteristic root, loading value, common degree, and theoretical structure comprehensively, the items with factor loading less than 0.45 and cross loading were excluded (CV1, CV5, CV7,CV8), and finally the items CV2, CV3, CV4 and CV6 were

retained, and exploratory factor analysis was carried out again. The sampling adequacy was also good (KMO = 0.75), the results for Bartlett's test of sphericity ($\chi^2 = 225.12$, $df = 6$, $P < 0.001$) were significant. There was 1 factor with an eigenvalue greater than 1, the cumulative variance explained rate is 56.25%, the common degree of all items is between 0.48 and 0.68, and standardized factor loadings of between 0.69~ 0.82, which indicated that the variable can be explained to a high degree by the factor.

Table 21 Exploratory Factor Analysis of collectivism

Item	degree of commonality	Factor loadings
CV2	0.52	0.72
CV3	0.68	0.82
CV4	0.58	0.76
CV6	0.48	0.69
Eigenvalues		2.25
variance explained (%)		56.25

4.3.3.2 Confirmatory Factor Analysis

The results of confirmatory factor analysis showed the model fit is good ($c2/df=1.91$, $RMSEA=0.06$, $CFI=0.99$, $IFI=0.99$, $TLI=0.98$). Standardized factor loadings for all items ranged from 0.642 to 0.736. The internal consistency reliability was 0.795, the composite reliability was 0.801, the convergent validity is 0.502 ($AVE>0.5$). Therefore, the scale of collectivist value has good reliability and validity.

Table 22 Confirmatory factor analysis results of collectivist value

Items	Parameters Significance Estimation			Factor Loading	Item Validity	Composite reliability	Convergent Validity
	Unstd	SE	t value	Std.	SMC	CR	AVE
CV2	1.000			0.642	0.412	0.801	0.502
CV3	1.014	0.108	9.420***	0.761	0.579		
CV4	0.906	0.102	8.911 ***	0.689	0.475		
CV6	0.965	0.104	9.276***	0.736	0.542		

4.3.4 Job Performance Scale

4.3.4.1 Exploratory Factor Analysis

The results showed that the sampling adequacy was good ($KMO = 0.87$). The results of the Bartlett sphericity test ($\chi^2 = 2393.34$, $df = 136$, $P < 0.001$) also indicated that the data was suitable for factor analysis. There were 3 factors with eigenvalues greater than 1, and the total variance explained was 62.58%. The degrees of commonality were between 0.34 and 0.77, and the standardized factor loadings were between 0.56 and 0.89, indicating that the variables can be explained to a high degree by the factors.

Table 23 Exploratory factor analysis results of job performance

Item	degree of commonality	Factor loadings		
		TP	RP	SP
TP1	0.65	0.83		
TP2	0.77	0.88		
TP3	0.77	0.89		
TP4	0.70	0.82		
TP5	0.59	0.73		
TP6	0.42	0.61		
TP7	0.34	0.56		
RP1	0.50		0.67	
RP2	0.71		0.84	
RP3	0.61		0.72	
RP4	0.74		0.88	
RP5	0.70		0.87	
RP6	0.61		0.75	
SP1	0.54			0.70
SP2	0.73			0.86
SP3	0.70			0.78
SP4	0.58			0.78
Eigenvalues		5.71	3.25	1.67
variance explained (%)		33.61	19.12	9.84
Total variance explained (%)		33.61	52.73	62.58

4.3.4.2 Confirmatory Factor Analysis

The results showed that the model has a good fit ($\chi^2/df=2.91$, RMSEA=0.08, CFI=0.92, IFI=0.92, TLI=0.91). Standardized factor loadings for all items ranged from 0.630 to 0.920. The internal consistency coefficient of the whole scale was 0.885. The internal consistency reliability of the three subscales of teaching performance, research performance, and social service were 0.893, 0.889, and 0.842, respectively. The composite reliability was 0.901, 0.892, and 0.847, which are all greater than 0.7. The convergent validity was 0.574, 0.581 and 0.584(AVE>0.5). Therefore, the scale of job performance has good reliability and validity.

Table 24 **Confirmatory factor analysis of job performance**

Construct	Items	Parameters Significance Estimation			Factor Loading	Item Validity	Cronbach's alpha	Composite reliability	Convergent Validity
		Unstd.	SE	t value	Std.	SMC	α	CR	AVE
TP	TP1	1.000			0.822	0.676	0.0893	0.901	0.574
	TP2	1.102	0.060	18.254 ***	0.888	0.789			
	TP3	1.130	0.062	18.283 ***	0.889	0.790			
	TP4	1.106	0.064	17.405 ***	0.860	0.740			
	TP5	0.913	0.078	11.651 ***	0.643	0.413			
	TP6	0.884	0.088	10.026 ***	0.569	0.324			
	TP7	0.761	0.082	9.321 ***	0.535	0.286			
RP	RP1	1.000			0.672	0.452	0.889	0.892	0.581
	RP2	1.070	0.092	11.576 ***	0.789	0.623			
	RP3	0.992	0.093	10.640 ***	0.715	0.511			
	RP4	1.036	0.087	11.973 ***	0.822	0.676			
	RP5	1.101	0.095	11.630 ***	0.793	0.629			
	RP6	1.046	0.092	11.380 ***	0.773	0.598			
SP	SP1	1.000			0.601	0.361	0.842	0.847	0.584
	SP2	1.897	0.182	10.417 ***	0.864	0.746			
	SP3	1.717	0.172	9.998 ***	0.795	0.632			
	SP4	1.650	0.168	9.818 ***	0.772	0.596			

In summary, after deleting several items (AC3, CV1, CV5, CV7,CV8), the scales used in this study have good reliability and validity. Therefore, the data has good internal

consistency and reliability to be analyzed later.

4.4 Descriptive Statistical Analysis of Participant Demographics

The participant demographics are especially important because the background information can help understand the research question more deeply and comprehensively. It can be seen from the below table 4.4-9: there are 548 participants in all, of which 237 (43.2%) are male and 311 (56.8%) are female. 20 (3.6%) of teachers are under 30 years old, 263 (48%) are 31-40 years old, 198 (36.1%) are 41-50 years old, 67(12.2%) are above 50 years old. 35.4% have a doctor's degree, and 49.3% have a master's degree, only 15.3% have a bachelor's degree. 47.3% of the respondents are lecturers, and 33% are associate professors, only 12% are assistants and 7.7% are professors. This data is consistent with the development trajectory and reality of local universities in China.

Table 25 Demographics characteristics of the participants

Demographics variables	Coding	Number	Percentage (%)
Gender	Male	236	43.1
	Female	312	56.9
Age	Below 30	20	3.6
	31-40	263	48
	41-50	198	36.1
	Above 50	67	12.2
Educational level	Bachelor	84	15.3
	Master	270	49.3
	Doctor	194	35.4
Title	Assistant	66	12
	Lecturer	259	47.3
	Associate professor	181	33
	Professor	42	7.7
Total		548	100

4.5 Independent Samples t-test and One-way ANOVA Between Subjects

In general, demographic factors will have an impact on many variables. To figure out which

demographic variables will affect the main variables studied in this study, an independent samples T-test and one-way ANOVA were used to make a judgment. The independent sample t test method was used for gender, and the one-way analysis of variance was used for age, education level, and professional title, then pairwise comparisons were made.

4.5.1 Independent Sample t-test for Gender Differences

Table 26 Results of independent sample t-test for gender difference

Variable	Male(n=236)	Female (n=312)	<i>F</i>	<i>p</i>	<i>t</i>	<i>p</i>
DJ	2.91±0.87	3.05±0.79	3.73	0.054	-1.89	0.059
PJ	2.76±0.88	2.90±0.81	2.24	0.135	-1.89	0.060
IPJ	3.13±0.82	3.33±0.77	.781	0.377	-2.93	0.004
IFJ	2.86±0.89	2.95±0.84	1.35	0.245	-1.28	0.202
TP	4.13±0.49	4.17±0.51	4.03	0.055	-0.90	0.365
RP	3.11±0.75	2.85±0.74	.013	0.908	4.10	0.000
SP	3.39±0.80	3.13±0.74	2.10	0.148	3.91	0.000
AC	3.44±0.82	3.45±0.73	4.07	0.054	-0.20	0.843
CV	4.00±0.47	4.05±0.43	0.08	0.785	-1.307	0.192

Note: *N*=548, Coefficients appear along the diagonal. DJ= distributive justice, PJ =procedural justice, IPJ =interpersonal justice, IFJ informational justice, JP= job performance, TP =teaching performance, RP= research performance, AC= affective commitment, AC= affective commitment, CV= collectivism.

The independent sample t test is used to compare the mean of two independent samples whose dependent variable is a continuous variable. If the two groups of data satisfy the assumption of equal variance, the independent sample t-test can be directly performed. When the t test result shows $P < 0.05$, it indicates that the mean scores of the two groups are significantly different (Yockey, 2018). The Levene's test for equality of variances results show that all p values are greater than 0.05. which indicates total variances are equal, and an independent sample t test can be performed. The independent sample t-test results show that, with a confidence level of 95%, gender differences have a significant impact on

interpersonal justice, research performance, and social service performance, but have no significant effect on the other three dimensions of organizational justice, teaching performance, affective commitment, and collectivism. The mean score of females' interpersonal justice is 3.33, while that of males is 3.13. The level of women's interpersonal justice is higher. The mean score of males' research performance is 3.11, and that of social service performance is 3.39, while females' is 2.85 and 3.13, respectively. Obviously, males do better than females in research performance and social service performance.

4.5.2 One-way ANOVA between Subjects

One-way ANOVA is used to compare the means of the dependent variable for multiple independent groups. Equal variance is the assumption of between-subject variance analysis, and this study uses variance homogeneity to test whether variances are equal. Total variances were considered equal if $p > 0.05$. Then, by calculating the observed value F and probability P value, whether the control variable has a significant effect on the observed variable can be judged. If the F value is significantly greater than 1, and the P value is less than the significance level of 0.05, the control variable significantly affects the observed variable. If the F value is close to 1, and the P value is greater than the significance level of 0.05, it indicates that the change of the observed variable is more caused by random variables. To further explore how the mean scores differ between groups, Tukey's post hoc comparison was used to perform a multiple comparison test (Yockey, 2018).

4.5.2.1 ANOVA for Age

Table 27 ANOVA for age results

Variable	Age	Mean	Std. Deviation	<i>p</i>	<i>F</i>	<i>p</i>
DJ	Below 30	3.43	0.89	0.054	2.538	0.056
	31-40	3.00	0.78			
	41-50	2.92	0.88			
	Above 51	3.05	0.77			
PJ	Below 30	3.62	0.78	0.652	9.157	0.000
	31-40	2.91	0.81			
	41-50	2.75	0.86			
	Above 51	2.61	0.79			
IPJ	Below 30	3.93	0.60	0.068	7.287	0.000
	31-40	3.30	0.77			
	41-50	3.14	0.84			
	Above 51	3.13	0.72			
IFJ	Below 30	3.71	0.85	0.288	8.634	0.000
	31-40 years old	2.97	0.82			
	41-50 years old	2.83	0.90			
	Above 51	2.67	0.81			
TP	Below 30	4.20	0.48	0.991	2.024	0.109
	31-40	4.11	0.50			
	41-50	4.21	0.50			
	Above 51	4.09	0.50			
RP	Below 30	3.14	0.88	0.052	0.555	0.645
	31-40	2.95	0.70			
	41-50	2.99	0.82			
	Above 51	2.92	0.77			
SP	Below 30	3.49	0.90	0.188	1.923	0.125
	31-40	3.17	0.75			
	41-50	3.28	0.81			
	Above 51	3.32	0.71			
AC	Below 30	3.88	0.87	0.706	2.541	0.056
	31-40	3.41	0.75			
	41-50	3.52	0.73			
	Above 51	3.50	0.74			
CV	Below 30	4.25	0.44	0.743	1.985	0.115
	31-40	4.00	0.45			
	41-50	4.05	0.44			
	Above 51	4.01	0.48			

Note: N=548 DJ= distributive justice, PJ =procedural justice, IPJ =interpersonal justice, IFJ informational justice, JP= job performance, TP =teaching performance, RP= research performance, AC= affective commitment, AC= affective commitment, CV= collectivism.

From Table 27, the results showed that, with a confidence level of 95%, $p > 0.05$ for all

variance homogeneity tests, indicating that all groups have equal variance and are suitable for variance analysis. In addition, age had significant effects on procedural justice, interpersonal justice, and information justice ($p < 0.05$), but had no significant effect on distributive justice, affective commitment, job performance, and collectivist values ($p > 0.05$).

Table 28 Age multiple comparison results

Dependent variable	(I) Age	(J) Age	Mean Difference		
			(I-J)	Std. Error	<i>p</i>
PJ	Below 30	31-40	0.71*	0.19	0.001
		41-50	0.88*	0.19	0.000
		Above 51	1.01*	0.21	0.000
IPJ	Above 51	31-40	-0.29*	0.11	0.047
		Below 30	0.64*	0.18	0.003
		41-50	0.80*	0.18	0.000
IFJ	Below 30	Above 51	0.81*	0.20	0.000
		31-40	0.74*	0.20	0.001
		41-50	0.88*	0.20	0.000
		Above 51	1.03*	0.22	0.000

*. The mean difference is significant at the 0.05 level.

Table 28 shows the results of the multiple comparisons. At a 95% confidence level, only those with statistically significant differences were listed in this study. The results showed that respondents under the age of 30 had the highest perceptions of procedural justice, interpersonal justice, and informational justice. The older the person, the lower the perception of procedural justice, interpersonal justice, and informational justice.

4.3.2.2 ANOVA for Education Level

Table 29 ANOVA for education level results

Variable	Educational level	Mean	Std. Deviation	<i>p</i>	<i>F</i>	<i>p</i>
DJ	Bachelor	3.19	.88	.605	4.471	.012
	Master	3.02	.80			
	Doctor	2.88	.83			

PJ	Bachelor	2.98	.83	.608	2.508	.082
	Master	2.86	.85			
	Doctor	2.74	.82			
IPJ	Bachelor	3.46	.71	.246	6.200	.002
	Master	3.27	.79			
	Doctor	3.10	.82			
IFJ	Bachelor	2.91	.80	.241	.632	.532
	Master	2.95	.89			
	Doctor	2.86	.86			
TP	Bachelor	4.18	.50	.059	2.015	.134
	Master	4.10	.47			
	Doctor	4.19	.55			
RP	Bachelor	2.89	.69	.876	33.828	.000
	Master	2.75	.71			
	Doctor	3.30	.74			
SP	Bachelor	3.23	.79	.267	2.336	.098
	Master	3.17	.74			
	Doctor	3.33	.81			
AC	Bachelor	3.64	.74	.570	5.078	.007
	Master	3.47	.73			
	Doctor	3.33	.81			
CV	Bachelor	4.01	.44	.560	0.799	.450
	Master	4.06	.46			
	Doctor	4.00	.45			

Note: $N=548$, Coefficients appear along the diagonal. DJ= distributive justice, PJ =procedural justice, IPJ =interpersonal justice, IFJ informational justice, JP= job performance, TP =teaching performance, RP= research performance, AC= affective commitment, AC= affective commitment, CV= collectivist value.

With a confidence level of 95%, the results showed that $p>0.05$ for all variance homogeneity tests, indicating that all groups have equal variance and are suitable for variance analysis. In addition, education level had significant effects on distributive justice, interpersonal justice, research performance, and affective commitment ($p<0.05$), but had no significant effects on procedural justice, informational justice, teaching performance, social service performance, or collectivist values ($p>0.05$).

Table 30 Education level multiple comparison results

Dependent Variable	(I) Education level	(J) Education level	Mean Difference (I-J)	Std. Error	<i>p</i>
DJ	Bachelor	Doctor	.31*	.11	.010
IPJ	Bachelor	Doctor	.35*	.10	.002
RP	Doctor	Bachelor	.41*	.09	.000
		Master	.55*	.07	.000
AC	Bachelor	Doctor	.31*	.07	.006

*. The mean difference is significant at the 0.05 level.

Table 4.5-14 shows the results of multiple comparisons. At a 95% confidence level, only those with significant statistical differences were listed in this study. The results show that respondents with a bachelor's degree have a higher perception of distributive justice and interpersonal justice than those with a Ph.D. degree, and those with a Ph.D. have higher research performance than both those with a bachelor's and a master's. The affective commitment of a bachelor is higher than that of a doctor.

4.5.2.2 ANOVA for Professional Title

Table 31 ANOVA for Professional title results

Variable	Title	Mean	Std. Deviation	<i>p</i>	<i>F</i>	<i>p</i>
DJ	Assistant	3.11	0.84	0.53	1.638	0.179
	Lecturer	2.96	0.83			
	Associate professor	2.95	0.82			
	Professor	3.21	0.74			
PJ	Assistant	3.20	0.83	0.53	4.849	0.002
	Lecturer	2.81	0.85			
	Associate professor	2.76	0.80			
	Professor	2.77	0.82			
IPJ	Assistant	3.45	0.75	0.76	2.482	0.060
	Lecturer	3.26	0.82			
	Associate professor	3.16	0.78			
	Professor	3.12	0.75			
IFJ	Assistant	3.14	0.89	0.80	2.502	0.059
	Lecturer	2.93	0.86			
	Associate professor	2.83	0.86			
	Professor	2.78	0.85			
TP	Assistant	4.10	0.47	0.05	0.323	0.809

	Lecturer	4.15	0.54			
	Associate professor	4.15	0.45			
	Professor	4.20	0.54			
RP	Assistant	2.89	0.69	0.73	9.193	0.000
	Lecturer	2.87	0.75			
	Associate professor	3.00	0.76			
	Professor	3.51	0.71			
SP	Assistant	3.27	0.82	0.26	3.211	0.023
	Lecturer	3.21	0.78			
	Associate professor	3.19	0.76			
	Professor	3.58	0.65			
AC	Assistant	3.66	0.73	0.98	3.076	0.027
	Lecturer	3.37	0.77			
	Associate professor	3.45	0.77			
	Professor	3.58	0.73			
CV	Assistant	4.11	0.45	0.05	1.179	0.317
	Lecturer	4.00	0.42			
	Associate professor	4.05	0.46			
	Professor	4.01	0.60			

Note: $N=548$, Coefficients appear along the diagonal. DJ= distributive justice, PJ =procedural justice, IPJ =interpersonal justice, IFJ informational justice, JP= job performance, TP =teaching performance, RP= research performance, AC= affective commitment, AC= affective commitment, CV= collectivism.

From Table 31, at a confidence level of 95%, the results showed that $p>0.05$ for all variance homogeneity tests, indicating that all groups have equal variance and are suitable for variance analysis. In addition, professional titles had significant effects on interpersonal justice, research performance, social service performance, and affective commitment ($p<0.05$), but had no significant effects on distributive justice, procedural justice, informational justice, teaching performance, or collectivist values ($p>0.05$).

