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## **The Role of Autonomy, Status Conflict and Techno-complexity in Exhaustion and Self-efficacy: A Study with Chinese University Teachers**

Mengyang Zhao

*Master in Human Resources Management and Organizational Consulting*

Supervisor:

PhD Sílvia Costa Agostinho da Silva, Full professor,  
Department of Human Resources and Organizational Behavior

June, 2021





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Department of Human Resources and Organizational Behavior

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### **Abstract**

Since the transformation of higher educational system, university teachers are confronting lots of challenges and stress at workplace. Previous studies have explored job demands and job resources played a significant role in explaining exhaustion of employees. In this study, 172 Chinese university teachers participated in the questionnaire survey. This cross-sectional study aimed to analyze how autonomy, status conflict, and techno-complexity could impact emotional exhaustion according to the JD-R model and how self-efficacy, as a moderator, could moderate these relationships. Results showed that autonomy negatively related to exhaustion, however, status conflict and techno-complexity were positively associated with exhaustion. The results revealed that the interaction of autonomy and higher-level self-efficacy was significant in predicting exhaustion. Additionally, the interaction of lower self-efficacy and status conflict was significant in predicting exhaustion. Furthermore, the interaction between techno-complexity and both levels of self-efficacy were statistically significant in predicting exhaustion. These results revealed that higher level of status conflict and higher level of techno-complexity were associated with exhaustion when self-efficacy was low.

The practical implications of the results, limitation, and some suggestions for future research are presented at the end of the study.

*Keywords:* exhaustion, autonomy, status conflict, techno-complexity, self-efficacy

*JEL Classification System:* O15 (Economic Development: Human Resources; Human Development; Income Distribution; Migration) and Y4 (Dissertations)



### **Resumo**

Com a transformação do sistema de ensino superior, os professores universitários estão enfrentando muitos desafios e estresse no local de trabalho. Estudos anteriores concluíram que as exigências e recursos do trabalho desempenham um papel importante na explicação da exaustão nos trabalhadores. Neste estudo, 172 professores universitários chineses participaram através da resposta a um questionário. Este estudo transversal teve como objetivo analisar como a autonomia, o conflito de estatuto e a complexidade tecnológica podem ter impacto na exaustão emocional utilizando o modelo JD-R e verificar de que modo a autoeficácia pode moderar estas relações. Os resultados mostraram que a autonomia estava negativamente associada à exaustão, porém, o conflito de estatuto e a complexidade tecnológica estavam positivamente relacionadas com a exaustão. Os resultados revelaram também um impacto significativo da interação entre autonomia e a autoeficácia elevada na exaustão. Adicionalmente, a interação entre a autoeficácia baixa e o conflito de estatuto foi significativa na previsão de exaustão. Além disso, a interação entre a complexidade tecnológica e os dois níveis de autoeficácia foram estatisticamente significativos na previsão da exaustão. Estes resultados revelaram que níveis mais elevados de conflito de estatuto e de complexidade tecnológica estavam associados à exaustão quando a autoeficácia era baixa.

No final do estudo apresentam-se as implicações práticas dos resultados, as limitações e algumas sugestões para pesquisas futuras.

*Palavras-chave:* exaustão, autonomia, conflito de estatuto, complexidade tecnológica, autoeficácia

*JEL Classification System:* O15 (Economic Development: Human Resources; Human Development; Income Distribution; Migration) and Y4 (Dissertations)



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**Abbreviations**

BAT	Burnout Assessment Tool
ICTs	Information and Computer Technologies
IT	Information Technology
JD-R Model	Job Demand-Resource Model



## **Introduction**

Higher education is the base stone for the development and advancement of the society. As relevant participants of this process, university teachers are expected to create more valuable knowledge and cultivate talents who can contribute significant and effective inputs for our society (Danish et al, 2019). One way to achieve these goals is that academics need to produce creative ideas and perform them effectively (Roeser, Skinner, Beers & Jennings, 2012). Additionally, high demanding and critical requirements of teaching lead to an increase of occupational stress to university teachers (Portoghese et al., 2017). In the context of continuous changes, university teachers are facing a series of problems such as the deterioration of the employment environment, the increasing trend of bureaucracy, and the regression of work autonomy, causing university teachers to be under great pressure (Altbach, 2000). Hence, faculty members make complaints about the stress of their work, such as unmanageable workload, lack of collaboration, budgetary inadequacy, poor laboratory equipment and corruption (Kyriacou, 2001; Tilak, 2006; Singh, 2008).

A relevant case of this study is China since it is in a period of rapid development of higher education. The expansion and popularization of higher education contribute to China's education system shifting from elite-oriented to public-oriented (Liu, 2013) and from quantity expansion to quality enhancement (Yin & Ke, 2017). Many Chinese universities stipulate that academic must have a doctorate degree to achieve senior positions, which is a usual evaluation standard to achieve senior positions in universities of more developed countries, but in China this process has happened with more fast velocity. On the other hand, in contrast with primary and secondary school teachers, university teachers undertake academic tasks and research duties besides teaching workload and remuneration is largely associated with academic achievements. The requirements force academics to continuously apply research projects and peer-review international papers, which increases the work pressure extensively. Additionally, faculty members also need to deal with complicated activities in their daily work, such as improper arrangement by leaders, competition among colleagues, and disagreement with students. All these impacts of work pressure permeate all aspects which obviously damage academics' well-being and stimulate exhaustion (Han, Yin, Wnag & Zhang, 2019). Consequently, those pressures reach a level more than individuals can bear, then job

burnout can occur (Roeser et al., 2013).

Burnout is regarded as a result of long-term occupational stress, particularly among the service personal, although the reasons may differ, most of the university teachers may experience burnout in their work (Jennett, Harris & Mesibov, 2003). There are three dimensions in burnout: exhaustion, depersonalization and reduced personal accomplishment (Maslach, 1998, p. 69). Emotional exhaustion is defined as the feelings of being depleted of energy and exhausted at work and is regarded as the main composition of burnout (Schaufeli, Leiter, Maslach & Jackson, 1996). Considering this, in our study, we concentrate on the exhaustion component of burnout to illustrate worker's experience of strain.

The impact of exhaustion on workers can lead to health-related impairments, such as severe distress, depression, and anxiety (Milczarek, Schneider & Eusebio, 2009), and it can later cause several outcomes for individuals and organisations. For individuals, emotional exhaustion can lead to sleep disturbance, memory impairment, mental dissonance, and deficiencies in the professional performance (Maslach, Schaufeli & Leiter, 2001). From the perspective of organisational level, it is also related to a diminished performance, absenteeism and high turnover rates (Cordes & Dougherty, 1993; Leiter, Harvie & Frizzell, 1998).

Job Demand-Resource model (JD-R) is the most accepted theory in the study of job burnout. According to previous studies (Demerout, Bakker, Nachreiner & Schaufeli, 2001), the job characteristics related to burnout could be divided into two categories: job demands (such as role conflict and interpersonal conflict) and job resources (such as autonomy and communication). Job demands have been identified as the main cause of burnout which led to poor health and negative organisational outcomes, while job resources are the main driver of engagement, which result in well-being and positive organisational outcomes (Bakker & Demerouti, 2007; Demerouti et al. 2001).

One important job resource that renders exhaustion is autonomy. Work autonomy involves employees' freedom, flexibility, and independence (Liu & Yang, 2017). Work autonomy is defined as the degree to which employees can freely arrange work plans, make decisions, and choose methods in the process of completing assigned work tasks (Cordery, Morrison & Wright, 2010; Spiegelare et al., 2014)). Burisch (1993) pointed that lack of autonomy is a pivotal factor causing exhaustion. However, substantial autonomy at work may

cause employees to feel vague about work goals and boundaries and have a sense of "blindness" in their work which consumes too many resources and lead to job burnout (Hu & Shen, 2014).

Status conflict, as a kind of job demands, is an unavoidable phenomenon of interaction in the organisation, and it has always received high attention. Amason & Sapienza (1997) divide conflicts into two major categories: work-related conflicts and affective conflicts; affective conflicts consist of role conflict and status conflict and they are related with each other. Rustichini's (2008) research revealed that when the competition is regarded as a signal of employees' work performance and their social status, they will exert best efforts to promote their status. Status conflict is produced in the competitive process of keeping the positions and promotions (Bendersky & Hays, 2012). Halevy, Chou & Galinsky (2011) found that status means the control of organisational resources and social respect, which motivates individuals to compete for a higher position and strive to achieve it. Additionally, status conflict weakens employees' withdrawal behaviour because employees' self-protection and Chinese mentality is based on traditional Confucianism (which is characterized by humaneness, righteousness, courtesy, wisdom, and faith) (Zhou & Zhao, 2017). Considering all these reasons, the meaning to explore how status conflict affects exhaustion in organisations is vital.

