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A Quantitative Study on the Factors Influencing Work Stress in the Healthcare Industry
-The Chinese Context

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Masters (MSc) in Business Administration

Supervisor:

PgD António da Cunha Meneses Martins Abrantes, Assistant Invited Professor
ISCTE-IUL

November, 2020

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BUSINESS
SCHOOL

Department of Marketing, Strategy and Operations

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Acknowledgement

I would like to express my sincerest appreciation to my supervisor, Dr. Antonio Abrantes. Without his help and guidance this dissertation would not have been possible. I would also like to thank other faculty members for their support not just during this dissertation but throughout the course. Last but not least, I would also like to thank my family and my friends who continue to cheer and support every endeavour of my life.

Abstract

Chinese healthcare industry is facing serious staff shortage, which is threatening Government's commitment to provide effective care for the population. Work-related stress is one of the main reasons why attracting and retaining employees have become difficult for the industry. This research study examines the stress factors that are affecting Chinese healthcare employees. By surveying the literature, this study constructed theoretical framework and hypotheses outlining various stressors and their relations to the Work Stress affecting the healthcare employees. These hypotheses are tested using the data collected via survey from 157 Chinese healthcare workers. Regression analyses indicate that increased Job Demand, lowered Job Control, decreased Job Reward, inadequate Employee Training, unfavourable Organisational Culture and lack of Self-Efficacy of the employees have direct positive effects on the increased Stress. Moreover, Organisational Culture and Management Style have indirect effects on Work Stress. This study found that better Organisational Culture reduces High Job Demand, increases Job Control for the workers, and improves their perception of Job Reward and Training efficacy, which in return reduces Work Stress. On the other hand, Authoritative Management Approach is associated with employees' perception of higher Job Demand, Lower Job Control, presence of Imbalanced Effort-reward system, unsatisfactory Training and Job Reward, all of which increase Work stress. This study concurs with previous studies advocating for organisation-wide changes to reduce Work Stress instead of person-directed approach. This study recommends the adaptation of Sustainable Human Resource Management in place of traditional Human Resource Management as the latter fails to adequately protect employee well-being.

Keywords: HRM, SHRM, Work-related stress, Work Stress in healthcare industry, Healthcare Work stressors, Work Stressors in Chinese healthcare industry.

JEL Code: O15

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Chapter 1. Introduction

1.1 Problem Statement

The pressure of constantly delivering successful results and intense working environment are threatening the physical and psychological well-being of the workers (Koinis et al., 2015). Work-related stress is on the rise across the industries, negatively affecting employees as well as the organisations. And this problem is even more severe in healthcare industry. As noted by Happell et al. (2013) and others, healthcare practitioners work in intense working environment, are constantly in contact with humans, need to make rapid decisions which have serious implications. These factors compound work-related stress for healthcare workers. According to Blanding (2015), workplace stress costs the US healthcare industry in the excess of \$190 billion a year.

China in particular is struggling with increased work-related stress among the healthcare employees. According to Wu, Zhao and Ye (2016), China is experiencing severe shortage of healthcare workers, and the problem is growing. Wu et al. (2016) found that the problem is mainly attributed to the demanding jobs and work-related stress in the sector. Therefore, it is important to determine how to counter this severe problem and curve work-related stress of healthcare workers in China.

The established literature acknowledges the short-comings of traditional Human Resource Management (HRM) practices, as they mainly focus on improving organisational efficiency, ignoring the long-term well-being of the employees. In the recent years, Sustainable Human Resource Management has come into the contention that claims to have solved problems such as work-related stress and other negative work-related effects on the employees.

1.2 Research Question

The following research question will be answered in this study:

- What are the work-related stress factors affecting workers in Chinese industry and how to mitigate these factors?

1.3 Research Objectives

The following research questions will be answered in this study:

1. To outline the impact of Work-related stress in healthcare industry
2. To identify the stressors for healthcare industry from theoretical and empirical studies.
3. To assess the identified stressors using primary research.
4. To recommend Human Resource Management (HRM) practices that can help to mitigate work-related stress in Healthcare Industry.

1.4 Significance of the Study

When it comes to studying work-related stress, studies have mainly explored individual and organisational intervention programs (Marine, Ruotsalainen, Serra & Verbeek, 2006; Awa, Plaumann & Walter, 2009; Cunningham et al., 2010; Koinis et al., 2015) identifying main attributes of these programs and the benefits of those programs. This study focuses on identifying all possible stress factors affecting Chinese healthcare workers instead of examining specific intervention program or stress framework. Furthermore, there are lack of studies examining work-related stressors among Chinese healthcare workers. This is significantly important, as identification of stress factors will help the Chinese government and private sector to address work-related stress in the healthcare industry.

Chapter 2. Literature Review

2.1 Introduction

The purview of this chapter is to survey the existing literature in order to understand the concept of 'stress', 'work-related stress', 'various factors influencing work-related stress', and the 'impact of work-related stress'. The focus is concentrated on work-related stress in the healthcare industry, especially in the context of China. Furthermore, emphasis is also given to understand how to prevent work-related stress among healthcare professionals.

2.2 Stress and Work-related Stress

The word 'stress' comes from the Latin word 'stringere' meaning 'draw tight' (Arnold & Silverster 2011, p. 2). Hans Selye, known as the 'father of modern stress' defined stress as '*a syndrome produced [in human body] by diverse noxious agents*' (Selye 1936). Lazarus and Launier (1978) provided a more elaborated definition of stress. According to them, '*Stress occurs when there are demands on the person, which taxes or exceeds his adjustive resources*'. They further compared stress to mental illness, which according to them was socially acceptable unlike other mental illness. Such a statement indicates that societies and organisations lack of concerns towards stress in the 1970s.

In the established literature, the term stress can be found to be synonymous with 'anxiety', 'depression', 'strain', 'fretfulness', 'angst' etc. (Burman & Goswami 2018). Chandan (2005) in his work focused on stress as a function of physiological side effects caused by internal and external environmental factors. He defined stress as '*a state of mind which reflects certain biochemical reactions in the human body and is projected by a sense of anxiety, tension and depression and is caused by such demands by the environmental forces or internal factors that cannot be met by the resources available to that person*' (p. 11). The cause identified by Chandan (2005) was echoed by others including Levi and Laude-Jensen (1996), and Bernik (1997). All of whom point out that stress is caused by a deficit in the resources and capability of an individual to achieve what is demanded from that individual.

While stress can be caused by any aspect of human lives, work-related stress or occupational stress is directly related to individual's professional work or occupation. Comish and Swindle (1994) defined work-related stress as a psychological and physical impact on an individual due to his or her inability to meet work requirements and expectations. According to Health and Safety Authority of Ireland, '*Stress occurs when an individual perceives an imbalance between the demands placed on them on the one hand, and their ability to cope on the other. It often occurs in situations characterised by low levels of control and support*' (hsa.ie, n.d.). In the era of rapid industrialisation, rapid advancements and globalisation, workers across the industries are expected to work intensely and constantly deliver success. And these according to Koinis et al. (2015) are the fundamental causes of work-related stress. The negative impacts of work-related stress on employees are grounded in empirical findings. Work-related stress leads to burnout, increased risk of cardio-vascular diseases, alcohol abuse etc. According to the study conducted by Frone (2013) found that work stressors increase alcohol use among employees. The employees use alcohol as a form of self-medication. However, Siegrist and Rodel (2006) found no direct relation between work stressors and increased use of alcohol. Simple cause-effect relationship might not be easy to establish, but Anthenelli and Grandison (2012) concluded that in the complex relationship between alcohol abuse and work stressors, the increase in work stressors have indirect effect on alcohol abuse. Therefore, it appears that work stressors can push individual employees to use alcohol as a mean to self-medicate.

Although, work-related stress is known to be a risk factor for individuals' chronic disease, researchers have long argued the extent of the impact. The study conducted by Kivimaki and Kawachi (2015) included over 600,000 men and women from 27 cohort studies undertaken in the US, Europe and Japan. The study found that work stressors such as long working hours, job strain etc are risk factors for elevated rate of strokes and rate of coronary heart disease among employees. The study concluded that employees who suffer from work-related stresses are 10-40% more likely to suffer cardiovascular diseases compared to those who do not have work-related stress. In their study, Yu, Wang, Zhai and Yang (2014) investigated work-related stress among 387 middle school teachers, and found that work stress leads to Job burnout among the teachers.

2.2.1 Impact of Work-related Stress in Healthcare

The negative impact of work-related stress on healthcare workers are well documented. Studies (Marine et al., 2006; Koinis et al., 2015; Kumar et al., 2018; Yehya et al., 2018 and others) have repeatedly shown the negative physical and psychological consequences of stress on healthcare workers. Happell et al. (2013) point out that work-related stress is compounded in healthcare industry as healthcare professionals are always in human contact, need to make rapid decisions, and their decisions have significant consequences.

The established literature indicates that healthcare workers who suffer from work-related stress are likely to fail in providing quality services to the patients (Kumar et al. 2018). The negative impacts are not limited on individuals, rather they affect the entire organisation. As Awa et al. (2010) found that work-related stress is directly related to decreasing organisational performances as number of sick-calls by employees increase, and staff become less motivated and engaged. Marine et al. (2006) further point out that occupational stress leads to increased employee turnover in healthcare industry. An earlier multi-country study conducted by Royal College of Nursing UK, the International Council of Nurses and the International Council of Nurses found that suboptimal working condition is one of the core factors behind increased migration among nurses (WHO, 2003). In other words, occupation stress pushes valuable nursing staff to migrate to a different country and find a suitable job. This is particularly alarming for a developing country such as China, where the country is struggling to find adequate healthcare employees, and migration from the country to other developed countries are rising.

Teasdale (2006) studied the impact of work-related or occupational stress on healthcare employees. Teasdale's study found that work-related stress increases poor decision-making, absenteeism, accidents, organisational breakdowns, lack of creativity and even intentional sabotage. The study conducted by Keykaleh et al. (2018) found that level of occupational stress among nursing staff is directly correlated to declining care quality and increasing patient mortality. Not to mention, occupational stress in healthcare employees leads to increased mistakes, and on-the-job injuries for careers and patients (Sarafis et al. 2016).

2.3 Work-related stressors in Healthcare

A number of factors are responsible for work-related stress in healthcare industry. The two fundamental theories that explain the processes connecting psychological as well as social pressures with physical un-wellness among healthcare professionals are: *Karasek and Theorell's Model of Demand/Control with Support*, and *Siegrist's Model Effort-Reward Imbalance*.

2.3.1 Theoretical Models of Work-related stress

The first model was developed by Karasek in 1981 to explain that ill-health of employees is an outcome of job strain. According to this model, when work has excessive demand, and employees have less control over the work, it leads to high job strain (shown in figure 1), resulting in higher risk of physical and psychological stress. In other words, work-related stress is a function that has two inputs: *Job Demands of the employees* and *Decision Latitude enjoyed by the employees*. This model therefore categorizes jobs into four kinds: *Low Strain Job (low Job Demands and high job decision latitude)*, *Active Job (high Job Demands and high job decision latitude)*, *Passive Jobs (low Job Demands and low job decision latitude)* and *High Strain Jobs (high Job Demands and low job decision latitude)*. Job demands in this model indicate a number of psychological work-related stressors such as time pressures, conflicting demands, interruption rate etc. On the other hand, Job decision latitude indicates decision authority and/or skill discretion enjoyed by an employee on his or her own role (Warr, 1990).

The second model was developed by Siegrist (2000). As shown in figure 2, imbalance between efforts (demands and/or obligations) warranted for a work and rewards obtained from that work leads to poor health outcomes. Partially based on theories of social reciprocity, Siegrist (2010) considers work as social contract where employees expect rewards in return for their duties. If rewards, which include intrinsic and extrinsic rewards fall short of the obligations and duties warranted from them, then poor physical and psychological outcomes become inevitable (Siegrist 2010).

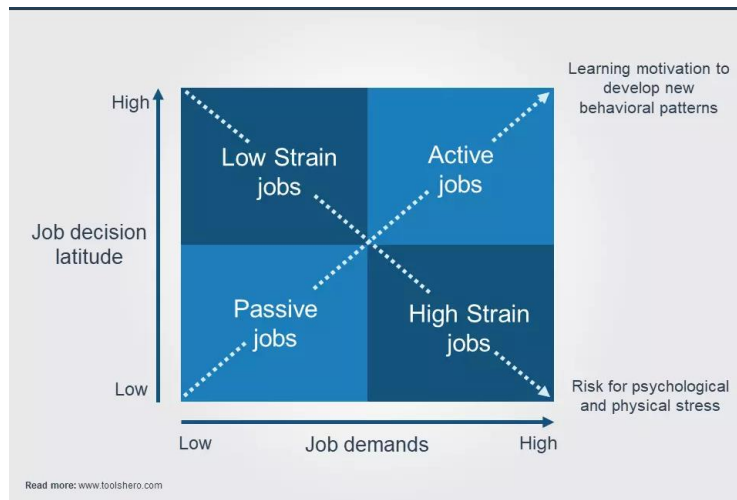


Figure 1 Karasek and Theorell's Model of Demand/Control with Support (adapted from toolshero.com)

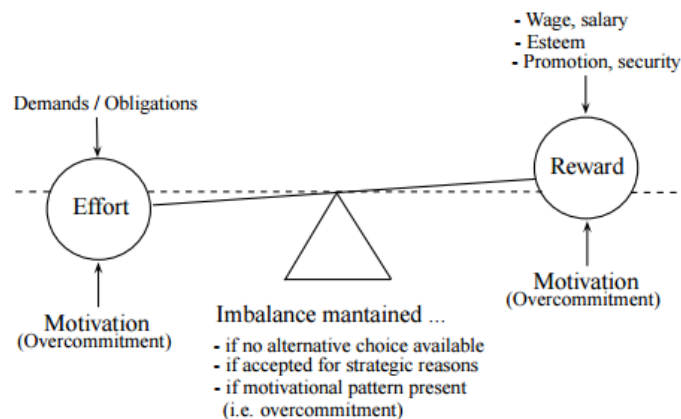


Figure 2 Siegrist's Effort-Reward Imbalance Model (source: UCSF.edu 2015)

This model is based on age-old social reciprocity, a social construct that supports the assumption of return that equals invested efforts. Therefore, if employees feel they are not rewarded adequately for their efforts, then it leads to imbalance in the employment dynamics resulting in emotional stress for those employees. Similarly, adequate rewards lead to holistic development of the employees.

In this model, the rewards have three dimensions: money (salary, wages, bonus etc.), esteem, career opportunities (promotions, job security etc.). Siegrist (2010) most

importantly points out how imbalanced employment is sustained in the market. According to him, this is due to three conditions: lack of choices for employees in the job market, promise of improved rewards in the future, and overcommitment by the employees. Overcommitted employees tend to have inappropriate views of the work demands than others who are less committed, resulting in the perception that they ought to do more for the rewards they are obtaining.

2.3.2 Empirical research on work-related stress

In the established literature, these two models have been predominantly used by researchers to link work conditions with health outcomes of the employees in healthcare industry (Siegrist 2010). The studies conducted by Steptoe, Wardle, Pollard, Canaan and Davies (1996), Vrijkotte, van Doornen and Geus (2000), Hurwitz et al. (2006), Bellingrath and Kudielka (2008) and others have used these models to examine work-related stressors and negative health outcomes for employees.

The results from the study of Peter, Siegrist, Hallqvist, Reuterwall and Theorell (2002) indicate that men have fractionally higher risk of myocardial infarction compared to women (2.02 vs 2.19), and they explain this risk difference using Karasek's model, where jobs performed by men had higher job strains.

According to Leka and Jain (2020), the decade leading to 2000 contains empirical work of stress primarily focusing on psycho-social elements in the work environment. Many American researchers were focusing on my stress stemmed from work environment was related to diseases such as cardio-vascular disease. The definition of stress evolved throughout this decade, as well as the measures to measure stress, resulting in increased amount of empirical studies.

Despite some improvements since 2000 in the physiological research involving stress, researchers such as (Chandola et al. 2008) concluded that stress may leads to cardiovascular disease, however, the exact impact of stress physiological mechanisms on human body is yet to be determined.

In studying stress, the researchers are keener to adopt Karask's model than Siegrist's. The empirical work of De Jonge, Vegchel, Shimazu, Schaufeli and Dormann (2010) examined Karask's model in their longitudinal study. Their study found strong positive

correlation between Low decision authority (or decision latitude) and high job demands (cognitive and emotional demands), and reduced job satisfaction. The study also found that High Strain jobs increase psychosomatic complaints among employees, while Low Strain jobs significantly reduce psychosomatic complaints. Moreover, low job latitude was found to increase higher rates of employee sickness absences, while increased job latitude was found to reduce employee sickness absence rates.

Similarly, the study conducted by Collins, Karasek and Costas (2005) found that job strain provides powerful explanation of heart disease as well as other chronic diseases. Other studies utilizing Karasek's model include Bultmann, Kant, Schroer and Kasl (2001) establishing positive association between job strain and psychological disorders, Robinson, Clements and Land (2003) demonstrating positive correlation between job strain and burnout, and Rugulies and Krause (2008) highlighting the association between job strain and musculoskeletal pain.

While, both of these models helped to conduct various empirical studies, one can easily identify the work-related stressors by examining both models together. In both models that quadrants that are associated with high risk of physical and psychological illness are: High Strain jobs (in Karasek's model) and High Job Imbalance (in Siegrist's model). Therefore, these job characteristics explain how work-related stress can impact the employees in healthcare industry. In other words, nurses and other professionals in healthcare industry are to suffer from high work-related stress when high job demands are forced on them along with lower job decision latitude, as well as their rewards fall behind the efforts, they make in fulfilling their duties. The stressors from combining both of the models have been recently validated by the study Bhui, Dinos, Galant-Miecznikowska, de Jongh and Stansfeld (2016) with samples from healthcare industry.

Besides these two dominant models, a number of other empirical studies identified numerous other work-related stressors. For instance, negative organisational culture leads to work-related stress (Lee & Jang, 2019). In a negative organisational culture, there is significant lack of trust between employer and employees, as well as among the employees, lack of cooperation within organisation, lack of support for the employees and constant disregard towards employee well-being, which lead to occupational stress among employees. Besides organisational culture, study

conducted by Li et al. (2014) found that employees in public healthcare sector in China tend to have less job satisfaction and higher work-related stress. Similar conclusion was made by the study of Mosadeghrad (2013). According to this study in Iranian healthcare sector, nursing staff in private sector has less (statistically significant) stress than nurses working in public sector.

Lack of support and discriminations are also found to increase workplace stress for healthcare employees. According to the study of Okechukwu, Souza, Davis and de Castro (2014), work-place discrimination based on race, gender, class and other factors lead to increased occupational stress among employees. Furthermore, study conducted by Sarafis et al. (2016) found that lack of psychological support for nurses and other healthcare employees lead to increased occupational stress among these employees. Their study found that conflicts with supervisors, constant contact with patients, death and their families lead to higher stress among nurses. Also, to note that management style might influence workplace stress in healthcare. According to the study conducted by Messias, Mendes and Monteiro (2009) found that aggressive management style directly contribute to Job stress. Fong, Mulok and Sumilan (2015) studied the impact of different leadership style on workplace stress. Although they found authoritative leadership has weak positive association with stress, democratic and transformational leadership have no association (statistically significant) with workplace stress.

Landsbergis et al. (2014) concluded that Job stress is a function of poor occupational health. However, most importantly, their work does not ignore socio-economic position of the employees as well as other institutional factors that have mediating effects on job stress. This model is supported by other similar studies. For instance, the work of Berkman and Kawachi (2000) found that disparate health outcomes of employees are relevant to socio-economic position of the employees, income inequality, social networks, social capital, social integration etc.

Besides organisational aspects, demographic characteristics such as Age, Family status, education level, and Income are found to have influence on workplace stress. Study conducted by Hsu (2018) found that Age has reverse-U-shaped impact on work stress. This means that stress increases with the Age to a point, after which stress decreases as age increases. Hsu (2018) concluded that this was due to resilience

developed by older workers. The literature survey conducted by Rauschenbach, Krumm, Thielgen and Hertel (2012) found conflicting evidence on the association between Age and Stress.

The work of Thoits (2010) highlighted that work stress is associated with individual's social class, ethnicity and marital status. While, this study explores the impact of marital status as well as social class in the form of income level, due to monocultural composition of Chinese workforce across the industry, the impact of ethnicity is ignored.

2.4 Work-related stress, Healthcare Industry and China

For China, occupational stress creates serious implications as the country is already struggling to find adequate healthcare population for its growing population. A report published Wu et al. (2016) points the finger at lack of physical and psychological welfare of the employees in the healthcare industry for China's shortage of healthcare workers. According to their report, in 2012 China only had 0.43 paediatricians for every 1000 children, while in 2015 for every 1000 of its population, the country only had 0.14 general practitioners. The country in 2013 only had 2.05 nurses per 1000 population, which is below the global average of 2.86 (WHO 2015). To turnover rate of nursing staff in China further highlights the extent of the problem. According to Lyu, Li, Li and Li (2016), the turnover rate among nurses in China is around 18% while turnover intention among nurses is above 50%. Wu et al. (2016) argue that besides the improvement of living standards of Chinese population, increased health awareness, and increased coverage of healthcare insurance, the factors that are attributing to the widening deficit of healthcare professionals in China can be attributed to work-related stress among healthcare professionals. Their conclusion was supported by the study of Millar et al. (2017), who found that Chinese government continues to attract healthcare professionals despite offering healthy financial incentives. According to them, the country will suffer the deficit in its healthcare professionals if it continues to ignore the issues such as better work-environment and positive organisational culture that can attract and motivate employees in health care industry.