Table 32 Professional title multiple comparison results

Dependent Variable	(I) Title	(J) Title	Mean Difference (I-J)	Std. Error	<i>p</i>
PJ	Assistant	Lecturer	0.39*	0.11	0.005
		Associate professor	0.44*	0.12	0.002
		Professor	0.43*	0.16	0.044

RP	Professor	Assistant	0.62*	0.15	0.000
		Lecturer	0.64*	0.12	0.000
		Associate professor	0.52*	0.13	0.000
SP	Professor	Lecturer	0.37*	0.13	0.019
		Associate professor	0.38*	0.13	0.015
AC	Assistant	Lecturer	0.29*	0.11	0.028

*. The mean difference is significant at the 0.05 level.

Table 32 shows the results of the multiple comparisons. At a 95% confidence level, only those with statistically significant differences were listed in this study. The results show that the interpersonal justice perception of assistants is higher than that of lecturers, associate professors, and professors; The research performance of professors is higher than that of assistants, lecturers, and associate professors; And the social service performance of professors is higher than that of lecturers and associate professors. assistants have a higher affective commitment than lecturers do.

4.6 Variables Mean and Correlations Analysis

Five- point Likert scales have been applied in this study, all mean values are between 2.83 and 4.15. When it comes to the four dimensions of organizational justice, the mean of interpersonal justice is the highest (Mean=3.24, SD=0.8), the mean of procedural justice is the lowest (Mean=2.83, SD=0.84). When it comes to the job performance dimensions, the mean of teaching performance is the highest (Mean=4.15, SD=0.50), the mean of research performance is the lowest (Mean=2.97, SD=0.76). The mean of collectivism is 4.03 (SD=0.45), relatively high. The pearson correlations between every organizational justice dimension and affective commitment are all above 0.5, which is very high. The correlations between other variables are not very high, and their internal relationships need to be further

explored in the next section.

Table 33 Pearson correlations between variables

Variable	Mean	Std. Deviation	DJ	PJ	IPJ	IFJ	TP	RP	SP	AC	CV
DJ	3.00	.83	1								
PJ	2.83	.84	.683**	1							
IPJ	3.24	.80	.513**	.704**	1						
IFJ	2.91	.86	.572**	.770**	.722**	1					
TP	4.15	.50	.064	.080	.103*	.139**	1				
RP	2.97	.76	.062	.178**	.176**	.247**	.240**	1			
SP	3.24	.77	.010	.145**	.156**	.192**	.248**	.488**	1		
AC	3.46	.77	.525**	.580**	.543**	.568**	.190**	.236**	.282**	1	
CV	4.03	.45	.155**	.235**	.261**	.232**	.371**	.183**	.229**	.348**	1

Note: N=548, Coefficients appear along the diagonal. DJ= distributive justice, PJ =procedural justice, IPJ =interpersonal justice, IFJ informational justice, JP= job performance, TP =teaching performance, RP= research performance, AC= affective commitment, CV= collectivism

** .P<0.01 (2-tailed).

*.P< 0.05 (2-tailed).

4.7 Hypotheses Testing

The hypotheses testing is divided into three parts: the first part is mainly to examine the impact of organizational justice on affective commitment and the impact of affective commitment on job performance; The second part is to examine the mediating role of affective commitment between organizational justice and job performance; The third part is to examine the moderating effect of collectivist values on the relationship between organizational justice and job performance. This study adopts a two-step hierarchical regression method with SPSS 26 software to examine the relationships between organizational justice and affective commitment and between affective commitment and job performance: the first step introduces control variables such as demographic factors, and the second step includes all independent variables in the regression equation. Mediating and moderating effects were analyzed using the bootstrap method of Process v3.3 by Andrew F. Hayes. Before the regression test, the control variables were converted into dummy

variables, and then the multicollinearity among the explanatory variables was tested as well.

4.7.1 Converting Control Variables into Dummy Variables

Since the control variables are categorical variables, they need to be turned into dummy variables before regression (Hardy, 1993).

Table 34 Control variables converting

Control variables					Dummy variables
Gender	Male	0			
	Female	1			Gender1
Age	Below 30	0	0	0	
	31-40	1	0	0	Age1
	41-50	0	1	0	Age2
	Above 51	0	0	1	Age3
Education	Bachelor	0	0		
	Master	1	0		Edu1
	Doctor and above	0	1		Edu2
Title	Assistant	0	0	0	
	Lecturer	1	0	0	Title1
	Associate Professor	0	1	0	Title2
	Professor	0	0	1	Title3

4.7.2 Multicollinearity

Multicollinearity is the fact that the explanatory variables in the linear regression model are distorted or difficult to estimate accurately due to the existence of high correlation between the explanatory variables. All explanatory variables in the study were included in the multicollinearity analysis, the VIF (variance inflation factor) and tolerance were calculated by SPSS25. If the value of VIF is below 10 and the tolerance value is above 0.1, there is no severe multicollinearity (Field, 2018). The results showed that all the VIF values are smaller than 4, and all the tolerance is greater than 0.2, which indicates that there is no multicollinearity between the independent variables.

Table 35 Results of collinearity test

Predictors	Collinearity Statistics	
	Tolerance	VIF
DJ	.500	2.000
PJ	.289	3.464
IPJ	.412	2.426
IFJ	.331	3.019
AC	.555	1.800
CV	.916	1.091

Note: Predictors: .DJ= distributive justice, PJ =procedural justice, IPJ =interpersonal justice, IFJ informational justice, , AC= affective commitment, CV= collectivism

Dependent Variable: TP=Teaching performance

4.7.3 Testing the Relationship between Organizational Justice and Affective Commitment

To verify the relationship between organizational justice and affective commitment, the hierarchical multiple linear regression method has been applied (Yockey, 2018). The first step is to use demographic variables (control variables) to regress the dependent variable of affective commitment. The four dimensions of organizational justice (distributive justice, procedural justice, interpersonal justice, and informational justice) were added and then regressed in the second step. The significance of the impact of organizational justice on affective commitment was tested by observing the p-value and the changes in R-square.

Table 36 Hierarchical regression model of organizational justice and affective commitment

Variable		Step1				Step2			
		<i>B</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	β	<i>t</i>	<i>p</i>
Step1	(Constant)	4.065		21.288	.000	1.458		7.155	.000
	Gender 1	-.001	-.001	-.013	.990	-.071	-.046	-1.350	.177
	Age1	-.321	-.209	-1.724	.085	.069	.045	.479	.632
	Age2	-.305	-.191	-1.566	.118	.171	.107	1.120	.263
	Age3	-.378	-.162	-1.763	.078	.193	.083	1.146	.252
	Edu1	-.163	-.106	-1.652	.099	-.057	-.037	-.737	.461
	Edu 2	-.298	-.186	-2.828	.005	-.121	-.075	-1.456	.146
	Title1	-.195	-.127	-1.719	.086	-.163	-.106	-1.852	.065
	Title2	-.102	-.063	-.811	.418	-.087	-.053	-.884	.377
	Title3	.048	.017	.270	.787	-.008	-.003	-.061	.951

Step2	DJ		.182	.196	4.282	.000
	PJ		.143	.156	2.551	.011
	IPJ		.181	.188	3.688	.000
	IFJ		.188	.212	3.743	.000
Durbin-Watson		1.931			1.992	
<i>F</i>		2.384			32.280	
<i>p</i>		.012 ^b			.000 ^b	
<i>R</i> ²		.038			.432	
ΔR^2		.022			.418	

- a. N=548. Predictors: (Constant), Gender1=female, Age1=31-40, Age2=41-50, Age3=Above 51, Edu1=Master, Edu2=Doctor and above, Title1=Lecturer, Title2=Associate professor, Title3=Professor, DJ=Distributive justice, PJ=Procedural justice, IPJ=Interpersonal justice, IFJ=Informational justice.

- b. Dependent Variable: AC=Affective commitment

From Table 36, after controlling for demographic variables, the *p* values of DJ, PJ, IPJ, and IFJ are all smaller than 0.05, so the four dimensions of organizational justice all made a new contribution to affective commitment, and the amount of variance explained increased by 0.394. Therefore, the four dimensions of organizational justice had a positive effect on affective commitment. The influence of demographic variables on affective commitment has been discussed in independent sample *t* test and one-way ANOVN analysis before, the results of regression here are consistent. Considering the *p* value of all demographic variables is greater than 0.05 after adding the four independent variables, which indicates their influence on affective commitment is not significant, the demographic variables are excluded from the regression equation. Then the regression equation can be expressed as:

$$Y_{AC} = 1.458 + 0.182X_{DJ} + 0.143X_{PJ} + 0.181X_{IPJ} + 0.188X_{IFJ}.$$

Therefore, the regression equation is significant, $F=32.28$, $p<0.05$, $R^2=0.432$, the predictors jointly explained 43.2% of the variance of affective commitment. And all predictors are significant, with distributive justice ($\beta=0.196$, $t=4.282$, $p<0.05$), procedural justice

(($\beta=0.156$, $t=2.151$, $p<0.05$), interpersonal justice ($\beta=0.188$, $t=3.688$, $p<0.05$), informational justice ($\beta=0.212$, $t=3.743$, $p<0.05$). With other variables held constant, the predicted value of affective commitment increases by 0.182 units for each unit increase in distributive justice, and the predicted value of affective commitment increases by 0.143 units for each unit increase in procedural justice, the predicted value of affective commitment increases by 0.181 units for each unit increase in interpersonal justice, the predicted value of affective commitment increases by 0.188 units for each unit increase in informational justice. As can be seen, informational justice has the strongest positive predicting effect on affective commitment, and procedural justice has the weakest one. Hence, the hypotheses (*H1a-1d*) that each of the four dimensions of organizational justice has a positive impact on affective commitment are supported.

4.7.4 Testing the Relationship between Affective Commitment and Job Performance

4.7.4.1 Testing the Relationship between Affective Commitment and Teaching Performance

The same procedures as in 4.7.3 have been conducted to examine the relationship between affective commitment and teaching performance.

Table 37 Hierarchical regression model of affective commitment and teaching performance

Variable	Step1				Step2			
	<i>B</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	β	<i>t</i>	<i>p</i>
(Constant)	4.207		33.297	.000	3.678		21.852	.000
Gender 1	.066	.065	1.474	.141	.066	.065	1.505	.133
Age1	-.113	-.112	-.916	.360	-.071	-.070	-.586	.558
Age2	-.004	-.004	-.029	.977	.036	.034	.284	.777

Step1	Age3	-.130	-.084	-.914	.361	-.081	-.052	-.576	.565
	Edu1	-.091	-.091	-1.402	.161	-.070	-.070	-1.095	.274
	Edu 2	-.004	-.004	-.055	.957	.035	.033	.508	.612
	Title1	.029	.029	.388	.698	.055	.054	.739	.461
	Title2	.014	.013	.167	.867	.027	.026	.333	.740
	Title3	.039	.020	.329	.742	.032	.017	.281	.779
Step2	AC					.130	.198	4.652	.000
	Durbin-Watson		2.023					2.040	
	<i>F</i>		1.366					3.441	
	<i>p</i>		.200 ^b					.000 ^b	
	<i>R</i> ²		.022					.060	
	ΔR^2		.006					.043	

a. *N*=548. Predictors: (Constant), Gender1=female, Age1=31-40, Age2=41-50, Age3=Above 51, Edu1=Master, Edu2=Doctor and above, Title1=Lecturer, Title2=Associate professor, Title3=Professor, AC=Affective commitment

b. Dependent Variable: TP=Teaching performance

From Table 37, after controlling for demographic variables, the *p* value of affective commitment is 0, smaller than 0.05, so affective commitment made a new contribution to teaching performance, and the amount of variance explained increased by 0.038. Therefore, affective commitment had a positive effect on teaching performance. The influence of demographic variables on teaching performance has been discussed in independent sample *t* tests and one-way ANOVN analysis before. The results of regression here are consistent with those results, all demographic variables have no significant impact on teaching performance. Considering the *p* value of all demographic variables is greater than 0.05 after adding the affective commitment variable, which indicates their influence on teaching performance is not significant, the demographic variables are excluded from the regression equation. Then the regression equation can be expressed as: $Y_{TP} = 3.678 + 0.13X_{AC}$.

Therefore, the regression equation is significant, $F=3.441$, $p<0.05$, $R^2=0.06$, the affective commitment explains 6% of the variance of teaching performance. Affective commitment

predicts teaching performance significantly ($\beta=0.198$, $t=4.652$, $p<0.05$). With other variables held constant, the predicted value of teaching performance increases by 0.13 units for each unit increase in affective commitment. Hence, the hypothesis *H2a* that affective commitment has a positive impact on teaching performance is supported.

4.7.4.2 Testing the Relationship between Affective Commitment and Research Performance

The same procedures as in 4.7.3 have been conducted to examine the relationship between affective commitment and research performance.

Table 38 Hierarchical regression model of affective commitment and research performance

	Variable	Step1				Step2			
		<i>B</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	β	<i>t</i>	<i>p</i>
Step1	(Constant)	3.258		18.584	.000	2.227		18.584	.000
	Gender 1	-.213	-.139	-3.420	.001	-.213	-.139	-3.420	.001
	Age1	-.215	-.141	-1.256	.210	-.133	-.088	-1.256	.210
	Age2	-.348	-.220	-1.946	.052	-.270	-.171	-1.946	.052
	Age3	-.480	-.208	-2.438	.015	-.384	-.166	-2.438	.015
	Edu1	-.103	-.068	-1.138	.256	-.062	-.041	-1.138	.256
	Edu 2	.358	.226	3.698	.000	.434	.274	3.698	.000
	Title1	-.073	-.048	-.704	.482	-.024	-.016	-.704	.482
	Title2	.088	.055	.758	.449	.114	.071	.758	.449
	Title3	.596	.209	3.674	.000	.584	.205	3.674	.000
Step2	AC					.254	.256	18.584	.000
Durbin-Watson			1.934				1.949		
<i>F</i>			12.288				16.382		
<i>p</i>			.000 ^b				.000 ^b		
<i>R</i> ²			.171				.234		
ΔR^2			.157				.219		

From Table 38, after controlling for demographic variables, the p value of affective commitment is 0, less than 0.05, so affective commitment made a new contribution to research performance, and the amount of variance explained increased by 0.063. Therefore, affective commitment had a positive effect on research performance. The influence of demographic variables on research performance has been discussed in independent sample t test and one-way ANOVN analysis before, the results of regression here are consistent with those results. To emphasize the variables studied and simplify the regression, demographic variables were excluded from the regression equation. Then the regression equation can be expressed as: $Y_{RP}=2.227+0.254 X_{AC}$.

Therefore, the regression equation is significant, $F=3.441$, $p<0.05$, $R^2=0.234$, the affective commitment explained 23.4% of the variance of research performance. Affective commitment is a significant predictor of research performance ($\beta=0.256$, $t=18.584$, $p<0.05$). With other variables held constant, the predicted value of research performance increases by 0.25 units for each unit increase in affective commitment. Hence, the hypothesis *H2b* that affective commitment has a positive impact on research performance is supported.

4.7.4.3 Testing the Relationship between Affective Commitment and Social Service Performance

The same procedures as in 4.7.3 have been conducted to examine the relationship between affective commitment and social service performance.

Table 39 Hierarchical regression model of affective commitment and social service performance

	Variable	Step1				Step2			
		<i>B</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	β	<i>t</i>	<i>p</i>
Step1	(Constant)	3.621		18.977	.000	2.448		18.977	.000
	Gender 1	-.246	-.157	-3.631	.000	-.246	-.157	-3.631	.000
	Age1	-.271	-.175	-1.458	.146	-.178	-.115	-1.458	.146
	Age2	-.199	-.124	-1.025	.306	-.111	-.069	-1.025	.306
	Age3	-.194	-.082	-.903	.367	-.084	-.036	-.903	.367
	Edu1	.009	.006	.093	.926	.056	.036	.093	.926
	Edu 2	.112	.069	1.058	.290	.198	.122	1.058	.290
	Title1	-.063	-.041	-.554	.580	-.007	-.004	-.554	.580
	Title2	-.146	-.089	-1.154	.249	-.116	-.071	-1.154	.249
	Title3	.229	.079	1.295	.196	.215	.074	1.295	.196
Step2	AC					.289	.286	18.977	.000
	Durbin-Watson		1.985				2.009		
	<i>F</i>		3.440				8.258		
	<i>p</i>		.000 ^b				.000 ^b		
	<i>R</i> ²		.054				.133		
	ΔR^2		.039				.117		

From Table 39, after controlling for demographic variables, the *p* value of affective commitment is 0, less than 0.05, so affective commitment made a new contribution to research performance, and the amount of variance explained increased by 0.079. Therefore, affective commitment had a positive effect on social service performance. The influence of the demographic variables on social service performance has been discussed in independent sample *t* tests and one-way ANOVN analysis before, the results of regression here are consistent with those results. To emphasize the variables studied and simplify the regression, demographic variables were excluded from the regression equation. Then the regression equation can be expressed as: $Y_{SP}=2.448+0.289X_{AC}$.

Therefore, the regression equation is significant, $F=8.258$, $p<0.05$, $R^2=0.133$, the affective commitment explained 13.3% of the variance of social service performance. Affective commitment is a significant predictor of social service performance ($\beta=0.256$, $t=18.584$,

$p < 0.05$). With other variables held constant, the predicted value of research performance increases by 0.289 units for each unit increase in affective commitment. Hence, the hypothesis *H2c* that affective commitment has a positive impact on social service performance is supported.

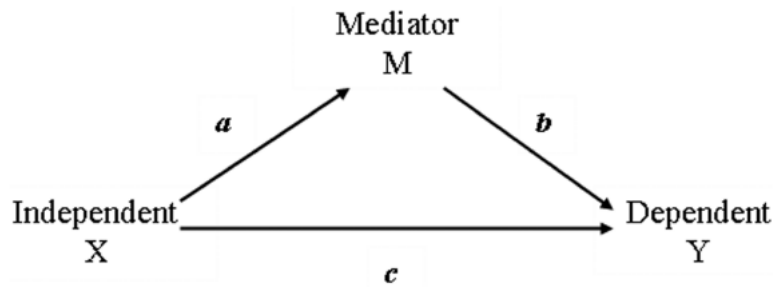
4.7.5 Testing the Mediation and Moderation Using Andrew Hayes' Process Macro (Model 5)

4.7.5.1 The Method Choice of Testing Mediation and Moderation

This research aims to study how organizational justice impacts university teachers' job performance through the mediator (affective commitment) and when organizational justice exerts influence on university teachers' job performance through the moderator (collectivism). It is very important to find a right statistical method to figure out the complex mechanism of relationships between organizational justice and job performance. The traditional and widely used mediation analysis method proposed by Baron and Kenny (1986) has been severely criticized in recent years. Their method believes that the significant influence of 'X' (independent variable) on 'Y' (dependent variable) is a prerequisite for the mediating effect of 'M' between 'X' and 'Y'. However, the misapplication of the Baron-Kenny Procedure caused researchers to abandon potential promising projects and caused journals to reject valuable papers because of its unreasonable testing procedures and insufficient analysis (Hayes, 2009; Zhao *et al.*, 2010). An alternative bootstrap mediation test has been strongly recommended by many statisticians and researchers in practice (Edwards and Cable, 2009, Hayes, 2009; Zhao *et al.*, 2010; Hayes, 2018). They proposed

that the significance of indirect effect $a \times b$ is the only prerequisite to establishing mediation, no need for an “effect to be mediated”, that is c of “X-Y test”(Zhao, Lynch and Chen, 2010;Hayes, 2009).