After the outbreak of covid-19, most universities decide to take courses online which accentuates university teachers' techno-stress as faculty members are not so proficient in technological facilities. The concept of techno-stress was first introduced by Brod (1984, p. 553), who defined it as "a modern disease of adaptation caused by an inability to cope with new computer technologies healthily", which is characterized by techno-overload, techno-invasion, techno-insecurity, techno-uncertainty, and techno-complexity (Tarafdar et al., 2007). University teachers are negatively affected by increasingly upgraded technology since they are overwhelmed in the complicated technological facilities for a long term. Techno-stress has become a serious problem since people frequently feel frustrated and distressed in their struggle to adapt to advancing and complex technologies (Wang, Shu & Tu, 2008). Techno-complexity is related to the inability to learn or deal with the complexity of new technology in a cross-sectional study from the previous research about the impact of technostress on role stress and productivity (Tarafdar et al., 2007). University faculty

members need to develop skills adapt to the technology change when confront continuous and increasing techno-complexity, which lead them to face stressful situations and experience exhaustion. (Stephen & Timothy, 2007; Geetha Nema et al. 2010).

On the other hand, as an essential mechanism of self-regulation, self-efficacy is a kind of personal resource that is linked to resiliency and individuals' sense of controlling (Hobfoll, Johnson, Ennis & Jackson, 2003). Furthermore, self-efficacy is a self-evaluation that can predict work engagement and exhaustion (Xanthopoulou, Bakker, Demerouti & Schaufeli 2007). Moreover, Skaalvik & Skaalvik (2007) regarded university teachers' self-efficacy as their abilities to plan, organise and conduct activities to achieve given educational goals, for example, expectation of engaging students in grasping knowledge, or illustrating a formidable task to make even low-achieving students understand it. Federici & Skaalvik (2012) found that university teachers' self-efficacy was negatively related to emotional exhaustion. Employees with high self-efficacy put in more efforts and are more likely to stick to overcome obstacles or negative experiences; in contrast, employees with low self-efficacy tend to give up, believing that these difficulties only prove that they are incompetent for the job (Kreitner & Kinicki, 2004). Self-efficacy is a contributor that makes people different from others in terms of cognitive and motivational functions, which impacts individuals' behaviour in organisations (Bakker & Demerouti, 2008) and can improve employees' mental health and is positively related with stress. Makara-Studzińska, Golonka & Izydorczyk (2019) explored the moderator impact of self-efficacy between stress and burnout in firefighters and indicated that the interaction of higher level of self-efficacy and stress is significant with burnout.

Based on all these factors, this study contributes to clarifying the relationship between the predictors (autonomy, status conflict, techno-complexity) of exhaustion which is lacking in Chinese university teachers according to the J-DR model. Furthermore, we aim to explore the moderating effect of self-efficacy in predicting academics' exhaustion in this thesis. Through this study, we could improve the work environment to maintain academics' well-being and make them work efficiently and effectively.

## 1. Literature review

### Overview of Exhaustion

Exhaustion is considered as the main and significant symptom of burnout (Maslach et al., 2001); it is related two dimensions: emotional depletion and physical fatigue (Bianchi, Schonfeld & Laurent, 2015). Accordingly, Maslach et al. (Maslach, Schaufeli, & Leiter, 2001) demonstrated that when employees feel burnout, they are encountering signs of emotional exhaustion. Although teaching has been reckoned as a stressful profession (Chaplain, 2008), university teachers are exposed higher level of stress compared with elementary and middle school teachers since they should concentrate on both teaching and academic research (Houston, Meyer & Paewai, 2006; Lai et al., 2014). Research based on the JD-R model to predict primary and secondary school teachers' exhaustion has increased, showing the model applicability in school settings (e.g., Bermejo-Toro, Prieto-Ursua & Hernandez, 2016; Hakanen, Bakker & Schaufeli, 2006; Yin, Huang & Wang, 2016).

Schwarzer et al. (2000) described that exhaustion characteristics contained fatigue, debilitation, loss of energy, and tiredness. On the other hand, Taris et al. (2004) reported that the inequity experienced by teachers in three relationships (with students, colleagues, and schools) is associated with teachers' burnout, especially in terms of emotional exhaustion. According to Leiter & Maslach (2005), exhaustion could weak workers' initiative, then progressively limit their competence for demanding jobs. Additionally, Vardi indicated that university teachers face the increasing stress because of high demands of academic teaching, research duties and administration (Vardi, 2009). Similarly, a study of primary and secondary teachers in Hong Kong revealed that emotional exhaustion predicted teachers' intentions of leaving the profession (Leung & Lee, 2006). The symptoms associated to are various, e.g., they often feel mentally and emotionally exhausted when dealing with students' misbehaviour which reduces teaching quality and school performance (Chang & Davis, 2009).

Specifically, university teachers from different countries would have diverse stressors and influence factors since they have distinct cultural traditions (e.g., life behaviour, adaptation to new standards of life), policies (e.g., government regulations versus autonomy, educational system), and economic conditions (e.g., personal wealth, average salary). For example, in

China, the increasing expansion of higher education has widely led to some problems, such as deteriorating teaching conditions and a decrease of teaching quality (Yin, Lu & Wang, 2014). Additionally, Chinese university teachers have suffered from not only the teaching workload but also the transformation of pedagogy and teaching practices owing to the education system transformed from teacher-centered approach to student-centered approach (Han, Yin, Wang & Zhang, 2019). Teaching and research conflict, both in China and western countries, causes tension among university teachers (Kinchin & Hay, 2007; Lai, Du & Li, 2014). Previous studies have indicated that faculty members confront extremely stress from work as consequence of different reasons, such as getting research projects and high level's role conflict between academic research and teaching (Winefield et al., 2003; Winefield, Boyd, Saebel & Pignata, 2008). Maslach (2001) stated that western European teachers appear to have lower level of exhaustion, while eastern European and Asian teachers have significantly higher level of exhaustion. Based on these different sources, it is possible to conclude that university teachers confront distinctive challenges and exhaustion levels.

### **Autonomy and Exhaustion**

Autonomy is one of the job resources that helps to reduce exhaustion syndrome (Ahuja et al., 2002). Some university teachers have dilemma about the contents and methods of their teaching; consequently, they do not have enough control and autonomy about their work. Spiegelaere et al. (2014) proposed that work autonomy is a significant indicator to weigh work characteristics as well as the autonomous power for employees to dispose tasks independently and distribute their work flexibly. On the other hand, Luo (2016) suggested that with work autonomy, individuals can plan, monitor, provide feedback, and evaluate work under internal drive. The JDR model, mentioned in Introduction, reveals that autonomy as the psychological motivation process have an impact on employees' job burnout. Ahuja, Chudoba, George, Kacmar & Mcknight (2002) found that work autonomy is negatively correlated with emotional exhaustion when studying whether work autonomy as a predictor and emotional exhaustion as a mediator to influence resignation intention. Fernet, Austin, Trépanier & Dussault (2013) also revealed that autonomy as a psychological resource could obstruct job burnout.

Moreover, it can also be considered that individuals with lower work autonomy will have a higher level of emotional exhaustion. In the research of commercial bank employees' burnout, Fan (2011) revealed that job autonomy had a significant negative effect on emotional exhaustion, that is, low job autonomy would lead to higher exhaustion. Additionally, doctors whose independent work requirements are met are less likely to suffer from exhaustion (Liu, Ji & Wang, 2012). However, some research results are inconsistent with former research conclusion. Kim (2008) proposed that the job autonomy of social service workers does not have a significant effect on exhaustion, but the interaction between work autonomy and role pressure can significantly predict exhaustion. These results suggest that autonomy could be a moderator to predict exhaustion.

From the previous research about university teachers, work autonomy plays a significant role in teachers' motivation as well as the experience of stress and burnout (Pearson & Moomaw, 2006). Furthermore, research also showed that the autonomy of elementary and middle school teachers was negatively but slightly associated with emotional exhaustion (Skaalvik & Skaalvik, 2010). In our knowledge, there is rare studies (Pearson & Moomaw, 2006; Skaalvik & Skaalvik, 2010) about the relationship between autonomy and exhaustion of university teachers and we suppose that university teachers' autonomy, as a kind of motivation process, has a direct impact on emotional exhaustion. Based on this theoretical rationale and the available empirical evidence, we propose the following hypothesis:

H1: Autonomy is negatively related to exhaustion.

### **Status Conflict and Exhaustion**

Another predictor of exhaustion is status conflict. From previous scholars, role conflict, work-family conflict is known as stress factors (Addae, Parbooteah & Velinor, 2008). Bendersky & Hays (2012) made a clear distinction between status conflict and other types of conflicts, and formally proposed the concept of status conflict as caused by the relative position change on the social hierarchy. Additionally, it is regarded as attempts to defend or elevate one's relative status (i.e., prominence or respect) which is a key group process that affects team performance (Anderson et al., 2006; Ridgeway & Correll, 2006). Therefore, the status conflict has a long-term nature, involving more members, will lead to more competitive

behaviour. It exists with the social hierarchy of the organisation and has the following characteristics: (1) Long-term impact (the dominance and compliance model established in status conflict will continue, making it with a longer impact than other types of conflict); (2) zero-sum (status is a fixed social resource, which makes status conflict has a zero-sum characteristic, which means that improving one's status in a team will inevitably reduce the status of others) (Bendersky & Hays, 2012).