2.5 Preventing Work-related Stress

The extent of the problem and the consequences make it necessary to address work-related stress in healthcare. A number of studies have been conducted to find the effective intervention programs to combat occupational stress among healthcare workers. Most of these studies explore individual and organisational intervention programs (such as Marine et al., 2006; Awa et al., 2009; Cunningham et al., 2010; Koinis et al., 2015). These studies found that person-directed intervention is less fruitful than organisation-directed intervention programs. Studies such as Burman and Goswami (2018) proposed organisational changes such as balanced workload, reduced professional conflicts, better emotional supports, better management and leadership, but they do not provide a detailed organisational framework to implement such system. Ruotsalainen, Verbeek, Marine and Serra (2015) conducted extensive systematic review on preventing occupational stress among healthcare workers. Their review that included 58 studies involving over 7188 participants. They concluded that cognitive-behavioural training as well as relaxation (mental and physical) can moderately reduce stress; changing work schedule can reduce stress. However, their review did not find clear effects of organisational intervention on reducing work-related stress. But they recommended that organisational interventions need to focus on addressing particular work-related stressors. Such recommendations are supported by a number of studies. Study conducted by Wright (2014) found the clinical supervision for student nurses in the UK helps those nurses to develop resilience, which in return reduces work-related stress. Guo et al. (2017) studied how nurses can prevent work-related stress, and found that education, self-efficacy, regular physical exercises and positive coping mechanism help nurses to become more resilient to work-related stress. Yoshikawa et al. (2016) found that negative coping mechanisms such as smoking leads to less resilience to work-related stress among nurses

Study of preventative measures to work-related stress helps to understand what causes work-related stress, while also highlighting how to prevent work-related stress for healthcare professionals.

2.5.1 Sustainable Human Resource Management

A number of studies in the recent years (such as Mazur 2015; Esfahani et al. 2017 and others) highlighted the importance and relevance of Sustainable Human Resource Management in safeguarding employee well-being such as reducing work-related stress.

The purpose of Human Resource Management (HRM) is to effectively manage the human resource of an organisation. And as Hassani, Mobaraki, Bayat and Mafimoradi (2013) point out one of the fundamental goals of HRM is to safeguard the well-being of the workers. Hence, any organisation-wide intervention falls within the purview of HRM. But as Kramar (2013) points out, although the HRM in the last three decades have improved the performance of HR performance and as a result the operational performance of the organisations, traditional HRM and Strategic HRM ignored the duty to safeguard the physical and psychological well-being of the workforce. And in order to fill this gap, Sustainable Human Resource Management was introduced. The aim of Sustainable HRM is to counter the one-sided focus on short-term efficiency with exploitation of HR (Ybema, Vuuren & Dam, 2017).

The definition of Sustainable Human Resource Management is vague and still emerging. The definition provided by van Dam, van Vuuren and Kemps (2017) captures the essence of the concept. According to them, Sustainable Human Resource Management refers to HRM practices that ensure workers are able and willing to remain working now and in the future. They further highlighted the three fundamental components of sustainable Human Resource Management that appear crucial for employees' sustained participation in the labour market, namely employability, work motivation and health. Employability refers to the ability of an employee to adequately fulfil their duties in their current job as well as future jobs, which increase their chance of obtaining a job in the internal and external labour market (Fugate, Kinchi & Ashforth, 2004). Motivation refers to energetic forces that direct and energize work-related behaviour (Ybema et al., 2017). And, the well-established definition of health by WHO refers to the 'state of complete physical, mental and social well-being, and not merely as the absence of disease or infirmity' (WHO, 1984, cited in Ybema et al., 2017).

Van Dam et al. (2017) in their study find that organisations are realising that Sustainable HRM is very relevant for the future of their organisations. To keep employees motivated and efficient in the long-term, organisations need to keep employees motivated and healthy.

The importance of Sustainable Human Resource Management is therefore very clear. However, as Ybema et al. (2017) pointed out that the established literature is not definitive when it comes to specifying HR practices that can be considered Sustainable HR practices. The common Sustainable HR practices identified from the studies (Kramar, 2013; van Dam et al., 2017; Ybema et al., 2017) are: *Ensuring good and safe working conditions, maintaining positive organisational culture, providing adequate support for the employees, eliminate dysfunctional conflicts, ensuring work-life balance and ensuring effective management and leadership.*

2.6 Conceptual Framework

This study adopts transaction-based theoretical view of stress, as proposed by Lazarus and Folkman (1984). According to this view, stress is not an isolated event, rather stress is the result of transaction between individuals and their environment. Lazarus and Folkman (1984) suggest that individuals appraise an encounter to be 'stress' when they perceive the demands to be exceeding the resources available to them. Apart from the environmental variables, 'Coping' is an important part of stress. Besides, better ability to cope can change individual's appraisal of an encounter from 'stressful' to 'not stressful' (Lazarus & Folkman, 1984). This was highlighted by various empirical studies such as Guo et al. (2017), Yoshikawa et al. (2016).

The theoretical framework of this study therefore includes primary factors of stress such as *High Job Strains* and *Employee's Agency* in line with Karasek's model and Siegrist's model, *Personal characteristics* associated with Coping in line with the model of Lazarus & Folkman (1984), *Organisational Characteristics* in line with the work of Lee and Jang (2019), Landsbergist et al. (2014), and *Socio-economic* factors in line with the work of Berkman and Kawachi (2000). The theoretical framework is shown in figure 3.

2.6.1 Hypotheses development

2.6.1.1 Direct Effects

Based on the survey of the literature, the following factors are found to have direct impact on the work stress. These include High Job Demand (Karasek et al. 1981; Bhui et al., 2016), Low Job Control (Karasek et al. 1981; Bhui et al., 2016), Imbalanced Effort-Reward (Siegrist, 2000; Bhui et al., 2016), Organisation type (Li et al., 2014; Mosadeghrad, 2013), Management Approach (Fong et al., 2015), Organisational Culture (Lee & Jang, 2019), Job Latitude (Bhui et al., 2016), Job Reward (Bhui et al., 2016), Training (Ruotsalainen et al., 2015), Workplace Support (Sarafis et al., 2016), Age (Hsu, 2018), Marital Status (Thoits, 2010), Income (Thoits, 2010), Self-efficacy (Guo et al., 2017), Education (Guo et al., 2017) and Coping Mechanism (Guo et al., 2017; Yoshikawa et al., 2016).

Based on the findings from the existing knowledge, the following hypotheses are constructed.

H1: High Job Strains, namely a) High Job Demand, b) Low Job Control, and c) Imbalanced Effort-Reward, have significant positive impact on workplace stress.

H2: Employee's Agency, namely a) Job Latitude, b) Job Reward, c) Training and d) Workplace Support have significant negative impact on workplace stress.

H3: Organisational Characteristics namely a) Organisational type, b) Management Approach, and c) Organisational Culture have significant impact on workplace stress.

H4: Socio-Demographics namely a) Age, b) Marital Status, and c) Income have significant impact on workplace stress.

H5: Personal Characteristics namely a) Self-Efficacy, b) Education, and c) Personal Coping Mechanism have significant impact on workplace stress.

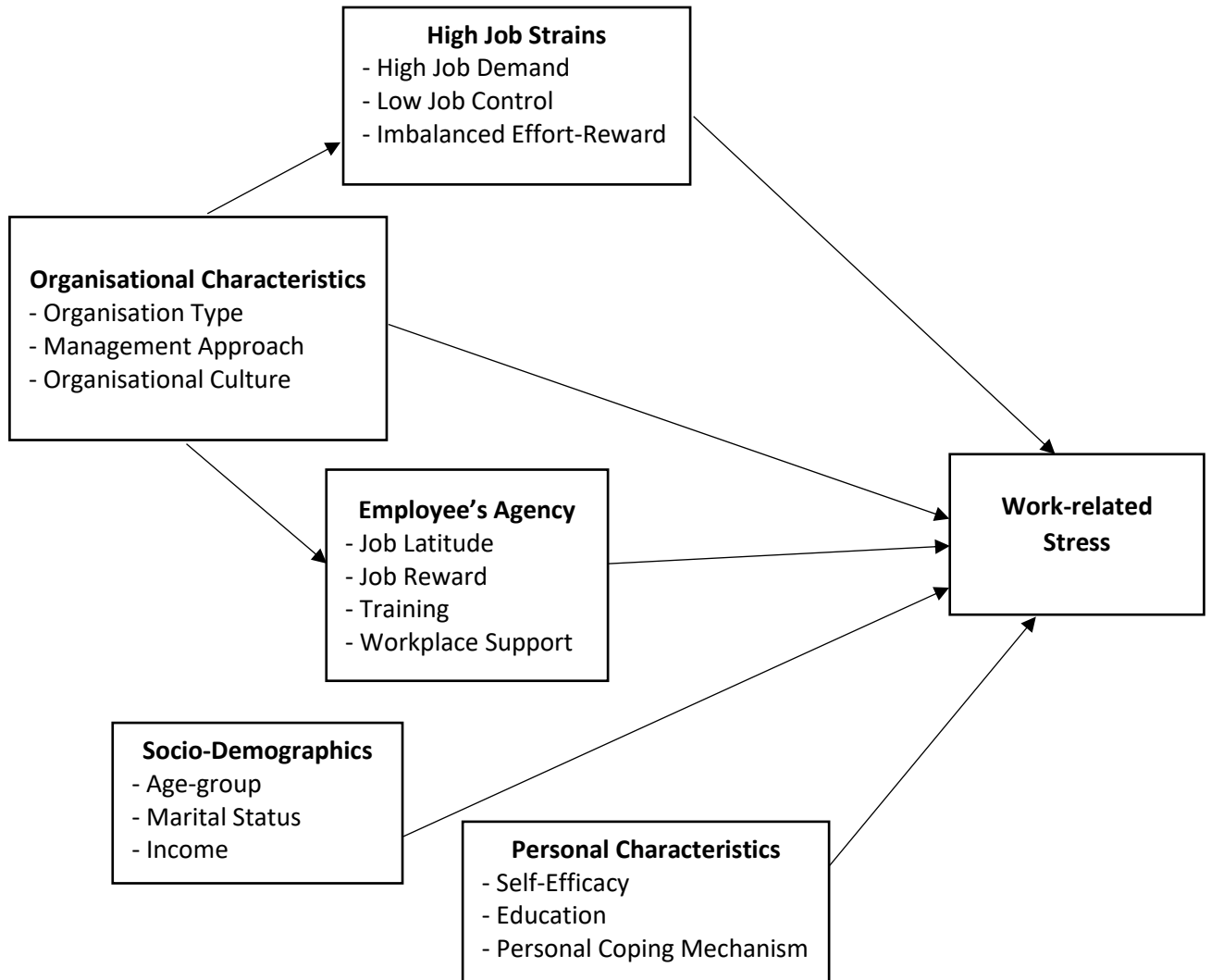


Figure 3 Conceptual Framework

2.6.1.2 Mediation effects

While the variables identified above have direct impact on work stress, some studies have pointed out indirect effects of these variables on work-related stress. Namely, study conducted by Bellagamba et al. (2015) pointed out that Organisational factors impact job strain, which in return influences mental health quality of the healthcare workers. Other studies such as Kim and Jung (2019) found that leadership style has direct effect on job strain of employees. Therefore, it is hypothesised that besides direction impact of Organisational Characteristics on Work Stress, Organisational Characteristics also have indirect effect on Work Stress through High Job Strain. Based on this, the following hypotheses are constructed:

H6: High Job Strains, namely a) High Job Demand, b) Low Job Control, and c) Imbalanced Effort-Reward, mediate the relationship between Organisation Type and work-related stress.

H7: High Job Strains, namely a) High Job Demand, b) Low Job Control, and c) Imbalanced Effort-Reward, mediate the relationship between Management Approach and work-related stress.

H8: High Job Strains, namely a) High Job Demand, b) Low Job Control, and c) Imbalanced Effort-Reward, mediate the relationship between Organisational Culture and work-related stress.

Study conducted by Landsbergis (1988) highlighted that different healthcare workers from different organisation has different level of work-related stress due to employee receiving different level of training and support. Also, Messias et al. (2009) pointed out that aggressive management style gives less latitude to the employees, which in return decreases their job satisfaction and increases their work-related stress. Moreover, Jehanzeb and Bashir (2013) pointed out that different organisation has level of training and workplace support for their employees. Therefore, it can be interpolated that different organisation provide different level of Job Latitude, Job Reward, Training and Support for their employees. Hence, this study hypothesizes that organisational characteristics have direct effect on Employee's Agency, which is the culmination of Job Latitude, Job Reward, Training and Support. In line with this, the following hypotheses are constructed:

H9: Employee's Agency, namely a) Job Latitude, b) Job Reward, c) Training and d) Workplace Support, mediate the relationship between Organisation Type and work-related stress.

H10: Employee's Agency, namely a) Job Latitude, b) Job Reward, c) Training and d) Workplace Support, mediate the relationship between Management Approach and work-related stress.

H11: Employee's Agency, namely a) Job Latitude, b) Job Reward, c) Training and d) Workplace Support, mediate the relationship between Organisational Culture and work-related stress.

Chapter 3. Research Methodology

In order to conduct a study, data are required. The types, collection methods and other attributes of research data vary depending on the aim and allocation of resources for that research. Research methodology outlines the collective strategy to collect and analyse data required for a particular study (Gorard, 2013).

3.1 Research Philosophy

According to Saunders et al. (2016), research philosophy indicates how research data are to be gathered, analysed and made inferences from. There are two main research philosophies that are suitable for business and social science research studies: *positivism* and *interpretivism* (Saunders et al. 2016). Positivist research takes objective world-view. Bryman (2015) explains that positivist research study treats reality as constant and unchanging, which means research observations can easily be repeated. Saunders et al. (2016) add, researchers can easily generalize positivist research findings through the use of quantitative data.

On the contrary, interpretivist research studies take subject and holistic view of the reality, and interpret the findings relative to this dynamic reality (Saunders et al. 2016). It is to mention that subjective view of the environment does not make interpretivist research conclusions any less reliable and valid compared to positivist research conclusions.

For this research study, positivist research philosophy is adapted. As this research collected data and tested those data against conceptual framework and hypotheses that are defined based on existing knowledge. Although the study is based on China, the findings of this study can largely be generalised for a healthcare industry in a different country.

3.2 Research Approach

How researchers approach their research can vary. According to Saunders et al. (2016), researcher can either set out to test a conceptual framework or hypotheses constructed from established knowledge, or they can freely explore the gathered data

to create new knowledge. The prior research approach is *deductive*, and the latter approach is *inductive*. Inductive research approach is more suitable for studies where existing literature is limited and building new theories and knowledge are of paramount importance (Bryman, 2015). Furthermore, Saunders et al. (2016) explain that for interpretivist research, inductive research approach is appropriate, while for positivist research, deductive research approach is better suited.

This study is deductive in nature, as it formulates hypotheses and constructs a conceptual framework and tests those using the gathered research data.

3.3 Research Choices

According to Gorard (2013), there are three principle research choices: *Mono method*, *Mixed method* and *Multi-method*. Mono method research choice dictates that a researcher either chooses *quantitative* or *qualitative* research, multi-method allows the researcher to choose both methods, while mixed-method allows the research to choose mix of both research choices (Saunders et al., 2016).

Qualitative research uses qualitative data, and quantitative research uses quantitative data. Qualitative data are numeric or non-numeric data that are not quantifiable, while quantitative data are continuous numeric data that are quantifiable (Saunders et al., 2016). Gorard (2013) points out that qualitative research complements inductive research, as building new knowledge and theories require qualitative data. On the other hand, quantitative research compliments deductive research as quantitative data are more suitable to test hypotheses and frameworks. Hence, quantitative research is chosen for the study at hand, making this research mono-method.

3.4 Research Strategies

To collect primary data, researchers have a number of research strategies at their disposal, which include: *Surveys*, *Experiment*, *Case Study*, *Archival Research*, *Action Research*, *Ethnography*, *Narrative inquiry* and *Grounded Theory* (Bryman, 2015).

According to Saunders et al. (2016), Surveys and experiments are more suited for quantitative studies, while, case study and archival research are more suited for

qualitative research studies. The remaining strategies – Grounded theory, Ethnography, Action research and Narrative inquiry are suitable for qualitative as well as quantitative studies. For this quantitative study, survey is selected as this research strategy allows the researcher to collect large data sets from relatively large sample size (Saunders et al., 2016).

3.5 Time Horizon

The timeline of data collection for a study can differ. According to Saunders et al. (2016), a study can collect data for an extended period of time, while data required for a can also be collected at a specific point in time. If data are collected for an extended period of time, then the research is known as longitudinal study, and if data are collected at a specific point in time, then the study is known as cross-sectional study. Longitudinal studies are costly as they require lengthy timeline and more resources, cross-sectional studies are more feasible.

For this study, cross-sectional time horizon is selected given its feasibility and its applicability as this study is not interested in observing the causes of work-related stress over an extended period of time.

3.6 Data Collection and Analysis

As mentioned, survey is used for conducting this primary research. In order to conduct the survey, firstly a questionnaire is developed. Survey through questionnaire has a number of benefits. According to Saunders et al. (2016), survey allows researchers to collect data without needing to meet the participants face to face. Moreover, survey reduces context bias, and allows participants to freely answer the questions at their own convenience.

The questionnaire is mainly divided into two sections. The first section is concerned with demographic information of the participants, while the second section is concerned with collecting required data needed to test the hypotheses of this study.

In order to ensure the suitability and integrity of the questionnaire, a preliminary survey is conducted. Besides measuring the validity of the questionnaire, feedbacks from

participants are also collected and taken into account to formulate the final questionnaire. The final questionnaire is shown in Appendix B.

3.6.1 Samples

Research studies such as this one focus on a particular population. However, studying the entire population is impractical and unnecessary (Saunders et al., 2016). Instead, samples are used. Samples are subset of the entire research population (Garard, 2013). Selection of samples are important as the reliability and acceptability of the research study depends on sampling technique used (Saunders et al., 2016). There are two different types of sampling techniques – probability sampling and non-probability sampling. In probability sampling, each subject of the population has the equal chance of selection and samples are chosen using application of probability theory. and in non-probability sampling, samples are selected by the researchers on the basis of specific characteristics of those samples or ease of access to those samples. This study adopts *Convenience sampling*, a non-probability sampling that allows the researcher to choose samples based on accessibility (Garard, 2013).

Furthermore, a sample size of 140 is proposed for this study (breakdown of the estimation is shown in appendix A).

3.6.2 Measures

3.6.2.1 Work-related Stress

Institute of Occupational Medicine (2001) used staff absence, staff morale, report of stress and staff turnover to measure work-place stress. This study adopted three of the four measurement items as staff turnover can only be determined from organisational records, which is not accessible for this study. Since, study requires measuring the attitude, belief or behaviour of the study participants, Likert Scale is used instead of hard data used in In Institute of Occupational Medicine (2001).

According to Losby and Wetmore (2012), Likert Scale is appropriate when measuring attitude, belief or behaviour items of the participants. Since, this study requires measuring the attitudes and beliefs of the participants, use of Likert Scale is suitable.

However, Likert Scale generates categorical data. But in Social Sciences, many scientists agree that Likert Scale data can be treated as continuous data as long as number of points are more than 5 (Allen & Seaman, 2007). Therefore, this study uses 7-scale Likert Scale.

3.6.2.2 High Job Demand

Three measuring items: 'Demanding work', 'inability to keep pace with responsibilities' and 'inability to maintain work-life balance' are used to measure High Job demand in the study of Moon and Maxwell (2004). This study adopts these three measuring items, however, instead of 5-scale Likert Scale, this study uses 7-scale in line with the rationale provided above.

3.6.2.3 Low Job Control

In order to measure Low Job Control, the measurement items used by Chiang et al. (2010) are used. It is to note that Chiang et al. (2010) used 8 measuring items, however, as Somekh and Lewin (2004) indicated that 3-item measurements are adequate to reliably measure a variable.

3.6.2.4 Imbalanced effort-reward

This study adopts three measuring items (listed in table 1) from measurement items for Effort-reward imbalance recommended by Siegrist, Li and Montano (2014). While their suggestions included 4-scale coding of Likert Scale, in line with the other variables and provided rationale, this study used 7-point Likert scale.

3.6.2.5 Job Latitude

Three items to measure Job Decision Latitude are borrowed from the Eurofound (2006) research on *Measuring Satisfaction in Surveys – Comparative Analytic Report*. These items are listed in table 1.

3.6.2.6 Job Reward

Three items (listed in table 1) to measure Job Reward are taken from the list of reward measuring items suggested by Siegrist et al. (2004).