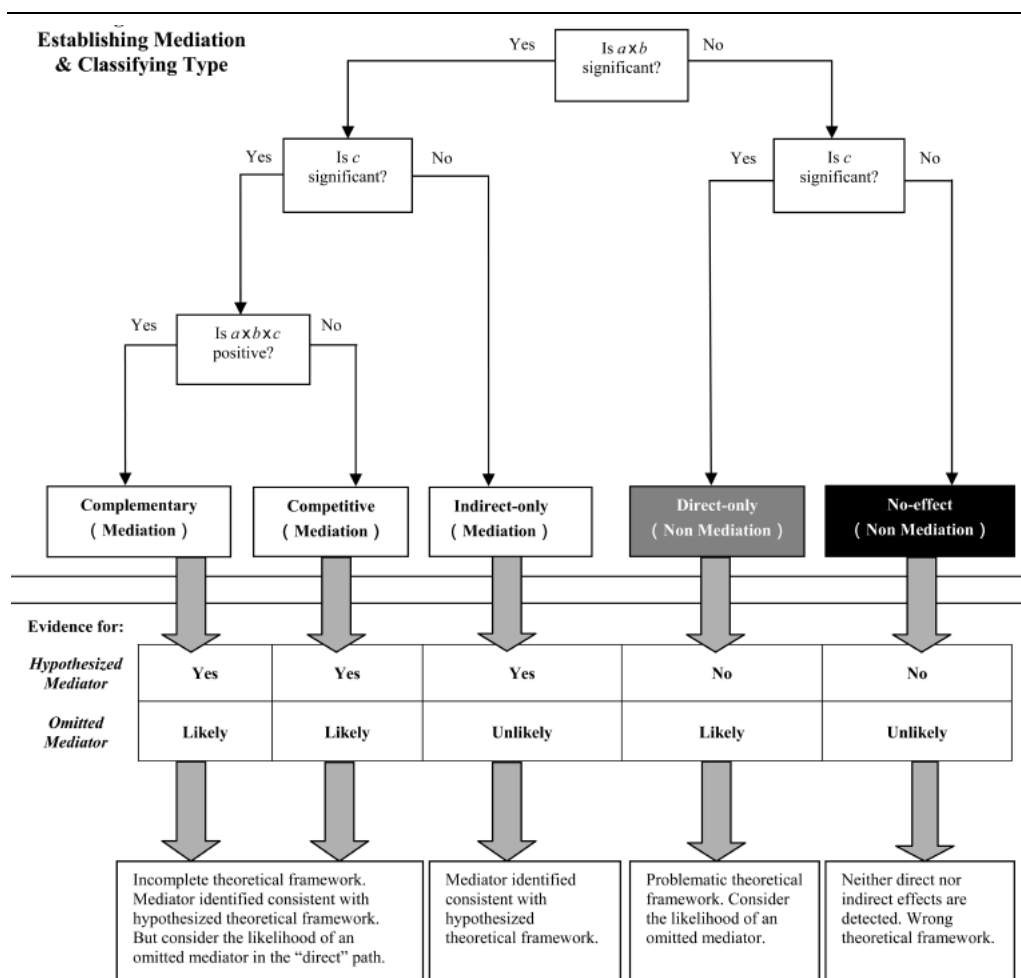
Figure 9 A simple mediation model



Source from(Baron and Kenny, 1986, p1177)

According to the theory of establishing mediation and classifying types (Zhao, Lynch and Chen, 2010, p201), when $a \times b$ is significant, there is a mediation. When c is not significant, there is indirect-only mediation. When c is significant, and $a \times b \times c$ is positive, there is a complementary mediation, while when $a \times b \times c$ is negative, there is a competitive mediation.

Figure 10 Decision tree of establishing and understanding types of mediation and non-mediation



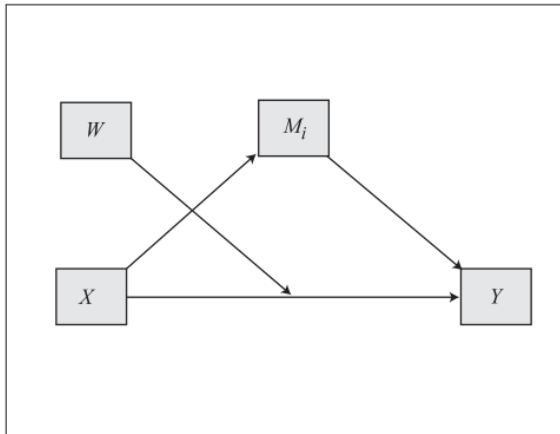
Source from(Zhao, Lynch and Chen, 2010, p201)

Andrew Hayes' Process macro is a bootstrap test of mediation and moderation approach which has been widely accepted in recent years (Hayes and Hayes, 2015; Hayes, 2018). This method provides a 95% confidence interval estimate of the mediation effect. If the interval estimate includes 0, the mediation effect is not significant. If the interval estimate does not include 0, the mediation effect is significant. According to the conceptual model of this research, model 5 of Process V.3.5 is suitable for testing the mediation and moderation. All variables have been standardized prior to analysis. Demographical variables and other independent variables were all put into the covariate box to exclude their interference with the dependent variables.

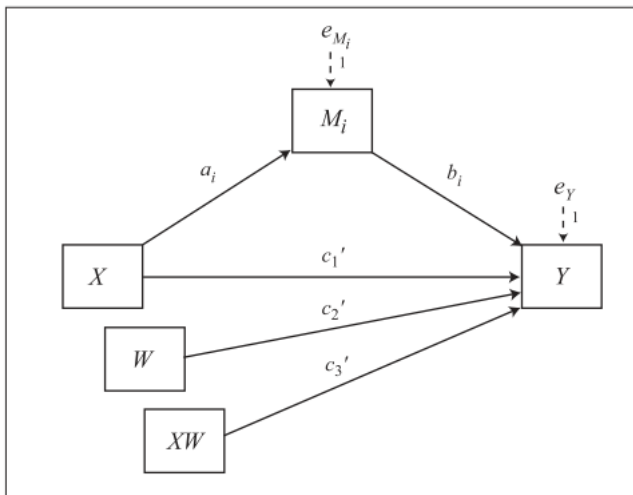
Figure 11 Model 5 of Process v3.5 by Hayes

Model 5

Conceptual Diagram



Statistical Diagram



Indirect effect of X on Y through $M_i = a_i b_i$

Conditional direct effect of X on $Y = c_1' + c_3'W$

Source from(Hayes, 2018)

4.7.5.2 Results of the Mediating Effect of Affective Commitment on the Relationship between Organizational Justice and Job Performance

Table 40 Mediation results

Path	P_a	P_b	Indirect effect $P_a * P_b$	Direct effect P_c'
DJ→AC→TP	.1958***	.1484**	.0291** 95%CI (.0053,.0556)	-.0121 95%CI (-.1281,.1040)
DJ→AC→RP	.1958***	.1775***	.0348** 95%CI (.0128,.0631)	-.1677** 95%CI (-.2722, -.0633)
DJ→AC→SP	.1958***	.2686***	.0526** 95%CI (.0253,.0868)	-.2432** 95%CI (-.3533, -.1330)

PJ→AC→TP	.1563**	.1517**	.0237** 95%CI (.0017,.0570)	-.1286 95%CI (-.2813,.0240)
PJ→AC→RP	.1563**	.1797***	.0281** 95%CI (.0039,.0610)	.0069 95%CI (-.1306,.1444)
PJ→AC→SP	.1563**	.2681***	.0419** 95%CI (.0069,.0865)	.0362 95%CI (-.1091,.1814)
IPJ→AC→TP	.1883***	.1482**	.0279** 95%CI (.0030,.0622)	-.0282 95%CI (-.1565,.1001)
IPJ→AC→RP	.1883***	.1807***	.0340** 95%CI (.0104,.0646)	.0525 95%CI (-.0625,.1675)
IPJ→AC→SP	.1883***	.2661***	.0501** 95%CI (.0176,.0897)	.0202 95%CI (-.1018,.1421)
IFJ→AC→TP	.2122***	.1493**	.0317** 95%CI (.0054,.0648)	.1609** 95%CI (.0182,.3036)
IFJ→AC→RP	.2122***	.1786***	.0379** 95%CI (.0124,.0719)	.2122** 95%CI (.0838,.3406)
IFJ→AC→SP	.2122***	.2677***	.0568** 95%CI (.0226,.1009)	.1316 95%CI (-.0038,.2670)

Note: $N=548$, * $p < .05$, ** $p < .01$, *** $p < .001$. Coefficients are standardized.

DJ= distributive justice, PJ =procedural justice, IPJ =interpersonal justice, IFJ informational justice, JP= job performance, TP =teaching performance, RP= research performance, AC= affective commitment.

The mediation results shown in Table 40 have demonstrated that the four dimensions of organizational justice all have a positive and significant influence on affective commitment, and affective commitment also has a significant influence on all three dimensions of job performance. The detailed analysis is as follows:

Path DJ→AC→TP: The indirect effect is statistically significant, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0053,0.0556), which indicates that two university teachers who differ by one unit in their distributive justice perception are estimated to differ by 0.0291 units in their reported teaching performance as a result of the tendency for those with better teaching performance to have stronger affective commitment to the university (because a is positive), which in turn promotes teaching performance (because b is positive)(Hayes, 2018). The direct effect of distributive justice, $c'=-0.0121$, is the estimated difference in teaching performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported

distributive justice perception. The coefficient is negative, which means that the university teacher perceiving lower distributive justice but who has an equal affective commitment level is estimated to be 0.0121 higher in his or her teaching performance. However, the direct effect is not significant, because the 95% confidence interval includes zero (-0.1281, 0.1040) (Hayes, 2018).

Path DJ→AC→RP: The indirect effect is statistically significant, as revealed by 95% a bootstrap confidence interval that is entirely above zero (0.0128, 0.0631). Which indicates that two university teachers who differ by one unit in their distributive justice perception are estimated to differ by 0.0348 units in their reported research performance as a result of the tendency for those with better research performance to have stronger affective commitment to the university (because a is positive), which in turn promotes research performance (because b is positive) (Hayes, 2018). The direct effect of distributive justice perception, $c' = -0.1677$, is the estimated difference in research performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported distributive justice perception. The coefficient is negative, which means that the university teacher perceiving lower distributive justice but who has an equal affective commitment level is estimated to be 0.1677 higher in his or her research performance. And the direct effect is significant, because the 95% confidence interval does not include zero (-0.2722, -0.0633) (Hayes, 2018).

Path DJ→AC→SP: The indirect effect is statistically significant, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0253, 0.0868). Two university

teachers who differ by one unit in their distributive justice perception are estimated to differ by 0.0526 units in their reported social service performance as a result of the tendency for those with better social service performance to have stronger affective commitment to the university (because a is positive), which in turn promotes social service performance (because b is positive) (Hayes, 2018). The direct effect of distributive justice perception, $c' = -0.2432$, is the estimated difference in social service performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported distributive justice perception. The coefficient is negative, which means that the university teacher perceiving lower distributive justice but who has an equal affective commitment level is estimated to be 0.2432 higher in his or her research performance. And the direct effect is significant, because the 95% confidence interval does not include zero (-0.3533, -0.1330) (Hayes, 2018).

Path PJ→AC→TP: The indirect effect is statistically different from zero, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0017, 0.0570). Which indicates that two university teachers who differ by one unit in their procedural justice perception are estimated to differ by 0.0237 units in their reported teaching performance as a result of the tendency for those with better teaching performance to have stronger affective commitment to the university (because a is positive), which in turn promotes teaching performance (because b is positive) (Hayes, 2018). The direct effect of procedural justice perception, $c' = -0.1286$, is the estimated difference in teaching performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported distributive justice perception. The coefficient is negative, which means

that the university teacher perceiving lower procedural justice but who has an equal affective commitment level is estimated to be 0.1286 higher in his or her research performance. However, the direct effect is not significant, because the 95% confidence interval includes zero (-0.2813, 0.0240) (Hayes, 2018).

Path PJ→AC→RP: The indirect effect is statistically different from zero, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0039,0.0610). Which indicates that two university teachers who differ by one unit in their procedural justice perception are estimated to differ by 0.0281 units in their reported research performance as a result of the tendency for those with better research performance to have stronger affective commitment to the university (because a is positive), which in turn promotes research performance (because b is positive) (Hayes, 2018). The direct effect of procedural justice perception, $c' = 0.0069$, is the estimated difference in research performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported procedural justice perception. The coefficient is positive, which means that the university teacher perceiving higher procedural justice but who has equal affective commitment level is estimated to be 0.0069 higher in his or her research performance as well. However, the direct effect is not significant, because the 95% confidence interval includes zero (-0.1306, 0.1444) (Hayes, 2018).

Path PJ→AC→SP: The indirect effect is statistically significant, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0069, 0.0865). Which indicates that two university teachers who differ by one unit in their procedural justice perception are

estimated to differ by 0.0419 units in their reported social service performance as a result of the tendency for those with better social service performance to have stronger affective commitment to the university (because a is positive), which in turn promotes social service performance (because b is positive) (Hayes, 2018). The indirect effect is statistically significant, as revealed by 95% bootstrap confidence interval that is entirely above zero (0.0069, 0.0865). The direct effect of procedural justice perception, $c' = 0.0362$, is the estimated difference in social service performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported procedural justice perception. The coefficient is positive which means that the university teacher perceiving higher interpersonal justice but who has equal affective commitment level is estimated to be 0.0362 higher in his or her research performance as well. However, the direct effect is not significant, because the 95% confidence interval includes zero (-0.1091, 0.1814) (Hayes, 2018).

Path IPJ→AC→TP: The indirect effect is statistically different from zero, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0030, 0.0622). Which indicates that two university teachers who differ by one unit in their interpersonal justice perception are estimated to differ by 0.0279 units in their reported teaching performance as a result of the tendency for those with better teaching performance to have stronger affective commitment to the university (because a is positive), which in turn promotes teaching performance (because b is positive) (Hayes, 2018). The indirect effect is statistically different from zero, as revealed by 95% bootstrap confidence interval that is entirely above zero (0.0030, 0.0622). The direct effect of interpersonal justice perception, $c' = -0.1286$, is

the estimated difference in teaching performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported interpersonal justice perception. The coefficient is negative, which means that the university teacher perceiving lower procedural justice but who has equal affective commitment level is estimated to be 0.1286 higher in his or her research performance. However, the direct effect is not significant, because the 95% confidence interval includes zero (-0.1565, 0.1001) (Hayes, 2018).

Path IPJ→AC→RP: The indirect effect is statistically different from zero, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0104,0.0646). Which indicates that two university teachers who differ by one unit in their interpersonal justice perception are estimated to differ by 0.0340 units in their reported research performance as a result of the tendency for those with better research performance to have stronger affective commitment to the university (because a is positive), which in turn promotes research performance (because b is positive) (Hayes, 2018). The direct effect of interpersonal justice perception, $c' = 0.0525$, is the estimated difference in research performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported interpersonal justice perception. The coefficient is positive, which means that the university teacher perceiving higher interpersonal justice but who has an equal affective commitment level is estimated to be 0.0525 higher in his or her research performance as well. However, the direct effect is not significant, because the 95% confidence interval includes zero (-0.0625, 0.1675) (Hayes, 2018).

Path IPJ→AC→SP: The indirect effect is statistically significant, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0176, 0.0897). Which indicates that two university teachers who differ by one unit in their interpersonal justice perception are estimated to differ by 0.0340 units in their reported social service performance as a result of the tendency for those with better social service performance to have stronger affective commitment to the university (because a is positive), which in turn promotes social service performance (because b is positive) (Hayes, 2018). The direct effect of interpersonal justice perception, $c'=0.0202$, is the estimated difference in social service performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported interpersonal justice perception. The coefficient is positive, which means that the university teacher perceiving higher interpersonal justice but who has an equal affective commitment level is estimated to be 0.0202 higher in his or her research performance as well. However, the direct effect is not significant, because the 95% confidence interval includes zero (-0.1018, 0.1421) (Hayes, 2018).

Path IFJ→AC→TP: The indirect effect is statistically different from zero, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0054, 0.0648). Which indicates that two university teachers who differ by one unit in their informational justice perception are estimated to differ by 0.0317 units in their reported teaching performance as a result of the tendency for those with better teaching performance to have stronger affective commitment to the university (because a is positive), which in turn promotes teaching performance (because b is positive) (Hayes, 2018). The direct effect of informational justice perception, $c'=0.1609$, is the estimated difference in teaching performance between two

university teachers having the same level of affective commitment but who differ by one unit in the reported informational justice perception. The coefficient is positive, which means that the university teacher perceiving higher informational justice but who has an equal affective commitment level is estimated to be 0.1609 higher in his or her research performance as well. The direct effect is significant, because the 95% confidence interval does not include zero (0.0182, 0.3036) (Hayes, 2018).

Path IFJ→AC→RP: The indirect effect is statistically different from zero, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0104,0.0646). Which indicates that two university teachers who differ by one unit in their informational justice perception are estimated to differ by 0.0379 units in their reported research performance as a result of the tendency for those with better research performance to have stronger affective commitment to the university (because a is positive), which in turn promotes research performance (because b is positive) (Hayes, 2018). The direct effect of informational justice perception, $c'=0.2122$, is the estimated difference in research performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported informational justice perception. The coefficient is positive, which means that the university teacher perceiving higher informational justice but who has an equal affective commitment level is estimated to be 0.2122 higher in his or her research performance as well. The direct effect is significant, because the 95% confidence interval does not include zero (0.0838, 0.3406) (Hayes, 2018).