At present, status conflict is still in the exploratory stage and most studies take it as an independent variable and focus on its impact on team effectiveness. For example, Bendersky & Hays (2012) found that status conflict can negatively affect team effectiveness by disrupting information sharing process, being harmful to team performance. On the other side, Chang (2018) proposed that it contributes to team creativity through its impact on intrinsic motivation. Furthermore, people engage in status conflict to gain or maintain their status position regardless of the quality of their interpersonal relationship with the other members of the team (Sutton & Hargadon 1996; Glynn, 2000).

Status conflict as a kind of affective conflict can produce suspicion, distrust, and hostility among the team (Amason & Sapienza, 1997). Previous studies have revealed that role conflict, a kind of job demands, has a direct influence on burnout, particularly on emotional exhaustion (Halbesleben & Buckley, 2004; Crawford, LePine & Rich, 2010). Interpersonal conflicts increase largely when a discrepancy is perceived between expectations and the achievement because of the status conflict and power ambiguity (Beehr & Glazer, 2005).

Additionally, owing to lower social and economic status, individuals are subject to more numerous and severe stressors compared with the higher status counterparts (Pearlin, 1999; Thoits, 2010; Pearlin & Bierman, 2013). Furthermore, similar situation has been discerned at workplace, employees with lower occupational status are exposed to more arduous workload in comparison with those of higher status (Karasek, 1979; Karasek & Theorell, 1990). Recent studies about the “stress of higher status” revealed that staffs with higher status are widely insulated from workplace stress but are easily vulnerable to some chronic stressors because of lack of job-related resources (Schieman et al., 2006; Schieman & Reid, 2009; Damaske et al., 2016). Shah, Ali & Khan (2012) pointed that the Pakistani teachers are always disappointed with their status. Another research illustrated that university teachers with high-quality skills

but inappropriate status could undertake the risk of work stress and wreck their efforts to exchange information and reach a consensus on controversial issue (Danish et al., 2019). Obviously, these studies provided vital insights for understanding how status conflict elicits job stress and burnout. Although most of the present research was designed to study the association between status conflict and exhaustion among general employees, we may also expect to have a similar influence on university teachers and it could serve as a reflection to understand the situation on university teachers. Therefore, we set the following hypothesis:

H2: Status conflict positively predicts employees' exhaustion.

### **Techno-complexity and Exhaustion**

The other relevant stressor that we would like to discuss is techno-complexity. As before mentioned there are five key techno-stress in organisations (techno-overload, techno-invasion, techno-insecurity, techno-uncertainty, and techno-complexity). Techno-stress is a phenomenon when exploring how and why information and computer technologies (ICTs) lead to various demands on employees (Tarafdar et al., 2017, p. 2). ICTs enable teachers to work conveniently and upgrade teaching approach flexibly (Jena, 2015; Qi, 2019) but also show challenges to teachers' well-being and job performance (Ayyagari et al., 2011). Techno-stress is the in-adaptability of psychological and physiological changes incurred by modern ICTs (Maier et al., 2015).

The practice of distance teaching, away from the conventional classroom teaching, has become a ubiquitous and fast-changing phenomenon (Eurofound and the International Labour Office, 2017). However, it also exerts stress on university teachers who are not technology-savvy. Employees with less technical skills do feel anxious and stressed than those with more competence when dealing with techno-complexity issues (Tu, Wang & Shu, 2005). Employees feel stressed and develop an aversion to using the new application which in turn exposes them to pressure and makes them exhausted as result of a complicated system (e.g., new innovation associated with online meetings and courses) (Bradley, 2000; Tarafdar et al., 2010). Roman, Christian & Bettina (2013) pointed out that the pressure of information technology can cause fatigue and depression in the body. The empirical analysis of 306 employees' survey indicated that information technology pressure could increase job burnout

(Maier, 2015). The continuity of techno-stress can cause burnout symptoms as exhaustion and fatigue (Salanova et al., 2014; Korunka & Vartiainen, 2017, p. 110).

University teachers have typically two activities: research and teaching. Majumder (2015) mentioned that people consider academic research is a comfortable and stress-free activity, while the research findings revealed that university teachers with research duties are overwhelmed with high job stress and exhaustion. Many university teachers are subject to expectation of grasping complicated software systems efficiently to adapt to ever-demanding requirements for teaching, which rendered technological exhaustion and fear (Sami & Pangannian, 2006). ICTs provide facilities and pedagogical tool in education; however, university teachers are exposed to techno-stress when integrating new digital technologies (Lei & Zhao, 2007; Lei, 2010). However, the direct linkage between techno-complexity and exhaustion is rare and unclear (Berg-Beckhoff et al., 2018). Furthermore, information technology (IT) languages are changing dramatically and are introduced to the workplace frequently, and those technologies are becoming ever-increasingly sophisticated (Fisher & Wesolkowski, 1999). Consequently, misfits between technology skills and high requirements could have a negative influence on teachers' work and result in exhaustion and absenteeism (Al-Fudail and Mellar, 2008; Tarafdar et al., 2015; Pignata et al., 2016). Thus, we found that it is meaningful to conduct the research about the relationship between techno-complexity and exhaustion, especially collecting the data during the covid-19 period. Therefore, we propose the third hypothesis:

H3: Techno-complexity positively predicts exhaustion.

### **Self-efficacy as a Moderator**

Self-efficacy is a personal resource and is defined as “the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations” (Bandura, 1995, p. 2). Self-efficacy affects one's goals and behaviours and enables people to carry out a certain activity and achieve success (Schunk & Meece, 2006). McDonald & Siegall (1992) pointed out that efficacious employees focused on work and produced higher quality and quantity work. From previous studies, self-efficacy is directly correlated with burnout in several meta-analyses (Aloe, Amo & Sanan, 2014). Research showed that more

self-efficacy could contribute to cognitive engagement and employees' performance (Lent, Schmidt & Schmidt, 2006; Walker, Greene & Mansell, 2006), and decrease emotional exhaustion (Grau et al., 2001). Similarly, Siu, Lu & Spector, (2007) demonstrated that both high and low general self-efficacy has a moderating effect on the relationship between stressors and mental and suggested that respondents with both levels of self-efficacy reported worse mental well-being as level of perceived stressors increased, with the effect being stronger for those with low level self-efficacy in Chinese society.

It is revealed that self-efficacy, as a moderator, has an influence on predicting exhaustion. Self-efficacy can impact the degree to which employees overcome the trouble and solve problematic situations (Jex et al., 2001), then it is considered as a moderator of stressor-strain relationships (Bandura & Locke, 2003). A recent study turned out that higher level self-efficacy to be an important moderator of the relationship between classroom-level disruptive behaviour and emotional exhaustion, which is in accordance with research carried out in general education studies (Hopman et al., 2018). On the other hand, Schmitt et al (Schmitt, Rosing, Zhang & Leatherbee, 2018) revealed that self-efficacy has a moderate impact on entrepreneurial and business opportunities, i.e., entrepreneurs with low self-efficacy may lack confidence in coping with the challenges of increasing uncertainty, so it is more likely to avoid or decrease exploration under uncertain circumstances.

On the other hand, when facing a low degree of autonomy, employees with a high level of self-efficacy may gain greater motivation following different procedures by reducing frustration and pain, while employees with low self-efficacy doubt their ability to remedy a trouble situation and may therefore feel helpless, depressed, and other forms of psychological and physical strains (Jerusalem & Schwarzer, 1992). The employees with high self-efficacy in their ability could handle responsibilities without undergoing greater strains and fatigue. A cross-national examination among US and Chinese university employees, including faculty members, clerical and administrative positions revealed that self-efficacy served as a buffer when test the relationship between job autonomy and psychological and physical strains (Nauta, Liu & Li, 2010). Thus, we suppose that the interaction effect between autonomy and self-efficacy in predicting emotional exhaustion. Therefore, we set the hypothesis as below:

H4: Self-efficacy moderates the relation between autonomy and exhaustion. Especially, it

is expected that self-efficacy moderates the negative impacts of autonomy in exhaustion.

Being a personal resource, self-efficacy affects human behaviour in several research areas, such as psychology (Linde, Rothman, Baldwin & Jeffery, 2006), personality (Miller, Pilkonis & Clifton, 2005) and work psychology (Bakker & Demerouti, 2008). The presence of self-efficacy may partially impact the relationship between status conflict and exhaustion although the research has not emerged as a focal topic in the extant conflict literature. Furthermore, related research suggests that people with high self-efficacy could solve the problematic situation efficiently and ease the exhaustion caused by the status contests (Bandura, 1997). Similarly, Rubio et al. (2015) analyzed the relationship between work-family conflict and emotional exhaustion and shed light on the moderator effect of self-efficacy between them in a study about military soldiers. Unfortunately, the discussion of intervention and moderator effect of self-efficacy about the relationship between status conflict and exhaustion are absent or rare in literature. Among the previous research, findings regarding the stress-buffering effect of self-efficacy are served as leverage that individuals copy with challenging situation will depend on. Thus, we introduced the self-efficacy as an intervention to buffer the positive effects of status conflict on university teachers' exhaustion. Accordingly, our hypothesis is as below:

H5: Self-efficacy moderates the relationship between status conflict and exhaustion and we suppose that self-efficacy moderates the positive relationship of status conflict in exhaustion.