3.6.2.7 Training

Holgado-Tello, Moscoso, Barbero-Garcia and Sanduvete-Chaves (2006) provided 72 measuring items to determine Training Satisfaction in the organisation. This study adopts three measuring items (listed in table 1) from 'Dimension 3: Usefulness and Overall Rating' of Holgado-Tello et al. (2006).

3.6.2.8 Workplace Support

Three measuring items (listed in table 1) that are used by Cevenini, Fratini and Gambassi (2012) are adopted in this study.

3.6.2.9 Self-efficacy

Klassen and Chiu (2011) used 12 measuring items to measure Self-efficacy of their participants. This study used three (listed in table) of the 12 items used in Klassen and Chiu (2011).

3.6.2.10 Education

This categorical variable used the options utilized by the study of Guo et al. (2017).

3.6.2.11 Positive Coping Mechanism

The main three common positive coping mechanisms for healthcare studies include regular exercise absence of regular smoking, absence of alcohol abuse and no sleeping problem (Garber et al. 2019; Steptoe et al. 1996; Yoshikawa et al., 2016).

Steptoe et al. (1996) used Regular exercise, Smoking and Alcohol abuse to determine coping mechanisms. Since, Alcohol abuse is hard to measure (Ferner & Chambers, 2001), regular exercise and regular smoking are used. Moreover, in line with the study of Savic et al. (2019) another coping mechanism is added (Sleeping pills) to determine whether participants are facing sleeping issues, as adequate sleep is indicated to be an important coping mechanism by healthcare workers (Garber et al. 2019; Steptoe et al. 1996; Yoshikawa et al., 2016; Savic et al., 2019).

3.6.2.12 Organisation Type

Similar to the study of Bhui et al. (2016), all three types of organisations: *Public*, *Private*, *Non-profit* are included in this study.

3.6.2.13 Management Approach

Although studies such as Fong et al. (2015) included three types of management style: Authoritative, Democratic and Transformational, this study only includes Authoritative and Democratic. This is because, pilot survey indicated that none of the participants were aware of Transformational leadership. Also, study of Fong et al. (2015) found that there is no statistically significant difference between the impact of Democratic and Transformational management style and their impact on work stress. There omission of transformational leadership is justified.

3.6.2.14 Organisational Culture

Buckingham and Coffman (2000) proposed 13 measuring items of 5-point Likert Scale to measure organisational culture. This study adopts 3 (listed in table 1) from those 13 items.

3.6.2.15 Age and Marital Status

The measures for these categorical variables are in line with the study of Xie, Huang and Zang (2020).

3.6.2.16 Annual Household Income

The measures for this ordinal categorical variable are in line with the measures used by Zhang and Liu (2018).

All the measuring items are shown in the table below.

| Variable type | Variables | Measuring Items |
|--------------------|---------------------|---|
| Dependent Variable | Work-related stress | <i>On a scale of 1 to 7, how would you rate the following statements? (1 being strongly disagree, and 7 being strongly agree)</i> DV1: There have been increased staff absences in our organisation (Institute of Occupational Medicine 2001). DV2: Staff morale in our organisation has been decreased (Institute of Occupational Medicine 2001) DV3: Overall, employees (yourself included) in the organisation feel more stressed. has increased (Institute of Occupational Medicine 2001). |

| | | |
|----------------------|--------------------------|--|
| Independent Variable | High Job Demand | <p>HJD1: My work is really demanding (Moon and Maxwell 2004)</p> <p>HJD2: I struggle to keep pace with my responsibilities (Moon and Maxwell 2004)</p> <p>HJD3: I struggle to maintain work-life balance (Moon and Maxwell 2004).</p> |
| Independent Variable | Low Job Control | <p>LJC1: I feel I do not have adequate control over my role (Chiang et al. 2010).</p> <p>LJC2: I am not able to work independently (Chiang et al. 2010).</p> <p>LJC3: I have inadequate say in my work scheduling (Chiang et al. 2010).</p> |
| Independent Variable | Imbalanced effort-reward | <p>IER1: My wages/salaries do not match my responsibilities (Siegrist et al., 2014).</p> <p>IER2: I do not get recognised for my efforts (Siegrist et al., 2014).</p> <p>IER3: I do not feel appreciated for fulfilling my duties (Siegrist et al., 2014).</p> |
| Independent Variable | Job Latitude | <p>JL1: I have autonomy in setting my own pace of work (Eurofound, 2006).</p> <p>JL2: I am trusted to make necessary decisions in the way work is done (Eurofound, 2006)</p> <p>JL3: I can leave early if need be (Eurofound, 2006).</p> |
| Independent variable | Job Reward | <p>JR1: I am properly respected at my work (Siegrist et al., 2004).</p> <p>JR2: I am satisfied with the treatment at work (Siegrist et al., 2004).</p> <p>JR3: I am satisfied with the respect and prestige I receive at work (Siegrist et al., 2004).</p> |
| Independent variable | Training | <p>TR1: The trainings I receive at work are useful (Holgado-Tello et al. 2006).</p> <p>TR2: I am satisfied with the trainer/mentor (Holgado-Tello et al. 2006).</p> |

| | | |
|----------------------|---------------------------|---|
| | | TR3: I am satisfied with the current training programs in the organisation (Holgado-Tello et al. 2006).). |
| Independent variable | Workplace Support | <p>WS1: I am satisfied with the support I receive from the superiors (Cevenini et al. 2012).</p> <p>WS2: I am satisfied with the cooperation and team-work (Cevenini et al. 2012).</p> <p>WS3: There are good and positive relationships among colleagues (Cevenini et al. 2012).</p> |
| Independent variable | Self-efficacy | <p>SE1: I have the ability to perform my role (Klassen and Chiu 2011).</p> <p>SE2: I have full confidence on my ability to perform my tasks (Klassen and Chiu 2011).</p> <p>SE3: I can handle the challenges that might rise in the course of my duty (Klassen and Chiu 2011).</p> |
| Independent variable | Education | <p>EDU: What is your level of education?</p> <ul style="list-style-type: none"> • Less than High School • High school or High School equivalent • More than High School |
| Independent variable | Positive Coping Mechanism | <p>PCM1: Do you exercise (physical) regularly (Step toe et al. 1996)?</p> <ul style="list-style-type: none"> • No • Yes <p>PCM2: Do you smoke regularly (Step toe et al. 1996)?</p> <ul style="list-style-type: none"> • Yes • No <p>PCM3: Do you take sleeping pills (Lehner et al. 1997)?</p> <ul style="list-style-type: none"> • Yes • No |
| Independent variable | Organisational type | <p>OT1: What type of organisation you work?</p> <ul style="list-style-type: none"> • Public • Private (for-profit) • Private (Non-profit) |

| | | |
|----------------------|-------------------------|---|
| Independent Variable | Management Approach | <p>MA: What is the main type of management approach in your organisation?</p> <ul style="list-style-type: none"> • Authoritative • Democratic |
| Independent Variable | Organisational Culture | <p><i>On a scale of 1 to 7, how would you rate the following statements? (1 being strongly disagree, and 7 being strongly agree)</i></p> <p>OC1: My organisation emphasizes on engaging with the employees and responding to their needs and wants (Buckingham and Coffman 2000).</p> <p>OC2: My organisation is transparent in their decision-making and they seek employee opinion and views (Buckingham and Coffman 2000).</p> <p>OC3: Employees in the organisation are supportive of each other (Buckingham and Coffman 2000).</p> |
| Independent Variable | Age | <p>AG1: Which Age group do you belong?</p> <ul style="list-style-type: none"> • Between 20 and 29 • Between 30 and 39 • Between 40 and 49 • Over 50 |
| Independent Variable | Marital Status | <p>MS1: What is your marital status?</p> <ul style="list-style-type: none"> • Single (Never married) • Married • Living with partner • Divorced • Widowed |
| Independent Variable | Annual Household Income | <p>AHI: What is the annual income of your household?</p> <ul style="list-style-type: none"> • Below 60,000 RMB • Between 60,000 and 120,000 RMB • Between 120,000 and 240,000 RMB • Above 240,000 |

Table 1 Measurement elements of variables

3.6.3 Analysis of the data

In order to analyse the data, first the gathered survey data were pre-processed. Since, no survey responses contained missing values, there was no need to exclude any

response. Also, the survey questions were close-ended, indicating the fact that respondents were allowed to select their responses on the set choices.

The reliabilities of the measurement elements were tested to determine their reliability in testing the indicator variables. Further data pre-processing was conducted to (1) combine continuous variables and (2) create dummy variables for categorical variables, which can be used to perform the regression analyses required to test the hypotheses presented in section 3.6.

To conduct regression analyses, SPSS (v.23) was used. Furthermore, PROCESS v3.4.1 by Andrew F. Hayes was used to test mediation effects.

Chapter 4. Results

4.1 Assessing Data Reliability

To assess the reliability of the survey responses, Cronbach's alpha was calculated for each of the continuous indicator variables from their measurement variables. Cronbach's alpha measures how closely related a set of items are as a group (Tavakol & Dennick, 2011). The table below illustrates the Cronbach's Alpha for each of the continuous indicator variable from their measurement variables.

| Indicator Variable | Cronbach's Alpha | No of measurement variables |
|--------------------------------|------------------|-----------------------------|
| High Job Demand (HJD) | 0.867 | 3 |
| Low Job Control (LJC) | 0.850 | 3 |
| Imbalanced Effort Reward (IER) | 0.890 | 3 |
| Job Latitude (JL) | 0.881 | 3 |
| Job Reward (JR) | 0.880 | 3 |
| Training (TR) | 0.879 | 3 |
| Workplace Support (WS) | 0.888 | 3 |
| Organisational Culture (OC) | 0.883 | 3 |
| Self-Efficacy (SE) | 0.847 | 3 |
| Work-related Stress | 0.890 | 3 |

Table 2 Reliability testing

From table 2, it appears that for all indicator variables, Cronbach's Alpha is greater than 0.70, which according to Tavakol and Dennick (2011) indicates that measurement variables are closely related as a group, and therefore measure the indicator variables reliably.

4.2 Data Pre-processing

A number of steps were taken to pre-process the survey data. These are briefly discussed below.

4.2.1 Combing measurement items

As indicated table 1, for each continuous independent variable, three measurement elements were used. To simply the further calculation, mean of these measuring items were calculated and used as continuous independent variables for further analysis. For instance, for each participant, the mean of HJD1, HJD2 and HJD3 were calculated and assigned to HJD to use as the independent variable: High Job Demand. The process was repeated for all the continuous independent variables, and dependent variable: Work-related Stress (DV).

4.2.2 Handling Categorical variables

The survey had a total of 8 categorical variables: Education (EDU), Positive Coping Mechanism (PCM), Organisation Type (OT), Management Approach (MA), Age group (AGE), Marital Status (MS), and Income Level (Inc).

As shown in table 1, Positive Coping Mechanism asks three questions to the participants: if they smoke regularly? If you perform exercise regularly and if they take sleeping pills? Favourable responses indicating Positive Coping Mechanisms (Not smoking regularly, Performing Regular Exercise and Not taking sleeping pills) were coded as 1, while unfavourable responses were coded as 0. These three variables falling into Coping Mechanisms are categorical and since they are already dummy variables, no further process was needed.

For the remaining seven variables, Management Approach is already a dummy variable as (0= Authoritative Management approach and 1 = Democratic Management Approach). But for the remaining six categorical variables, Dummy variables (k-1) were created by using 'Recode into different Variables' function in SPSS. These dummy variables are shown in the table below.

| Categorical Variables | Dummy Variables (Labels) |
|--|--|
| EDU (Base: <i>Less than High School</i>) | EDU_HS (High School or Equivalent) EDU_AbvHS (More than High School) |
| OT (Base: <i>Public organisation</i>) | OT_PvtProfit (For profit private organisation) OT_PvtNonProfit (Non-Profit private. Organisation) |

| | |
|----------------------------------|---|
| AGE (Base: between 20 and 29) | AGE_30_39 (Between 30 and 39) AGE_40_49 (Between 30 and 39) AGE_50 (Above 50) |
| MS (Base: Single) | MS_Partnered (Married or living with Partner) MS_Div_Widowed (Divorced or Widowed) |
| Inc (Base less than 60k RMB) | Inc_60K_120K (Between 60k and 120k) Inc_120K_240K (Between 120k and 240k) Inc_240K (Above 240k) |

Table 3 Dummy Variables

4.3 Descriptive Statistics

4.3.1 Summary Statistics

The summary statistics of the independent continuous variables use for this study are shown in the table below.

| | Statistics | | | | | | | | |
|-----|------------|---------|------|--------|----------------|----------|----------|-------------|------|
| | N | | Mean | Median | Std. Deviation | Skewness | Kurtosis | Percentiles | |
| | Valid | Missing | | | | | | 25 | 75 |
| HJD | 157 | 0 | 5.10 | 6.00 | 1.511 | -1.270 | .923 | 5.00 | 6.00 |
| LJC | 157 | 0 | 4.93 | 6.00 | 1.676 | -1.005 | -.045 | 4.00 | 6.00 |
| IFR | 157 | 0 | 5.12 | 6.00 | 1.766 | -1.197 | .269 | 5.00 | 6.00 |
| JL | 157 | 0 | 2.66 | 2.00 | 1.663 | 1.171 | .107 | 2.00 | 3.00 |
| JR | 157 | 0 | 2.55 | 2.00 | 1.766 | 1.245 | .458 | 1.00 | 3.00 |
| TR | 157 | 0 | 2.90 | 2.00 | 1.736 | 1.022 | -.167 | 2.00 | 3.00 |
| WS | 157 | 0 | 2.61 | 2.00 | 1.705 | 1.225 | .273 | 1.00 | 3.00 |
| SE | 157 | 0 | 3.04 | 3.00 | 1.650 | 1.038 | .008 | 2.00 | 3.00 |
| OC | 157 | 0 | 2.62 | 2.00 | 1.623 | 1.266 | .569 | 2.00 | 3.00 |

Table 4 Summary Statistics for Independent Variables

As shown in table 4, no variable involves missing values. On average, participants rated High Job Demand as 5.10, with median being 6 (on the scale of 1 to 7). This indicates that participants feel severe high job demand at their workplace. Similarly, 75% of the participants rated Low Job Control and Imbalanced Effort Reward at least 6 (on the same scale). This indicates that participants believe they have significantly

lower job control (rating of 1 indicating highest Job Control and rating of 7 indicating lowest Job Control), and higher Imbalanced Effort-Rewards (rating 1 indicating most balanced Effort-Rewards and rating 7 indicating most imbalanced Effort-Rewards).

Participants are also found to be less satisfied with their Job Latitude, Job Reward, Training and Workplace Support. The average for these variables ranges from 2.55 to 2.90 (on the scale of 1 to 7). This indicates that participants are not satisfied (rating 1 indicating least satisfaction and 7 indicating most satisfaction) with the decision Latitude, Reward, Training and Workplace Support they currently receive. In particular, 25% of the participants rated Job Reward and Workplace Support the rating of 1. Finally, participants are not satisfied with existing Organisational culture, which was demonstrated by an average rating of 2.62 (rating 1 indicating least satisfied and rating 7 indicating most satisfied).

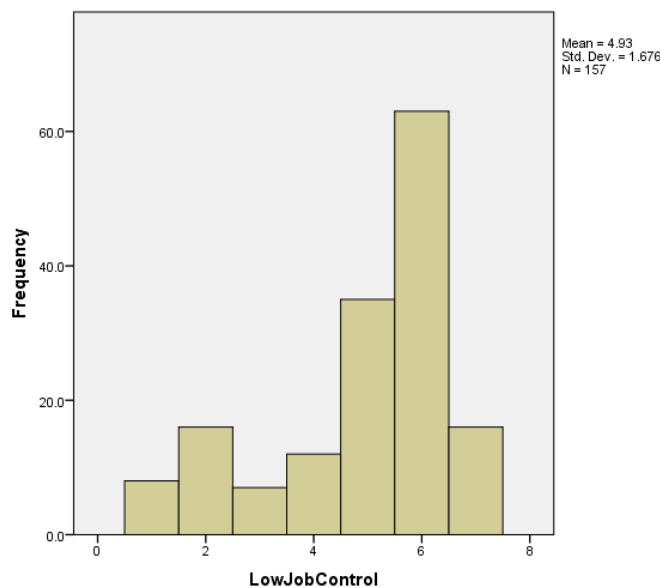


Figure 4 Low Job Control distribution

It is to note that High Job Demand, Low Job Control and Imbalanced Effort-Reward are negatively (left) skewed. The left skewness of the distributions is due to more participants providing higher rating for these variables. For instance, figure 4 indicates the distribution of Low Job Control with left skewness.

On the contrary, the remaining 6 variables in table 4 shows positive or right skewness. This is because, most participants rated less variables lower, while only handful of

participants gave these variables higher ratings. As shown in figure 5, when it comes to Job Reward, most participants agreed that they do not receive adequate rewards, which resulted in concentration in the left side of the distribution, creating right skewness.

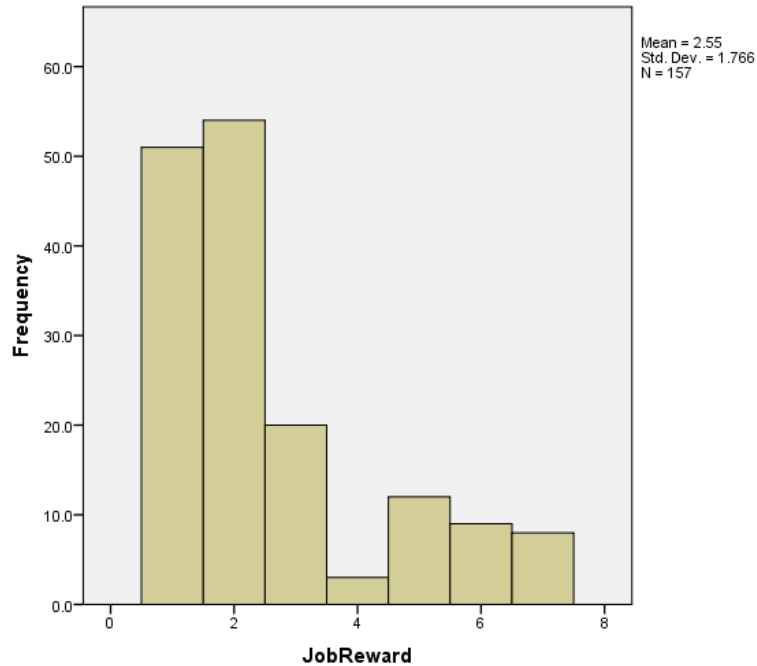


Figure 5 Job Reward distribution

Since, linear regression does not require variables to be normally distributed (Kim 2015), no pre-processing is required for these skewed distributions.

The summary statistics of the Dependent Variable: Workplace Stress is shown in the table below.

Statistics

WorkplcStress

| N | | Mean | Median | Std. Deviation | Skewness | Kurtosis | Percentiles | |
|-------|---------|------|--------|----------------|----------|----------|-------------|------|
| Valid | Missing | | | | | | 25 | 75 |
| 157 | 0 | 5.19 | 6.00 | 1.602 | -1.104 | .341 | 5.00 | 6.00 |

Table 5 Summary Statistics for Dependent Variable

From table 6, it appears that on average participants rated their Workplace Stress to be 5.19 (rating 1 indicating least stressful and rating 7 indicating most stressful). Furthermore, 75% of the participants rated their stress 5 or more on the Likert scale, while 25% rated their stress 6 or more. The distribution of the responses is shown in the figure below, which shows left skewness, indicating high prevalence of workplace stress among the participants.

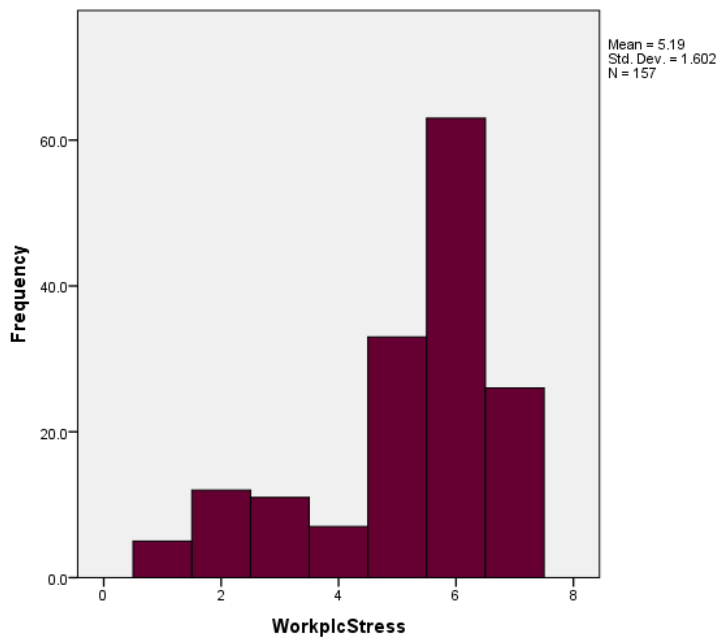


Figure 6 Distribution of Workplace stress among the participants

4.3.2 Frequency Distributions

Frequency distributions of the categorical variables are briefly described below.