Path IFJ→AC→SP: The indirect effect is statistically significant, as revealed by 95% a

bootstrap confidence interval that is entirely above zero (0.0226, 0.1009). Which indicates that two university teachers who differ by one unit in their informational justice perception are estimated to differ by 0.0568 units in their reported social service performance as a result of the tendency for those with better social service performance to have stronger affective commitment to the university (because a is positive), which in turn promotes social service performance (because b is positive) (Hayes, 2018). The direct effect of interpersonal justice perception, $c' = 0.1316$, is the estimated difference in social service performance between two university teachers having the same level of affective commitment but who differ by one unit in the reported informational justice perception. The coefficient is positive, which means that the university teacher perceiving higher informational justice but who has an equal affective commitment level is estimated to be 0.1316 higher in his or her research performance as well. However, the direct effect is not significant, because the 95% confidence interval includes zero (-0.0038, 0.2670). (Hayes, 2018)

Therefore, affective commitment has a mediating effect between all dimensions of organizational justice and each dimension of job performance, that is, all 12 hypotheses (from H3-1a to H3-4c) are supported.

4.7.5.3 Results of the Moderating Effect of Collectivist Value on the Relationship between Organizational Justice and Job Performance

Table 41 Moderation results

Path	P_x	P_w	P_{X*W}	Conditional direct effects		
				Low	Moderate	High
DJ→TP	-.0121	.1961***	.0212	-.0333	-.0121	.0092

			95%CI (-.0565,.0989)	95%CI (-.1759,.1093)	95%CI (-.1281,.1040)	95%CI (-.1274,.1457)
DJ→RP	-.1677**	.0445	.0177 95%CI (-.0522,.0877)	-.1855 95%CI (-.3139, -.0571)	-.1677 95%CI (-.2722, -.0633)	-.1500 95%CI (-.2729, -.0271)
DJ→SP	-.2432***	.1380***	.0579 95%CI (-.0159,.1336)	-.3010 95%CI (-.4364, -.1657)	-.2432 95%CI (-.1533, -.1330)	.1853 95%CI (-.3147, -.0557)
PJ→TP	-.1286	.1981***	.0566 95%CI (-.0209,.1342)	-.1853 95%CI (-.3592, -.0114)	-.1286 95%CI (-.2813,.0240)	.0720 95%CI (-.2405,.0965)
PJ→RP	.0069	.0459	.0412 95%CI (-.0287,.1110)	-.0343 95%CI (-.1909,.1224)	.0069 95%CI (-.1306,.1444)	.0481 95%CI (-.1037,.1999)
PJ→SP	.0362	.1393***	.0477 95%CI (-.0261,.1215)	-.0115 95%CI (-.1770,.1540)	.0362 95%CI (-.1091,.1814)	.0839 95%CI (-.0764,.2442)
IPJ→TP	-.0282	.1994***	.0244 95%CI (-.0466,.0954)	-.0526 95%CI (-.1974,.0922)	-.0282 95%CI (-.1565,.1001)	.0038 95%CI (-.1522,.1447)
IPJ→RP	.0525	.0549	.0732** 95%CI (.0095,.1368)	-.0207 95%CI (-.1504,.1091)	.0525 95%CI (-.0625,.1675)	.1257 95%CI (-.0074,.2588)
IPJ→SP	.0202	.1426***	.0358 95%CI (-.0317,.1033)	-.0156 95%CI (-.1532,.1220)	.0202 95%CI (-.1018,.1421)	.0560 95%CI (-.0851,.1971)
IFJ→TP	.1609**	.2017***	.0510 95%CI (-.0223,.1243)	.1099 95%CI (-.0532,.2730)	.1609 95%CI (.0182,.3036)	.2119 95%CI (.0542,.3695)
IFJ→RP	.2122**	.0499	.0487 95%CI (-.0173,.1146)	.1635 95%CI (.0168,.3103)	.2122 95%CI (.0838,.3406)	.2609 95%CI (.1190,.4028)
IFJ→SP	.1316	.1458***	.0726** 95%CI (.0031,.1422)	.0590 95%CI (-.0958,.2137)	.1316 95%CI (-.0038,.2670)	.2042 95%CI (0546,.3538)

Note: N=548, * p < .05, ** p < .01, *** p < .001. Coefficients are standardized.

DJ= distributive justice, PJ =procedural justice, IPJ =interpersonal justice, IFJ informational justice, JP= job performance, TP =teaching performance, RP= research performance.

The moderation results shown in Table 41 have demonstrated that most of the moderating effects of collectivism on the relationship between the four dimensions of organizational justice and each dimension of job performance is not significant. At the 0.05 level of significance, their 95% confidence interval includes zero except for path IPJ→RP and path IFJ→SP.

Path IPJ→RP: The coefficient of X*W which calculates how the effect of X on Y changes as W changes by one unit (Hayes, 2018). Here, the coefficient is 0.0732, which is positive, as revealed by a 95% bootstrap confidence interval that is entirely above zero

(0.0095,0.1306), meaning that the collectivism has a significant positive moderating effect on the relationship between interpersonal justice and research performance. More specifically, as collectivism increases by one unit, the positive effect of interpersonal justice on research performance increases by 0.0732 as well (Hayes, 2018).

Path IFJ→SP: The coefficient of $X*W$ is 0.0726, which is positive, as revealed by a 95% bootstrap confidence interval that is entirely above zero (0.0031,0.1422), meaning that the collectivism has a significant positive moderating effect on the relationship between informational justice and social service performance. More specifically, as collectivism increases by one unit, the positive effect of informational justice on social service performance increases by 0.0726 as well (Hayes, 2018).

Apart from that, it is worth noting that collectivism has a significant positive influence on teaching performance and social service performance in all the paths. For example, the coefficient of w in path DJ→TP is 0.1961, it's statistically significant($p<0.001$), meaning that as the collectivism increases one unit, the teaching performance increase by 0.1961 as well. The coefficient of w in path DJ→TP is 0.1380, it is also statistically significant ($p<0.001$), meaning that as the collectivism increases one unit, the social service performance increases by 0.1961 as well.

In summary, the 12 hypotheses of positive moderating effects of collectivist value on the relationship between each organizational justice dimension and each university teachers' job performance dimension (from H4-1a to H4-4c) are mostly rejected, except for H4-3b and H4-4c.

4.8 Conclusion

All hypotheses have been tested and the results are as follows (Table 42):

Table 42 Outcomes of all hypotheses

Number	Hypotheses	Result
<i>H1a</i>	Distributive justice has positive impact on affective commitment.	Supported
<i>H1b</i>	Procedural justice has positive impact on affective commitment.	Supported
<i>H1c</i>	Interpersonal justice has positive impact on affective commitment.	Supported
<i>H1d</i>	Informational justice has positive impact on affective commitment.	Supported
<i>H2a</i>	Affective commitment has positive impact on teaching performance.	Supported
<i>H2b</i>	Affective commitment has positive impact on research performance.	Supported
<i>H2c</i>	Affective commitment has positive impact on social service performance.	Supported
<i>H3-1a</i>	Affective commitment plays a mediating role between distributive justice and teaching performance.	Supported
<i>H3-1b</i>	Affective commitment plays a mediating role between distributive justice and research performance.	Supported
<i>H3-1c</i>	Affective commitment plays a mediating role between distributive justice and social service performance.	Supported
<i>H3-2a</i>	Affective commitment plays a mediating role between procedural justice and teaching performance.	Supported
<i>H3-2b</i>	Affective commitment plays a mediating role between procedural justice and research performance.	Supported
<i>H3-2c</i>	Affective commitment plays a mediating role between procedural justice and social service performance.	Supported
<i>H3-3a</i>	Affective commitment plays a mediating role between interpersonal justice and teaching performance.	Supported
<i>H3-3b</i>	Affective commitment plays a mediating role between interpersonal justice and research performance.	Supported
<i>H3-3c</i>	Affective commitment plays a mediating role between interpersonal justice and social service performance.	Supported
<i>H3-4a</i>	Affective commitment plays a mediating role between informational justice and teaching performance.	Supported
<i>H3-4b</i>	Affective commitment plays a mediating role between informational justice and research performance.	Supported
<i>H3-4c</i>	Affective commitment plays a mediating role between informational justice and social service performance.	Supported
<i>H4-1a</i>	Collectivism plays a moderating role between distributive justice and teaching performance.	Rejected
<i>H4-1b</i>	Collectivism plays a moderating role between distributive justice and research performance.	Rejected
<i>H4-1c</i>	Collectivism plays a moderating role between distributive justice and social service performance.	Rejected
<i>H4-2a</i>	Collectivism plays a moderating role between procedural justice and teaching performance.	Rejected
<i>H4-2b</i>	Collectivism plays a moderating role between procedural justice and research performance.	Rejected

<i>H4-2c</i>	Collectivism plays a moderating role between procedural justice and social service performance.	Rejected
<i>H4-3a</i>	Collectivism plays a moderating role between interpersonal justice and teaching performance.	Rejected
<i>H4-3b</i>	Collectivism plays a moderating role between interpersonal justice and research performance.	Supported
<i>H4-3c</i>	Collectivism plays a moderating role between interpersonal justice and social service performance.	Rejected
<i>H4-4a</i>	Collectivism plays a moderating role between informational justice and teaching performance.	Rejected
<i>H4-4b</i>	Collectivism plays a moderating role between informational justice and research performance.	Rejected
<i>H4-4c</i>	Collectivism plays a moderating role between informational justice and social service performance.	Supported

Chapter Five: Qualitative data analysis and findings

5.1 Introduction

In this study, sequential explanatory mixed methods is the best approach to address the research question “how organizational justice impacts university teachers’ job performance”, which was elaborated in the methodology chapter. The sequential explanatory strategy can help explore the theory’s adaptability in distinct groups and cultural backgrounds while verifying the hypotheses (Creswell, 2014). And it can be especially useful when unexpected results arise from a quantitative study (Caruth, 2013; Terrell, 2012). There are some unexpected quantitative results emerged, so it is necessary to find out the reasons and show the real story of the research problem. A focus group interview of eight participants has been conducted to dig up the whole picture about how organizational justice impacts on university teachers’ job performance. The thematic analysis strategy was used to analyze the qualitative data: get familiar with the data, generate initial code, search for themes, review themes, define and name themes, and produce the report. Through thematic analysis of qualitative data, five main themes have been extracted: organizational justice and job performance, affective commitment, collectivist value, sense of accomplishment, and self-growth.

5.2 The Purpose of Qualitative Research

The purpose of qualitative research in this study is to explore the quantitative findings and deepen the inquiry. The quantitative analysis has shown some interesting findings:

-
- i) Informational justice is the only dimension of organizational justice that has a direct positive influence on teaching performance and research performance. The other dimensions of organizational justice have no direct effects on university teachers' job performance. Distributive justice even has a negative impact on research performance and social service performance.
 - ii) Teaching performance is the most stable, it is not significantly affected by all demographic characteristics of participants and all organizational justice dimensions except for informational justice, it's less affected by affective commitment as well, compared with research performance and social service performance.
 - iii) All relationships between organizational justice dimensions and job performance dimensions are mediated by affective commitment.
 - iv) Collectivism has no moderating effect on the relationships between organizational justice and job performance in general, except for the relationship between interpersonal justice and research performance and the relationship between informational justice and social service performance.
 - v) Female teachers are significantly inferior to male teachers in research performance and social service performance.

Therefore, to find out the real story behind the above results, it is necessary to inquire the participants deeply through focus groups.

5.3 The Thematic Analysis Strategy of Qualitative Data

Thematic analysis is a foundational and widely used qualitative analytic method for “identifying, analysing, and reporting patterns (themes) within data” (Braun and Clarke,

2006,p79) in social science research (Liamputtong, 2009). The thematic analysis method has been considered as a reliable and independent method to conduct a rigorous and relevant analysis (Vaismoradi, Turunen and Bondas, 2013). Thematic analysis will include but should not be limited to identifying themes, it is also relevant to the research question, context, and theoretical framework in which the research is conducted (Bergman, 2015; Nowell *et al.*, 2017).

Following the recommendations of Braun and Clarke (2006), six phases have been used to analyse qualitative data in this study.

Phase 1, getting familiar with the data. First, the audio data has been transcribed into a word version in detail, and the transcript has been checked several times for accuracy according to the audio record. Then, to get familiar with the data deeply and broadly, read the whole data repeatedly critically for meaning, patterns in quiet and isolated places (Braun and Clarke, 2006; Nowell *et al.*, 2017).

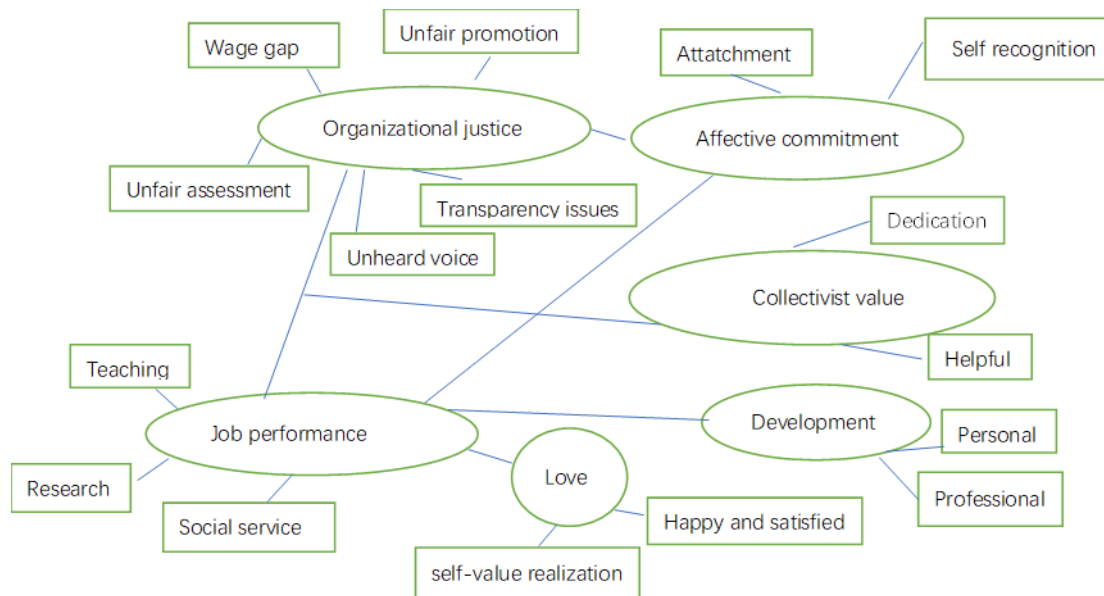
Phase 2, generating initial codes. Both data-driven and concept-driven initial codes have been generated after repeated reading and familiarization with the data (Braun and Clarke, 2006; Gibbs, 2018). These initial codes are the most basic parts or elements in the original data or information related to the research question of how organizational justice affects the job performance of university teachers, the coding process is also part of the analysis (Boyatzis, 1998). The data has been sorted into meaningful groups based on the initial codes using tables, and notes have been made in the text for further analysis.

Phase 3, searching for themes. After preliminary classification of all the raw data, initial codes have been identified. In this process, relevant codes have been sorted into potential

themes (Braun and Clarke, 2006). Visual mind mapping has been used to find the inner relationships between codes and themes at various levels. Some initial codes have been formed into the main theme, some have been formed into sub-themes, some have been combined into other themes, and some have been abandoned at last because of their lack of relevance ((Miles, Huberman and Johnny, 2014; Nowell *et al.*, 2017).

However, do not give up anything at this stage, because without looking at all the excerpts in detail (the next stage), it is uncertain whether the theme remains the same, or whether it needs to be combined, refined, and separated, or abandoned (Braun and Clarke, 2006).

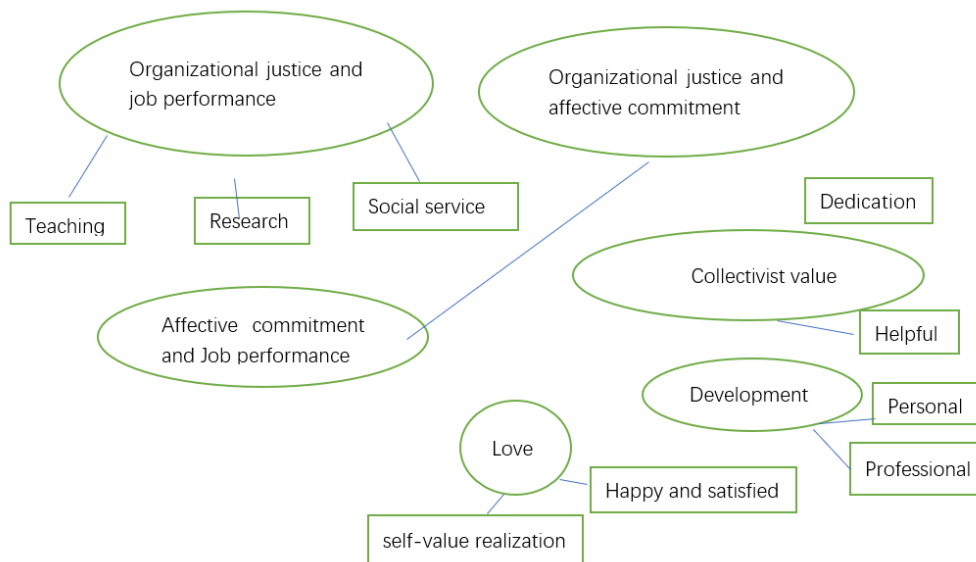
Figure 12 Initial thematic map



Phase 4 Reviewing themes. The themes have been refined to make sure that all the themes left are real themes, and do not overlap each other. First, all selected excerpts from every theme have been examined carefully to find out whether they form a coherent theme. Second, whether all the themes accurately describe the whole story of the whole dataset and reveal the myth of the research question (Braun and Clarke, 2006). For example, affective commitment, feelings of accomplishment, and self -growth should be carefully

distinguished to address the different facets of the research question. After all the themes have been carefully reviewed, the data within the theme has been combined meaningfully, and clear and identifiable differences between themes can be found (Braun and Clarke, 2006).

Figure 13 Developed thematic map



Phase 5 Defining and naming themes. The themes have been defined and named to be presented for analysis. Data excerpts from each theme have been collated and organized into a coherent and internally consistent narrative, and the content of the data excerpts has been interpreted and the reasons for its relevance have been explained in detail too. By doing this, overlap between themes has been minimized (Braun and Clarke, 2006).

Figure 14 Final thematic map



Phase 6, producing the report. At this stage, the analysis of the qualitative data should be presented in an academic manner. To provide a concise, coherent, logical, and meaningful story within and across the themes, enough vivid evidence and data extracts have been provided to show the prevalence of the themes. And their relevance to the research question has also been elaborated in detail (Braun and Clarke, 2006; Nowell *et al.*, 2017).

In other words, all these phases were not simply movements in one direction from one step to another, they are reflexive processes to spark insight and develop meaning (Srivastava and Hopwood, 2009; Miles, Huberman and Johnny, 2014).