Self-efficacy is related to Bandura's social learning theory (Shu et al., 2011), which is positively associated to individual's physical and mental health (Lunenborg, 2011) but negatively correlated with vital exhaustion, depression and anxiety (Romppel et al., 2013, p. 5). Shu, Tu & Wang (2011) mentioned that self-efficacy impacts employees' pressure on information technology, and the pressures are different because of organisational environment changes. A recent study about information technology demonstrated that self-efficacy could mitigate the harms of techno-stress and burnout (Yener, Arslan & Kiliç, 2020). Additionally, research related to the double-edged effect of mobile devices on students' academic shows that both levels of mobile technology self-efficacy could moderate the impact of mobile devices' academic usage on techno-stress (Qi, 2019). As stated before, self-efficacy is one

different individual variable that theoretically as a buffer to prevents pressure (Bandura, 1997). Techno-complexity ought to be regarded as a particular threat to individuals' mental health and well-being (Nimrod, 2018), therefore, in the workplace could have the potential to create pressure and lead to tiredness and fatigue. Therefore, we expect that high self-efficacy could serve as a buffer against high techno-complexity on exhaustion. The lack of research about self-efficacy as a moderator when discussing the relationship between techno-complexity and exhaustion also calls for new theoretical models. Thus, the hypothesis is following:

H6: Self-efficacy moderates the relationship between techno-complexity and exhaustion such that the effect of techno-complexity on exhaustion will be reduced for employees who have higher self-efficacy rather than those who have lower self-efficacy.

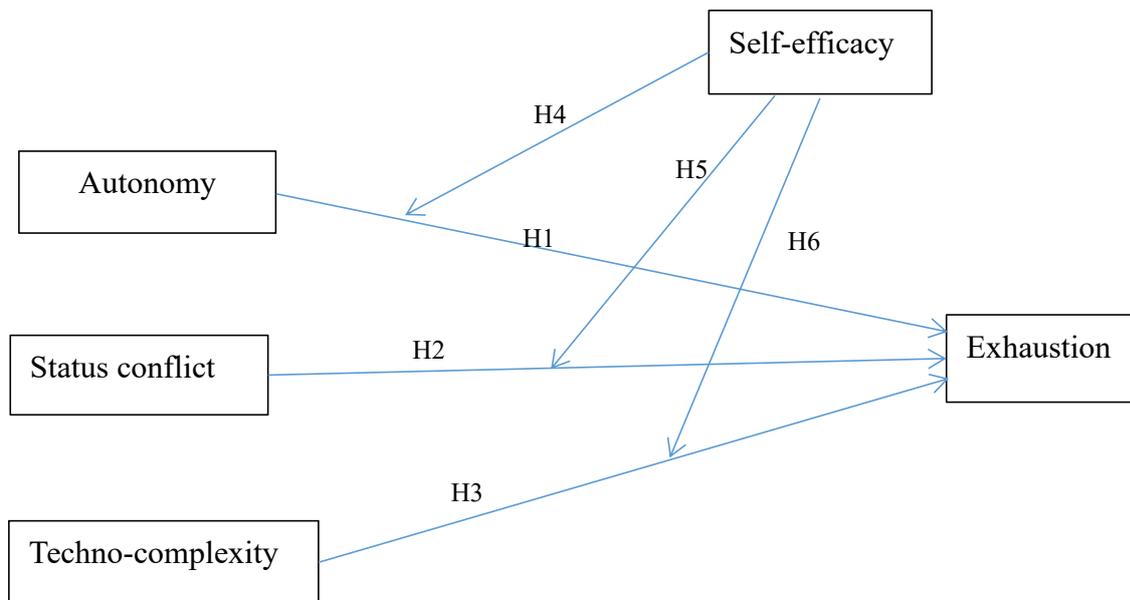


Figure 1.1. Research model proposed in this thesis



## 2. Methods

### Participants

The study was carried out with 172 Chinese university teachers from 10 central provinces. The sociodemographic detail of the sample is in Table 2.1, but its most important characteristics are described in the following text. The gender was mainly male (62.2% as compared to 37.8% female gender). The ages range from 26 to 60 years old, and the majority was between 41-50 years old (32.6%). The distribution of seniority was split into 6 groups with the range of 5 years and years of teaching less than 10 years accounts for 36%. On the other hand, the education level was: 12.2% with a bachelor's degree, 48.3% with a master's degree, 38.9% with a doctoral degree, and other cases were about 0.6%. Of the Chinese university teachers, 36.6% were lecturer without PhD degree, 39.0 % were associate professors, and 24.4% were professors. Concerning the job function, 30.8% of the participants only played the role of teaching, 51.8% of teachers took the responsibility of teaching and research, and 17.4% held academic and administrative positions. Besides, most of them (66.3%) were from the engineering field. In terms of marital status, married people were over-represented (86.6%). When taking financial status into account, 65.7% experienced or ever experienced a financial pressure and 34.3% never experienced before.

Table 2.1. Sociodemographic characterisation of the sample

Variables	Answers	Frequency
Sex	Male	62.2%
	Female	37.8%
Age	26-30 Years Old	9.3%
	31-35 Years Old	18.0%
	36-40 Years Old	13.9%
	41-45 Years Old	15.7%
	46-50 Years Old	16.9%
	51-55 Years Old	12.8%
Seniority (years of teaching)	55-60 Years Old	13.4%
	1-5	26.2%
	6-10	10.5%
	11-15	16.3%
	16-20	11.6%
	21-25	13.9%

	Over 26	21.5%
Educational Level	Bachelor's degree	12.2%
	Master's degree	48.3%
	Doctoral degree	38.9%
	Others	0.6%
Title*	Lecturer	36.6%
	Associate professor	39.0%
	Professor	24.4%
Job Function	Teaching	30.8%
	Teaching and Research	51.8%
	Academic and administration	17.4%
Academic discipline	Art	18.6%
	Science	15.1%
	Engineering	66.3%
Marital status	Married	86.6%
	Single	11.6%
	Other	1.8%
Financial status**	Yes	65.7%
	No	34.3%

\* We use the title standard of research and teaching career pathway at the University of Oxford.

\*\* Financial status means the academics are confront with different financial loans (mortgage loan, installment payment for the house and car, banking loans) which are main source of financial pressure for Chinese employees.

## Procedure

Data were collected from August to September in 2020. With the help of Professor Sílvia da Silva and Professor Shaozhuang Ma, the English version of the questionnaire was translated into Chinese and “back-translation” method was used to validate the translation (Brislin, 1970). The survey was anonymous and only used for this research which ensured the confidentiality of participants' information and encouraged the subjects to answer the questionnaires. Chinese university teachers were invited to participate in this questionnaire through Wechat (a high-profile Chinese social network) or email using a non-probabilistic sampling strategy (mainly convenience sampling and snowball sampling). The questionnaire was distributed on the platform Questionnaire Star which is a special website for collecting questionnaire. In total, 172 responses were gathered, and all answers were completed well.

In this study, we use IBM SPSS Statistics software (Version 20) to do the analysis. Firstly,

the data were analysed for reliability which was used to test whether the results were consistent and stable. Cronbach coefficient was usually used to measure. Secondly, we analysed the mean, standard deviation, and correlations of each variable. Then, control variables such as age, gender, seniority, and financial status were selected for analysis to test whether they had effects on exhaustion. To test the hypotheses, the simple linear regression analysis was used between predictors (autonomy, status conflict and techno-complexity) and exhaustion. As for testing the moderator of self-efficacy, we centered the independent variable and moderator variable and then ran the hierarchical linear regression analysis (Aiken, West & Reno, 1991; Field, 2009). Additionally, Process Macro was also conducted to examine the interaction terms to test the self-efficacy as a moderator among variables in Figure 1.

## Measures

The analyses of the variables are described below:

**Exhaustion.** We use a sub-scale from the Burnout Assessment Tool (BAT), which was researched by KU Leuven associated with Schaufeli (Schaufeli, De Witte & Desart, 2019; Hadžibajramović, Schaufeli & De Witte, 2020) to assess emotional exhaustion. This scale has been widely used in the last 3 years and is showing very good quality proprieties. Exhaustion included eight items (e.g., "At the end of my working day, I feel mentally exhausted and drained"). All things were pointed on a five-point scale (1=Never to 5=Always). The Cronbach's alpha was .93, which indicates that the measure is reliable.

**Autonomy.** Breugh's Scale (Breugh, 1999) was used to assess the university teachers' autonomy. Eight items assessed autonomy (e.g., "My job allows me to modify the normal way we are evaluated so that I can emphasize some aspects of my job and play down others"). Each item was rated on a scale ranging from 1 (Strongly disagree) to 7 (Strongly agree) to indicate job autonomy's latent construct. The Cronbach's alpha was .93, which implicates that the measure is reliable.