Figure 7 below illustrates the Age group distribution of the participants. It appears that 61(38.6%) of the participants are between 20 and 29 years old, 42(26.6%) of the participants are between 30 and 39 years old, 30(19%) of the participants are between 40 and 49 years old, and the remaining 24(15.2%) of them are aged above 40.

In terms of marital status of the participants, 28(17.7%) of them stated that they are single, while 111(70.3%) stated that they are married, and 18(11.4%) are living with their partners (Figure 8).

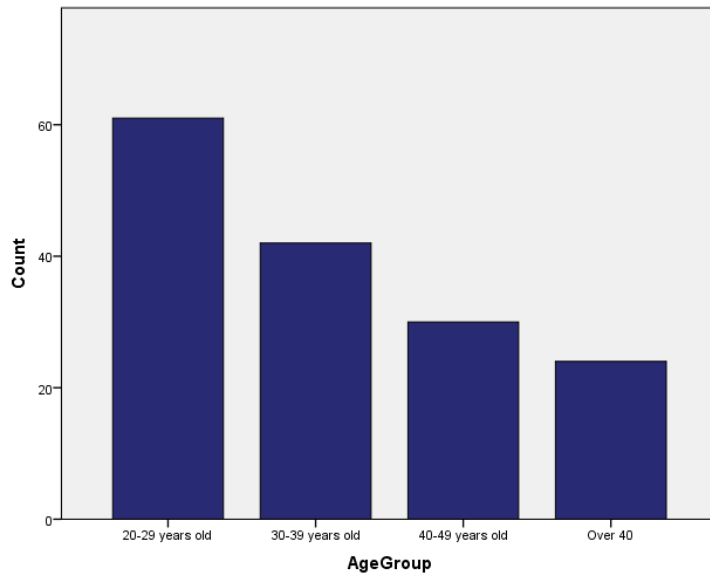


Figure 7 Frequency distribution of Age group

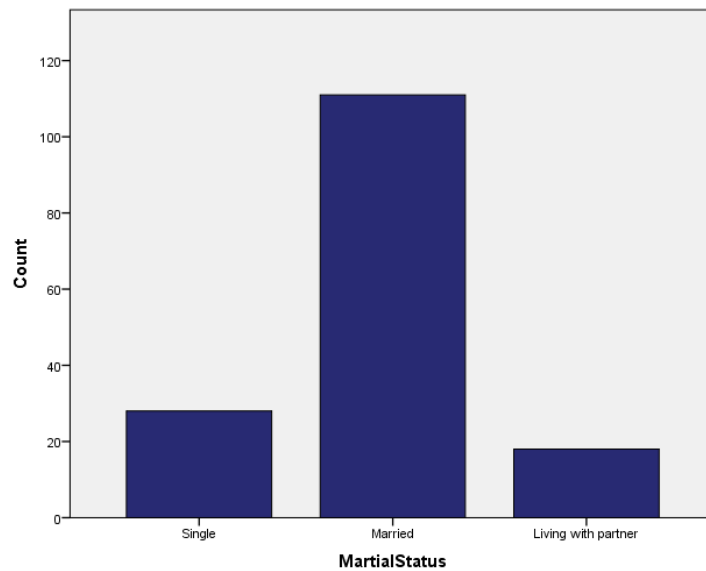


Figure 8 Frequency distribution of Marital Status

Among the 157 participants, 42(26.6%) stated their education to be less than Highschool, 50(31.6%) stated that they have attended at least Highschool and remaining 65(41.1%) stated that they have attended more than Highschool for their education. The frequency distribution is shown in the figure below.

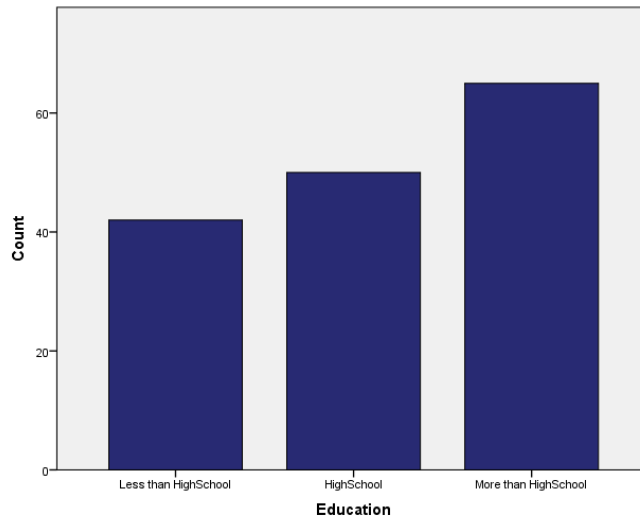


Figure 9 Frequency distribution for participants' Education

In terms of their income, 144 (91.1%) of the participants stated that they earn between 60,000 and 120,000 RMB annually, while 13(8.2%) stated that their annual salary is over 120,000 RMB but less than 240,000 RMB (figure 10). It is to note that no participant reported to be earning less than 60,000 RMB or more than 240,000 RMB annually.

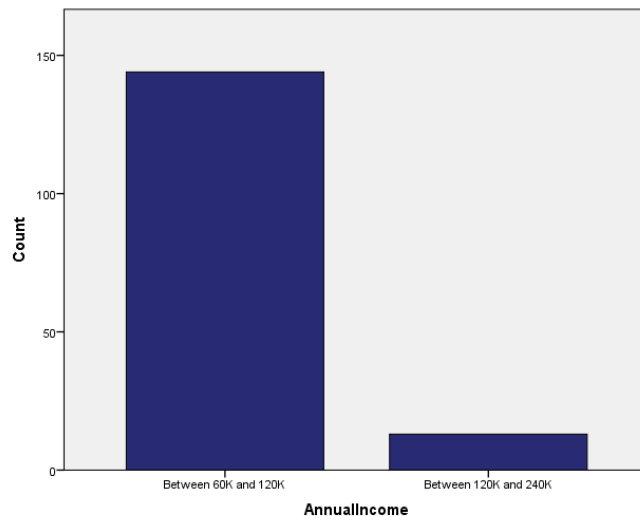


Figure 10 Frequency distribution of Annual income of the participants

Participants were also asked about the type of organisation they work for as well as the management approach used in their organisation. In response to organisational type, it appears that majority of them work for private healthcare organisations. 71(45.2%) stated that they work for for-profit private organisation, 48(30.6%) stated

that they work for Non-profit organisations, and only 38(24.2%) of the participants stated that they work for public healthcare organisations (figure 11).

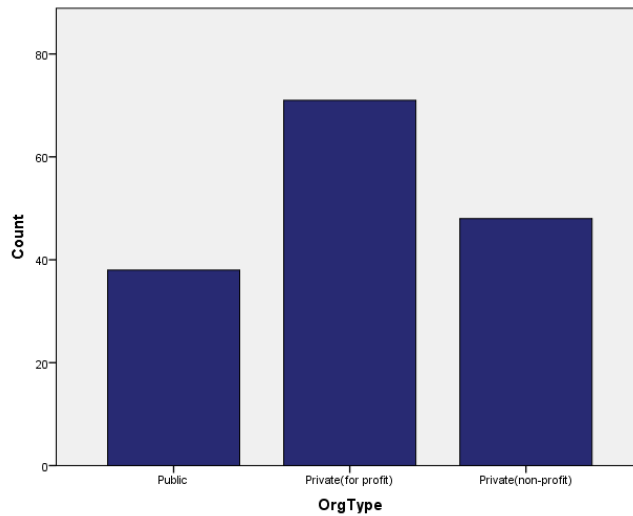


Figure 11 Frequency distribution of Organisation types

94(59.9%) of the 157 participants reported that their organisations have 'Authoritative' management approach, while the remaining 63(40.1%) of the participants stated that their work under 'Democratic' management in their organisation (figure 12).

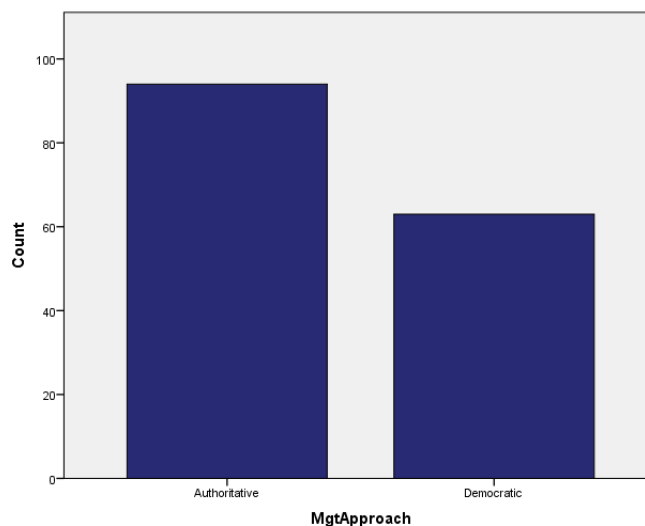


Figure 12 Frequency distribution of Management Approach

Participants were asked about their coping mechanisms. In response to 'Smoking' as a coping mechanism, 75(47.8%) stated that they are regular smoker as oppose to 82(52.2%) who stated that they do not smoke regularly (figure 13). In response to

'Regular Exercise', 99(63.1%) stated that they do not undertake regular exercise, while only 58(36.7%) stated that they perform regular exercises (figure 14).

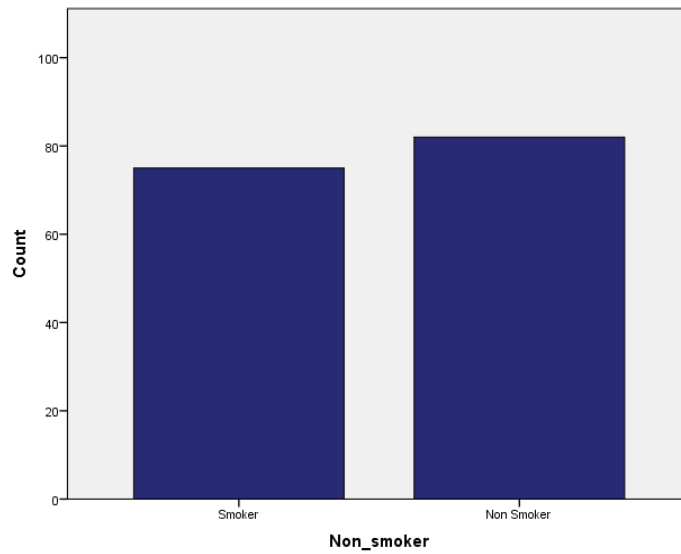


Figure 13 Frequency distribution of regular smoking among the participants

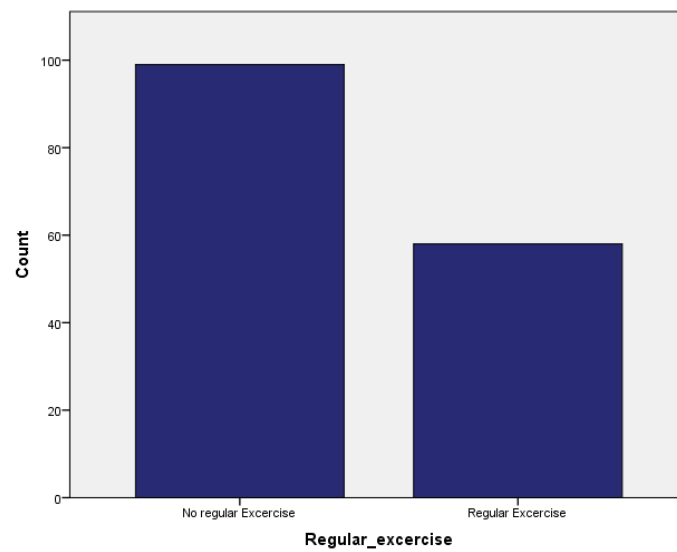


Figure 14 Frequency distribution of 'Regular Exercising' among the participants

Finally, 145(91.8%) stated that they do not take sleeping pills while only 12(7.6%) stated that they take sleeping pills (figure 15).

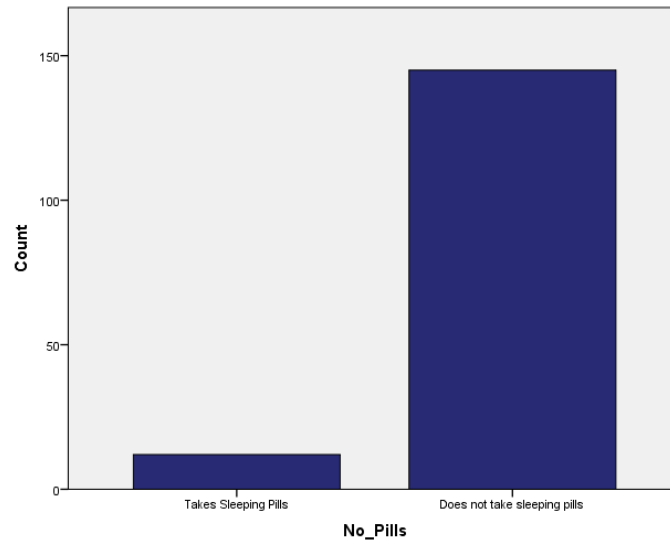


Figure 15 Frequency distribution of taking sleeping pills as coping mechanism

4.4 Hypotheses Testing

Firstly, Pearson Correlation Coefficient was calculated between the dependent variables and all the independent variables. The detailed result is shown in Appendix C. As it appears, Workplace stress has strong positive correlation with High Job Demand (0.802; $p < 0.001$), Low Job Control (0.788; $p < 0.001$), and Imbalanced Effort-Reward (0.764; $p < 0.001$). This indicates that increase in High Job Demand, Low Job Control or Imbalanced Effort-Reward are associated with increase in Workplace Stress.

The correlations table also shows that Workplace Stress has strong negative correlation with Job Latitude (-0.726; $p < 0.001$), Job Reward (-0.776; $p < 0.001$), Training (-0.818; $p < 0.001$), workplace Support (-0.810; $p < 0.001$), Self-efficacy (-0.850; $p < 0.001$) and Organisational culture (-0.876; $p < 0.001$). This indicates that increase in these variables decrease Workplace Stress.

4.4.1 Direct Effects

To examine the hypothesized direct effects Regression Analysis is performed using Workplace Stress as Dependent variable and all the independent variables (HJD, LJC, IER, JL, JR, TR, SE, WS, MA, OC, Education [High School or Equivalent], Education

[More than High School], OT [Private], OT[Non Profit], Income [Between 120K and 240K], Age [30 to 39], Age [40 to 49], Age [Above 50], Marital Status [Married or Partnered], PCM [Non Smoking], PCM [Regular exercise], and PCM [No Pills]) as predictor variables.

The model is able to explain 87% (Adjusted $R^2 = 0.870$) of the variance in Work Stress by using the predictor variables (Appendix D – Table 8). Moreover, Analysis of Variance (Appendix D – Table 9) of the Regression Model indicates that independent variables constructed in this study has significant effect on the dependent variable ($p < 0.001$). Finally, to ensure that error terms are normally distributed, Breusch-Pagan test was performed. As shown in table 10 in Appendix D, $p > 0.05$ indicates that Null Hypothesis indicating homoskedasticity cannot be rejected. Therefore, heteroscedasticity is not detected for the regression analysis.

4.4.1.1 Hypothesis 1

Hypothesis 1 proposes that High Job Strains, namely a) High Job Demand, b) Low Job Control, and c) Imbalanced Effort-Reward, have significant positive impact on workplace stress. As reported on table 6, only two out of these three predictor variables: High Job Demand ($\beta = 0.155$, $p = 0.005$) and Low Job Control ($\beta = 0.135$, $p = 0.009$) are statistically significant, while Imbalanced Effort-Reward ($\beta = 0.026$, $p = 0.591$) is not statistically significant in predicting Work Stress.

Therefore, Hypothesis 1a and Hypothesis 1b are **accepted**, while Hypothesis 1c is **rejected**.

4.4.1.2 Hypothesis 2

Hypothesis 2 implies that Employee's Agency, namely a) Job Latitude, b) Job Reward, c) Training and d) Workplace Support have significant negative impact on workplace stress. Data presented on table 6 indicates that only Job Reward ($\beta = -0.161$, $p = 0.001$) and Training ($\beta = -0.150$, $p = 0.007$) are statistically significant in predicting Work Stress.

Therefore, Hypothesis 2b and Hypothesis 2c are **accepted**, while Hypothesis 2a and 2d are rejected.

| Variable or Path | β | t | p |
|--------------------------------------|---------|--------|-------|
| Direct Effects on Work Stress | | | |
| Intercept | 5.231 | 9.411 | 0.000 |
| High Job Demand | 0.155 | 2.829 | 0.005 |
| Low Job Control | 0.135 | 2.650 | 0.009 |
| Imbalanced Effort-Reward | 0.026 | 0.538 | 0.591 |
| Job Latitude | 0.032 | 0.563 | 0.575 |
| Job Reward | -0.161 | -3.459 | 0.001 |
| Training | -0.150 | -2.754 | 0.007 |
| Workplace Support | 0.119 | 1.500 | 0.136 |
| OT [private] | 0.072 | 0.568 | 0.571 |
| OT [Non-profit] | 0.033 | 0.245 | 0.807 |
| MA [Democratic] | 0.157 | 1.423 | 0.157 |
| Organisational Culture | -0.338 | -4.260 | 0.000 |
| Age [30 to 39] | 0.146 | 1.056 | 0.293 |
| Age [40 to 49] | 0.277 | 1.760 | 0.081 |
| Age [Above 50] | -0.052 | -0.235 | 0.815 |
| Marital Status [Partnered] | 0.111 | 0.610 | 0.543 |
| Income [120K to 240K] | 0.162 | 0.633 | 0.528 |
| Self-Efficacy | -0.183 | -2.974 | 0.003 |
| Education [Highschool or Equivalent] | -0.013 | -0.098 | 0.922 |
| Education [Above Highschool] | -0.051 | -0.409 | 0.683 |
| PCM [Non-Regular Smoking] | 0.031 | 0.297 | 0.767 |
| PCM [Regular Exercise] | -0.005 | -0.050 | 0.960 |
| PCM [No Sleeping pill] | 0.011 | -0.058 | 0.953 |

Table 6 Direct Effects on Work Stress

4.4.1.3 Hypothesis 3

Hypothesis 3 predicated Organisational Characteristics namely a) Organisational type, b) Management Approach, and c) Organisational Culture have significant impact on workplace stress. However, as indicated by the data on table 6, only Organisational Culture ($\beta = -0.338$, $p = 0.007$) has direct effects (statistically significant) on Work Stress.

Findings of this study therefore **support** H3c, while **reject** H3a and H3b.

4.4.1.4 Hypothesis 4

Hypothesis 3 suggests Socio-Demographics namely a) Age, b) Marital Status, and c) Income have significant positive impact on workplace stress. But none of these predictor variables were found to be statistically significant as shown in table 6.

Therefore, Hypothesis 4a, Hypothesis 4b and Hypothesis 4c are **rejected**.

4.4.1.5 Hypothesis 5

Fifth Hypothesis predicted direct effects of Personal Characteristics namely a) Self-Efficacy, b) Education, and c) Personal Coping Mechanism on Work Stress. As data presented on table 6 indicates, only Self-Efficacy ($\beta = -0.188$, $p = 0.003$) has direct effect on Work Stress, while the effects of Education (Education [Highschool or Equivalent]: $\beta = -0.013$, $p = 0.922$; Education [More than Highschool]: $\beta = -0.051$, $p = 0.683$) and Personal Coping Mechanisms (PCM [Non Regular Smoking]: $\beta = 0.031$, $p = 0.767$; PCM [Regular Exercise]: $\beta = -0.005$, $p = 0.960$; PCM [No Sleeping Pills]: $\beta = 0.011$, $p = 0.953$) are not statistically significant.

Therefore, Hypothesis 5a is **accepted**, but Hypothesis 5b and Hypothesis 5c are **rejected**.

4.4.2 Mediation Effects

4.4.2.1 Hypothesis 6

Hypothesis 6 proposes that High Job Strains, namely a) High Job Demand, b) Low Job Control, and c) Imbalanced Effort-Reward mediate the relationship between Organisation Type and work-related stress.

As seen previously, Organisation Type has no direct effects on Work Stress, and bootstrap procedures (shown in table 7) reveal no indirect effects of Organisation Type on Work Stress through High Job Demand ($\beta = 0.038$, 95% CI [-0.06, 0.16] for OT [private]; $\beta = 0.034$, 95% CI [-0.08, 0.15] for OT [Non-profit]), Low Job Control ($\beta = 0.213$, 95% CI [-0.09, 0.14] for OT [private]; $\beta = -0.035$, 95% CI [-0.18, 0.09] for OT

[Non-profit]) and Imbalanced Effort-Reward ($\beta = 0.016$, 95% CI [-0.04, 0.08] for OT [private]; $\beta = 0.001$, 95% CI [-0.06, 0.06] for OT [Non-profit]).