5.4 Findings of qualitative data

Teachers who participated in focus groups reported unfair treatment while working at university, which includes wage gap, unfair assessment and opportunity for promotion,

information transparency issues and unheard voice, and so on. Details of findings have been elaborated with the excerpts and examples in this section, which prepares for the discussion chapter integrating the quantitative findings and qualitative findings together. Five main themes have been extracted: organizational justice and job performance, affective commitment, collectivist value, sense of accomplishment, and self-growth.

5.4.1 Theme one: Organizational Justice and Job Performance

5.4.1.1 Organizational Justice and Teaching Performance

Many studies have confirmed that organizational justice has positive impact on job performance. However, regarding the impact of organizational justice on teaching performance, several teachers agreed that their teaching performance will not be affected.

“The previous leaders of my university were very perverted, showed great disrespect to teachers. But I still took every class seriously. I think the students are innocent, and their interests should not be sacrificed.” (Participant 3) *“Due to the low professional title and no scientific research team, it is difficult to apply for research projects, so I have no research funding. I am a head teacher who spends a lot of time in charge of the class without getting what I deserve. But I still try my best to prepare every class, my students rate my teaching highly.”* (Participant 5)

All teachers believe that it is their job to teach and educate people, and they should do their best to help students grow. *“No matter how much I get paid and how I’m treated, I will do my teaching work seriously, because this is what a teacher should do.”* (Participant 7) In the minds of students, teachers are often social norms, the embodiment of knowledge, and moral models. They not only see teachers as role models to learn from, but even imitate their

words and deeds. Therefore, teachers believe that unfair treatment cannot affect teaching and destroy the glorious image of teachers in the minds of students.

5.4.1.2 Organizational justice and Scientific Performance

Scientific research is one of the main contents of teachers' work in universities, it is the embodiment of teachers' professional competence, and it is also an important requirement for teachers' promotion and professional development. Therefore, the fairness of scientific research management and scientific research evaluation system has received great attention from university teachers. *“Professional title promotion mainly evaluates scientific research performance, and the publication of papers and project application are related to professional titles and academic qualifications. Young teachers like us feel hopeless in scientific research.”* (Participant 1) Sometimes, even if the teachers feel that the scientific research assessment is unfair, in order not to damage their own interests, they will try their best to meet the requirements. *“I am required to publish a certain number of papers and complete a certain number of projects within 3 years, when I fail, my bonus will be deducted. This assessment method violates the laws of scientific research. The production of scientific research fluctuates, rather than the average “output” every year or every few years. But I have no choice, to meet the requirements of scientific research assessment, I can only try my best to apply for projects and publish as many papers as possible in journals.”* (Participant 6)

In addition, brilliant research performance is also the most important condition for university teachers to seek better jobs. This will also prepare them for going to other better universities. *“I’m working hard to apply for projects and publish high-level papers, so that when I’m*

being unfairly treated, I can have better options instead of passive acceptance.” (Participant 6)

Female teachers are generally dissatisfied with their research performance. On the one hand, they devote too much time to teaching rather than scientific research, and on the other hand, they lack scientific research support and platforms. *“When I put a lot of energy into teaching, I do not have much time and energy for scientific research. However, promotion and assessment focus on scientific research performance, and I feel very helpless.”* (Participant 2) *“I had to take care of my two children, it’s hard to balance work and life, and I didn’t have much time for academic activities before. Now my children grow older, I want to spend more time doing research. But I realize that I do not have the support of the team and need to improve my academic ability.”* (Participant 3) The career development of female teachers is more concerned with the balance between family and life, and their enthusiasm for teaching and research is also different. Besides, support from teams and universities is also particularly important for their scientific performance.

5.4.1.3 Organizational Justice and Social Service Performance

By using their professional and intellectual advantages, university teachers can not only meet the needs of social development by providing services to the government, enterprises, and social organizations, but also expand their popularity and influence, bringing certain economic benefits. Some teachers admitted that if they are not getting what they deserve, they will find ways to make money from other sources to make a living, for example: *“Salaries in other industries have increased a lot in recent years, but ours has not increased much. Three years ago, I took out a loan from bank to buy an apartment, after repaying the*

mortgage every month, little left. Hence, I face great economic and mental pressure. I must use my professional knowledge and experience to serve the society to earn some extra money for living.” (Participant 6) “I am practicing law in spare time in companies too, which brings me some extra income. My classmate teaches at another same level university in Jiangxi. We are both associate professors, a few years ago, our salaries were about the same level, but now his annual income is twice mine, which is very difficult for me to accept. So, I must take actions.” (Participant 4)

It can be seen from the above quotation that the lower the level of distributive justice of teachers, the more pressure for them to go out of the campus to serve the society to obtain more income and social influence. Of course, not all teachers have opportunities to participate in social services, which requires universities to build social service platforms for more teachers.

5.4.2 Theme Two: Affective Commitment

5.4.2.1 Organizational Justice and Affective Commitment

According to social exchange theory, good organizational atmosphere, like organizational justice, can make employees emotionally attach to and trust the organization. However, organizational injustice conception can damage employees’ affective commitment to the organization. Several teachers mentioned how organizational injustice treatment affected their reliance and trust in the university.

“I do not know how the university's policy came out, we are just asked to implement it, if I knew more background about the policy, I think I would be more willing to cooperate. And

now, I am a little conflicted from the bottom of my heart.” (Participant 3)

“According to the current promotion requirements, I do not think there will be any chance of promotion in the future. Every year, the year-end assessment bonus will be deducted because the scientific research is not up to standard. When I think about this, I feel a lot of pressure, and I cannot concentrate on my work, and I feel that it is meaningless to stay in this university.” (Participant 6)

When the teachers are treated unfairly in distribution, they feel deprived and angry and try to look for other job opportunities. Furthermore, ignorance and unheard voice can lead to a non-constructive shift, as it creates feelings of disappointment and frustration when teachers’ issues are not addressed and resolved. This will affect teachers’ motivation and work engagement, which in turn affects job performance. For example:

“If the procedure of policy and decision making is more transparent, if the administrators can fully communicate with the us, I will feel more involved and valued, this is very important for me.” (Participant 6) “I got very disappointed when my suggestions to discipline development were ignored directly by the dean. I felt that my efforts had not been recognized accordingly, and I wish I could leave immediately. Therefore, I am now doing my Ph.D. to improve my scientific research capabilities. I hope that when I am unfairly treated in the future, I will be able to leave with dignity.” (Participant 1)

5.4.2.2 Affective Commitment and Job Performance

Affective commitment affects individual attitudes and behaviors, the teachers’ affective commitment to the universities really impacts their job performance. For examples: *“When*

I have a sense of belonging and identity in this university, I hope to make the university better through my hard work, so that the university can also provide a better platform for my career development.” (Participant 6) *“When my voice was not heard at university and my rights were ignored, I was very frustrated, I’m always looking for opportunities to leave, and it’s difficult for me to focus on other work except basic teaching activity.”* (Participant 2) Weak affective commitment can generate teachers’ negative behaviors, such as deficient performance, turnover intention. While strong affective commitment can promote positive behavior, such as *“Once my family encountered some difficulties, I plucked up the courage to ask my leader for help, he considered my special situation and gave me some help and support. I am so grateful; I feel like the university I work at is a loving collective and it deserves my challenging work to make it better.”* (Participant 3) Strong affective commitment makes individuals willingly put their efforts in the better interest of the organization.

5.4.3 Theme Three: Collectivism

In China, the organization is often taken as an in-group. Ingroup harmony and welfare are especially important to Chinese people. The Chinese people have been educated by collectivism since childhood, they are more willing to sacrifice their personal interests for the collective good. Most teachers who participated in focus groups admitted that they all had collectivist values, but that does not mean they do not care about justice and fairness. *“I like to help colleagues and people around me. This does not affect my frustration and anger when I encounter unfair treatment.”* (Participant 3) *“I work hard, I try to contribute to the collective, and of course I want to be treated fairly.”* (Participant 5) *“I love the university I work at, and I want everyone to be treated fairly, which will inspire everyone's potential and*

make it a better place.” (Participant 4)

Only when everyone is treated fairly can everyone's enthusiasm be ignited, and the collective become better. Justice is a beautiful value pursued by human beings, and it is also the driving force for the development of social civilization.

5.4.4 Theme Four: Sense of Accomplishment

For university teachers, the sense of accomplishment comes every day, not because of salary or respect, but because of love for their profession and responsibility for the students. They believe that the sense of accomplishment does not affect their perception of justice, but partially offset the impact of organizational justice on job performance, especially teaching performance.

“I love my job very much, especially teaching. I spend every day with young people and often come up with new ideas. I am also incredibly happy to be able to help young students grow as much as I can.” (Participant 3)

“When I receive greetings from students on Teachers' Day, when the students share with me the joy of their success, I feel that everything I do is meaningful and worthwhile.” (Participant 2). “I am very proud to see the growth of the students. One of my students, who is now the head of a law firm, told me that he strives to pursue justice in every case to promote the progress of the rule of law in China. I am very proud of him.” (Participant 4)

The teacher-student relationship is a bit like the parent-child relationship. Teachers' unreserved efforts just hope that students will learn more knowledge and develop better, which is the source of their sense of achievement. Hence, most university teachers' sense of achievement comes from positive feedback from students they have taught, so they feel that

teaching is the most rewarding. There are also some teachers who believe that their scientific research achievements can promote social progress and that their social service can bring positive impact to the society as well.

“I made a proposal to the local government on the protection of historical and cultural districts the year before last. The government accepted my proposal, and our city has become better because of this. I am immensely proud and accomplished.” (Participant 8) *“The camellia seeds cultivated by our scientific research team have enhanced disease resistance, increased yield, and increased income for farmers. I think our work can help others and is particularly valuable and meaningful.”* (Participant 6) *“I often use my legal knowledge to help vulnerable groups defend their rights, such as employees who have been dismissed illegally and women who have suffered domestic violence. I find it extremely rewarding to be able to help others out of a difficult situation.”* (Participant 4)

In a word, the sense of achievement of university teachers mainly comes from the positive influence on students in the process of teaching and getting along with students. It also comes from the contribution of scientific research and social services to society.

5.4.5 Theme Five: Self Growth

The self-growth of university teachers is not only the need of professional development, but also the need of self-value realization. Therefore, no matter what environment they are in, they will put self-growth in the most prominent position.

“No matter what the treatment in university is, I will continue to study and improve my academic qualifications and abilities, which makes me more confident as a teacher to guide

and help students, and it is also beneficial to my career development.” (Participant 6)

In addition, if the organizational justice perception level of university teachers is lower, they will have a lower affective commitment and will pay more attention to personal growth and ability improvement to prepare for more choices in the future. Because university teachers are senior knowledge workers, they themselves are the most worthwhile investment assets (Drucker, 2012).

“I am doing my PhD, which will give me more options and the ability to choose somewhere else if I do not feel like I'm being treated fairly at this university. But I still hope that this university can do better in terms of fairness, then I can play my best potential here, I do not want to leave unless I must.” (Participant 5)

When teachers do not have any hope of promotion in the university, they will pay more attention to their career development outside the university to gain practical experience and expand their reputation. *“I also use my professional knowledge to serve the society, which enriches my practical experience on the one hand, and enhances my social influence on the other hand, that self-growth can bring me additional economic benefits at the same time.”* (Participant 6)

5.5 Contribution of Qualitative Research Results

The purpose of qualitative research in this study was to explore the quantitative findings and deepen the inquiry. The findings of qualitative research are consistent with the quantitative research results in general, but they provide more detail and vivid information of the whole picture of the research question.

Concerning the relationship between organizational justice and university teachers' affective commitment, many teachers reported that organizational justice affected their affective commitment to the university they work at, which is consistent with the acceptance of *H1a-1d* in quantitative research. Furthermore, many teachers revealed that affective commitment in turn promoted their job performance based on social exchange, which is consistent with the acceptance of *H2a-2b* in quantitative research as well.

Concerning the direct relationship between organizational justice and university teachers' job performance, teaching performance is least influenced by organizational justice in quantitative research, sense of accomplishment theme in teaching in qualitative research well explained the reason. The distributive justice even negatively impacted the research performance of university teachers in quantitative research results, the theme of self-growth well explained the reason. However, all the information indicated that affective commitment played a role of bridge between organizational justice and university job performance, which is consistent with the acceptance of *H3-1a-3-4c* in quantitative research. The qualitative results also demonstrated that organizational justice is not absolute, undifferentiated equality, the university administrators should notice the gender, title, and education difference of teachers to make fairer policies. Furthermore, emphasis on affective commitment, sense of accomplishment, and self-growth are the characteristics of knowledge workers, qualitative results also remind university administrators to pay more attention to the characteristics of university teachers as senior knowledge workers in the process of management, this will be discussed in the discussion chapter and practical implication section in detail.

Concerning the moderating role of collectivism, many teachers admitted they have high level collectivism, but this does not affect their concern about organizational justice, which is consistent with the most rejection of *H4-1a- 4-4c* in quantitative research. This indicated that university teachers with horizontal collectivism emphasize common goals and sociality but do not easily obey authority. So, the university administrators can not merely hope to promote collectivism and dedication, but ignore organizational justice to improve teachers' job performance, this will be discussed specifically in the following chapters.

5.6 Conclusion

Five main themes have been extracted after the qualitative data analysis: organizational justice and job performance, affective commitment, collectivist value, sense of accomplishment, and self-growth. In this study, qualitative method is a supplementary method to explore some unexpected and interesting findings emerged in the quantitative study stage, and the qualitative findings have made a good contribution. All qualitative analysis results will be discussed comprehensively in the following chapters in combination with quantitative analysis results.

Chapter Six: Discussion

6.1 Introduction

This study aimed to develop a management framework for Chinese public universities from the organizational justice perspective to improve the teachers' job performance. So, this chapter will synthesize, interpret, and evaluate the results of quantitative and qualitative to answer the main research question: How organizational justice affects the job performance of university teachers. Results from quantitative research indicated that the organizational justice perception level of university teachers in China was not high, organizational justice (distributive, procedural, interpersonal, and informational) had significant positive impacts on university teachers' affective commitment, and affective commitment, in turn, positively affected job performance (teaching, research, and social service). And affective commitment functioned as an indispensable bridge between organizational justice and job performance. In addition, collectivism did not moderate all relationships between organizational justice and job performance as hypothesized. Therefore, this chapter will discuss these quantitative findings in conjunction with qualitative results. The relationship between organizational justice and affective commitment and job performance will be first discussed, then followed by mediation results, moderation results, and finally demographic characteristic impacts.

6.2 The Impact of Organizational Justice on University Teachers' Affective Commitment

This part of discussion will answer the research question: how does organizational justice impact public university teachers' affective commitment?

The quantitative results indicated that four dimensions of organizational justice all had a positive impact on the university teachers' affective commitment, which are consistent with previous studies (Colquitt et al., 2012; Sharma and Dhar, 2016; Jiang, Gollan and Brooks, 2017; Lee and Wei, 2017; Haque, Fernando and Caputi, 2019). Therefore, the hypotheses (*H1a-1d*) are all supported. In the interaction between employees and organization (teachers and university) based on social exchange, distributive and procedural justice influence teachers' affective commitment positively. In the interaction between employees and supervisors (teachers and university administrators), interpersonal and informational justice also impose a positive impact on teachers' affective commitment.

As knowledge workers, university teachers have strong mental and psychological needs (Jiang *et al.*, 2017). Organizational justice makes the teachers feel respected, supportive, and valuable, which in turn develops a high level of affective commitment to the university. The relationship is mutual and reciprocal and it can be explained by the social exchange theory (Cropanzano and Mitchell, 2005; Cropanzano *et al.*, 2017). According to social exchange theory, feeling obligated and committed after being treated fairly is a key to explain why justice perceptions impact behaviors that are very crucial to organizations, such as affective commitment (Roch *et al.*, 2019). However, some researchers (Lam et al., 2002; Westwood et al., 2004; Cropanzano *et al.*, 2017) demonstrated that social exchange theory may not be adapted to explain the attitudes and behaviors of employees in countries like China. They argued that in countries with high power distance and collectivism, employees are more likely to be motivated to comply with the obligations of their defined social roles than with

obligations that originated from social exchange. The results in this study supported that the theory of social exchange is also applicable to China(Casimir *et al.*,2014,Song, 2017; Jin, 2018), especially in the context of public university.

It is worth noting that among the four dimensions of organizational justice, informational justice had the strongest predicting effect on affective commitment, followed by distributive and interpersonal justice, while procedural justice was the weakest. Many empirical studies in Western culture countries have revealed that, compared with other justice dimensions, procedural justice had the strongest direct impact on affective commitment, such as in South Korea , Australia (Jiang, Gollan and Brooks, 2017), and the US ((Zapata-Phelan *et al.*, 2009;DeConinck, 2010). However,procedural justice had the weakest predicting effect in this study. The results in this study are consistent with some previous related studies in the Chinese context((Wang *et al.*, 2010; Lee and Wei, 2017; Jiang, Gollan and Brooks, 2017).

First of all, Chinese people have a tradition of emphasizing substance over procedures. In order to pursue substantive justice, procedural justice can be waived. This is a common value orientation in ancient Chinese society, and it has far-reaching influence(Ma, 2012). In modern society, in pursuit of more efficient problem solving, people will more focus on results rather than procedures. Therefore, distributive justice that reflects fairness of outcomes has better predictive power(Liang and Chen, 2014).However, with the widespread and influence of Western procedural justice idea, people are paying more and more attention to the issue of procedural justice (Qu, 2021). Therefore, although procedural justice does not have the strongest influence, it also significantly affects teachers' affective commitment.

As Participant 3 said in the focus group *“I do not know how the university's policy came out, we're just asked to implement it, if I knew more background about the policy, I think I would be more willing to cooperate.”*

Furthermore, The Chinese people emphasize the relationship and harmony between people. That's the reason while procedural justice has a stronger impact on affective commitment in the Western culture countries, while interpersonal and informational justice(interactional justice) have a stronger influence in China(Wang *et al.*, 2010).The ultimate concern of Confucianism is to focus on the "justice" of interpersonal relations-“Guanxi” (Jia, 2016; Huang, 2019). Confucianism have always run through Chinese society and have had a far-reaching impact on the shaping of people's ideas in the historical process (Huang, 2019). Interpersonal and informational justice implies the harmonious guanxis(respect, dignity,transparency,and good communication) supervisors show to teachers, in return, teachers develop higher affective commitment, the reverse is true. *“I got very disappointed when my suggestions to discipline development were ingored by adminstrators. I felt that my efforts had not been recognized accordingly, and I wish I could leave immediately. Therefore, I am now doing my Ph.D. to improve my scientific research capabilities. I hope that when I am ignored and unheard in the future, I will be able to leave with dignity.”* (Participant 1) *“If the decision making is more transparent,if the administrators can fully communicate with the teachers, I will feel more involved and valued, this is very important for me.”* (Participant 6)

However, guanxi may sometimes break the fair rules and procedures, which enables some people to get benefits and privileges(Jia, 2016; Huang, 2019). In this sense, Guanxi may

reduce the process control of teachers and lower their expectation of procedural justice, which in turn leads their affective commitment to be affected more by interactional justice that they really feel in the process of interaction and the distributive justice that reflects the outcomes they can actually see. In conclusion, the results of this study reconfirm that procedural justice is the most effective predictor of individuals' positive attitudes and behaviors, such as affective commitment in western countries, may not be applicable in China.