**Status conflict.** Bendersky & Hays scale (Bendersky & Hays, 2012) was used to measure status conflict. There are four items (e.g., "My team members experienced conflicts due to members trying to assert their dominance") in this scale. Each item ranges from 1 (Strongly disagree) to 7 (Strongly agree). The Cronbach's alpha was .89, which indicates that the

measure is reliable.

**Techno-complexity.** The study used the instrument provided by Ragu-Nathan et al. (2008) to measure the variable techno-complexity. The techno-complexity dimension sub-scale was assessed with five items (e.g., "I often find it too complex for me to understand and use new technologies") and the items were measured on a seven-point Likert scale anchored with "strongly disagree" to "strongly agree". The Cronbach's alpha was .83, which also means that the measure is reliable.

**Self-efficacy.** Self-efficacy scale (Bandura,1977) was used, which is an 8-item and each one with 7 points Likert-format instruments to measure. An example of an item is, "I feel I am overqualified for the job I will be doing". All questiones were scored on a seven-point scale (1=strongly disagree, 7=strongly agree). The scale has been validated in previous studies (Kim, 1997). The Cronbach's alpha was .89, which indicates that the measure is reliable.

**Control variables.** In this study, we should consider the effect of sociodemographic variables on exhaustion. Previous studies reported gender, age, education level and seniority to be related to exhaustion symptom (Hill et. al., 2008; Rashkovits & Livne, 2013; Domínguez Alonso, López Castedo & Iglesias Vaqueiro, 2017). Nevertheless, after analysing the three variables, we found that these variables (gender, age, educational level, seniority) were not significantly associated to exhaustion in our study. Even though we did not find any research showing that there is a possible relationship between financial status and exhaustion, financial status was found to be significantly correlated to exhaustion. Therefore, we choose financial status as a control variable in the following analysis.

### 3. Results

For all the studied variables, means, standard deviations and correlations are shown in Table 3.1. One can see that autonomy is negatively associated with exhaustion ( $r = -.24$ ,  $p < .05$ ). In terms of status conflict and techno-complexity, they are both positively associated with exhaustion ( $r = .29$ ,  $p < .001$ ;  $r = .51$ ,  $p < .001$ ). The results also reveal that self-efficacy is significantly and positively associated with autonomy ( $r = .58$ ,  $p < .001$ ) and status conflict ( $r = .32$ ,  $p < .001$ ). The control variable financial status has correlations with dependent variable exhaustion ( $r = -.18$ ,  $p < .001$ ).

Table 3.1. Means, standard deviations and correlations between the variables (N=172)

Variable	Mean	Std. Dev.	1	2	3	4	5
1. Self-efficacy	4.98	0.93					
2. Autonomy	4.30	1.27	.58**				
3. Status conflict	4.07	1.28	.32**	.23**			
4. Techno-complexity	3.94	1.14	.058	.038	.36**		
5. Exhaustion	2.86	0.67	-.04	-.24**	.29**	.51**	
6. Financial status	1.34	0.48	.016	.04	-.08	.03	-.18*

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

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

#### Test of Hypothesis

The hypotheses were tested through conducting hierarchical linear regression analysis (Baron & Kenny, 1986; Raudenbush & Bryk, 2002). For testing H1 and H4, hierarchical multiple regressions were conducted, and the control variable financial status was inserted in the model at step 1; then, in step 2, we entered autonomy as the predictor of our model; in step 3, self-efficacy was inserted as the moderator variable; finally, in step 4, the interaction term between autonomy and self-efficacy was placed

into the regression model. Before calculating the interaction term, we centered the independent variables (e.g., autonomy, status conflict and techno-complexity) and moderator (self-efficacy) variables, as indicated by Aiken and West (1991). Therefore, the results provided on Table 3.2 for variables were obtained after centering them. In order to both better interpret and test hypotheses, the macro was also conducted to create the moderation plot. The simple slope test (see Figure 3.1) as a conventional procedure was conducted above and below the mean of one standard deviation about the self-efficacy variable and the Process Macro was adopted to ascertain the results.

Table 3.2. Hierarchical multiple regression for self-efficacy as a moderator and autonomy in predicting exhaustion

	Exhaustion							
	Step 1		Step 2		Step 3		Step 4	
	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t
Financial status	-.26*	-2.40	-.25*	-2.36	-.25*	-2.37	-.28**	-2.82
Autonomy (AT)			-.13**	-3.13	-.17**	-3.45	-.13**	-2.84
Self-efficacy (SE)					.09	1.53	-.03	-.38
AT*SE							-.12***	-4.44
$\Delta R^2$	.03		.08		.08		.17	

Notes: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

According to the Table 3.2, the results revealed that autonomy was negatively associated with exhaustion after controlling for financial status ( $\beta = -.13$ ,  $p < .01$ ). Therefore, the H1 was confirmed. The interaction between autonomy and self-efficacy is significant ( $\beta = -.12$ ,  $p < .001$ ). Additionally, the result was also supported by the Process Macro (Hays, 2012) when controlling for the financial status

( $t=-4.44$ ,  $p<.001$ ). The interaction term was statistically significant in the model, indicating that self-efficacy was a significant moderator of the effect of the autonomy on exhaustion. From Figure 3.1, the simple slope test result indicated that the interaction between autonomy and higher-level self-efficacy explained a significant amount of variance in exhaustion (simple slope=.93,  $t=-4.98$ ,  $p<.001$ ). The results also revealed that the slope was not significant for people perceiving lower self-efficacy (simple slope=-.93,  $t=-.35$ ,  $p=.725$ ). Overall, the model explains 17% of Chinese university teachers' exhaustion variance ( $\Delta R^2=.17$ ;  $p<.001$ ). Thus, the H4 was also supported, which indicated that self-efficacy could moderator the relationship between autonomy and exhaustion.

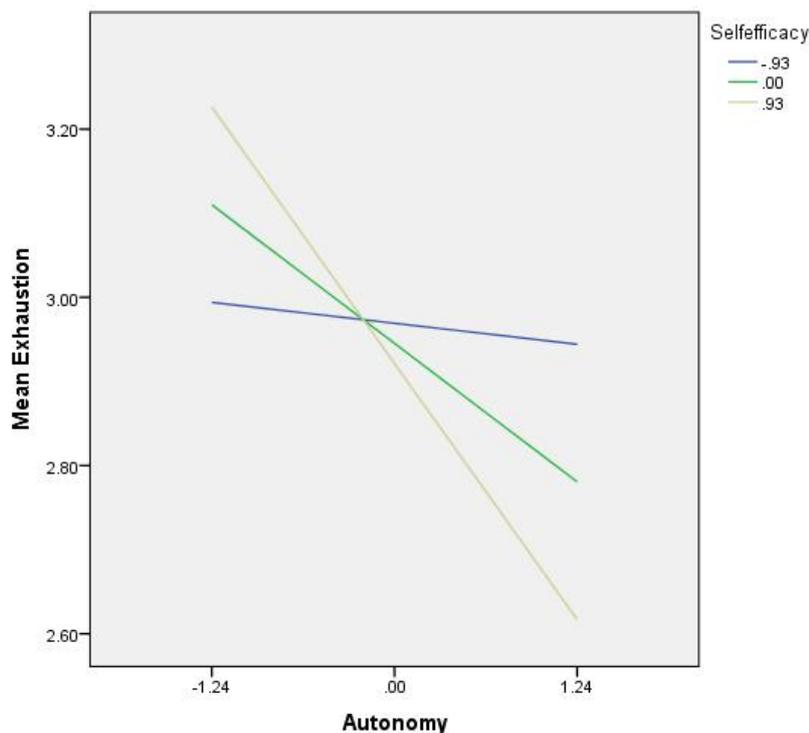


Figure 3.1. Interaction of autonomy and self-efficacy in predicting exhaustion

To test H2 and H5, we continued to conduct hierarchical multiple regression. In step 1, control variable (financial status) was inserted. Then, status conflict was inserted in step 2. Additionally, we insert self-efficacy in the model in step 3. At the end, the interaction term between status conflict and self-efficacy was inserted in the last step. Results are shown in Table 3.3 and Figure 3.2 (simple slope test).

Table 3.3. Hierarchical multiple regression for self-efficacy as a moderator and status conflict in predicting exhaustion

	Exhaustion							
	Step 1		Step 2		Step 3		Step 4	
	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t
Financial status	-.26*	-2.40	-.23*	-2.20	-.22*	-2.14	-.24*	-2.51
Status Conflict (SC)			.14***	3.76	.17***	4.20	.19***	4.97
Self-efficacy (SE)					-.11	-1.91	-.18**	-3.27
SC*SE							-.13***	-4.65
$\Delta R^2$	.03		.10		.11		.21	

Notes: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

According to the results, status conflict was significantly related to exhaustion after controlling for financial status ( $\beta = .14$ ,  $p < .001$ ). Thus, the H2 was confirmed. The interaction between status conflict and self-efficacy is significant ( $\beta = -.13$ ,  $p < .001$ ). Additionally, the result was also supported by the Process Macro (Hays, 2012) when controlling for the financial status ( $t = -4.65$ ,  $p < .001$ ). Here, we see the interaction term was statistically significant in the model, consistent with the hypothesis that the self-efficacy would moderate the effect of status conflict on exhaustion. The results from the simple slope test revealed that interaction between status conflict and higher self-efficacy and exhaustion was not significant (simple slope = .93,  $t = 1.69$ ,  $p = .093$ ). However, with lower self-efficacy, the results revealed that the relation was significant (simple slope = -.93,  $t = 6.37$ ,  $p < .001$ ). The model explains approximately 21% of Chinese university professor's exhaustion variance ( $\Delta R^2 = .21$ ;  $p < .001$ ).