Therefore, Hypothesis 6a, Hypothesis 6b and Hypothesis 6c are **rejected**.

| Indirect Effects of OT [private] on Work Stress | β | Bootstrapped 95% CI |
|--|---------------------------|----------------------------|
| OT [private] -> HJD -> Work Stress | 0.038 | [-0.0623, 0.1578] |
| OT [private] -> LJC -> Work Stress | 0.213 | [-0.0859, 0.1364] |
| OT [private] -> IER -> Work Stress | 0.016 | [-0.0354, 0.0776] |
| OT [private] -> JL -> Work Stress | -0.004 | [-0.0621, 0.0696] |
| OT [private] -> JR -> Work Stress | 0.041 | [-0.0648, 0.1739] |
| OT [private] -> TR -> Work Stress | 0.051 | [0.0617, 0.1724] |
| OT [private] -> WS -> Work Stress | 0.045 | [-0.0385, 0.1550] |
| Indirect Effects of OT [Non-profit] on Work Stress | | |
| OT [Non-profit] -> HJD -> Work Stress | 0.034 | [-0.0821, 0.1463] |
| OT [Non-profit] -> LJC -> Work Stress | -0.035 | [-0.1771, 0.0943] |
| OT [Non-profit] -> IER -> Work Stress | 0.001 | [-0.0637, 0.0605] |
| OT [Non-profit] -> JL -> Work Stress | -0.002 | [-0.0726, 0.0508] |
| OT [Non-profit] -> JR -> Work Stress | 0.050 | [-0.0716, 0.1813] |
| OT [Non-profit] -> TR -> Work Stress | -0.030 | [-0.1597, 0.0952] |
| OT [Non-profit] -> WS -> Work Stress | -0.004 | [-0.1017, 0.1022] |
| Indirect Effects of MA [Democratic] on Work Stress | | |
| MA [Democratic] -> HJD -> Work Stress | -0.214 | [-0.3929, -0.0591] |
| MA [Democratic] -> LJC -> Work Stress | -0.247 | [-0.4217, -0.1043] |
| MA [Democratic] -> IER -> Work Stress | -0.105 | [-0.2341, -0.0084] |
| MA [Democratic] -> JL -> Work Stress | 0.012 | [-0.1931, 0.1756] |
| MA [Democratic] -> JR -> Work Stress | -0.182 | [-0.3901, -0.0487] |
| MA [Democratic] -> TR -> Work Stress | -0.245 | [-0.4479, -0.0876] |
| MA [Democratic] -> WS -> Work Stress | -0.149 | [-0.4070, 0.0621] |
| Indirect Effects of Organisational Culture on Work Stress | | |
| Organisation Culture -> HJD -> Work Stress | -0.120 | [-0.1904, -0.0368] |
| Organisation Culture -> LJC -> Work Stress | -0.128 | [-0.2034, -0.0601] |
| Organisation Culture -> IER -> Work Stress | -0.026 | [-0.0908, 0.0305] |
| Organisation Culture -> JL -> Work Stress | 0.011 | [-0.1178, 0.1209] |
| Organisation Culture -> JR -> Work Stress | -0.138 | [-0.2442, -0.0617] |
| Organisation Culture -> TR -> Work Stress | -0.138 | [-0.2356, -0.0591] |
| Organisation Culture -> WS -> Work Stress | -0.084 | [-0.0736, 0.2425] |

Table 7 Indirect Effects on Work Stress (detailed output is shown in Appendix E)

4.4.2.2 Hypothesis 7

Hypothesis 7 suggests that High Job Strains, namely a) High Job Demand, b) Low Job Control, and c) Imbalanced Effort-Reward, mediate the relationship between Management Approach and work-related stress.

Section 4.4.1.3 indicates that Management Approach has no direct effect on Work Stress. However, data presented in table 7 indicates that Management Approach has indirect effects on Work Stress via High Job Demand ($\beta = -0.214$, 95% CI [-0.18, -0.06]), Low Job Control ($\beta = -0.247$, 95% CI [-0.42, -0.10]), and Imbalanced Effort-Reward ($\beta = -0.105$, 95% CI [-0.23, -0.01]).

Hence, High Job Strains mediates the relationship between Management Approach and Work Stress. Therefore, Hypothesis 7a, Hypothesis 7b and Hypothesis 7c are **accepted**.

4.4.2.3 Hypothesis 8

Hypothesis 8 predicted High Job Strains, namely a) High Job Demand, b) Low Job Control, and c) Imbalanced Effort-Reward, mediate the relationship between Organisational Culture and work-related stress. Organisational Culture was found to have (statistically significant) direct effects on Work Stress in the previous section, and table 7 indicates that Organisational Culture also has indirect effects on Work Stress via High Job Demand ($\beta = -0.120$, 95% CI [-0.19, -0.04]) and Low Job Control ($\beta = -0.128$, 95% CI [-0.20, -0.06]), but not via Imbalanced Effort-Reward ($\beta = -0.026$, 95% CI [-0.19, 0.17]).

Therefore, Hypothesis 8a and Hypothesis 8b are **accepted**, but Hypothesis 8c is **rejected**.

4.4.2.4 Hypothesis 9

Hypothesis 9 anticipated Employee's Agency, namely a) Job Latitude, b) Job Reward, c) Training and d) Workplace Support, to mediate the relationship between Organisation Type and work-related stress. However, data presented on table 7 indicates that Employee's Agency does not mediate the relationship between Organisation Type and Work Stress.

Hence, Hypothesis 9a, Hypothesis 9b, Hypothesis 9c and Hypothesis 9d are **rejected**.

4.4.2.5 Hypothesis 10

Hypothesis 10 suggests Employee's Agency, namely a) Job Latitude, b) Job Reward, c) Training and d) Workplace Support, mediate the relationship between Management Approach and work-related stress.

While, Job Reward ($\beta = -0.182$, 95% CI $[-0.39, -0.05]$) and Training ($\beta = -0.245$, 95% CI $[-0.45, -0.09]$) mediate the relationship between Management Approach and Work Stress, Job Latitude ($\beta = 0.012$, 95% CI $[-0.19, 0.17]$) and Workplace Support ($\beta = -0.149$, 95% CI $[-0.41, 0.06]$) do not mediate the relationship between Management Approach and Work Stress.

Therefore, Hypothesis 10a and Hypothesis 10d are **rejected**, and Hypothesis 10b and Hypothesis 10c are **accepted**.

4.4.2.6 Hypothesis 11

Hypothesis 11 predicts Employee's Agency, namely a) Job Latitude, b) Job Reward, c) Training and d) Workplace Support to mediate the relationship between Organisational Culture and work-related stress.

Similar to Management Approach, Organisational Culture also has indirect effects on Work Stress via Job Reward ($\beta = -0.139$, 95% CI $[-0.24, -0.06]$) and Training ($\beta = -0.138$, 95% CI $[-0.23, -0.05]$), but not via Job Latitude ($\beta = 0.011$, 95% CI $[-0.12, 0.12]$) and Workplace Support ($\beta = -0.084$, 95% CI $[-0.07, 0.24]$).

Therefore, Hypothesis 11a and Hypothesis 11d are **rejected**, and Hypothesis 11b and Hypothesis 11c are **accepted**.

Chapter 5. Discussions

The effects of Work Stress on the individual healthcare employees and their patients are well-documented. Work Stress is a multifaceted problem with various factors. The work of Karasek (1981) and Siegrist (2000) provided two widely used theory to understand the effects of various factors of Work Stress. Among those factors identified in these two models, this study found High Job Demand and Low Job Control attribute to increased Workplace stress. However, Job decision Latitude and Imbalanced Effort-Reward were not found to be statistically significant in determining Workplace stress. The reason why these variables not significant could be due to chance, or due to the sample chosen for this particular study. Besides, the work conducted by Schmidt and Diestel (2011) highlighted that Low Decision Latitude has direct effects on Job Demand. Therefore, while Job Latitude in this study was not found to have direct effects on Work Stress, it might have indirect effect on Work Stress via High Job Demand.

It is also to note that another similar variable 'Job Reward' was found to be statistically significant. As highlighted by the work of Abualrub and Al-Zaru (2008), Job Rewards are significant important for Healthcare workers. According to them, appropriate reward indicates healthcare employees being recognised and respected for their work in a very demanding sector, which in turn increase their satisfaction and reduce their work stress. The finding of this study supports this argument.

In line with the established literature, this study found that Employee Training has statistically significant effects on Work Stress. This was explained by Ruotsalaninen et al. (2015). According to them, employee training makes employees more equipped to deal with the workplace stressors. Therefore, by providing effective training, organisations can help reduce the stress of their employees. However, this study found that Workplace Support does not have statistically significant effect on Work Stress. This can be due to workplace dynamics in China. As Clifton (2013) explains, employees across Chinese industries face lack of workplace engagement. This lack of workplace engagement in the country could explain the mentality of the healthcare workers in China who are likely to expect little workplace support from their peers.

In consensus with the established literature, this study also finds that Self-Efficacy to be statistically significant. As explained by Guo et al. (2017), self-efficacy can help

healthcare workers to become more resilient to workplace stress. Furthermore, this study also finds Organisational Culture to be statistically significant. Established literature indicates that Organisational culture is important as it creates safe and good working environment, eliminate dysfunctional conflicts, provide adequate support, and ensure work-life balance, which collectively help to reduce workplace stress for the employees.

Based on the regression analysis, Age is not statistically significant in determining workplace stress. This can be explained by the conclusion made by Cornelia et al. (2013) in their study. According to them age influences several components related to workplace stress and some of the components are partly conflicting and therefore nullify each other, resulting in non-significant influence on the workplace stress.

This study also found Management Approach and Organisational Type (Public, Private non-profit and Private for-profit) do not have statistically significant influence on workplace stress. In respect to Management Approach, the finding of this study is in line with the study of Fong et al. (2015), who found that Democratic management approach has no statistically significant direct relationship with employee stress at the workplaces. Teo et al. (2011) found that healthcare workers in public and non-profit sector tend to have higher stress level due to resource shortage and lack of financial rewards. However, this study did not find such relationship. This could be explained by ineffective control variable – income used in this study. It is to note that intervals used to record Annual Income for the participants were not effective. As no participants stated that their Annual Income falls into the lowest interval (below 60,000 RMB annually) and highest interval (above 240,000 RMB annually). Furthermore, 92% of the participants stated that their Annual Income fall into one particular interval: Between 60,000 RMB and 120,000 RMB.

While, Married or partnered participants have positive correlation with Workplace stress, marital status was not found to be statistically significant in determining workplace stress. This can be attributed to presence of a control variable or due to the sample chosen for this study.

Finally, Positive Coping Mechanisms were not found to be statistically significant in determining workplace stress. This can be explained by self-reporting nature of this study, where participants self-reported their coping mechanisms. Therefore,

Response bias of the participants or chance could explain the absence of this relationship.

The exploration of indirect effects found that High Job Demand, Low Job Control, Job Reward and Training mediate the relationship between Organisational Culture and Workplace stress. This is in line with the findings from the established literature. However, Imbalanced Effort-Reward, Job Latitude, Workplace Support are found not to mediate the relationship between Organisational culture and Workplace stress. This is contrary to the study of Anzam (2011), who found that positive Organisational culture influence workplace support. The absence of these mediating relationships can be explained by due to chance, due to the samples chosen for this particular study or due to how Chinese healthcare workers perceive the importance of Job Latitude and Workplace Support.

Moreover, High Job Demand, Low Job Control, Job Reward and Training also appear to mediate the relationship between Management Approach and Workplace stress. It is to note that Democratic Management Approach appears to have negative effects on High Job Demand and Low Job Control. This means that Democratic Management facilitates Lower Job Demand for the employees while giving them higher Job Control. Furthermore, Democratic Management Approach also increase Job Reward and Employee Training. Finally, Democratic Management Approach negatively affects (indirect effect) Workplace Stress.

Finally, the mediating variables do not establish indirect relationship between Organisational types and Workplace stress. Established literature has mixed findings when it comes to organisational types and workplace stress, therefore statistically significant influence was not observed for different organisational types on workplace stress.

Chapter 6. Conclusion

6.1 Summary of the Findings

Work related stress has significantly negative impact on the healthcare industry, especially in China where the industry is struggling to attract and retain adequate employees to effectively serve their population. This study attempted to understand the factors that lead to work stress among Chinese healthcare workers. The survey of the literature indicated few established theories and empirical studies that collectively identified a number of stress factors. These factors were used to construct hypotheses and theoretical framework for this study, which were then tested by the data collected from 157 participants working in Chinese healthcare industry.

Regression analysis indicated that High Job Demand, Low Job Control, Job Reward, Employee Training, Organisational Culture and Self-Efficacy have direct effects on the Work Stress for healthcare workers. In line with the existing knowledge, it appears that as Job becomes more demanding for the employees, and their control over their roles decreases, workers become more stressed. Also, better Job Reward and effective Training help to reduce work stress for these employees. Moreover, better Organisational Culture of the workplace and improved Self-efficacy of the individual workers have direct negative effects on the increase of Work stress. Besides the direct effects, this study also found that authoritative leadership as opposed to democratic leadership to be detrimental in healthcare industry as it leads to employees perceiving higher Job Demand, Lower Job Control and presence of Imbalanced Effort-reward system, which in return increases Work stress. Furthermore, Authoritative management style also leads to negative perception of Job reward and effective Training system, which also results in increased Work stress. This study also highlighted the importance of Organisational Culture. Not only Organisational Culture has direct effect on Work stress, it also has effects on how employees perceive their Job demand, Job control, Job reward and Training adequacy.

The presence of factors such as Organisational Culture and Management Approach indicate that combating occupational stress for healthcare workers require organisational intervention program rather than person-directed intervention programs. This study therefore affirms the argument of Awa et al. (2009) and Cunningham et al. (2010). Furthermore, democratic management style should be

adopted, which will help employees to reduce their stress as their perception towards their Job demand, Job control, training satisfaction and job reward will improve. Also, organisations need to ensure that positive organisational culture is harnessed, as this is imperative in lowering work stress for the employees working in healthcare sector.

6.2 Implications

The main contribution of this study is to provide a theoretical framework that goes beyond the limited work-related stress models by Karasek (1981) and Siegrist (2000). This study also highlights how organisational characteristics such as Management Approach has indirect effects on Work Stress. This study also establishes the direct and indirect effects of organisational culture on Work Stress. Moreover, this study affirms the transaction-based theoretical view of stress, as proposed by Lazarus and Folkman (1984). Findings of this study indicate that interaction between individual employees and their environment determine work stress. This means that by changing environmental factors such as Organisational Culture, Job Reward, Job Demand etc., organisation can change whether an individual employee encounter an event to be stressful or not. Despite the role of personal (such as Marital Status, Age etc.) and socio-economic characteristics (such as Income level) on Work Stress in the established literature, this study did not find those factors to have statistically significant impact of Work Stress.

6.3 Limitations and Future research

This study has a few limitations. First, the study used convenience sampling instead of random sampling, which makes generalisation of the findings somewhat questionable. Therefore, future research should be undertaken with random sampling to make the conclusion more reliable. Second, the stress factors identified in this study mainly are mainly reflective on Chinese healthcare industry. Finally, this study uses deductive research approach, which means that stressors from the existing literature are identified and evaluated. However, there could be some other factors that are specific for Chinese healthcare industry. Therefore, in future inductive research needs to be undertaken, so that new stress factors can be identified.

Chapter 7. References

- Abualrub, R., & Al-Zaru, I. (2008). Job stress, recognition, job performance and intention to stay at work among Jordanian hospital nurses. *Journal Of Nursing Management*, 16(3), 227-236. <https://doi.org/10.1111/j.1365-2834.2007.00810.x>
- Aibaghi Esfahani, S., Rezaii, H., Koochmeshki, N., & Parsa, S. (2017). Sustainable and flexible human resource management for innovative organizations. *AD-Minister*, 195-215. <https://doi.org/10.17230/ad-minister.30.10>
- Allen, I., & Seaman, C. (2007). *Statistics Roundtable: Likert Scales and Data Analyses* / ASQ. Asq.org. Retrieved 23 October 2020, from <https://asq.org/quality-progress/articles/statistics-roundtable-likert-scales-and-data-analyses?id=617a8521fc0a4c9aa366fcb0486bbd5>.
- Antheneli, R., & Grandison, L. (2012). Effects of Stress on Alcohol Consumption. *Alcohol Res*, 34(4), 381-382. Retrieved 23 October 2020, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3860387/>.
- Arnold, J., Randall, R., Patterson, F., Silverster, I., Robertson, I., Burnes, B., et al. (2011). *Work psychology* (5th ed.). Pearson Education/Prentice Hall.
- Awa, W., Plaumann, M., & Walter, U. (2010). Burnout prevention: A review of intervention programs. *Patient Education And Counseling*, 78(2), 184-190. <https://doi.org/10.1016/j.pec.2009.04.008>
- Barrena-Martínez, J., López-Fernández, M., & Romero-Fernández, P. (2017). Socially responsible human resource policies and practices: Academic and professional validation. *European Research On Management And Business Economics*, 23(1), 55-61. <https://doi.org/10.1016/j.iedeen.2016.05.001>
- Barzideh, M., Choobineh, A., & Tabatabaee, H. (2014). Job stress dimensions and their relationship to musculoskeletal disorders in Iranian nurses. *Work*, 47(4), 423-429. doi: 10.3233/wor-121585
- Bellagamba, G., Gionta, G., Senergue, J., Bèque, C., & Lehucher-Michel, M. (2015). Organizational factors impacting job strain and mental quality of life in emergency and critical care units. *International Journal Of Occupational Medicine And Environmental Health*, 28(2). <https://doi.org/10.13075/ijomeh.1896.00121>
- Bellingrath, S., & Kudielka, B. (2008). Effort-reward-imbalance and overcommitment are associated with hypothalamus–pituitary–adrenal (HPA) axis responses to acute psychosocial stress in healthy working schoolteachers. *Psychoneuroendocrinology*, 33(10), 1335-1343. doi: 10.1016/j.psyneuen.2008.07.008
- Bernik, V. (1997). Stress: The Silent Killer. Retrieved 22 October 2020, from https://cerebromente.org.br/n03/doencas/stress_i.htm
- Bhui, K., Dinos, S., Galant-Miecznikowska, M., de Jongh, B., & Stansfeld, S. (2016). Perceptions of work stress causes and effective interventions in employees working in public, private and non-governmental organisations: a qualitative

- study. *Bjpsych Bulletin*, 40(6), 318-325.
<https://doi.org/10.1192/pb.bp.115.050823>
- Bragard, I., Dupuis, G., & Fleet, R. (2015). Quality of work life, burnout, and stress in emergency department physicians. *European Journal Of Emergency Medicine*, 22(4), 227-234. <https://doi.org/10.1097/mej.0000000000000194>
- Bryman, A. (2015). *Social Research Methods* (5th ed.). OXFORD University Press.
- Buckingham, M., & Coffman, C. (2000). *First, break all the rules* (1st ed.). Simon and Schuster.
- Bültmann, U., Kant, I., Schröer, C., & Kasl, S. (2001). The relationship between psychosocial work characteristics and fatigue and psychological distress. *International Archives Of Occupational And Environmental Health*, 75(4), 259-266. doi: 10.1007/s00420-001-0294-0
- Burman, R., & Goswami, T. (2018). A Systematic Literature Review of Work Stress. *International Journal Of Management Studies*, V(3(9), 112.
[https://doi.org/10.18843/ijms/v5i3\(9\)/15](https://doi.org/10.18843/ijms/v5i3(9)/15)
- Castle, T., & Martin, J. (2006). Occupational hazard: Predictors of stress among jail correctional officers. *American Journal Of Criminal Justice*, 31(1), 65-80.
<https://doi.org/10.1007/bf02885685>
- Cevenini, G., Fratini, I., & Gambassi, R. (2012). A new quantitative approach to measure perceived work-related stress in Italian employees. *International Journal Of Occupational Medicine And Environmental Health*, 25(4).
<https://doi.org/10.2478/s13382-012-0050-6>
- Cevenini, G., Fratini, I., & Gambassi, R. (2012). A new quantitative approach to measure perceived work-related stress in Italian employees. *International Journal Of Occupational Medicine And Environmental Health*, 25(4).
<https://doi.org/10.2478/s13382-012-0050-6>
- Chandan, J. (2005). *Organizational behaviour*. New Delhi: Vikas.
- Chandola, T., Britton, A., Brunner, E., Hemingway, H., Malik, M., & Kumari, M. et al. (2008). Work stress and coronary heart disease: what are the mechanisms?. *European Heart Journal*, 29(5), 640-648. doi: 10.1093/eurheartj/ehm584
- Chatterjee, K., Chng, S., Clark, B., Davis, A., De Vos, J., & Ettema, D. et al. (2019). Commuting and wellbeing: a critical overview of the literature with implications for policy and future research. *Transport Reviews*, 40(1), 5-34.
<https://doi.org/10.1080/01441647.2019.1649317>
- Chen, S. (2015). *Beijing workers have longest daily commute in China at 52 minutes each way*. South China Morning Post. Retrieved 23 October 2020, from <https://www.scmp.com/news/china/article/1692839/beijingers-lead-chinas-pack-longest-daily-commute>.
- Chiang, F., Birtch, T., & Kwan, H. (2010). The moderating roles of job control and work-life balance practices on employee stress in the hotel and catering