6.3 The Impact of Affective Commitment on University Teachers' Job Performance

This part of discussion will answer the research question: how does affective commitment impact public university teachers' job performance?

The quantitative results showed that affective commitment significantly had a positive influence on university teachers' teaching, research, and social service performance. Therefore, the hypotheses (*H2a-H2c*) are all supported. The findings of previous studies showed that affective commitment can inhibit negative behaviors, such as turnover intention (Craig *et al.*, 2013; Albrecht, 2015; Haque, Fernando and Caputi, 2019), withdrawal intention (Tillman *et al.*, 2018), and counterproductive performance (Somers, 2017). While it can also promote positive behaviors like organizational citizenship behavior (Kim, 2014), knowledge sharing and exploration (Li *et al.*, 2015), job performance (task performance and contextual performance) (Sharma and Dhar, 2016; Ribeiro, Yucel and Gomes, 2018). The results of this study are in line with those previous studies (Sharma

and Dhar, 2016; Ribeiro, Yucel and Gomes, 2018), revealing a very strong positive relationship between affective commitment and university teachers' job performance. According to Maslow's hierarchy of needs theory, after a basic lower level need fulfilled, a higher new need will be generated (Maslow, 1954). When the teachers have a strong identification with the university's value and goals and have a strong attachment to the university, this strong feeling of belongings make them to work hard to contribute to the university and actualize themselves meanwhile (Mercurio, 2015). *"When I have a sense of belonging and identity in this university, I hope to make the university better through my hard work, so that the university can also provide a better platform for my career development."* (Participant 6) *"Once my family encountered some difficulties, I plucked up the courage to ask my leader for help, he considered my special situation and gave some help and support. I am so grateful; I feel like the university I work at is a loving collective and it deserves my challenging work to make it better."* (Participant 3). This process is mutual and reciprocal to benefit two parties based on social exchange. However, lower level of affective commitment will lead to distraction and deficient performance. For example, *"When my voice was not heard at university and my rights were ignored, I was very frustrated, I'm always looking for opportunities to leave, and it's difficult for me to focus on other jobs except basic teaching jobs."* (Participant 2)

Among the three dimensions of university teachers' job performance, teaching performance was least affected by affective commitment while social service was most affected. For university teachers, the sense of accomplishment comes every day, not because of income or respect, but because of love for their profession and responsibility for the students.

“I love my job very much, especially teaching. I spend every day with young people and often come up with new ideas. I am also incredibly happy to be able to help young students grow as much as I can.” (Participant 3) *“When I receive greetings from students on Teachers' Day, when the students share with me the joy of their success, I feel that everything I do is meaningful and worthwhile.”* (Participant 2) *“I am immensely proud to see the growth of the students. One of my students, who is now the head of a law firm, told me that he strives to pursue justice in every case to promote the progress of the rule of law in China. I am immensely proud of him.”* (Participant 4). The pursuit of self-fulfillment is one of typical characteristics of knowledge workers (Heidary Dahooie, Ghezel Arsalan and Zolghadr Shojai, 2018). This inner sense of achievement and responsibility drives the teachers to devote themselves to teaching. Although scientific research and social services will also bring teachers a sense of achievement, they are not so strong as teaching, so they need more external conditions and stimulation. Based on the principle of social exchange, higher affective commitment will motivate teachers to improve research and social service performance to give back to the university and achieve the overall interests of the university.

6.4 The Impact Mechanism of Organizational Justice on University Teachers' Job Performance through Affective Commitment

This part of discussion will answer the research question: How does affective commitment mediate the relationship between organizational justice and university teachers' job performance?

6.4.1 The Direct Impact of Organizational Justice on University Teachers' Job Performance

The results showed that almost all the dimensions of organizational justice didn't positively influence teachers' job performance directly, except for the direct positive relationship between informational justice and teaching performance and research performance. The findings reconfirmed that the influence of organizational justice on job performance was mostly indirect (Wang *et al.*, 2010; Swalhi, Zgoulli and Hofaidhllaoui, 2017). However, it is noteworthy that distributive justice had a direct negative influence on teachers' research performance and social service performance, which contrasts with most previous studies.

The results of previous studies have confirmed that the influence of organizational justice (including specific dimension) on job performance can be different based on distinct cultural backgrounds and the professional characteristics and needs of research objects. For example, in a survey of 277 undergraduates in the United States demonstrated that procedural justice predicted task performance, while interpersonal justice was not significantly related to task performance (Zapata-Phelan *et al.*, 2009). A comparative study based on Saudi and foreign employees found that there was no direct relationship between justice dimensions and self-perceived performance for the Saudi employees, but for the foreign employees, all justice dimensions had a significant impact (Elamin and Alomaim, 2011). A study in the context of Turkey revealed that only distributive justice had a positive and significant impact on task performance (Krishnan *et al.*, 2018). A survey of academic staff at public universities in Iraq showed that distributive justice and interactional justice had a positive influence on

academic performance and ability to increase performance, while procedural justice had no influence (Jameel, Ahmad and Mousa, 2020).

Regarding the impact of organizational justice on teaching performance, several teachers agreed that organizational justice will not affect their teaching performance. Because university teachers are senior knowledge workers, their mental and psychological needs are very strong, the pursuit of self-fulfillment is one of their typical characteristics (Jiang *et al.*, 2017). Teaching can bring them a high sense of accomplishment. *“When I receive greetings from students on Teachers' Day, when the students share with me the joy of their success, I feel that everything I do is meaningful and worthwhile.”* (Participant 2). *“I am very proud to see the growth of the students. One of my students, who is now the head of a law firm, told me that he strives to pursue justice in every case to promote the progress of the rule of law in China. I am very proud of him.”* (Participant 4). Therefore, even if teachers are treated unfairly, they still take teaching seriously, because autonomy is from their own values and sense of responsibility as knowledge workers. *“The previous leaders of my university were very perverted, showed great disrespect to teachers. But I still took every class seriously. The students are innocent, and their interests should not be sacrificed.”* (Participant 3) *“Due to the low professional title and no scientific research team, it is difficult for to apply for research projects, so I have no research funding. I am a head teacher who spends a lot of time in charge of the class without getting what I deserve. But I still try my best to prepare every class, my students rate my teaching highly.”* (Participant 5) All teachers believe that it is their job to teach and educate people, and they should do their best to help students grow. *“No matter how much I get paid and how I'm treated, I will do my teaching work*

seriously, because this is what a teacher should do.” (Participant 7).

Informational justice is the only one that have a direct positive impact on university teachers' job performance (teaching and research). Because the Chinese people emphasize the relationship and harmony between people. The ultimate concern of Confucianism is to focus on the "justice" of interpersonal relations-“Guanxi”((Jia, 2016; Huang, 2019). Confucianism have always run through Chinese society and have had a far-reaching impact on the shaping of people's ideas in the historical process (Huang, 2019). Informational justice implies the harmonious guanxis(respect, dignity,transparency,and good communication) supervisors show to teachers, in return, teachers develop better job performance based on higher affective commitment and self-identity. According to George Elton Mayo's human relation theory, good communication and feedback mechanism can improve productivity(Beatley, 2016). *“If the decision making is more transparent,if the administrators can fully communicate with the teachers, I will feel more involved and valued, this is very important for me.” (Participant 6) .* “Guanxis”are very important for Chinese people. Opaque information and not being heard will cause damage to “Guanxis” (Huang, 2019), which will cause serious devaluation and a sense of disapproval, which will affect teachers job performance in turn.When teachers feel disrespected, it prevents them from devoting themselves to teaching and research, and instead constantly thinking about how to leave the university and find another job. *“I got very disappointed when my suggestions to discipline development were ingored by adminstrators. I felt that my efforts had not been recognized accordingly, and I wish I could leave immediately. Therefore, I am now doing my Ph.D. to improve my scientific research capabilities. I hope that when I am*

ignored and unheard in the future, I will be able to leave with dignity.” (Participant 1).

Distributive justice had a direct negative influence on university teachers’ research performance and social service performance. The traditional view of the impact of organizational justice on job performance can basically be summed up as: employees with a high conception of organizational justice are employees with better performance (Shan, Ishaq and Shaheen, 2015; Krishnan *et al.*, 2018)). However, the reality is complicated. On the surface, this is an unreasonable result, but in fact it is in line with the characteristics of university teachers and their work in the context of fierce competition and frequent flow of senior talents in universities in China (Li, Liu and Li, 2013). The performance appraisal of Chinese universities puts more emphasis on scientific research than teaching, and the scientific research assessment focuses on more quantity and less quality (Wang and Chen, 2019). Although teachers are dissatisfied with the unfair distribution based on assessment results, they will try their best to complete scientific research tasks in order not to affect their income. *“I’m required to publish a certain number of papers and complete a certain number of projects within 3 years, when I fail, my bonus will be deducted. This assessment method violates the laws of scientific research. The production of scientific research fluctuates, rather than the average “output” every year or every few years. But I have no choice, to meet the requirements of scientific research assessment, I can only try my best to apply for projects and publish as many papers as possible in journals.*” (Participant 6). When the distributive justice perception level of university teachers is lower, based on the social exchange theory, they will have a lower affective commitment and will pay more attention to personal growth and ability improvement so as to prepare for more choices in the future.

Because university teachers are senior knowledge workers, they themselves are the most worthwhile investment assets(Drucker, 2012). *“I’m doing my PhD, which will give me more options and the ability to choose somewhere else if I do not feel like I’m being treated fairly at this university.”* (Participant 5). *“I’m working hard to apply for projects and publish high-level papers, so that when I’m being unfairly treated, I can have better options instead of passive acceptance.”* (Participant 6). The lower the level of distributive justice of teachers, the more pressure for them to go out of the campus to serve the society to obtain more income and social influence. When the teachers cannot get what they deserve, they will find ways to make money from other sources to make a living, *“Salaries in other industries have increased a lot in recent years, but ours has not increased much. Three years ago, I took out a loan from bank to buy an apartment, after repaying the mortgage every month, little left. Hence, I face great economic and mental pressure. I must use my professional knowledge and experience to serve the society to earn some extra money for living.”* (Participant 6) *“I am practicing law in spare time in companies too, which brings me some extra income. My classmate teaches at another same level university in Jiangxi. We are both associate professors, a few years ago, our salaries were about the same level, but now his annual income is twice mine, which is very difficult for me to accept. So, I must take actions.”* (Participant 4). Furthermore, the perception of unfair distribution prompts university teachers to improve their scientific research performance and social service performance, which can not only make up for the loss of unfair distribution, but also serve as a means for knowledge workers to grow and realize themselves(Drucker, 2012). Overall, the situation of university teachers' low level of distributive justice and high research and social service performance is the results of fierce competition, professional characteristics and

psychological needs of university teachers.

6.4.2 The Indirect Impact of Organizational Justice on University Teachers' Job Performance Through Affective Commitment

The results showed that the indirect impact of all dimensions of organizational justice on each job performance through affective commitment was significant, which revealed that affective commitment functioned as an important mediator and an indispensable bridge between organizational justice and university teachers' job performance. These are consistent with the hypothesized theoretical framework, and the hypotheses(*H3-1a-H3-4c*) are all supported.

According to social exchange theory, good organizational actions and fact can make employees attach to and trust the organization in spirit and then positively affect their behaviors and performance, which is beneficial to the development of the entire organization(Colquitt *et al*, 2013; Jayasingam, Govindasamy and Garib Singh, 2016; Ribeiro, Yucel and Gomes, 2018;Haque, Fernando and Caputi, 2019). This study suggests that the university teachers who have higher organizational justice will have better affective commitment, which in turn promotes better job performance. In this study, affective commitment fully mediated the relationship between organizational justice and university teachers' job performance, which is consistent with the results of an empirical study of Chinese industry employees(Wang *et al.*, 2010). However, the results in this study are not fully consistent with a study in France that affective commitment only played a partial

mediating role between organizational justice and enterprise employee's job performance (Swalhi, Zgoulli and Hofaidhllaoui ,2017).

These different results may be caused by cultural difference. Chinese people care more about emotional identification and affective commitment to the organization. The organization is often taken as an in-group, people get a sense of belonging from organization(Zhang, Huang and Xu ,2021). University teachers especially pay more attention to the emotional and spiritual pursuit(Drucker, 2012; Heidary Dahooie, Ghezel Arsalan and Zolghadr Shojai, 2018).*“When my voice was not heard at university and my rights were ignored, I was very frustrated, I’m always looking for opportunities to leave, and it’s difficult for me to focus on other work except basic teaching activity.”* (Participant 2) *“Once my family encountered some difficulties, I plucked up the courage to ask my leader for help, he considered my special situation and gave me some help and support. I am so grateful; I feel like the university I work at is a loving collective and it deserves my hard work to make it better.”* (Participant 3)

To sum up, the previous justice theory that the direct influence of organizational justice on job performance does not apply across all cultures and contexts. The results of this study demonstrated that affective commitment, as a fully mediator, can help better understand the complex mechanism of the influence of organizational justice and university teachers' job performance.

6.5 The Role of Collectivism in the Relationship Between Organizational Justice and Job Performance

This part of discussion will answer the research question: Whether or how does collectivism moderate the relationship between organizational justice and university teachers' job performance?

The moderation results demonstrated that except for the positive strengthening moderating effect on the relationship between interpersonal justice and research performance, and the relationship between informational justice and social service performance, collectivism had no moderating effect on the relationships between other dimensions of organizational justice and university teachers' job performance. The hypotheses *H4-3b* and *H4-4c* are supported, other hypotheses (*H4-1a-H4-4c*) are rejected.

This result is in contrast to earlier studies on the moderation of collectivism. Francesco and Chen(2004) revealed that the relationships between organizational commitment and job performance were found to be weaker for those with higher level collectivism. This was because at that time, collectivistic individuals regarded organizations as in-groups, so they felt obligated to serve organizations without considering the level of personal organizational commitment. However, the results in this study are partly consistent with the latest collectivism moderating studies. Those results showed that collectivism played a strengthening moderating role on the relationships between transformational leadership and organizational emotional competence(Tong, Mei and Sun ,2017), humble leadership

behavior and resource sharing (Dai, Lei and Su, 2019), team member exchange and workplace mentality (Zhang, Huang and Xu 2021). At the current stage, based on social exchange, if the organization or leader is not good to employees, even employees with high collectivism tendencies will not act in favor of the organization. When the organization is friendly to employees, employees with high collectivism tend to behave more favorably for the organization. According to the model of horizontal and vertical dimensions of individualism and collectivism (Singelis *et al.*, 1995; Triandis and Gelfand, 1998), the collectivism in China nowadays is horizontal collectivism (HC), which emphasizes common goals and sociality but does not easily obey authority, especially for knowledge workers (Triandis and Gelfand, 1998). Unlike people with vertical collectivism can sacrifice personal interests under any conditions for the interests of the organization, while people with horizontal collectivism emphasize common goals and sociality but do not easily obey authority. They pursue collective interests and well-being, but also pay attention to individual rights and treatment. *“I like to help colleagues and people around me. This does not affect my frustration and anger when I encounter unfair treatment.” (Participant 3) “I work hard, I try to contribute to the collective, and of course I want to be treated fairly.” (Participant 5) “I love the university I work at, and I want everyone to be treated fairly, which will inspire everyone's potential and make it a better place.” (Participant 4).*

In addition, collectivism had a positive strengthening moderating effect on the relationship between interpersonal justice and research performance, and the relationship between informational justice and social service performance. First, interpersonal justice and informational justice reflect the level of communication and interaction between supervisors

and employees (Masterson et al., 2000). In a collectivist culture, people attach the most importance to the relationship (“Guanxi”) between people, and a harmonious “Guanxi” is the goal that people pursue, which will also make them feel the warmth and strength in the collective (Jia, 2016; Huang, 2019). When university teachers with high level collectivism are respected and treated fairly when interacting with the university administrators, they may be more motivated to improve job performance and contribute to the university. Teaching performance is not affected because teachers think teaching is their love and obligation and they should do it well. *“No matter how much I get paid and how I’m treated, I will do my teaching work seriously, because this is what a teacher should do.”* (Participant 7).

Second, distributive justice and procedural justice reflect the relationship between organizations and employees (Masterson et al., 2000). People with horizontal collectivism emphasize common goals and sociality but do not easily obey authority (Triandis and Gelfand, 1998). University teachers, as senior knowledge workers, are independent and critical. Although they have high collectivism tendency, they will not easily obey the university and feel obligated to work hard. The teachers not only work for the university but also work for the students and their own development. *“I will continue to study and improve my academic qualifications and abilities, which makes me more confident as a teacher to guide and help students, and it is also beneficial to my career development.”* (Participant 6)

Third, university teachers' professional characteristics and personal growth pursuit determine that they are not affected by collectivism like other employees in economic organizations. In today's market economy, teachers not only pay attention to the interests of the university, but also care about how the university treats them, they will not blindly allege

to the organization as in the era of planned economy(Hofstede, 2011). Therefore, it is understandable that collectivism has no moderating role in the relationship between distributive justice and procedural justice and university teachers' job performance. In this context, universities should not only emphasize collectivism and dedication, as they had done in the past, while ignoring the fair distribution and procedural rights of teachers. This will undermine the motivation of teachers to work for the university.

6.6 The Impact of Demographic Characteristics of Participants on Studied Variables

This part of discussion will answer the research question: Whether the demographic characteristics of participants have influence on studied variables (organizational justice, affective commitment, collectivism, and job performance)? What is the internal connection between them?