## Predictors of exhaustion in Chinese University teachers

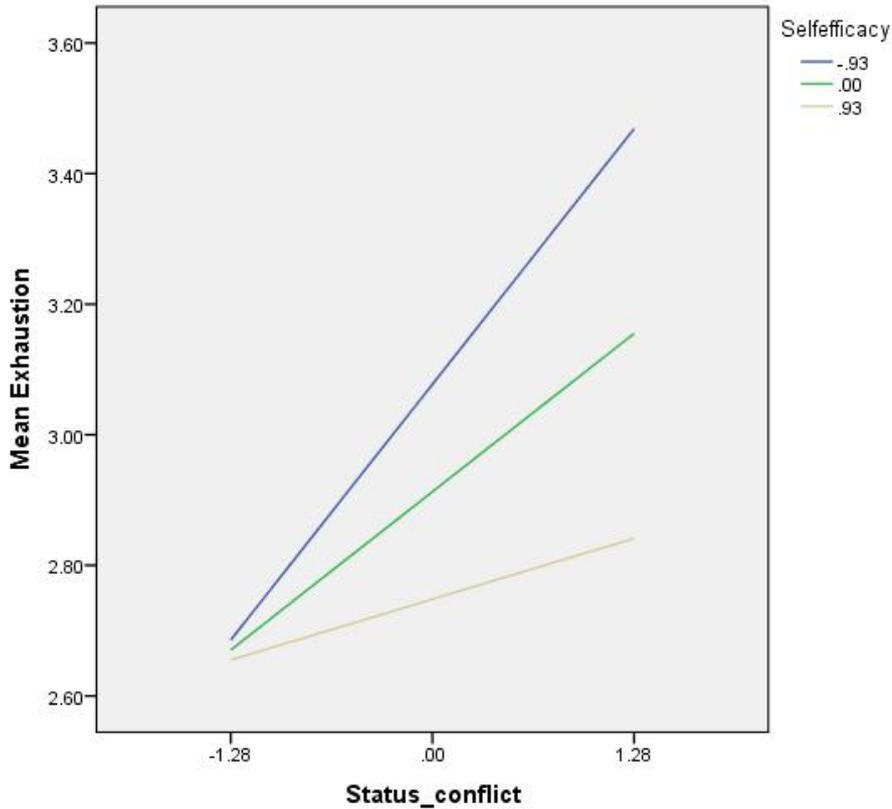


Figure 3.2. Interaction of status conflict and self-efficacy in predicting exhaustion

To test H3 and H6, we also conducted hierarchical multiple regression. In step 1, control variable (financial status) was inserted. Then, techno-complexity was inserted in step 2. Additionally, we insert self-efficacy in the model in step 3. At the end, the interaction between techno-complexity and self-efficacy was inserted in the last step. Additionally, the Process Macro was conducted to assure the results. Results are shown in Table 3.4 and Figure 3.3 (simple slope test).

Table 3.4. Hierarchical multiple regression for self-efficacy as a moderator and techno-complexity in predicting exhaustion

	Exhaustion							
	Step 1		Step 2		Step 3		Step 4	
	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t
Financial status	-.26*	-2.40	-.28**	-3.02	-.27**	-3.00	-.28**	-3.06
Techno-complexity (TC)			0.30***	7.91	.30***	7.97	.30***	8.03
Self-efficacy (SE)					-.05	-1.10	-.08	-1.72
TC*SE							-.06*	-2.07
$\Delta R^2$	.03		.29		.29		.30	

Notes: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

Techno-complexity was positively associated with exhaustion ( $\beta = .30$ ,  $p < .001$ ). Thus, H3 was confirmed. We can also find that the interaction between techno-complexity and self-efficacy significantly predict exhaustion ( $\beta = -.06$ ,  $p < .05$ ). Therefore, H6 was also supported. The model explains 30% of Chinese university professors' exhaustion variance ( $\Delta R^2 = .30$ ;  $p < .05$ ). Furthermore, the result was also supported by the Process Macro (Hays, 2012) when controlling for the financial status ( $t = -2.07$ ,  $p < .05$ ). Here, from Figure 3.3, according to the simple slope test the results revealed that the interaction term (techno-complexity and self-efficacy) and exhaustion was statistically significant in the model for all the moderator levels (simple slope = .93,  $t = 5.486$ ,  $p < .001$  and simple slope = -.93,  $t = 7.837$ ,  $p < .001$ ).

Predictors of exhaustion in Chinese University teachers

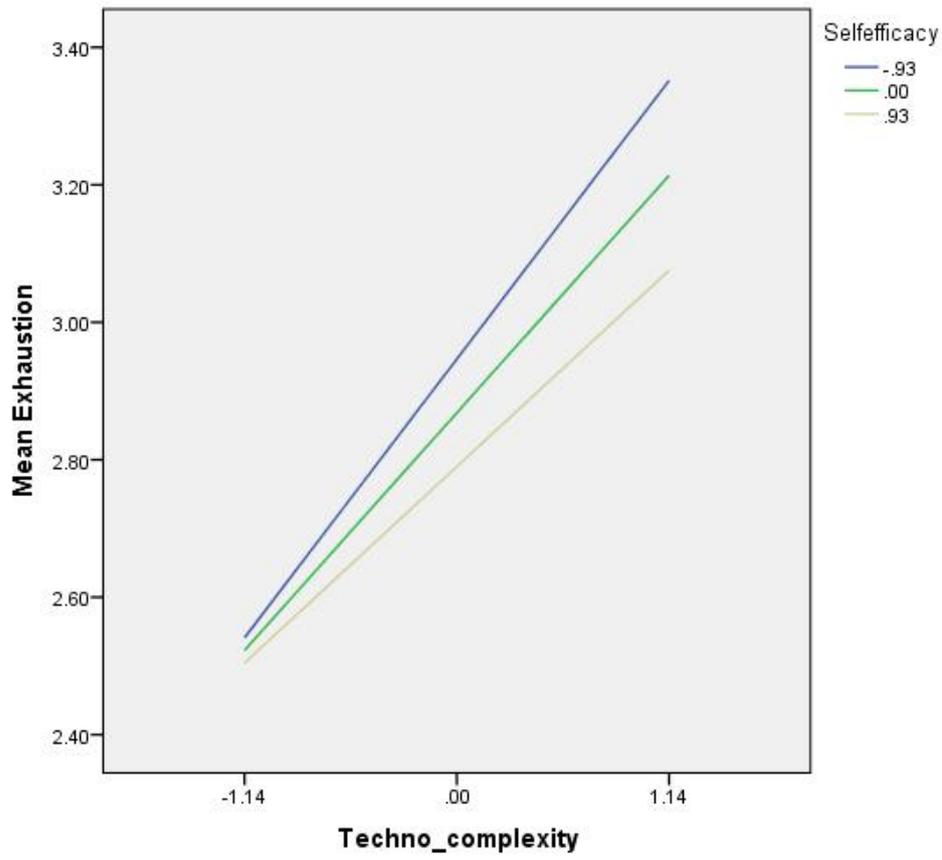


Figure 3.3. Interaction of techno-complexity and self-efficacy in predicting exhaustion



## 4. Discussion

### Summary of findings

The aim of this research was to investigate whether autonomy, status conflict, techno-complexity could predict exhaustion in a sample of Chinese university teachers. Based on Results, it is possible to conclude that autonomy as a job resource was negatively related with exhaustion, however, status conflict and techno-complexity as sources of stress both have positive relationship with emotional exhaustion. Furthermore, we examined a personal resource (self-efficacy) could buffer, as a moderator, the relationship between independent variables (autonomy, status conflict and techno-complexity) and dependent variable (exhaustion).