- industry. *International Journal Of Hospitality Management*, 29(1), 25-32. <https://doi.org/10.1016/j.ijhm.2009.04.005>
- Chiang, F., Birtch, T., & Kwan, H. (2010). The moderating roles of job control and work-life balance practices on employee stress in the hotel and catering industry. *International Journal Of Hospitality Management*, 29(1), 25-32. <https://doi.org/10.1016/j.ijhm.2009.04.005>
- Clifton, J. (2020). *China, We Have a Workplace Problem*. Gallup.com. Retrieved 23 October 2020, from <https://news.gallup.com/businessjournal/160406/china-workplace-problem.aspx>.
- Collins, S., Karasek, R., & Costas, K. (2005). Job strain and autonomic indices of cardiovascular disease risk. *American Journal Of Industrial Medicine*, 48(3), 182-193. doi: 10.1002/ajim.20204
- Comish, R., & Swindle, B. (1994). Managing Stress in the Work Place. *National Public Accountant*, 39(9), 11.
- Conway, P., Campanini, P., Sartori, S., Dotti, R., & Costa, G. (2008). Main and interactive effects of shiftwork, age and work stress on health in an Italian sample of healthcare workers. *Applied Ergonomics*, 39(5), 630-639. doi: 10.1016/j.apergo.2008.01.007
- Cunningham, C., Woodward, C., Shannon, H., MacIntosh, J., Lendrum, B., Rosenbloom, D., & Brown, J. (2010). Readiness for organizational change: A longitudinal study of workplace, psychological and behavioural correlates. *Journal Of Occupational And Organizational Psychology*, 75(4), 377-392. <https://doi.org/10.1348/096317902321119637>
- de Jonge, J., van Vegchel, N., Shimazu, A., Schaufeli, W., & Dormann, C. (2010). A Longitudinal Test of the Demand–Control Model Using Specific Job Demands and Specific Job Control. *International Journal Of Behavioral Medicine*, 17(2), 125-133. doi: 10.1007/s12529-010-9081-1
- Eurofond. (2007). *Measuring job satisfaction in surveys - Comparative analytical report*. Eurofound.europa.eu. Retrieved 25 October 2020, from https://www.eurofound.europa.eu/sites/default/files/ef_files/ewco/reports/TN0608TR01/TN0608TR01.pdf.
- Ferner, R., & Chambers, J. (2001). Alcohol Intake: Measure For Measure: It's Hard To Calculate How Much You Are Drinking: But You Should Know. Retrieved 25 October 2020, from.
- Fong, C., Michael Mulok, F., & Sumilan, H. (2015). Relationship between Selected Leadership Style and Employee Stress Level at Workplace. *Journal Of Cognitive Sciences And Human Development*, 1(1), 11-21. doi: 10.33736/jcshd.184.2015
- Frone, M. (2013). Alcohol and illicit drug use in the workforce and workplace. *Choice Reviews Online*, 50(10), 50-56. <https://doi.org/10.5860/choice.50-5687>
- Frone, M. (2016). Work stress and alcohol use: developing and testing a biphasic self-medication model. *Work & Stress*, 30(4), 374-394. <https://doi.org/10.1080/02678373.2016.1252971>

- Fugate, M., Kinicki, A., & Ashforth, B. (2004). Employability: A psycho-social construct, its dimensions, and applications. *Journal Of Vocational Behavior*, 65(1), 14-38. <https://doi.org/10.1016/j.jvb.2003.10.005>
- Garber, M., Huston, S., & Breese, C. (2019). Sources of stress in a pharmacy student population. *Currents In Pharmacy Teaching And Learning*, 11(4), 329-337. <https://doi.org/10.1016/j.cptl.2019.01.014>
- Gorard, S. (2013). *Research design - Creating Robust Approaches for the Social Sciences*. Sage.
- Griffin, M., Hogan, N., Lambert, E., Tucker-Gail, K., & Baker, D. (2009). Job Involvement, Job Stress, Job Satisfaction, and Organizational Commitment and the Burnout of Correctional Staff. *Criminal Justice And Behavior*, 37(2), 239-255. <https://doi.org/10.1177/0093854809351682>
- Guo, Y., Cross, W., Plummer, V., Lam, L., Luo, Y., & Zhang, J. (2017). Exploring resilience in Chinese nurses: a cross-sectional study. *Journal Of Nursing Management*, 25(3), 223-230. <https://doi.org/10.1111/jonm.12457>
- Happell, B., Dwyer, T., Reid-Searl, K., Burke, K., Caperchione, C., & Gaskin, C. (2013). Nurses and stress: recognizing causes and seeking solutions. *Journal Of Nursing Management*, 21(4), 638-647. <https://doi.org/10.1111/jonm.12037>
- Hassani, S., Mobaraki, H., Bayat, M., & Mafimoradi, S. (2013). Right place of human resource management in the reform of health sector. *Iran J Public Health*, 42(1), 56-62. Retrieved 22 October 2020, from <https://pubmed.ncbi.nlm.nih.gov/23515234/>.
- Hsa.ie. Work-Related Stress A Guide for Employers. Retrieved 23 October 2020, from https://www.hsa.ie/eng/Publications_and_Forms/Publications/Occupational_Health/Work_Related_Stress_A_Guide_for_Employers.pdf
- Hurwitz, I., Malkesman, O., Stern, Y., Schroeder, M., Lavi-Avnon, Y., & Shayit, M. et al. (2006). Stress and pain responses in rats lacking CCK1 receptors. *Peptides*, 27(6), 1483-1489. doi: 10.1016/j.peptides.2005.10.009
- Institute of Occupational Medicine. (2001). Baseline measurements for the evaluation of the work-related stress campaign. Retrieved 23 October 2020, from http://www.hse.gov.uk/research/crr_pdf/2001/crr01322.pdf
- Jehanzeb, K., & Bashir, N. (2013). Training and Development Program and its Benefits to Employee and Organization: A Conceptual Study. *European Journal Of Business And Management*, 5(2). Retrieved 24 October 2020, from <https://www.dcvmn.org/IMG/pdf/3947-5999-1-pb.pdf>.
- Karasek, R., Baker, D., Marxer, F., Ahlbom, A., & Theorell, T. (1981). Job decision latitude, job demands, and cardiovascular disease: a prospective study of Swedish men. *American Journal Of Public Health*, 71(7), 694-705. doi: 10.2105/ajph.71.7.694
- Keykaleh, M., Safarpour, H., Yousefian, S., Faghisolouk, F., Mohammadi, E., & Ghomian, Z. (2018). The Relationship between Nurse's Job Stress and Patient

Safety. *Open Access Macedonian Journal Of Medical Sciences*, 6(11), 2228-2232. doi: 10.3889/oamjms.2018.351

Khamisa, N., Oldenburg, B., Peltzer, K., & Ilic, D. (2015). Work Related Stress, Burnout, Job Satisfaction and General Health of Nurses. *International Journal Of Environmental Research And Public Health*, 12(1), 652-666. doi: 10.3390/ijerph120100652

Khamisa, N., Peltzer, K., Ilic, D., & Oldenburg, B. (2017). Effect of personal and work stress on burnout, job satisfaction and general health of hospital nurses in South Africa. *Health SA Gesondheid*, 22. doi: 10.4102/hsag.v22i0.1011

Kim, B., & Jung, S. (2019). The Mediating Role of Job Strain in the Transformational Leadership–Safety Behavior Link: The Buffering Effect of Self-Efficacy on Safety. *International Journal Of Environmental Research And Public Health*, 16(8), 1425. <https://doi.org/10.3390/ijerph16081425>

Kivimäki, M., & Kawachi, I. (2015). Work Stress as a Risk Factor for Cardiovascular Disease. *Current Cardiology Reports*, 17(9). doi: 10.1007/s11886-015-0630-8

Klassen, R., & Chiu, M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology*, 36(2), 114-129. doi: 10.1016/j.cedpsych.2011.01.002

Klassen, R., & Chiu, M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology*, 36(2), 114-129. <https://doi.org/10.1016/j.cedpsych.2011.01.002>

Koinis, A., Giannou, V., Drantaki, V., Angelaina, S., Stratou, E., & Saridi, M. (2015). The impact of healthcare workers job environment on their mental-emotional health. Coping strategies: the case of a local general hospital. *Health Psychology Research*, 3(1). doi: 10.4081/hpr.2015.1984

Kowalski, T., & Loretto, W. (2017). Special Issue of International Journal of Human Resource Management: Well-being and HRM in the changing workplace. *International Journal Of Human Resource Management*, 28(16), 2229-2255.

Kramar, R. (2013). Beyond strategic human resource management: is sustainable human resource management the next approach?. *The International Journal Of Human Resource Management*, 25(8), 1069-1089. doi: 10.1080/09585192.2013.816863

Landsbergis, P. (1988). Occupational stress among health care workers: A test of the job demands-control model. *Journal Of Organizational Behavior*, 9(3), 217-239. <https://doi.org/10.1002/job.4030090303>

Landsbergis, P., Grzywacz, J., & LaMontagne, A. (2014). Work organization, job insecurity, and occupational health disparities. *American Journal Of Industrial Medicine*, 57(5), 495-515. <https://doi.org/10.1002/ajim.22126>

- Lazarus, R., & Launier, R. (1978). Stress-Related Transactions between Person and Environment. *Perspectives In Interactional Psychology*, 287-327. doi: 10.1007/978-1-4613-3997-7_12
- Lee, E., & Jang, I. (2019). Nurses' Fatigue, Job Stress, Organizational Culture, and Turnover Intention: A Culture–Work–Health Model. *Western Journal Of Nursing Research*, 42(2), 108-116. doi: 10.1177/0193945919839189
- Lee, H., & Cummings, G. (2008). Factors influencing job satisfaction of front line nurse managers: a systematic review. *Journal Of Nursing Management*, 16(7), 768-783. doi: 10.1111/j.1365-2834.2008.00879.x
- Lehner, P., Seyed-Solorforough, M., O'Connor, M., Sak, S., & Mullin, T. (1997). Cognitive biases and time stress in team decision making. *IEEE Transactions On Systems, Man, And Cybernetics - Part A: Systems And Humans*, 27(5), 698-703. doi: 10.1109/3468.618269
- Leka, S., & Jain, A. (2010). Health Impact of Psychosocial Hazards at Work: An Overview. Retrieved 22 October 2020, from https://apps.who.int/iris/bitstream/handle/10665/44428/9789241500272_eng.pdf;jsessionid=
- Levi, L., & Lunde-Jensen, P. (1996). *A Model for assessing the costs of stressors at national level*. Luxembourg: Office for Official Publications of the European Communities.
- Li, L., Hu, H., Zhou, H., He, C., Fan, L., & Liu, X. et al. (2014). Work stress, work motivation and their effects on job satisfaction in community health workers: a cross-sectional survey in China. *BMJ Open*, 4(6), e004897-e004897. <https://doi.org/10.1136/bmjopen-2014-004897>
- Losby, J., & Wetmore, A. (2012). *Using Likert Scales In Evaluation Survey Work*. Cdc.gov. Retrieved 23 October 2020, from https://www.cdc.gov/dhdsp/pubs/docs/CB_February_14_2012.pdf.
- Lynch, J., & Kaplan, G. (2000). Socioeconomic Factors. In L. Berkman & I. Kawachi, *Social Epidemiology* (pp. 13-35). Oxford University Press. Retrieved 22 October 2020, from.
- Lyu, L., Li, G., Li, J., & Li, M. (2016). Nurse turnover research in China: A bibliometric analysis from 2000 to 2015. *International Journal Of Nursing Sciences*, 3(2), 208-212. <https://doi.org/10.1016/j.ijnss.2016.04.008>
- Marine, A., Ruotsalainen, J., Serra, C., & Verbeek, J. (2006). Preventing occupational stress in healthcare workers. *Cochrane Database Of Systematic Reviews*. doi: 10.1002/14651858.cd002892.pub2
- Mazur, B. (2015). Sustainable Human Resource Management. The attempt of holistic approach. *Economics And Management*, 7(2), 7-12. <https://doi.org/10.12846/j.em.2015.02.01>
- Messias, F., Mendes, J., & Monterio, I. (2009). *The effects of leadership behaviors on the employee well-being in the workplace: a worthy investment from managers or leaders*. Fernandomessias.pt. Retrieved 22 October 2020, from

<https://fernandomessias.pt/ftp/The%20effects%20of%20leadership%20behaviors%20on%20the%20employee%20well-being%20in%20the%20workplace%20-%20Fernando%20Messias%202009.pdf>.

- Millar, R., Chen, Y., Wang, M., Fang, L., Liu, J., Xuan, Z., & Li, G. (2017). It's all about the money? A qualitative study of healthcare worker motivation in urban China. *International Journal For Equity In Health*, 16(1). <https://doi.org/10.1186/s12939-017-0616-9>
- Mosadeghrad, A. (2013). Occupational Stress and Turnover Intention: Implications for Nursing Management. *International Journal Of Health Policy And Management*, 1(2), 169-176. <https://doi.org/10.15171/ijhpm.2013.30>
- Neveu, J. (2007). Jailed resources: conservation of resources theory as applied to burnout among prison guards. *Journal Of Organizational Behavior*, 28(1), 21-42. doi: 10.1002/job.393
- Okechukwu, C., Souza, K., Davis, K., & de Castro, A. (2014). Discrimination, harassment, abuse, and bullying in the workplace: Contribution of workplace injustice to occupational health disparities. *American Journal Of Industrial Medicine*, 57(5), 573-586. <https://doi.org/10.1002/ajim.22221>
- Peter, R., Siegrist, J., Hallqvist, J., Reuterwall, C., & Theorell, T. (2002). Psychosocial work environment and myocardial infarction: improving risk estimation by combining two complementary job stress models in the SHEEP Study. *Journal Of Epidemiology & Community Health*, 56(4), 294-300. doi: 10.1136/jech.56.4.294
- Pfeffer, J. (2010). Building Sustainable Organizations: The Human Factor. *SSRN Electronic Journal*, 24(1). doi: 10.2139/ssrn.1545977
- Rauschenbach, C., Krumm, S., Thielgen, M., & Hertel, G. (2013). Age and work-related stress: a review and meta-analysis. *Journal Of Managerial Psychology*, 28(7/8), 781-804. doi: 10.1108/jmp-07-2013-0251
- Robinson, J., Clements, K., & Land, C. (2003). Workplace STRESS Among Psychiatric Nurses. *Journal Of Psychosocial Nursing And Mental Health Services*, 41(4), 32-41. doi: 10.3928/0279-3695-20030401-12
- Rugulies, R., & Krause, N. (2007). Effort-reward imbalance and incidence of low back and neck injuries in San Francisco transit operators. *Occupational And Environmental Medicine*, 65(8), 525-533. doi: 10.1136/oem.2007.035188
- Ruotsalainen, J., Verbeek, J., Mariné, A., & Serra, C. (2015). Preventing occupational stress in healthcare workers. *Sao Paulo Medical Journal*, 134(1), 92-92. <https://doi.org/10.1590/1516-3180.20161341t1>
- Ryali, S., Kumar, A., & Bhat, P. (2018). Study of quality of life among health workers and psychosocial factors influencing it. *Industrial Psychiatry Journal*, 27(1), 96. doi: 10.4103/ipj.ipj_41_18
- Sakketou, A., Galanakis, M., Varvogli, L., Chrousos, G., & Darviri, C. (2014). Validation of the Greek Version of the "Job Stress

Measure". *Psychology*, 05(13), 1527-1535.
<https://doi.org/10.4236/psych.2014.513163>

- Sarafis, P., Rousaki, E., Tsounis, A., Malliarou, M., Lahana, L., & Bamidis, P. et al. (2016). The impact of occupational stress on nurses' caring behaviors and their health related quality of life. *BMC Nursing*, 15(1). doi: 10.1186/s12912-016-0178-y
- Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research methods for business students* (7th ed.). Pearson Education Limited.
- Savic, M., Ogeil, R., Sechtig, M., Lee-Tobin, P., Ferguson, N., & Lubman, D. (2019). How Do Nurses Cope with Shift Work? A Qualitative Analysis of Open-Ended Responses from a Survey of Nurses. *International Journal Of Environmental Research And Public Health*, 16(20), 3821.
<https://doi.org/10.3390/ijerph16203821>
- Selye, H. (1936). A Syndrome produced by Diverse Nocuous Agents. *Nature*, 138(3479), 32-32. doi: 10.1038/138032a0
- Siegrist, J. (2010). Effort-reward imbalance at work and cardiovascular diseases. *International Journal Of Occupational Medicine And Environmental Health*, 23(3). doi: 10.2478/v10001-010-0013-8
- Siegrist, J., & Rödel, A. (2006). Work stress and health risk behavior. *Scandinavian Journal Of Work, Environment & Health*, 32(6), 473-481.
<https://doi.org/10.5271/sjweh.1052>
- Siegrist, J., Li, J., & Montano, D. (2014). *Psychometric properties of the Effort-Reward Imbalance Questionnaire*. Uniklinik-duesseldorf.de. Retrieved 25 October 2020, from https://www.uniklinik-duesseldorf.de/fileadmin/Fuer-Patienten-und-Besucher/Kliniken-Zentren-Institute/Institute/Institut_fuer_Medizinische_Soziologie/Dateien/ERI/ERI_Psychometric-New.pdf.
- Siegrist, J., Starke, D., Chandola, T., Godin, I., Marmot, M., Niedhammer, I., & Peter, R. (2004). The measurement of effort–reward imbalance at work: European comparisons. *Social Science & Medicine*, 58(8), 1483-1499.
[https://doi.org/10.1016/s0277-9536\(03\)00351-4](https://doi.org/10.1016/s0277-9536(03)00351-4)
- Siegrist, M. (2000). The Influence of Trust and Perceptions of Risks and Benefits on the Acceptance of Gene Technology. *Risk Analysis*, 20(2), 195-204. doi: 10.1111/0272-4332.202020
- Somekh, B., & Lewin, C. (2004). *Research methods in the social sciences* (1st ed.). SAGE Publications.
- Step toe, A., Wardle, J., Pollard, T., Canaan, L., & Davies, G. (1996). Stress, social support and health-related behavior: A study of smoking, alcohol consumption and physical exercise. *Journal Of Psychosomatic Research*, 41(2), 171-180.
[https://doi.org/10.1016/0022-3999\(96\)00095-5](https://doi.org/10.1016/0022-3999(96)00095-5)
- Step toe, A., Wardle, J., Pollard, T., Canaan, L., & Davies, G. (1996). Stress, social support and health-related behavior: A study of smoking, alcohol consumption

- and physical exercise. *Journal Of Psychosomatic Research*, 41(2), 171-180. [https://doi.org/10.1016/0022-3999\(96\)00095-5](https://doi.org/10.1016/0022-3999(96)00095-5)
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal Of Medical Education*, 2, 53-55. doi: 10.5116/ijme.4dfb.8dfd
- Teo, S., Yeung, M., & Chang, E. (2012). Administrative stressors and nursing job outcomes in Australian public and non-profit health care organisations. *Journal Of Clinical Nursing*, 21(9-10), 1443-1452. doi: 10.1111/j.1365-2702.2011.03871.x
- Thoits, P. (2010). Stress and Health: Major Findings and Policy Implications. *Journal Of Health And Social Behavior*, 51(1_suppl), S41-S53. <https://doi.org/10.1177/0022146510383499>
- Trivellas, P., Reklitis, P., & Platis, C. (2013). The Effect of Job Related Stress on Employees' Satisfaction: A Survey in Health Care. *Procedia - Social And Behavioral Sciences*, 73, 718-726. <https://doi.org/10.1016/j.sbspro.2013.02.110>
- Tunwall, T., & Stutzman, M. (2012). Sustainability of the Workforce: Human Resource Influence. *GSTF International Journal Of Law And Social Sciences*, 1(1), 133-138. Retrieved 23 October 2020, from.
- van Dam, K., van Vuuren, T., & Kemps, S. (2016). Sustainable employment: the importance of intrinsically valuable work and an age-supportive climate. *The International Journal Of Human Resource Management*, 28(17), 2449-2472. <https://doi.org/10.1080/09585192.2015.1137607>
- Vrijkkotte, T., van Doornen, L., & Geus, E. (2000). Effects of Work Stress on Ambulatory Blood Pressure, Heart Rate, and Heart Rate Variability. Retrieved 22 October 2020, from <https://core.ac.uk/download/pdf/15457658.pdf>
- Warr, P. (1990). Decision latitude, job demands, and employee well-being. *Work & Stress*, 4(4), 285-294. doi: 10.1080/02678379008256991
- WHO. (2003). International nurse mobility Trends and policy implications. Retrieved 22 October 2020, from https://apps.who.int/iris/bitstream/handle/10665/68061/WHO_EIP_OSD_2003.3.pdf;jsessionid=1E942DED5E39BEB66BFBDADF37E337FB1?sequence=1
- WHO. (2015). *World Health Statistics 2015*. World Health Organization. Retrieved 22 October 2020, from https://www.who.int/gho/publications/world_health_statistics/2015/en/.
- Wright, K. (2014). Alleviating stress in the workplace: advice for nurses. *Nursing Standard*, 28(20), 37-42. <https://doi.org/10.7748/ns2014.01.28.20.37.e8391>
- Wu, Q., Zhao, L., & Ye, X. (2016). Shortage of healthcare professionals in China. *BMJ*, i4860. <https://doi.org/10.1136/bmj.i4860>
- Xie, M., Huang, Z., & Zang, W. (2020). The inequality of health-income effect in employed workers in China: a longitudinal study from China Family Panel Studies. *International Journal For Equity In Health*, 19(1). <https://doi.org/10.1186/s12939-020-01211-6>

- Ybema, J., van Vuuren, T., & van Dam, K. (2017). HR practices for enhancing sustainable employability: implementation, use, and outcomes. *The International Journal Of Human Resource Management*, 31(7), 886-907. <https://doi.org/10.1080/09585192.2017.1387865>
- Yehya, A., Sankaranarayanan, A., Alkhal, A., Al Naemi, H., Almeer, N., Khan, A., & Ghuloum, S. (2018). Job satisfaction and stress among healthcare workers in public hospitals in Qatar. *Archives Of Environmental & Occupational Health*, 75(1), 10-17. <https://doi.org/10.1080/19338244.2018.1531817>
- Yoshikawa, E., Nishi, D., & Matsuoka, Y. (2016). Association between regular physical exercise and depressive symptoms mediated through social support and resilience in Japanese company workers: a cross-sectional study. *BMC Public Health*, 16(1). <https://doi.org/10.1186/s12889-016-3251-2>
- Yu, X., Wang, P., Zhai, X., Dai, H., & Yang, Q. (2014). The Effect of Work Stress on Job Burnout Among Teachers: The Mediating Role of Self-efficacy. *Social Indicators Research*, 122(3), 701-708. <https://doi.org/10.1007/s11205-014-0716-5>
- Zhang, C., & Liu, Y. (2018). The salary of physicians in Chinese public tertiary hospitals: a national cross-sectional and follow-up study. *BMC Health Services Research*, 18(1). <https://doi.org/10.1186/s12913-018-3461-7>

Appendix A | Calculating sample size

| | |
|--|--------------------------------------|
| What margin of error can you accept? 5% is a common choice | <input type="text" value="5"/> % |
| What confidence level do you need? Typical choices are 90%, 95%, or 99% | <input type="text" value="95"/> % |
| What is the population size? If you don't know, use 20000 | <input type="text" value="4586600"/> |
| What is the response distribution? Leave this as 50% | <input type="text" value="10"/> % |
| Your recommended sample size is | 139 |

Appendix B | Questionnaire

Section 1: Demographic Data

1.1 Which Age group do you belong?

- Between 20 and 29
- Between 30 and 39
- Between 40 and 49
- Over 50

1.2: What is your marital status?