First, concerning gender, the results showed that gender differences had a significant impact on university teachers' interpersonal justice, research performance, and social service performance. The interpersonal justice level of female teachers is higher than male teachers', and there are no significant differences in other three justice dimensions. These are not consistent with earlier findings. Early research showed that female university teachers are less demanding than men for distributive and procedural justice (Wang, 2010). In this study, female and male teachers share the same perceptions except for interpersonal justice. One interpretation could be that women have the same responsibilities and obligations in the workplace and at home nowadays. They are increasingly demanding equal rights and

treatment with men in the workplace (Qin, 2019). Besides, females are inherently better at communicating and managing interpersonal relationships. And in turn administrators will return more respect and kindness. Therefore, women perceive higher interpersonal justice, which is the result of positive interactions between the two parties (Diehl, Richter and Sarnecki, 2018). There is no significant difference between females and males in teaching performance, but the female teachers are significantly weaker than the male teachers in research and social service performance. The reason might be that the female teachers spend more time on teaching and have to balance work and family, so there is not enough time and energy on scientific research and social services. As a female teacher said, *“When I put a lot of energy into teaching, I don't have much time and energy for scientific research. However, promotion and assessment focus on scientific research performance, and I feel very helpless.”* (Participant 2) *“I had to take care of my two children, it's hard to balance work and life, and I didn't have much time for academic activities before. Now my children grow older, I want to spend more time doing research. But I realize that I do not have the support of the team and need to improve my academic ability.”* (Participant 3) Obviously, support from teams and universities is particularly important for female teachers' scientific performance and social service improvements.

Second, concerning age, the results showed that the teachers under age of 30 had the highest perceptions of procedural justice, interpersonal justice, and informational justice. The older the teacher, the lower the perception of justice. Teachers under the age of 30 are curious about their work because they have just joined the university. They do not have enough understanding of the university's operation and management procedures. They may attribute

some unfair treatments such as less promotion and training opportunities to their low qualifications and contributions (Caleo, 2016 ;Jayasingam, Govindasamy and Garib Singh, 2016). However, with the growth of age, the increase of their own ability and experience, and the further understanding of the internal management of the university, teachers also increasingly hope to get more respect and fair treatment.

Third, concerning education level, the results showed that the teachers with a bachelor's degree have a higher perception of distributive justice and interpersonal justice than those with a Ph.D. degree, and those with a Ph.D. have higher research performance than both those with a bachelor's and a master's. The affective commitment of a bachelor is higher than that of a Ph.D. The teachers with higher education levels feel more unfair. With the improvement of educational level, teachers' understanding of justice is more comprehensive and in-depth, and their thirst for justice gradually increases. The teachers with Ph.D. invest more in their own education, they have received systematic academic training and have academic connections. So, their scientific research performance are more outstanding than that of teachers without Ph.D., hence they hope to get distribution that matches their investment and ability. Furthermore, teachers with Ph.D. focus more on scientific research, compared with teachers with bachelor's degree, they do not like and are not good at handling interpersonal relationships with superiors. In addition, teachers with Ph.D. have lower affective commitment than teachers without Ph.D. because they can choose better jobs, which is one reason for the brain drain from universities. Just like this teacher with Ph.D. said, *"I'm working hard to apply for projects and publish high-level papers, so that when I'm being unfairly treated, I can have better options instead of passive acceptance."*

(Participant 6)

Fourth, concerning title, the results showed that the research performance and social service of professors is higher than that of assistants, lecturers, and associate professors. Because professors tend to be highly educated and have doctoral degrees, they have better academic accumulation and resources, which makes them easier to apply for research projects and cooperate with others. In addition, because of their academic influence and social resources, professors also have more confidence and channels to provide social services. *“I made a proposal to the local government on the protection of historical and cultural districts the year before last. The government accepted my proposal, and our city has become better because of this. I am immensely proud and accomplished.”* (Participant 8)

To sum up, the demographic characteristics of university teachers have influence on the research variables, which is beneficial to help universities implement more comprehensive and personalized policies according to the characteristics of teachers to improve organizational justice and teachers' affective commitment, and then enhance university teachers' job performance.

6.7 Conclusion

This chapter first discussed the impact of organizational justice on university teachers' affective commitment and the impact of affective commitment on university teachers' job performance. Then on the basis of previous studies and related theories, it analyzed the

mediating effect of affective commitment between organizational justice and university teachers' job performance, and expounded the moderating effect of collectivism between organizational justice and job performance. Finally, the impact of participant demographics on studied variables was discussed to gain a more detailed understanding of the research question. These discussions helped to explore the impact mechanism of organizational justice on job performance and will provide decision-making reference for university and university administrators on how to improve teachers' job performance from the perspective of organizational justice and thus strengthen the overall competitiveness of universities in the next chapter.

Chapter Seven: Conclusion

This chapter will draw a conclusion about this research by summarizing the key findings related to the research objectives and research questions, as well as the theoretical and practical contributions. The research limitations and outlook will be also discussed at last.

7.1 Main findings

This study aimed to develop a management framework for Chinese public universities from the organizational justice perspective to improve teachers' job performance. Through the combination of main quantitative research and complementary qualitative research, several pre-set objectives have been achieved.

First, one of the objectives of this study was to investigate the impact of organizational justice (distributive, procedural, interpersonal, and informational) on university teachers' affective commitment. The results indicated that all organizational justice dimensions had a positive impact on university teachers' affective commitment. Among the four dimensions, informational justice had the strongest predicting effect, followed by distributive and interpersonal justice, while procedural justice had the weakest.

Second, one of the objectives of this study was to examine the impact of affective commitment on university teachers' job performance (teaching, research, and social service). The results revealed that affective commitment positively affected university teachers' job

performance. Among the three dimensions of job performance, teaching performance was least affected by affective commitment while social service was most affected.

Third, one of the objectives of this study was to explore how organizational justice impacts university teachers' job performance through affective commitment. The results suggested that affective commitment acted as an indispensable mediator and an important bridge between organizational justice and university teachers' job performance.

Fourth, one of the objectives of this study was to evaluate the moderating effect of collectivism as a cultural trait on the relationship between organizational justice and university teachers' job performance. The results showed that except for the positive strengthening moderating effect on the relationship between interpersonal justice and research performance, and the relationship between informational justice and social service performance, collectivism had no moderating effect on the relationships between other dimensions of organizational justice and university teachers' job performance. Therefore, universities should not only emphasize collectivism and dedication, as they had done in the past, while ignoring the fair distribution and procedural rights of teachers. This will undermine the motivation of teachers to work for the university.

Fifth, one of the objectives of this study was to examine the influence of the demographic characteristics of participants on studied variables and their internal connection. The results indicated that the interpersonal justice level of female teachers was higher than male teachers', the female teachers were significantly weaker than the male teachers in research

and social service performance. The research performance of the professors and the teachers with Ph.D. are higher than that of other teachers. These results were affected by organizational justice to some extent.

7.2 Theoretical Contribution

This study opened the black box of the influence of organizational justice on job performance of university teachers, analyzed the reasons why the influence mechanism of organizational justice on teachers' job performance in university was different from that of organizational justice on job performance of employees in the enterprise context, and expanded the application of organizational justice theory in the field of job performance research.

First, this study integrated two theoretical approaches (social exchange theory and knowledge worker theory) to explain the proposed relationships of organizational justice and university teachers' job performance. Social exchange theory is one of the most popular and influential theories explaining human behaviors, and it has become the theoretical basis for a large number of empirical studies in the sociology field in recent decades, especially in organizational management (Cropanzano and Mitchell, 2005; Casimir *et al.*, 2014; Cropanzano *et al.*, 2017; Roch *et al.*, 2019). A key preposition of social theory is that all human behavior as an exchange process for its own benefits, and human behavior can be predicted based on the consequences of past behavior. According to social exchange theory, feeling obligated and committed after being treated fairly is key to explaining why

justice perceptions impact behaviors that are very crucial to job performance(Colquitt and Rodell, 2011;Roch *et al.*, 2019). However, not all social interactions are equal and fair, interpersonal relationship can be interactive and unilateral. Activities in complex organizations cannot be fully explained by social exchange theory (Emerson, 1976; Cropanzano *et al.*, 2017). Therefore, this study integrated knowledge worker theory into social exchange theory, which strengthened the interpretation ability of social exchange theory in the special organizational context and special research objects. According to some researchers (Lam et al., 2002; Westwood et al., 2004; Casimir *et al.*, 2014), social exchange theory may not be adapted to explain the attitudes and behaviors of employees in countries like China. They argued that in countries with high power distance and collectivism, employees are more likely to be motivated to comply with the obligations of their defined social roles than with obligations that originated from social exchange. This study suggested that social exchange theory combined with knowledge worker theory can well explain the impact of organizational justice on teachers' job performance in the context of universities.

Second, this study extended the limited research on the understanding of organizational justice and its influence on university teachers' job performance.

Although there are many previous studies discussing the relationship between organizational justice and job performance in enterprise settings, few empirical studies comprehensively examine the impact mechanism of organizational justice on the job performance of university teachers, especially in the context of China. This study is one of the earlier ones to investigate organizational justice' impact mechanism on university teachers' job performance in higher education institutions.

Third, this study found the unique mediating role of affective commitment between organizational justice and university teachers' job performance. The results showed that organizational justice had a positive impact on affective commitment, affective commitment in turn promoted job performance. However, most organizational justice dimensions did not have a positive impact on job performance directly, which revealed that affective commitment acted as an indispensable mediator and an important bridge between the two variables, and affective commitment can well demystify the impact mechanism of organizational justice on university teachers' job performance.

Fourth, collectivism was first introduced to explain the relationship between organizational justice and job performance of university teachers as a cultural trait in this study. The relationships between organizational commitment and job performance were found to be weaker for those with higher level collectivism in early study(Francesco and Chen,2004). However, in this study, collectivism was found to have no moderating effect in most situations, and even have a positive strengthening moderating effect on the relationship between interpersonal justice and research performance, and informational justice and social service performance. These results opened a door for collectivism and organizational justice research, and which give important implications for practice in universities in China.

Fifth, this study developed a complete organizational justice scale suitable for Chinese public university teachers. The scale of organizational justice dimensions developed by (Colquitt, 2001) has been most frequently cited (Silva and Caetano, 2016).

Guo and Giacobbe-Miller(2015) analysed the concept and dimensions of the organizational justice construct in China and found that the conceptualization of organizational justice in the West and China shared a lot of similarities. However, it also revealed an important exception: in China, justice concepts and management practices are influenced by specific circumstances, social relations, cultural values, and institutional environment. In particular, the perception of organizational justice is based on social comparisons between individuals. Based on the above considerations, to improve the application of Colquitt's (2001) four-dimensional organizational justice in this study, some items have been revised and added. These self-created items are not only derived from existing literature, but also consulted by university teachers and experts on organizational justice. The CFA of the organizational justice scales showed that the internal consistency coefficient of the total scale was 0.965. The internal consistency reliability of the four subscales of distributive justice, procedural fairness, interpersonal justice, and informational justice were 0.930, 0.929, 0.931, and 0.936, respectively; the composite reliability was 0.930, 0.930, 0.932, and 0.937, all above 0.7. This indicated that the scales has good reliability and validity(Hair *et al.*, 2014). Therefore, the scales can be applied in Chinese university to assess the level of organizational justice perception of teachers for related policymaking.

Taken together, this study deepened the understanding of the impact mechanism of organizational justice and university teachers' job performance. This study also initiates the discussion of the mediating role of affective commitment and the moderating role of collectivism between organizational justice and job performance.

7.3 Practical Implications

Given that organizational justice had a positive impact on affective commitment, which in turn would promote job performance of university teachers, and the collectivism level and demographic characteristics of participants also had a certain impact on the research variables, this study has many significant implications for the universities and administrators, which can help develop a management framework for Chinese public universities from the organizational justice perspective to improve teachers' job performance.

First, transform the traditional management ideas to modern management ideas.

Performance management was initially introduced and applied in the field of enterprise management in China. The performance management of universities was borrowed from the performance management of enterprises (Liao, 2018). However, the current performance management in public universities still ignores the facts that university teachers are knowledge workers, and their creative work is significantly different from that of ordinary enterprise employees (Shah *et al.*, 2012; Kallio *et al.*, 2016; Drucker, 2018).

The results showed that the traditional scientific management and bureaucratic management did not adapt to the management of university teachers, and those performance evaluation system that only focused on quantity but not quality could not evaluate the real job performance of teachers well. The top-down vertical management model undermines teachers' autonomy and creativity and will make them feel seriously frustrated and unfair (Iazzolino and Laise, 2018). The results also showed that interactional justice involving

respect, understanding and communication had the strongest predictive power on university teachers' affective commitment and job performance. If university administrators do not understand and respect teachers well, which will reduce teachers' interactive justice perception, thus damaging teachers' affective commitment to the university, and then affecting their job performance. In the process of social exchange, people not only care about material interests, but also non-material interests, especially for university teachers who are knowledge workers (Cropanzano *et al.*, 2017; Roch *et al.*, 2019). People's behavior is not only out of the pursuit of money, but also out of social and psychological needs. They need to be concerned, which will give them a strong sense of commitment and belonging (Beatley, 2016). Knowledge workers cannot be manipulated, administrators can only serve for them to achieve organizational goals (Shujahat *et al.*, 2019). Therefore, universities and administrators should pay attention to the social and psychological needs of teachers, fully consider the creativity and invisibility of their work, transform the traditional top -down management into modern flat management.

Second, respect teachers' autonomy and encourage participation. The results showed that even if the perception of organizational justice was not high, university teachers' job performance, especially teaching performance, was not directly affected much. Teachers love teaching and focus on personal growth. According to Drucker's theory of knowledge workers, the key to improve their job performance is to improve their autonomy and enhance their sense of responsibility (Drucker, 2012;2018). Knowledge workers are highly independent and innovative. They are not subordinates, but collaborators. The management should arrange knowledge workers to work in appropriate positions to stimulate their

maximum potential. As knowledge workers, university teachers should not be regarded as costs, but as assets (Shujahat et al., 2019). Respecting the autonomy of university teachers can mobilize their enthusiasm for work and stimulate their imagination and creativity (Drucker, 2012). In teaching, teachers should have autonomy in setting teaching goals and choosing teaching contents. In scientific research, teachers should independently arrange scientific research activities according to their majors, research interests and career development.

On the other hand, full participation can promote university teachers' autonomy, top-down management with poor participation will inhibit teacher's autonomy and creativity. Allowing teachers to participate in the university decision-making process can effectively enhance teachers' perception of procedural justice and interactive justice and make up for the negative impact of insufficient fairness of distribution results. In addition, participation can give play to the advantages of democratic decision-making, ensure the rationality and scientificity of decision-making, and reduce the resistance to policy implementation. Generally speaking, people are more inclined to agree and implement the policies they participate in.

Third, pay close attention to university teacher's inner psychological needs to enhance their affective commitment and motivate them effectively. The results showed that affective commitment had a significant positive impact on university teachers' job performance, and organizational justice would affect job performance through affective commitment, so universities should pay attention to enhancing the affective commitment of

university teachers. According to Maslow's hierarchy of needs theory (Maslow, 1970a), Homans' social exchange theory (Homans, 1974), and George Elton Mayo's human relation theory (Beatley, 2016), for knowledge workers, they have not only material needs, but also spiritual and psychological needs (Drucker, 2012). When university teachers feel concerned and valued, their job performance will be improved accordingly. The university management should strengthen the communication and exchange with teachers, find out their problems and difficulties in time, and give some help, so that teachers can feel the care and warmth from the university. In addition, university teachers focus on self-development, and have a strong sense of professional honor and achievement. University should pay attention to spiritual motivation while giving material incentives. The unreasonable incentive mechanism will seriously affect teachers' work enthusiasm, and even lead to serious job burnout and turnover intention (Li 2018; Xiao, 2019). Therefore, the university should establish reasonable incentive systems. When teachers' psychological needs are continuously met, they will have a strong emotional commitment to the university. Based on the social exchange theory, they will naturally improve their job performance to promote the development of the university.

Fourth, build a culture that tolerates short-term failures and rewards long-term investment in long-term goals. Scientific research needs such a culture, because scientific research cannot be accomplished overnight. It needs long-term accumulation, repeated experiments, and long-term investment. As one teacher said *"I am required to publish a certain number of papers and complete a certain number of projects within 3 years, when I fail, my bonus will be deducted. This assessment method violates the laws of scientific*

research.” (Participant 6). It is important for universities to provide teachers with a free and friendly scientific research environment. If the universities only focus on short-term benefits and quantitative objectives, the teachers will be eager for quick success and instant benefits, blindly aspiring after quantity indicators and ignoring quality standards. On the premise of following the laws of scientific research, university management should provide appropriate academic space and time for teachers at various levels, build a flexible scientific research management mechanism, and encourage teachers to conduct scientific research for their missions and social needs.

Fifth, create an organizational atmosphere and support system for continuous lifelong learning. The results showed that the scientific research performance of the young teachers with no doctoral degree and professor title was inferior to those teachers with doctoral degree and professor title. And the scientific research performance of the female teachers was inferior to those of male teachers. It’s difficult for young teachers and female teachers to get the same opportunities of development. The development of the university cannot be separated from the performance contributions of the young teachers and female teachers. How to support them to improve their job performance, especially scientific research performance, is the key to organizational justice and the development of the university. According to Peter Senge's learning organization theory, an organization can survive and develop better only if it knows how to stimulate its members' learning enthusiasm and improve their learning ability at all levels of the organization (Senge, 2014). First, universities should create a good academic environment, provide various facilities and supports for teachers to establish and join academic teams, and provide supports for teachers

to take part in academic exchanges home and abroad. Second, universities should provide special fund support for young teachers continuing education and scientific research training. Third, universities should provide young teachers with professional and scientific career planning guidance and provide mentors to guide young teachers' career development. To establish social service platforms for young teachers and broaden social service channels are also very important to enhance their social service performance. Fourth, university should improve life supporting facilities, such as childcare and home service for the elderly, to help female teachers better balance the conflict between family and work, and allow them to devote more time and energy to scientific research and social services.

Sixth, build an effective and multiple communication and feedback system. The results showed that informational justice was the most effective predictor for university teacher's affective commitment and job performance, and procedural justice also had considerable influence on affective commitment. Informational and procedural justice are about communication and feedback between teachers and university and administrators. Therefore, an effective communication and feedback bridge between universities and teachers should be built. Good communication and feedback can improve the teachers' procedural and informational justice perception and make university administrators and teachers understand and support each other. First, when the university formulates policies, whether the policies are beneficial to teachers or unfavorable to teachers, the administrators should fully communicate with teachers, which will make teachers feel respected and better understand the original intention and position of administrators. Therefore, the implementation of the policy will be smoother. As the teacher said in focus group discussion: *"If the decision*

making is more transparent, if the administrators can fully communicate with the teachers, I will feel more involved and valued, this is very important for me. ” (Participant 6). When there is inequity in the operation of the university, or teachers feel unfair, teachers can communicate with administrators through the grievance channel. If there is a real problem with university management, rectify the problem in time, which can enhance the perception of organizational justice. If it is the teacher's own problem, patient explanation and guidance from the university aspect can also ease the conflict and the tension, so as not to affect the work efficiency due to the sense of unfairness.

Seventh, establish a reasonable performance appraisal and salary distribution system.