The results support some of our hypothesis research model. First, we found perceptions of autonomy have a negative correlation with emotional exhaustion (see Figure 3.1). Therefore, it is plausible to conclude that when academics have less autonomy on their work, they experience more exhaustion. Additionally, we found the positive relationship between status conflict and exhaustion, which could provide us deeper perspective on decreasing Chinese university teachers' exhaustion through manage the status conflict in the team. It was found that techno-complexity has a positive correlation with exhaustion. In line with the proposition, our research results were consistent with prior studies indicating that job demands, such as techno-stress, imposed strain to academics and lead to exhaustion as showed in the JD-R model through the health impairment process (Demerout, Bakker, Nachreiner & Schaufeli, 2001; Bakker, Demerouti & Sanz-Vergel, 2014; Bakker & Demerouti, 2017). In this research, our findings show that the interaction term between techno-complexity and any level of self-efficacy had a significant association with exhaustion (see Figure 3.3). However, simple slopes test indicated that the interaction terms of autonomy and self-efficacy is not significant for exhaustion. That is when faculty members experienced higher self-efficacy the relationship between autonomy and exhaustion was stronger (see Figure 3.1). The similar situation can also apply to the interaction terms of status conflict and self-efficacy. From the figure of simple slope test (see

Figure 3.2), with lower self-efficacy there is a stronger association between status conflict and exhaustion.

Additionally, there is a significantly negative relationship between job autonomy and exhaustion. According to the results, faculty members who reported to have more freedom and authority in teaching experience less sense of exhaustion. Besides, this study revealed that low job autonomy resulted in feeling of exhaustion. Fernet et al. (2012) suggested that autonomy-supportive conditions allow academics to flexibly choose and decide about their works and develop a significant rationale career development. Thus, the efforts to improve academics' autonomy is one of the main aspects to develop flexible teaching and reduce exhaustion. Self-efficacy could serve as a moderator that increases the positive effects of autonomy on emotional exhaustion. Additionally, it may be a risk for Chinese university teachers with low autonomy and low self-efficacy since academics doubt their ability to implement the tasks and challenges. Thus, these results are in line with cognitive appraisal theories' idea (e.g., Lazarus & Folkman, 1984) that self-efficacy as a moderator against strains and (Nauta, Liu & Li, 2010) found that self-efficacy was a moderator between the relationship of autonomy, and psychological and physical strains among Chinese employees. We propose that academics with high self-efficacy and autonomy have more confidence about their work and skills to take on the challenges, which contribute to reduce the symptom of exhaustion.

In this study, we found that there is a positive and significant relationship between these two variables, which indicates that status conflict as a source of stress affects faculty members' exhaustion. When university teachers are struggling with status conflict among team members, they are more vulnerable to experience feelings of exhaustion. Until now, studies mostly concentrate on antecedents of status conflict and outcomes of team performance (Anderson et al., 2006). However, extant research has ignored the exploration the effect of status conflict on individuals' health and well-being. The results indicated that status conflict is an unavoidable phenomenon in the organisation because status competition is high as consequence of performance evaluation and assessment for attaining a high rank in career development. This

makes status conflict often occurs at workplace ( Bendersky & Hays, 2012). The consecutive extreme competition and performance appraisal make the academics face pressure and lead to exhaustion. Skaalvik & Skaalvik (2007) indicated a significant relationship between self-efficacy and exhaustion in the sample of Norwegian teachers. From the simple slope test (see Figure 3.2), the interaction of lower self-efficacy and status conflict is significant for exhaustion. For the reason, previous research found that status means power for controlling of financial resources (including assessment for them) and attaining social respect (Halevy, Chou & Galinsky, 2011). Consequently, it will motivate team members strive to achieve it; however, the competition and motivation process damage the interpersonal relationship and elicit the symptom of exhaustion. The findings may inspire scholars to further research the interplay between status conflict and self-efficacy to identify the models.

Our study also further supports the idea that techno-complexity as a predictor was related with exhaustion. Specifically, employees need to deal with the complicated software and hardware during the covid-19 period, so techno-complexity occurs at workplace frequently. Considering the technological educational facilities needed for teaching, technologies as pedagogical tools play an important role in higher education (Peeraer & Van Petegem, 2015). A study conducted by Burke (2009) stated that the instructors have a medium level of technostress in terms of hardware and internet use and there is a salient difference between existing skills and required skills for certain tasks. The development and increasing demanding of technology in teaching leads to academics confronted with the extreme stress causing by techno-complexity, especially during the covid-19 period. Furthermore, the continuous stress and the lack of solution and support from techno-complexity result in emotional exhaustion among faculty members (Longman, 2013). Our results corroborated previous studies that Indian academicians with a significant level of techno-stress are more liable to experience exhaustion (Jena, 2015). Additionally, Comerchero (2008) explored that self-efficacy negatively related with emotional exhaustion. Then, we can know that self-efficacy is a predictor of exhaustion at the same time. The results from our

research indicated that self-efficacy could moderate the relationship between techno-complexity and exhaustion with different levels.

Our sample focused on the Chinese university teachers because China is experiencing the fast transformation of education system and Chinese academics are confront with the consecutive work-related stress and emotional exhaustion. From our perspective, the 10 regions we chose to do the research probably reflect the dilemmas Chinese university teachers facing when considering the level of region distribution and economic development. In terms of the university teachers' academic discipline, engineering are around two thirds of the whole sample because engineering is the main subject in Chinese university. We also found that financial status is associated with academics' exhaustion and that is the reason we point it as the control variable. Generally, financial status is positively related to exhaustion level. We can know that university teachers feel widely exhausted when they have financial status in the workplace.

### **Theoretical Contributions**

This research findings contribute for specifying the role of higher self-efficacy as a moderator to buffer the relationship between autonomy and exhaustion based on the sample of Chinese university professors. Previous studies have mostly concentrated on the relation of autonomy on predicting exhaustion (Ahujia et al., 2002). Our results clearly demonstrate that higher level of self-efficacy plays an active role in autonomy predicting academics' exhaustion in the workplace. By ensuring that academics have appropriate levels of self-efficacy and autonomy, it can help mitigate the deleterious effects of exhaustion on well-being. The interaction between autonomy and self-efficacy could provide a chance for university teachers to avoid exhaustion, which it is specially related to university teachers' exhaustion. Therefore, providing more freedom rather than tightening control over faculty members is an effective way to avoid the symptom of exhaustion. Moreover, Kavgacı & Çalık (2017) indicated that teachers with high levels of autonomy predicted higher work engagement. Our finding is also in line with Skaalvik & Skaalvik (2014) that it is vital to satisfy

autonomous need for university teachers and the interaction term of autonomy and self-efficacy is significant for exhaustion.

The other theoretical contribution is the negative relationship between status conflict and exhaustion (see Figure 3.2). Our results support the proposition that status conflict affects university teachers' feeling of exhaustion. Status conflict is distinguished from other types of conflicts, which is related with disrespect, workplace incivility, interpersonal harm, and lead to the anxiety and exhaustion to the faculty members. Moreover, academics with high status conflict and lower self-efficacy could reduce exhaustion symptoms, which is also a totally new theoretical contribution. Lower self-efficacy could exacerbate the effect between the status conflict and exhaustion. Although further research needs to do on the interaction terms of status conflict and self-efficacy, the results from our research suggest that academics who have a lower self-efficacy would feel the stronger effect the status conflict on exhaustion. Some previous studies examined the effect of status conflict on team performance (Rustichini, 2008); however, no studies explored the relationship between status conflict and exhaustion and the self-efficacy as the moderator to buffer the relationship. Therefore, this study contributes to for clarifying how status conflict and the interaction terms of status conflict and self-efficacy predict emotional exhaustion. Additionally, this is useful for finding solutions to mitigate the effect on exhaustion.

Furthermore, this study underscores the relationship between techno-complexity and exhaustion, and the techno-complexity as a catalyst of stress is positively related with exhaustion. It was observed that techno-complexity was an important predictor of exhaustion, and the decrease in techno-complexity is a significant factor that will reduce the level of exhaustion. In fact, previous research indicated that techno-stress could predict exhaustion (Salanova et al., 2014; Korunka & Vartiainen, 2017). Although extant research has emphasized the importance of techno-stress, there is still insufficient studies on the effect of techno-complexity on exhaustion, especially to university teachers. The results corroborate the research that techno-stress is correlated with mental fatigue, scepticism, anxiety and ineffectiveness (Salanova et al.,

2007). Our result confirms that techno-complexity as one dimension of techno-stress exert the effect on university teachers' exhaustion. This relationship could be buffered by any levels of self-efficacy and this moderation has never been studied from previous research. Thus, based on our result, we can regard it as a totally new theoretical contribution. By investigating the role of self-efficacy as a moderator to buffer the relationship between techno-complexity and exhaustion, we could better understand techno-complexity in workplace.

Finally, it is crucial to mention the effect of financial status as the control variable. The significant relation between financial status and exhaustion suggests that university teachers with financial stress are subject to exhaustion, perhaps because financial stress led to negative mood and life strain for academics. From the previous articles, we have not found the relative research about the financial status as the control variable to impact the exhaustion, and economic stressors could be explored in future studies, which is also a theoretical contribution.

### **Limitations and Future Research**

Despite some theoretical contributions were shown, we still need to consider the limitations while conducting this research.