- Single (Never married)
- Married
- Living with partner
- Divorced
- Widowed

1.3: What is the annual income of your household?

- Below 60,000 RMB
- Between 60,000 and 120,000 RMB
- Between 120,000 and 240,000 RMB
- Above 240,000

1.4: What is your level of education?

- Less than High School
- High school or High School equivalent
- More than High School

1.5: Do you exercise (physical) regularly?

- Yes
- No

1.6: Do you smoke regularly?

- Yes
- No

1.7: Do you take sleeping pills?

- Yes
- No

Section 2: Work-related questions

2.1: Job Stress

On a scale of 1 to 7, how would you rate the following statements regarding stress at your work? (1 being **Strongly Disagree**, and 7 being **Strongly Agree**).

| | 1 Strongly Disagree | 2 | 3 | 4 Neither Agree or Disagree | 5 | 6 | 7 Strongly Disagree |
|--|---------------------------|---|---|-----------------------------------|---|---|---------------------------|
| There have been increased staff absences in our organisation | | | | | | | |
| Staff morale in our organisation has been decreased | | | | | | | |
| Overall, employees (yourself included) in the organisation feel more stressed. has increased | | | | | | | |
| My work is really demanding | | | | | | | |
| I struggle to keep pace with my responsibilities | | | | | | | |
| I struggle to maintain work-life balance | | | | | | | |
| I feel I do not have adequate control over my role | | | | | | | |
| I am not able to work independently | | | | | | | |
| I have inadequate say in my work scheduling | | | | | | | |

2.2: Job Control and Reward

On a scale of 1 to 7, how would you rate the following statements regarding stress at your work? (1 being **Strongly Disagree**, and 7 being **Strongly Agree**).

| | 1 Strongly Disagree | 2 | 3 | 4 Neither Agree or Disagree | 5 | 6 | 7 Strongly Disagree |
|--|---------------------------|---|---|-----------------------------------|---|---|---------------------------|
| My wages/salaries match my responsibilities | | | | | | | |
| I get recognised for my efforts | | | | | | | |
| I feel appreciated for fulfilling my duties | | | | | | | |
| I can set my own pace of work | | | | | | | |
| I can decide how my works need to be done | | | | | | | |
| I have inputs in my scheduling | | | | | | | |
| I have adequate respect at work | | | | | | | |
| I am satisfied with the treatment at work | | | | | | | |
| I am satisfied with the respect and prestige I receive at work | | | | | | | |

2.3: Training and Support from the Organisation

On a scale of 1 to 7, how would you rate the following statements regarding stress at your work? (1 being **Strongly Disagree**, and 7 being **Strongly Agree**).

| | 1 Strongly Disagree | 2 | 3 | 4 Neither Agree or Disagree | 5 | 6 | 7 Strongly Disagree |
|--|---------------------------|---|---|-----------------------------------|---|---|---------------------------|
| The trainings I receive at work are useful | | | | | | | |

| | | | | | | | |
|---|--|--|--|--|--|--|--|
| I am satisfied with the trainer/mentor | | | | | | | |
| I am satisfied with the current training programs in the organisation | | | | | | | |
| I am satisfied with the support I receive from my superiors | | | | | | | |
| I am satisfied with the cooperation and team-work | | | | | | | |
| There are good and positive relationships among colleagues | | | | | | | |
| My organisation emphasizes on engaging with the employees and responding to their needs and wants | | | | | | | |
| My organisation is transparent in their decision-making and they seek employee opinion and views | | | | | | | |
| Employees in the organisation are supportive of each other | | | | | | | |

2.4: About Yourself

On a scale of 1 to 7, how would you rate the following statements regarding stress at your work? (1 being **Strongly Disagree**, and 7 being **Strongly Agree**).

| | 1 Strongly Disagree | 2 | 3 | 4 Neither Agree or Disagree | 5 | 6 | 7 Strongly Disagree |
|--|---------------------------|---|---|-----------------------------------|---|---|---------------------------|
| I have the ability to perform my role | | | | | | | |
| I have full confidence on my ability to perform my tasks | | | | | | | |
| I can handle the challenges that might rise in the course of my duty | | | | | | | |

2.5: What type of organisation you work?

- Public
- Private (for-profit)
- Private (Non-profit)

2.6: What is the main type of management approach in your organisation?

- Authoritative
- Democratic

Appendix C | Pearson Correlations

Correlations

| | | Work plc Stress | High Job Demand | Low Job Control | Imb Effort Reward | Job Latitude | Job Reward | Training | Work plc Support | Org Culture | Self- Efficacy |
|----------------------------|---------------------|--------------------|--------------------|--------------------|----------------------|-----------------|---------------|----------|---------------------|----------------|-------------------|
| Work plc Stress | Pearson Correlation | 1 | .802** | .788** | .764** | -.726** | -.776** | -.818** | -.810** | -.876** | -.850** |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |
| High Job Demand | Pearson Correlation | .802** | 1 | .716** | .701** | -.626** | -.641** | -.690** | -.733** | -.768** | -.732** |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |
| Low Job Control | Pearson Correlation | .788** | .716** | 1 | .739** | -.604** | -.578** | -.668** | -.712** | -.757** | -.727** |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |
| Imb Effort Reward | Pearson Correlation | .764** | .701** | .739** | 1 | -.649** | -.640** | -.665** | -.718** | -.766** | -.699** |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 | .000 |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |
| Job Latitude | Pearson Correlation | -.726** | -.626** | -.604** | -.649** | 1 | .733** | .709** | .827** | .758** | .735** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 | .000 |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |
| Job Reward | Pearson Correlation | -.776** | -.641** | -.578** | -.640** | .733** | 1 | .748** | .707** | .700** | .704** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |
| Training | Pearson Correlation | -.818** | -.690** | -.668** | -.665** | .709** | .748** | 1 | .766** | .757** | .765** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |

| | | | | | | | | | | | |
|------------------|---------------------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|
| Work plc Support | Pearson Correlation | -.810** | -.733** | -.712** | -.718** | .827** | .707** | .766** | 1 | .892** | .845** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 | .000 |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |
| Org Culture | Pearson Correlation | -.876** | -.768** | -.757** | -.766** | .758** | .700** | .757** | .892** | 1 | .839** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |
| Self-Efficacy | Pearson Correlation | -.850** | -.732** | -.727** | -.699** | .735** | .704** | .765** | .845** | .839** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | |
| | N | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 | 157 |

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

Appendix D | SPSS Output of Regression Analysis

D1 | Model Summary Table

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .943 ^a | .889 | .870 | .577 |

a. Predictors: (Constant), No_Pills, JobLattitude, Non_smoker, Private Non Profit, More than HighSchool, Regular_exercise, Aged Above 50, Aged 40 to 49, MgtApproach, Aged 30 to 39, HighSchool or Equ, Private for Profit, Married or has Partner, HighJobDemand, Between 120K and 240K, JobReward, ImbEffortReward, LowJobControl, SelfEfficacy, Training, OrgCulture, WorkplcSupport

Table 8 Model Summary of the regression analysis

D2 | ANOVA Table

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1 | Regression | 355.647 | 22 | 16.166 | 48.547 | .000 ^b |
| | Residual | 44.621 | 134 | .333 | | |
| | Total | 400.268 | 156 | | | |

a. Dependent Variable: WorkplcStress

b. Predictors: (Constant), No_Pills, JobLattitude, Non_smoker, Private Non Profit, More than HighSchool, Regular_exercise, Aged Above 50, Aged 40 to 49, MgtApproach, Aged 30 to 39, HighSchool or Equ, Private for Profit, Married or has Partner, HighJobDemand, Between 120K and 240K, JobReward, ImbEffortReward, LowJobControl, SelfEfficacy, Training, OrgCulture, WorkplcSupport

Table 9 ANOVA Table

D3 | Test of Heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of DV

chi2(1) = 0.07

Prob > chi2 = 0.7928

Table 10 Breusch-Pagan test for heteroskedasticity

To ensure that error terms are normally distributed, Breusch-Pagan test was performed. As shown in table 11, $p > 0.05$ indicates that Null Hypothesis indicating homoskedasticity cannot be rejected. Therefore, heteroscedasticity is not detected for the regression analysis.

Appendix E | Output of Mediation Analysis

Analysis 1 | X = OC (Organisational Culture)

```

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 3.4.1 *****

      Written by Andrew F. Hayes, Ph.D.      www.afhayes.com
      Documentation available in Hayes (2018). www.guilford.com/p/hayes3

*****

Model   : 4
  Y     : DV
  X     : OC
  M1    : HJD
  M2    : LJC
  M3    : IER
  M4    : JL
  M5    : JR
  M6    : TR
  M7    : WS

Sample
Size: 157

*****
OUTCOME VARIABLE:
  HJD

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .7678      .5896      .9436     222.6580      1.0000     155.0000      .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant     6.9735     .1475     47.2934     .0000     6.6822     7.2647
OC           -.7149     .0479    -14.9217     .0000    -.8096    -.6203

Standardized coefficients
      coeff
OC      -.7678

*****
OUTCOME VARIABLE:
  LJC

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .7568      .5727     1.2080     207.7618      1.0000     155.0000      .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant     6.9755     .1668     41.8106     .0000     6.6459     7.3050
OC           -.7814     .0542    -14.4139     .0000    -.8885    -.6743

Standardized coefficients
      coeff
OC      -.7568

*****
OUTCOME VARIABLE:
  IER

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .7663      .5871     1.2964     220.4388      1.0000     155.0000      .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant     7.3037     .1728     42.2604     .0000     6.9623     7.6451
  
```

```

OC          -.8338      .0562    -14.8472    .0000    -.9447    -.7228

Standardized coefficients
  coeff
OC      -.7663

*****
OUTCOME VARIABLE:
  JL

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .7584      .5751      1.1827      209.7952      1.0000      155.0000      .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant      .6222      .1651      3.7695      .0002      .2962      .9483
OC      .7769      .0536      14.4843      .0000      .6710      .8829

Standardized coefficients
  coeff
OC      .7584

*****
OUTCOME VARIABLE:
  JR

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .7003      .4904      1.6005      149.1399      1.0000      155.0000      .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant      .5593      .1920      2.9123      .0041      .1799      .9386
OC      .7620      .0624      12.2123      .0000      .6388      .8853

Standardized coefficients
  coeff
OC      .7003

*****
OUTCOME VARIABLE:
  TR

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .7570      .5731      1.2955      208.0872      1.0000      155.0000      .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant      .7782      .1728      4.5041      .0000      .4369      1.1194
OC      .8098      .0561      14.4252      .0000      .6989      .9207

Standardized coefficients
  coeff
OC      .7570

*****
OUTCOME VARIABLE:
  WS

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .8924      .7963      .5959      606.0999      1.0000      155.0000      .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant      .1513      .1172      1.2916      .1984      -.0801      .3828
OC      .9373      .0381      24.6191      .0000      .8621      1.0125

Standardized coefficients
  coeff
OC      .8924

*****
OUTCOME VARIABLE:

```

| DV | | | | | | | | |
|---|--------|--------|----------|----------|--------|----------|--------|--------|
| Model Summary | | | | | | | | |
| | R | R-sq | MSE | F | df1 | df2 | p | |
| | .9343 | .8730 | .3435 | 127.1788 | 8.0000 | 148.0000 | .0000 | |
| Model | | | | | | | | |
| | coeff | se | t | p | LLCI | ULCI | | |
| constant | 5.1340 | .4740 | 10.8305 | .0000 | 4.1973 | 6.0708 | | |
| OC | -.3983 | .0741 | -5.3760 | .0000 | -.5447 | -.2519 | | |
| HJD | .1677 | .0534 | 3.1403 | .0020 | .0622 | .2732 | | |
| LJC | .1641 | .0483 | 3.3997 | .0009 | .0687 | .2595 | | |
| IER | .0314 | .0462 | .6794 | .4980 | -.0599 | .1226 | | |
| JL | .0142 | .0543 | .2613 | .7943 | -.0932 | .1216 | | |
| JR | -.1808 | .0454 | -3.9783 | .0001 | -.2706 | -.0910 | | |
| TR | -.1843 | .0491 | -3.7509 | .0003 | -.2813 | -.0872 | | |
| WS | .0892 | .0724 | 1.2316 | .2201 | -.0539 | .2324 | | |
| Standardized coefficients | | | | | | | | |
| | coeff | | | | | | | |
| OC | -.4036 | | | | | | | |
| HJD | .1582 | | | | | | | |
| LJC | .1717 | | | | | | | |
| IER | .0346 | | | | | | | |
| JL | .0147 | | | | | | | |
| JR | -.1994 | | | | | | | |
| TR | -.1997 | | | | | | | |
| WS | .0950 | | | | | | | |
| ***** TOTAL EFFECT MODEL ***** | | | | | | | | |
| OUTCOME VARIABLE: | | | | | | | | |
| DV | | | | | | | | |
| Model Summary | | | | | | | | |
| | R | R-sq | MSE | F | df1 | df2 | p | |
| | .8765 | .7682 | .5985 | 513.8039 | 1.0000 | 155.0000 | .0000 | |
| Model | | | | | | | | |
| | coeff | se | t | p | LLCI | ULCI | | |
| constant | 7.4553 | .1174 | 63.4876 | .0000 | 7.2233 | 7.6872 | | |
| OC | -.8649 | .0382 | -22.6672 | .0000 | -.9403 | -.7895 | | |
| Standardized coefficients | | | | | | | | |
| | coeff | | | | | | | |
| OC | -.8765 | | | | | | | |
| ***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***** | | | | | | | | |
| Total effect of X on Y | | | | | | | | |
| | Effect | se | t | p | LLCI | ULCI | c_ps | c_cs |
| | -.8649 | .0382 | -22.6672 | .0000 | -.9403 | -.7895 | -.5400 | -.8765 |
| Direct effect of X on Y | | | | | | | | |
| | Effect | se | t | p | LLCI | ULCI | c'_ps | c'_cs |
| | -.3983 | .0741 | -5.3760 | .0000 | -.5447 | -.2519 | -.2486 | -.4036 |
| Indirect effect(s) of X on Y: | | | | | | | | |
| | Effect | BootSE | BootLLCI | BootULCI | | | | |
| TOTAL | -.4666 | .0765 | -.6169 | -.3165 | | | | |
| HJD | -.1199 | .0384 | -.1904 | -.0368 | | | | |
| LJC | -.1282 | .0363 | -.2034 | -.0601 | | | | |
| IER | -.0262 | .0311 | -.0908 | .0305 | | | | |
| JL | .0110 | .0587 | -.1178 | .1209 | | | | |
| JR | -.1378 | .0459 | -.2442 | -.0617 | | | | |
| TR | -.1492 | .0444 | -.2356 | -.0591 | | | | |
| WS | .0836 | .0796 | -.0736 | .2425 | | | | |
| Partially standardized indirect effect(s) of X on Y: | | | | | | | | |
| | Effect | BootSE | BootLLCI | BootULCI | | | | |
| TOTAL | -.2913 | .0474 | -.3854 | -.1999 | | | | |
| HJD | -.0749 | .0235 | -.1182 | -.0241 | | | | |
| LJC | -.0801 | .0231 | -.1283 | -.0379 | | | | |
| IER | -.0163 | .0195 | -.0569 | .0190 | | | | |
| JL | .0069 | .0370 | -.0755 | .0746 | | | | |
| JR | -.0860 | .0292 | -.1551 | -.0387 | | | | |
| TR | -.0932 | .0281 | -.1487 | -.0368 | | | | |

```
WS .0522 .0507 -.0464 .1551
```

Completely standardized indirect effect(s) of X on Y:

| | Effect | BootSE | BootLLCI | BootULCI |
|-------|--------|--------|----------|----------|
| TOTAL | -.4729 | .0727 | -.6112 | -.3277 |
| HJD | -.1215 | .0382 | -.1908 | -.0371 |
| LJC | -.1299 | .0367 | -.2070 | -.0612 |
| IER | -.0265 | .0314 | -.0907 | .0314 |
| JL | .0112 | .0596 | -.1169 | .1229 |
| JR | -.1396 | .0457 | -.2446 | -.0629 |
| TR | -.1512 | .0448 | -.2373 | -.0601 |
| WS | .0848 | .0809 | -.0759 | .2456 |

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
5000

----- END MATRIX -----

Analysis 2 | X = MA (Management Approach)

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 3.4.1 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model : 4
Y : DV
X : MA
M1 : HJD
M2 : LJC
M3 : IER
M4 : JL
M5 : JR
M6 : TR
M7 : WS

Sample
Size: 157

OUTCOME VARIABLE:
HJD

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .3141 | .0987 | 2.0723 | 16.9696 | 1.0000 | 155.0000 | .0001 |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|---------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 5.4894 | .1485 | 36.9710 | .0000 | 5.1961 | 5.7827 | |
| MA | -.9656 | .2344 | -4.1194 | .0001 | -1.4286 | -.5025 | |

Standardized coefficients
coeff
MA -.6388

 OUTCOME VARIABLE:
 LJC

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .3390 | .1149 | 2.5024 | 20.1269 | 1.0000 | 155.0000 | .0000 |

| Model | | | | | | | |
|----------|---------|-------|---------|-------|---------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 5.3936 | .1632 | 33.0575 | .0000 | 5.0713 | 5.7159 | |
| MA | -1.1555 | .2576 | -4.4863 | .0000 | -1.6643 | -.6467 | |

| Standardized coefficients | |
|---------------------------|--------|
| | coeff |
| MA | -.6894 |

 OUTCOME VARIABLE:
 IER

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .3367 | .1134 | 2.7840 | 19.8224 | 1.0000 | 155.0000 | .0000 |

| Model | | | | | | | |
|----------|---------|-------|---------|-------|---------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 5.6064 | .1721 | 32.5772 | .0000 | 5.2664 | 5.9463 | |
| MA | -1.2096 | .2717 | -4.4522 | .0000 | -1.7462 | -.6729 | |

| Standardized coefficients | |
|---------------------------|--------|
| | coeff |
| MA | -.6848 |

 OUTCOME VARIABLE:
 JL

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .3110 | .0967 | 2.5142 | 16.5929 | 1.0000 | 155.0000 | .0001 |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.2340 | .1635 | 13.6600 | .0000 | 1.9110 | 2.5571 | |
| MA | 1.0517 | .2582 | 4.0734 | .0001 | .5417 | 1.5617 | |

| Standardized coefficients | |
|---------------------------|-------|
| | coeff |
| MA | .6324 |