The results showed that the fairness of benefit distribution had a key impact on teachers' perception of distributive justice. Fair benefit distribution is based on teachers' input, the key lies in the reasonable and fair evaluation of teachers' input. At present, many universities have established a salary distribution system based on the performance appraisal system to ensure the fairness to the greatest extent, but the scientificity and rationality of the evaluation index system need to be improved. Reasonable job performance indicators are the premise of scientific management job performance. University teachers' job performance indicators should comprehensively reflect the overall situation of teachers' performance. The current general situation is that quantitative and short-term indicators are seriously abused (Li 2018; Xiao, 2019). Therefore, universities should comprehensively use quantitative and qualitative indicators, short-term indicators and long-term indicators to not only scientifically evaluate teachers' job performance, but also guide its healthy development. In addition, universities should also set different performance indicator weights according to

teachers' academic background and content to maintain balance and fairness among different disciplines. Furthermore, the performance indicators are not static after being formulated. They should be adjusted regularly according to the discipline and social development as well as the development goals of the university, to ensure the scientificity and rationality of the indicator system.

Eighth, strengthen the construction of organizational culture and cultivate the spirit of collectivism. The results showed that collectivism can positively moderated the positive impact of organizational justice on teachers' job performance to a certain extent. In addition. Collectivism itself has a certain role in promoting job performance. To strengthen the construction of team culture, a good organizational culture can not only eliminate the narrow-minded mentality of organizational members but also significantly stimulate the initiative of organizational members. Based on the subjectivity of the perception of organizational justice, it is easy for prejudice to regard the reasonable distribution results within the organization as organizational unfairness. Universities should provide corresponding funds to support teachers and management to conduct some team building activities to cultivate the spirit of collectivism. Cooperative and non-confrontational entertainments can deepen the communication and understanding between ordinary teachers and management, thus increasing mutual trust, understanding among the members, and helping to cultivate the sense of collectivism. This can strengthen teachers' trust and sense of belonging to the university, so that they can work with ease and comfort, thus improving their job performance accordingly. In a word, a democratic, fair, and equal campus culture should be created to make teachers feel comfortable and respected, and then have a strong

affective commitment to the university. Only then the teachers' enthusiasm and potential can be fully inspired.

Nineth, train the university administrators on the importance of organizational justice and how to improve teachers' sense of organizational justice. The results showed that organizational justice had a positive impact on the affective commitment of university teachers, thereby promoting job performance. The above content also mentioned the measures should be taken by administrators to improve teachers' perception of organizational justice. The implementation of these measures requires administrators to practice in the actual management work, so it is especially important to provide relevant training for them. University administrators need to fully realize that university teachers are not subordinates, but collaborators. Therefore, university administrators are urged to improve teachers' perception level of organizational justice, no matter when formulating policies or in their daily contact with teachers. Administrators need to communicate with teachers in an equal and non-hierarchical manner, they better weaken their position power, strengthen their professional expertise, and convince teachers through personal charm and excellent professional quality. It is prohibited to use insulting and derogatory language to make teachers feel interpersonal justice as much as possible. The nonhierarchical communication mode can achieve the close relationship (Guanxi) between the management and teachers, which creates harmonious organizational atmosphere, and enhances the sense of security and belonging of teachers, which in turn promotes their job performance and inhibits their turnover.

7.4 Research Limitation and Outlook

Although this study has made several significant contributions, there are still some limitations need to be improved in future research.

First, sampling and generalizability. The sample of this study was university teachers from Jiangxi province in central China, the economic level of various regions in China and the development level of various universities are not balanced. Although the sample in Jiangxi can represent most public university teachers in the central and western regions, whether the results of this study can be applied to the whole universities in China remains to be discussed. In the future research, comparative research can be carried out between different areas of economic development level, and between different types of universities. In addition, whether the results of this study are suitable for knowledge workers other than university teachers is also worth exploring. Comparative study can be also conducted on the impact of organizational justice on job performance between employees of high-tech enterprises and university teachers as well in future.

Second, time and budget constraints. Due to the constraints of time and budget, the research data in this study was cross-sectional data. However, it is not ruled out that the participants will have different perceptions about organizational justice over time, and the impact mechanism will also be different. Therefore, when conditions permit in the future, longitudinal data research can be conducted to further reveal the impact mechanism of organizational justice on university teachers' job performance.

Third, self-reported survey. Self-completed questionnaires were the most appropriate

choice for collecting quantitative data in this study, which had been explained in detail in the methodology chapter. Several measures have also been adopted to avoid common method bias. Although the questionnaires were filled in anonymously, some participants may still have the phenomenon of self-disguise, and the problem of homology deviation was difficult to avoid. If participants can give up anonymous participation in the future, and job performance can be collected through the performance management system of the universities, the research results may be more reliable.

Fourth, moderating variable. This study only selected collectivism as a cultural trait to explore the moderating effect on the relationship between organizational justice and job performance, ignoring the impact of other cultural traits on this mechanism. And collectivism was not proved to have a strong moderating effect in this study. The follow-up research can mine more Chinese unique cultural traits to build a more complex moderating model between organizational justice and university teachers' job performance.

Fifth, control variable. Based on previous studies, this study selected gender, age, years of teaching and professional title as control variables. The research results proved that these control variables have a certain impact on each research variable and can also have some practical enlightenments. However, this study did not further examine how the control variables affect the impact of organizational justice on the job performance of university teachers. Subsequent research could delve deeper into this aspect.

In conclusion, a single study can't sort out all the questions about the impact mechanism of

organizational justice on university teachers' job performance. However, every little step makes significance. This study opened the black box of the influence of organizational justice on job performance of university teachers, expanded the application of organizational justice theory in the field of job performance research, and will also help Chinese public universities develop a management framework from the organizational justice perspective to improve teachers' job performance. More importantly, the interesting findings in this study will ignite and inspire further research in the future.

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Appendixes

Appendix 1 Questionnaire

A Questionnaire on the Impact of Organizational Justice on Public University Teachers'

Job Performance

Dear respondent,

Thank you very much for taking time to participate in this questionnaire. I am a DBA student from UWTSD. The purpose of this questionnaire is to study the mechanism of the impact of organizational justice on public university teachers' job performance in China, and the survey respondents are Chinese public university teachers who engaged in teaching and scientific research. Your participation is voluntary. If you're willing to participate, this questionnaire may take you about 15 minutes. please read the instructions at the beginning of each section and choose the answers.

Please remember there are no right answers or wrong answers. I am very interested in your opinion on the impact of organizational justice on public university teachers' job performance. Please answer all the questions in the questionnaire, if you're not sure about the answer, you can try to answer it within your existing understanding.

Please be assured that this survey is conducted completely anonymously to protect your privacy. I promise the result is only used for academic research.

If you have any questions about this survey, please contact my Email: 1903456@student.uwtsd.ac.uk.

Thank you very much for your participation.

Part I Main part of the questionnaire

Please answer the following questions truthfully based on your actual feelings and thoughts. Please choose the most agreeable number from 1-5. Different numbers represent different levels of consent, and numbers from 1 to 5 represent: 1 strongly disagree, 2 disagree, 3 Neither agree nor disagree, 4 agree, 5 strongly agree.

1. My outcome reflects the effort I have put into my work.

☐1 ☐2 ☐3 ☐4 ☐5

2. My outcome is appropriate for the work I have completed.

☐1 ☐2 ☐3 ☐4 ☐5

3. My outcome reflects what I have contributed to this university.

☐1 ☐2 ☐3 ☐4 ☐5

4. My outcome is justified, given my performance.

☐1 ☐2 ☐3 ☐4 ☐5

5. My outcome is justified, given my education and training.

☐1 ☐2 ☐3 ☐4 ☐5

6. My outcome is justified, given my work experience and qualifications.

☐1 ☐2 ☐3 ☐4 ☐5

7. My outcome is justified compared with other teachers in the same university who do similar jobs.

☐1 ☐2 ☐3 ☐4 ☐5

8. My outcome is justified compared with the administrative staff of this university.

☐1 ☐2 ☐3 ☐4 ☐5

9. My outcome is justified compared with teachers from other universities of the same type and level.

☐1 ☐2 ☐3 ☐4 ☐5

10. I have been able to express my views and feelings during those procedures.

☐1 ☐2 ☐3 ☐4 ☐5

11. I have influence over the (outcome) arrived at by those procedures.

☐1 ☐2 ☐3 ☐4 ☐5

12. I have those procedures been applied consistently.

☐1 ☐2 ☐3 ☐4 ☐5

13. Those procedures have been free of bias.

☐1 ☐2 ☐3 ☐4 ☐5

14. Those procedures have been based on accurate information.

☐1 ☐2 ☐3 ☐4 ☐5

15. I have been able to appeal the (outcome) arrived at by those procedures.

☐1 ☐2 ☐3 ☐4 ☐5

16. Those procedures have upheld ethical and moral standards.

☐1 ☐2 ☐3 ☐4 ☐5

The following items (17-28) refer to (the authority figure who enacted the procedure).

To what extent:

17. (He/She) has treated me in a polite manner.

☐1 ☐2 ☐3 ☐4 ☐5

18. (He/She) refers to the authority figure who enacted the procedure).

☐1 ☐2 ☐3 ☐4 ☐5

19. (He/She) has treated me with dignity.

☐1 ☐2 ☐3 ☐4 ☐5

20. (He/She) has treated me with respect.

☐1 ☐2 ☐3 ☐4 ☐5

21. (He/She) has refrained from improper remarks or comments.

☐1 ☐2 ☐3 ☐4 ☐5

22.(He/She) has a harmonious relationship with me, expressed concern for me and provided the needed help.

☐1 ☐2 ☐3 ☐4 ☐5

23.(He/She) has valued my rights as a university teacher.

☐1 ☐2 ☐3 ☐4 ☐5

24. (He/She) has been candid in (his/her) communications with me.

☐1 ☐2 ☐3 ☐4 ☐5

25. (He/She) has explained the procedures thoroughly.

☐1 ☐2 ☐3 ☐4 ☐5

26. (His/Her) explanations were regarding the procedures reasonable.

☐1 ☐2 ☐3 ☐4 ☐5

27. (He/She) has communicated details in a timely manner.

☐1 ☐2 ☐3 ☐4 ☐5

28. (He/She) has seemed to tailor (his/her) communications to individuals' specific needs.

☐1 ☐2 ☐3 ☐4 ☐5

29. I prepare the lesson carefully and I am familiar with the content of the lesson.

☐1 ☐2 ☐3 ☐4 ☐5

30. I continue to improve teaching methods to enhance teaching effects.

☐1 ☐2 ☐3 ☐4 ☐5

31. I take the initiative to enrich the course content, use advanced teaching materials to explain the frontier latest trends of the subject and connect with reality to ensure the quality of teaching.

☐1 ☐2 ☐3 ☐4 ☐5

32. I try my best to fully mobilize students' learning enthusiasm and improve the effect of classroom learning.

☐1 ☐2 ☐3 ☐4 ☐5

33. I am good at discerning the new direction of the subject and actively constructing new courses.

☐1 ☐2 ☐3 ☐4 ☐5

34. I often overcomplete the teaching tasks set by the university.

☐1 ☐2 ☐3 ☐4 ☐5

35. My "Student Evaluation for Teaching" score is high.

☐1 ☐2 ☐3 ☐4 ☐5

36. I often attend academic conferences at home and abroad for scientific exchange.

☐1 ☐2 ☐3 ☐4 ☐5

37. I actively conduct research work and have a considerable number of high-level papers or works.

☐1 ☐2 ☐3 ☐4 ☐5

38. I devote a lot of energy to scientific research and get high-level awards for scientific research achievements.

☐1 ☐2 ☐3 ☐4 ☐5

39. I try to make the scientific research achievements have good social application prospects and economic benefits.

☐1 ☐2 ☐3 ☐4 ☐5

40. I actively apply for scientific research projects, and the number and level of scientific research projects exceeded the average.

☐1 ☐2 ☐3 ☐4 ☐5

41. I try my best to apply cutting-edge academic theories, technologies, and methods to scientific research.

☐1 ☐2 ☐3 ☐4 ☐5

42. I actively participate in other work of serving university and community.

☐1 ☐2 ☐3 ☐4 ☐5

43. I often participate in technical exchange or management consulting activities of enterprises.

☐1 ☐2 ☐3 ☐4 ☐5

44. I often preside over or participate in horizontal projects of enterprises. Undertake some production, teaching and research projects or offer lectures and training often.

☐1 ☐2 ☐3 ☐4 ☐5

45. I have served the government, corporates, and other NGOs in recent years.

☐1 ☐2 ☐3 ☐4 ☐5

46. I would be very happy to spend the rest of my career with this university.

☐1 ☐2 ☐3 ☐4 ☐5

47. I really feel as if this university's problems are my own.

☐1 ☐2 ☐3 ☐4 ☐5

48. I do not feel a strong sense of belonging to my university.

☐1 ☐2 ☐3 ☐4 ☐5

49. I do not feel emotionally attached to this university.

☐1 ☐2 ☐3 ☐4 ☐5

50. I do not feel like part of the family at my university.

☐1 ☐2 ☐3 ☐4 ☐5

51. This university has a great deal of personal meaning for me.

☐1 ☐2 ☐3 ☐4 ☐5

52. The well-being of my coworkers is important to me

☐1 ☐2 ☐3 ☐4 ☐5

53. If a coworker gets a prize, I will feel proud.

☐1 ☐2 ☐3 ☐4 ☐5

54. If a relative were in financial difficulty, I would help within my means.

☐1 ☐2 ☐3 ☐4 ☐5

55. It is important to maintain harmony within my group.

☐1 ☐2 ☐3 ☐4 ☐5

56. I like sharing little things with my neighbors.

☐1 ☐2 ☐3 ☐4 ☐5

57. I feel good when I cooperate with others.

☐1 ☐2 ☐3 ☐4 ☐5

58. My happiness depends very much on the happiness of those around me.

☐1 ☐2 ☐3 ☐4 ☐5

59. To me, pleasure is spending time with others.

☐1 ☐2 ☐3 ☐4 ☐5

Part II Basic Information

Q1. Your gender: [Single-choice question] *

☐ A Male ☐ B Female

Q2. Your age group: [Single-choice question] *

☐ A 26-35 years old ☐ B 36-45 years old ☐ C 46-55 years old ☐ D 56 years old and above

Q3. Your educational level: [Single-choice questions] *

☐ A Undergraduate ☐ B Master ☐ C Doctor and above

Q4. Your title: [Single-choice questions] *

☐ A Assistant ☐ B Lecturer ☐ C Associate professor ☐ D Professor

Q5. The length of service as a teacher in this university [Single-choice questions] *

☐ A Less than 10 years ☐ B 11-20 years ☐ C 21-30 years ☐ D More than 30 years

Appendix 2 Semi-structured focus group interview guide

- i) Have you ever been treated unfairly at university? Can you tell more details? (20m)
- ii) Does your organizational justice perception affect job performance? Specifically in what aspects? (20m)
- iii) Do you think your organizational justice perception affects your affective commitment to the university? How? (20m)
- iv) Do you think your affective commitment has an impact on your job performance? How? (20m)
- v) Do you love your job as a university teacher? What do you love best (teaching, research, social service)? Why? (10m)
- vi) Have you ever thought about leaving this university? What is the main reason for leaving? (10m)
- vii) Quantitative research data shows that the more unfair some teachers feel in terms of wages and benefits, the better their research performance and social service performance. What do you think of this phenomenon? (10m)
- viii) Quantitative research data shows female teachers are inferior to male teachers in research performance and social service performance. Do you think there are any reasons from the perspective of organizational injustice? (10m)
- ix) As a teacher, do you think we should pay more attention to dedication and not pay too much attention to justice for the collective honor and interests? Why? (10m)

Appendix 3 Unengaged response

ID number	Completion time within 4 minutes	ID number	Standard deviation below 0.5
10	1:48	4	0.41
23	3:05	9	0.35
30	2:44	53	0.36
42	1:20	78	0.25
97	3:50	101	0.34
105	1:05	125	0.42
123	2:02	163	0.23
150	1:36	196	0.44
151	2:20	201	0.33
184	3:02	256	0.35
196	1:48	278	0.30
248	3:51	303	0.28
254	1:18	348	0.41
306	2:05	367	0.42
323	2:46	396	0.32
352	1:50	404	0.33
402	1:36	509	0.28
431	2:32	510	0.39
487	3:08		
490	2:07		
516	1:10		
530	1:50		
561	2:10		
584	3:25		
596	1:58		
601	2:47		

Appendix 4 Outliers

ID number	Z score
11	4.04
40	3.78
79	5.02
109	3.68
234	4.20
305	4.17
483	3.89
512	4.47
598	4.56

Appendix 5 Item analysis results

Item	High and low grouping t value	R value
DJ1	19.33***	0.73**
DJ2	18.45***	0.75**
DJ3	17.95***	0.75**
DJ4	19.38***	0.76**
DJ5	16.26***	0.72**
DJ6	17.73***	0.75**
DJ7	12.74***	0.64**
DJ8	14.83***	0.74**
DJ9	11.27***	0.64**
PJ1	13.68***	0.69**
PJ2	14.41***	0.68**
PJ3	15.05***	0.75**
PJ4	16.72***	0.76**
PJ5	16.59***	0.77**
PJ6	11.16***	0.67**
PJ7	15.40***	0.76**
IPJ1	12.54***	0.69**
IPJ2	13.16***	0.72**
IPJ3	12.56***	0.70**
IPJ4	9.84***	0.59**
IPJ5	13.59***	0.73**
IPJ6	15.04***	0.78**
IFJ1	18.11***	0.78**
IFJ2	13.94***	0.72**
IFJ3	15.86***	0.79**
IFJ4	16.37***	0.75**
IFJ5	12.83***	0.69**
AC1	12.29***	0.82**
AC2	13.75***	0.77**
AC3	10.04***	0.78**
AC4	12.40***	0.83**
AC5	17.42***	0.87**
AC6	14.73***	0.87**
CV1	12.41***	0.73**
CV2	8.82***	0.69**
CV3	7.04***	0.63**
CV4	5.53***	0.53**
CV5	8.31***	0.71**
CV6	8.62***	0.70**
CV7	12.40***	0.72**
CV8	12.31***	0.72**
TP1	3.81***	0.37**
TP2	6.35***	0.49**
TP3	5.37***	0.51**
TP4	6.08***	0.51**

TP5	6.46***	0.54**
TP6	4.99***	0.49**
TP7	4.90***	0.41**
RP1	6.44***	0.59**
RP2	8.92***	0.69**
RP3	8.77***	0.69**
RP4	8.42***	0.66**
RP5	8.45***	0.65**
RP6	7.89***	0.66**
SP1	7.82***	0.56**
SP2	9.08***	0.59**
SP3	9.21***	0.64**
SP4	8.79***	0.54**
SP5	6.44***	0.50**