 OUTCOME VARIABLE:
 JR

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .2663 | .0709 | 2.9178 | 11.8339 | 1.0000 | 155.0000 | .0007 |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.1702 | .1762 | 12.3179 | .0000 | 1.8222 | 2.5182 | |
| MA | .9568 | .2781 | 3.4400 | .0007 | .4074 | 1.5062 | |

| Standardized coefficients | |
|---------------------------|-------|
| | coeff |
| MA | .5416 |

 OUTCOME VARIABLE:
 TR

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|---------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .3335 | .1112 | 2.6971 | 19.3950 | 1.0000 | 155.0000 | .0000 |

| Model | | | | | | | |
|---|--------|-------|---------|----------|---------|----------|-------|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.4255 | .1694 | 14.3192 | .0000 | 2.0909 | 2.7601 | |
| MA | 1.1776 | .2674 | 4.4040 | .0000 | .6494 | 1.7059 | |
| Standardized coefficients | | | | | | | |
| | coeff | | | | | | |
| MA | .6782 | | | | | | |
| ***** | | | | | | | |
| OUTCOME VARIABLE: | | | | | | | |
| WS | | | | | | | |
| Model Summary | | | | | | | |
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .3431 | .1177 | 2.5814 | 20.6852 | 1.0000 | 155.0000 | .0000 |
| Model | | | | | | | |
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.1277 | .1657 | 12.8392 | .0000 | 1.8003 | 2.4550 | |
| MA | 1.1898 | .2616 | 4.5481 | .0000 | .6730 | 1.7066 | |
| Standardized coefficients | | | | | | | |
| | coeff | | | | | | |
| MA | .6978 | | | | | | |
| ***** | | | | | | | |
| OUTCOME VARIABLE: | | | | | | | |
| DV | | | | | | | |
| Model Summary | | | | | | | |
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .9219 | .8500 | .4058 | 104.8014 | 8.0000 | 148.0000 | .0000 |
| Model | | | | | | | |
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 3.8913 | .4647 | 8.3740 | .0000 | 2.9730 | 4.8096 | |
| MA | .1478 | .1124 | 1.3146 | .1907 | -.0744 | .3699 | |
| HJD | .2211 | .0571 | 3.8717 | .0002 | .1082 | .3339 | |
| LJC | .2139 | .0518 | 4.1288 | .0001 | .1115 | .3162 | |
| IER | .0866 | .0493 | 1.7588 | .0807 | -.0107 | .1840 | |
| JL | .0116 | .0591 | .1961 | .8448 | -.1052 | .1284 | |
| JR | -.1900 | .0494 | -3.8470 | .0002 | -.2876 | -.0924 | |
| TR | -.2084 | .0534 | -3.9016 | .0001 | -.3139 | -.1028 | |
| WS | -.1255 | .0661 | -1.8977 | .0597 | -.2562 | .0052 | |
| Standardized coefficients | | | | | | | |
| | coeff | | | | | | |
| MA | .0922 | | | | | | |
| HJD | .2086 | | | | | | |
| LJC | .2238 | | | | | | |
| IER | .0955 | | | | | | |
| JL | .0120 | | | | | | |
| JR | -.2096 | | | | | | |
| TR | -.2259 | | | | | | |
| WS | -.1336 | | | | | | |
| ***** TOTAL EFFECT MODEL ***** | | | | | | | |
| OUTCOME VARIABLE: | | | | | | | |
| DV | | | | | | | |
| Model Summary | | | | | | | |
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .3014 | .0909 | 2.3477 | 15.4911 | 1.0000 | 155.0000 | .0001 |
| Model | | | | | | | |
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 5.5851 | .1580 | 35.3404 | .0000 | 5.2729 | 5.8973 | |
| MA | -.9819 | .2495 | -3.9359 | .0001 | -1.4748 | -.4891 | |
| Standardized coefficients | | | | | | | |
| | coeff | | | | | | |
| MA | -.6130 | | | | | | |
| ***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***** | | | | | | | |

```

Total effect of X on Y
  Effect      se      t      p      LLCI      ULCI      c_ps
  -0.9819    .2495   -3.9359   .0001   -1.4748   -.4891   -.6130

Direct effect of X on Y
  Effect      se      t      p      LLCI      ULCI      c'_ps
   .1478     .1124    1.3146   .1907   -.0744    .3699    .0922

Indirect effect(s) of X on Y:
  Effect      BootSE   BootLLCI   BootULCI
TOTAL    -1.1297    .2691    -1.6732    -.6170
HJD      -.2135     .0858     -.3929     -.0591
LJC      -.2471     .0818     -.4217     -.1043
IER      -.1048     .0577     -.2341     -.0084
JL        .0122     .0904     -.1931     .1756
JR       -.1818     .0893     -.3901     -.0487
TR       -.2454     .0918     -.4479     -.0876
WS       -.1493     .1185     -.4070     .0621

Partially standardized indirect effect(s) of X on Y:
  Effect      BootSE   BootLLCI   BootULCI
TOTAL    -.7053    .1472     -.9970     -.4178
HJD      -.1333    .0505     -.2360     -.0397
LJC      -.1543    .0483     -.2580     -.0689
IER      -.0654    .0348     -.1423     -.0055
JL        .0076    .0566     -.1231     .1089
JR       -.1135    .0539     -.2403     -.0314
TR       -.1532    .0552     -.2735     -.0564
WS       -.0932    .0730     -.2456     .0397

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

NOTE: Standardized coefficients for dichotomous or multicategorical X are in
      partially standardized form.

----- END MATRIX -----

```

Analysis 3| X = OT_PvtPr (Private for-profit)

```

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 3.4.1 *****

      Written by Andrew F. Hayes, Ph.D.      www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

*****

Model   : 4
Y       : DV
X       : OT_PvtPr
M1      : HJD
M2      : LJC
M3      : IER
M4      : JL
M5      : JR
M6      : TR
M7      : WS

```

Sample
Size: 157

OUTCOME VARIABLE:
HJD

Model Summary
R R-sq MSE F df1 df2 p
.0575 .0033 2.2916 .5134 1.0000 155.0000 .4747

Model
coeff se t p LLCI ULCI
constant 5.0233 .1632 30.7729 .0000 4.7008 5.3457
OT_PvtPr .1739 .2427 .7165 .4747 -.3056 .6534

Standardized coefficients
coeff
OT_PvtPr .1151

OUTCOME VARIABLE:
LJC

Model Summary
R R-sq MSE F df1 df2 p
.0304 .0009 2.8247 .1438 1.0000 155.0000 .7051

Model
coeff se t p LLCI ULCI
constant 4.8837 .1812 26.9474 .0000 4.5257 5.2417
OT_PvtPr .1022 .2695 .3792 .7051 -.4302 .6346

Standardized coefficients
coeff
OT_PvtPr .0610

OUTCOME VARIABLE:
IER

Model Summary
R R-sq MSE F df1 df2 p
.0538 .0029 3.1309 .4506 1.0000 155.0000 .5030

Model
coeff se t p LLCI ULCI
constant 5.0349 .1908 26.3878 .0000 4.6580 5.4118
OT_PvtPr .1905 .2837 .6713 .5030 -.3700 .7509

Standardized coefficients
coeff
OT_PvtPr .1078

OUTCOME VARIABLE:
JL

Model Summary
R R-sq MSE F df1 df2 p
.0740 .0055 2.7682 .8524 1.0000 155.0000 .3573

Model
coeff se t p LLCI ULCI
constant 2.7674 .1794 15.4252 .0000 2.4130 3.1218
OT_PvtPr -.2463 .2668 -.9233 .3573 -.7733 .2807

Standardized coefficients
coeff
OT_PvtPr -.1481

OUTCOME VARIABLE:
JR

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|---------------------------|--------|-------|---------|----------|--------|----------|-------|
| | .0606 | .0037 | 3.1290 | .5721 | 1.0000 | 155.0000 | .4506 |
| Model | | | | | | | |
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.6512 | .1907 | 13.8989 | .0000 | 2.2744 | 3.0280 | |
| OT_PvtPr | -.2145 | .2836 | -.7564 | .4506 | -.7749 | .3458 | |
| Standardized coefficients | | | | | | | |
| | coeff | | | | | | |
| OT_PvtPr | -.1215 | | | | | | |
| ***** | | | | | | | |
| OUTCOME VARIABLE: | | | | | | | |
| TR | | | | | | | |
| Model Summary | | | | | | | |
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .0722 | .0052 | 3.0188 | .8121 | 1.0000 | 155.0000 | .3689 |
| Model | | | | | | | |
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 3.0116 | .1874 | 16.0743 | .0000 | 2.6415 | 3.3817 | |
| OT_PvtPr | -.2511 | .2786 | -.9011 | .3689 | -.8014 | .2993 | |
| Standardized coefficients | | | | | | | |
| | coeff | | | | | | |
| OT_PvtPr | -.1446 | | | | | | |
| ***** | | | | | | | |
| OUTCOME VARIABLE: | | | | | | | |
| WS | | | | | | | |
| Model Summary | | | | | | | |
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .1051 | .0111 | 2.8936 | 1.7322 | 1.0000 | 155.0000 | .1901 |
| Model | | | | | | | |
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.7674 | .1834 | 15.0873 | .0000 | 2.4051 | 3.1298 | |
| OT_PvtPr | -.3590 | .2728 | -1.3161 | .1901 | -.8978 | .1798 | |
| Standardized coefficients | | | | | | | |
| | coeff | | | | | | |
| OT_PvtPr | -.2105 | | | | | | |
| ***** | | | | | | | |
| OUTCOME VARIABLE: | | | | | | | |
| DV | | | | | | | |
| Model Summary | | | | | | | |
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .9211 | .8484 | .4100 | 103.5228 | 8.0000 | 148.0000 | .0000 |
| Model | | | | | | | |
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 4.0129 | .4680 | 8.5753 | .0000 | 3.0882 | 4.9377 | |
| OT_PvtPr | -.0434 | .1035 | -.4190 | .6759 | -.2479 | .1612 | |
| HJD | .2195 | .0574 | 3.8243 | .0002 | .1061 | .3329 | |
| LJC | .2080 | .0520 | 3.9985 | .0001 | .1052 | .3108 | |
| IER | .0822 | .0494 | 1.6647 | .0981 | -.0154 | .1798 | |
| JL | .0149 | .0594 | .2514 | .8019 | -.1024 | .1322 | |
| JR | -.1930 | .0496 | -3.8919 | .0001 | -.2910 | -.0950 | |
| TR | -.2034 | .0535 | -3.7988 | .0002 | -.3092 | -.0976 | |
| WS | -.1250 | .0667 | -1.8742 | .0629 | -.2568 | .0068 | |
| Standardized coefficients | | | | | | | |
| | coeff | | | | | | |
| OT_PvtPr | -.0271 | | | | | | |
| HJD | .2071 | | | | | | |
| LJC | .2176 | | | | | | |
| IER | .0907 | | | | | | |
| JL | .0155 | | | | | | |
| JR | -.2129 | | | | | | |
| TR | -.2205 | | | | | | |
| WS | -.1331 | | | | | | |

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:
DV

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|--------|-------|--------|----------|-------|
| | .0516 | .0027 | 2.5755 | .4132 | 1.0000 | 155.0000 | .5213 |

Model

| | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 5.1163 | .1731 | 29.5646 | .0000 | 4.7744 | 5.4581 |
| OT_PvtPr | .1654 | .2573 | .6428 | .5213 | -.3429 | .6738 |

Standardized coefficients

| | coeff |
|----------|-------|
| OT_PvtPr | .1033 |

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

| Effect | se | t | p | LLCI | ULCI | c_ps |
|--------|-------|-------|-------|--------|-------|-------|
| .1654 | .2573 | .6428 | .5213 | -.3429 | .6738 | .1033 |

Direct effect of X on Y

| Effect | se | t | p | LLCI | ULCI | c'_ps |
|--------|-------|--------|-------|--------|-------|--------|
| -.0434 | .1035 | -.4190 | .6759 | -.2479 | .1612 | -.0271 |

Indirect effect(s) of X on Y:

| | Effect | BootSE | BootLLCI | BootULCI |
|-------|--------|--------|----------|----------|
| TOTAL | .2088 | .2325 | -.2525 | .6559 |
| HJD | .0382 | .0546 | -.0623 | .1578 |
| LJC | .0213 | .0565 | -.0859 | .1364 |
| IER | .0157 | .0270 | -.0354 | .0776 |
| JL | -.0037 | .0302 | -.0621 | .0696 |
| JR | .0414 | .0594 | -.0648 | .1739 |
| TR | .0511 | .0582 | -.0617 | .1724 |
| WS | .0449 | .0488 | -.0385 | .1550 |

Partially standardized indirect effect(s) of X on Y:

| | Effect | BootSE | BootLLCI | BootULCI |
|-------|--------|--------|----------|----------|
| TOTAL | .1303 | .1442 | -.1620 | .4041 |
| HJD | .0238 | .0339 | -.0387 | .0967 |
| LJC | .0133 | .0353 | -.0552 | .0838 |
| IER | .0098 | .0168 | -.0224 | .0478 |
| JL | -.0023 | .0188 | -.0376 | .0431 |
| JR | .0259 | .0369 | -.0412 | .1067 |
| TR | .0319 | .0363 | -.0392 | .1060 |
| WS | .0280 | .0305 | -.0243 | .0969 |

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
5000

NOTE: Standardized coefficients for dichotomous or multicategorical X are in partially standardized form.

NOTE: Variables names longer than eight characters can produce incorrect output. Shorter variable names are recommended.

----- END MATRIX -----

Analysis 6| X = OT_PvtNon (Private non-profit)

```

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 3.4.1 *****

      Written by Andrew F. Hayes, Ph.D.      www.afhayes.com
      Documentation available in Hayes (2018). www.guilford.com/p/hayes3

*****

Model   : 4
Y       : DV
X       : OT_PvtNo
M1      : HJD
M2      : LJC
M3      : IER
M4      : JL
M5      : JR
M6      : TR
M7      : WS

Sample
Size:   157

*****
OUTCOME VARIABLE:
HJD

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .0469   .0022   2.2941   .3413   1.0000   155.0000   .5599

Model
      coeff      se      t      p      LLCI      ULCI
constant  5.0550   .1451  34.8443   .0000   4.7685   5.3416
OT_PvtNo  .1533     .2624   .5842   .5599  -.3650   .6716

Standardized coefficients
      coeff
OT_PvtNo  .1014

*****
OUTCOME VARIABLE:
LJC

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .0466   .0022   2.8211   .3380   1.0000   155.0000   .5618

Model
      coeff      se      t      p      LLCI      ULCI
constant  4.9817   .1609  30.9653   .0000   4.6639   5.2994
OT_PvtNo  -.1692   .2910  -.5814   .5618  -.7439   .4056

Standardized coefficients
      coeff
OT_PvtNo  -.1009

*****
OUTCOME VARIABLE:
IER

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .0015   .0000   3.1400   .0003   1.0000   155.0000   .9851

Model
      coeff      se      t      p      LLCI      ULCI
constant  5.1193   .1697  30.1617   .0000   4.7840   5.4545
OT_PvtNo  .0057   .3070   .0187   .9851  -.6006   .6121

Standardized coefficients
      coeff
OT_PvtNo  .0032

```

 OUTCOME VARIABLE:
 JL

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|-------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .0458 | .0021 | 2.7776 | .3257 | 1.0000 | 155.0000 | .5690 |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.7064 | .1596 | 16.9542 | .0000 | 2.3911 | 3.0218 | |
| OT_PvtNo | -.1648 | .2887 | -.5707 | .5690 | -.7351 | .4055 | |

Standardized coefficients
 coeff
 OT_PvtNo -.0991

 OUTCOME VARIABLE:
 JR

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|-------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .0675 | .0046 | 3.1263 | .7097 | 1.0000 | 155.0000 | .4008 |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.6330 | .1694 | 15.5473 | .0000 | 2.2985 | 2.9676 | |
| OT_PvtNo | -.2580 | .3063 | -.8424 | .4008 | -.8631 | .3470 | |

Standardized coefficients
 coeff
 OT_PvtNo -.1461

 OUTCOME VARIABLE:
 TR

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|-------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .0391 | .0015 | 3.0300 | .2370 | 1.0000 | 155.0000 | .6271 |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.8532 | .1667 | 17.1130 | .0000 | 2.5239 | 3.1826 | |
| OT_PvtNo | .1468 | .3015 | .4868 | .6271 | -.4489 | .7424 | |

Standardized coefficients
 coeff
 OT_PvtNo .0845

 OUTCOME VARIABLE:
 WS

| Model Summary | | | | | | | |
|---------------|-------|-------|--------|-------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .0078 | .0001 | 2.9257 | .0094 | 1.0000 | 155.0000 | .9230 |

| Model | | | | | | | |
|----------|--------|-------|---------|-------|--------|--------|--|
| | coeff | se | t | p | LLCI | ULCI | |
| constant | 2.5963 | .1638 | 15.8473 | .0000 | 2.2727 | 2.9200 | |
| OT_PvtNo | .0287 | .2963 | .0968 | .9230 | -.5566 | .6140 | |

Standardized coefficients
 coeff
 OT_PvtNo .0168

 OUTCOME VARIABLE:
 DV

| Model Summary | | | | | | | |
|---------------|-------|-------|-------|----------|--------|----------|-------|
| | R | R-sq | MSE | F | df1 | df2 | p |
| | .9210 | .8482 | .4104 | 103.4009 | 8.0000 | 148.0000 | .0000 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 3.9851 | .4627 | 8.6134 | .0000 | 3.0708 | 4.8994 |
| OT_PvtNo | -.0188 | .1133 | -.1659 | .8685 | -.2427 | .2051 |
| HJD | .2206 | .0577 | 3.8202 | .0002 | .1065 | .3347 |
| LJC | .2085 | .0521 | 3.9992 | .0001 | .1055 | .3115 |
| IER | .0822 | .0494 | 1.6633 | .0984 | -.0155 | .1799 |
| JL | .0138 | .0595 | .2313 | .8174 | -.1039 | .1314 |
| JR | -.1940 | .0499 | -3.8897 | .0002 | -.2925 | -.0954 |
| TR | -.2021 | .0539 | -3.7490 | .0003 | -.3087 | -.0956 |
| WS | -.1220 | .0666 | -1.8322 | .0689 | -.2535 | .0096 |

Standardized coefficients

| | coeff |
|----------|--------|
| OT_PvtNo | -.0117 |
| HJD | .2081 |
| LJC | .2181 |
| IER | .0906 |
| JL | .0143 |
| JR | -.2139 |
| TR | -.2191 |
| WS | -.1298 |

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:
DV

Model Summary

| | R | R-sq | MSE | F | df1 | df2 | p |
|--|-------|-------|--------|-------|--------|----------|-------|
| | .0015 | .0000 | 2.5824 | .0003 | 1.0000 | 155.0000 | .9852 |

| Model | coeff | se | t | p | LLCI | ULCI |
|----------|--------|-------|---------|-------|--------|--------|
| constant | 5.1927 | .1539 | 33.7361 | .0000 | 4.8886 | 5.4967 |
| OT_PvtNo | -.0052 | .2784 | -.0185 | .9852 | -.5551 | .5447 |

Standardized coefficients

| | coeff |
|----------|--------|
| OT_PvtNo | -.0032 |

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

| Effect | se | t | p | LLCI | ULCI | c' ps |
|--------|-------|--------|-------|--------|-------|--------|
| -.0052 | .2784 | -.0185 | .9852 | -.5551 | .5447 | -.0032 |

Direct effect of X on Y

| Effect | se | t | p | LLCI | ULCI | c' ps |
|--------|-------|--------|-------|--------|-------|--------|
| -.0188 | .1133 | -.1659 | .8685 | -.2427 | .2051 | -.0117 |

Indirect effect(s) of X on Y:

| | Effect | BootSE | BootLLCI | BootULCI |
|-------|--------|--------|----------|----------|
| TOTAL | .0136 | .2644 | -.5230 | .5202 |
| HJD | .0338 | .0573 | -.0821 | .1463 |
| LJC | -.0353 | .0672 | -.1771 | .0943 |
| IER | .0005 | .0293 | -.0637 | .0605 |
| JL | -.0023 | .0284 | -.0726 | .0508 |
| JR | .0501 | .0619 | -.0716 | .1813 |
| TR | -.0297 | .0640 | -.1597 | .0952 |
| WS | -.0035 | .0465 | -.1017 | .1022 |

Partially standardized indirect effect(s) of X on Y:

| | Effect | BootSE | BootLLCI | BootULCI |
|-------|--------|--------|----------|----------|
| TOTAL | .0085 | .1654 | -.3346 | .3243 |
| HJD | .0211 | .0357 | -.0513 | .0908 |
| LJC | -.0220 | .0421 | -.1107 | .0599 |
| IER | .0003 | .0183 | -.0398 | .0375 |
| JL | -.0014 | .0178 | -.0447 | .0317 |
| JR | .0312 | .0390 | -.0437 | .1152 |
| TR | -.0185 | .0401 | -.1013 | .0601 |
| WS | -.0022 | .0291 | -.0637 | .0638 |

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

```
Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000
```

```
NOTE: Standardized coefficients for dichotomous or multicategorical X are in  
partially standardized form.
```

```
NOTE: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.
```

```
----- END MATRIX -----
```