Firstly, in this study it was used a self-reported survey which may be affected by common method variance. It is a common and potential problem in organisational behaviour research (Podsakoff, MacKenzie, Lee & Podsakoff, 2003), which would affect the results by intensifying or weakening the strength of correlation. Besides, in this study, we used the same survey for predictor and dependent variables, which may lead to a "artificial covariance". In terms of the the data collection in this study, all variables were measured at the same period and simultaneous, which may lead to similar answers for different variables (Podsakoff et al., 2003). This results the possibility of inverse or reciprocal relationship between variables, so it is hard to test the real causality between the predictors and exhaustion (Michel & Hargis, 2008; Park et al., 2011). The extant studies conduct a procedure for solving causal relationship of the variables through longitudinal designs (Stroet et al., 2015; Schuitema et al., 2016;

Yu et al., 2016). To analyse similar constructs and make sure these causal relationships, a longitudinal study or experimental designs should be implemented with these variables in the future.

Secondly, considering the social desirability bias, participants are inclined to answer the questions based on a socially accepted way, instead of according to their true feelings (Podsakoff et al., 2003). The confidential and anonymous data collection may be a way to mitigate the effect of social desirability bias (Jong, Pieters & Fox, 2010). Thus, in future research, it is crucial to ascertain that all reply will be confidential and anonymous to get the objective data in the research.

Thirdly, it would be debated that the incremental variance examined by the interaction terms is likely rather small, although they are statistically significant. Additionally, (Evans, 1985; McClelland & Judd, 1993) indicated that moderator effects are rather hard to detect and those explaining as small as 1% of the total variance would be regarded as important.

Fourthly, the other limitation is associated with a particular cultural and educational system of the analysed sample. Thus, the results would not be generalised to all university teachers in different countries. This study concerns only Chinese academics which may have different characteristics compared with other countries. Furthermore, the educational regulations and organisational climate are also distinctive in different educational background and profession. Besides, the data were collected during the covid-19 period and most university teachers are exposed to the online courses during this period, the trouble of techno-complexity could be over emphasised, and this strengthened the level of exhaustion led by techno-complexity at the time. What is more, the sample was only drawn from public universities without the data from private universities. Thus, this may not be representative of the conditions of all the university teachers, for future study we could extend this research to different types of institutions and other countries.

### **Practical Implications**

Our results offer some practical implications, which makes the research interesting

and important. Furthermore, the practical implications are very important for faculty members as emotional exhaustion is a special threat when they conduct their work.

Autonomy is negatively related to emotional exhaustion. With sufficient autonomy in the workplace, university teachers could freely decide teaching methods, choose goals and educational strategies, which are concordant with academics' educational beliefs and value. It would decline academics' emotional exhaustion when organisations provide more decision latitude and support. Additionally, leaders could adopt an autonomy-supportive way to meet the employees' needs i.e., provide alternatives for choices, and acknowledge subordinates' opinions (Baard et al., 2004). Faculty members would be more inclined to view their work negatively when they feel oppressed or inadequate autonomy about their work. Moreover, this study suggests that having more capacity and skills can be a good solution for academics to feel autonomous and experience lower levels of exhaustion. Self-efficacy is crucial for academics with autonomy in reaching the desired educational goals. Organisations can advocate for using training and supervisory practices to enhance workers' belief and confidence about their ability. Previous research has illustrated that mastery modeling and supportive supervisory practices as training efforts are effective ways to increase self-efficacy (Wood & Bandura, 1989; Gist & Mitchell, 1992). Therefore, behaviour and personality that affect university teachers' sense of self-efficacy could be focused and necessary measures should be taken to increase self-efficacy.

Status conflict is positively correlated to exhaustion in workplace activities. This explains why faculty members are feeling exhaustion in their teams with high status conflict. On the other hand, status conflict could lead to negative outcomes for organisations, since individuals' job productivity would decrease and employees' exhaustion would rise, even cause their intentions to leave the organisation (Cascio, 1991; Peeters et al., 2005). Organisations concerned with alleviating emotional exhaustion can assess status conflict among team members to ensure that it is adequate and appropriate for their career development. The leader and managers could attempt to clarify employee's status, power, and responsibility to avoid the discrimination and malicious competition. It should be noted that employees with low

status are susceptible to constraint and this prevents them from eliciting more positive treatment effectively in the workplace. Individuals with lower status are not only insufficient of legitimate authority, but also would be excluded from dominant coalitions and have fewer employment opportunities. Those with higher status may be overly aggressive when dealing with others, which can be risky in the organisation. Taking this into consideration, university should provide a safe working environment and support to help academics develop benign competition and alleviate status conflict in the team. The notion that employees can deter workplace exhaustion by behaving well and manage the status conflict with co-workers. Effective status conflict management needs the use of both dominant and integrated approaches, and employees are advised to avoid being overly conciliatory in dealing with colleagues since it may make others to perceive them as the targets of exploitation or mistreatment. The present data suggest that good communication and information sharing can enhance interpersonal relationship and obstruct the increase of exhaustion.

We could find that self-efficacy is in a moderating way to buffer the effect of status conflict on exhaustion. Employees with self-efficacy will be more engaged and the team climate will be more favourable, even if employees are under fierce competition or different status level. It is likely that the lower level of self-efficacy could make employees feel more supported and therefore report less exhaustion. Organisations could provide status conflict management strategies for faculty members once they feel some vicious competition, status differentiation or even bias in working conditions. Furthermore, organisations could facilitate discussions session between group members so that individuals have a good communication environment to avoid misunderstanding and maintain a positive mood in the workplace.

In terms of techno-complexity, it has been found ubiquitous and has created stress on university teachers. The pressure has influenced academics' affection and results in exhaustion. Previously, scholars revealed that techno-stress directly or indirectly affect behaviour and psychological health, and it could manifest emotional exhaustion (Ayyagari et al., 2011; Maier et al., 2015). The results of this research would attract

attention to the techno-complexity pressure on the teaching profession. Techno-complexity has a negative effect on individuals' emotion, such as anxiety and a negative sense of self-view. Thus, the organisation should make sure that faculty members are not overwhelmed in sophisticated technology for a long time. In-service training can be provided to decrease techno-complexity stress. The institution could offer a variety of tools created for distance learning and it is very important for all members of the community to grasp the instruments of the new technology. Additionally, academics should strive to learn new IT skills and adapt the accelerated pace of information technologies upgrades. More seminars about solving technology complexity problems should be organised frequently. We advice that faculty administrators should help academics overcome the difficulties and improve targeted training plans, such as online technical support service. University information centers could provide platforms and information tools, which are accessible for faculty members accept new technology skills. Furthermore, more studies could be implemented on education planning and some training about how to operate the new technology efficiently. Besides, according to the different levels of self-efficacy on the relationship between techno-complexity and exhaustion. Individuals with self-efficacy are willing to face challenging tasks (Larson & Luthans, 2006) and they do not hesitate to resolve the complicated technology troubles.

### **Conclusion**

In this study, our research concentrates on exploring possible predictors and moderators which could affect university teachers' exhaustion. In the current context of Chinese faculty members, autonomy, status conflict and techno-complexity as predictors could explain academics' exhaustion to some extent.

According to the results, autonomy has a negative relationship with exhaustion, however, status conflict and techno-complexity could be positively related to exhaustion.

On the other hand, the interaction between autonomy and higher-level self-efficacy explained a significant amount of variance in exhaustion. However, with lower self-efficacy and status conflict, the results revealed that the relation with exhaustion was significant. Additionally, the interaction term (techno-complexity and self-efficacy) and exhaustion was statistically significant in the model for all the moderator levels.

Therefore, these predictors and the moderate effect of different levels of self-efficacy should be taken into consideration to reduce stress and exhaustion at workplace. Additionally, the organisation could improve work environment for university teachers to help them reduce exhaustion symptoms and maintain well-being. Furthermore, academics from other types of universities with different tenures, other countries with different cultural backgrounds and various levels of development should also be considered to acquire extensive results and find more specific characters for this group to work effectively and productively.



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## Annexes

*Annex A. Sociodemographic characterisation of the sample*

Variables	Answers	Frequency
Sex	Male	62.2%
	Female	37.8%
Age	26-30 Years Old	9.3%
	31-35 Years Old	18.0%
	36-40 Years Old	13.9%
	41-45 Years Old	15.7%
	46-50 Years Old	16.9%
	51-55 Years Old	12.8%
	55-60 Years Old	13.4%
Seniority (years of teaching)	1-5	26.2%
	6-10	10.5%
	11-15	16.3%
	16-20	11.6%
	21-25	13.9%
	Over 26	21.5%
Educational Level	Bachelor's degree	12.2%
	Master's degree	48.3%
	Doctoral degree	38.9%
	Others	0.6%
Title*	Lecturer	36.6%
	Associate professor	39.0%
	Professor	24.4%
Job Function	Teaching	30.8%
	Teaching and Research	51.8%
	Academic and administration	17.4%
Academic discipline	Art	18.6%
	Science	15.1%
	Engineering	66.3%
Marital status	Married	86.6%
	Single	11.6%
	Other	1.8%
Financial status**	Yes	65.7%
	No	34.3%

Note: \* We use the title standard of research and teaching career pathway at the University of Oxford.

\*\* Financial status means the academics are confront with different financial loans (mortgage loan, installment payment for the house and car, banking loans) which are main source of financial pressure for Chinese employees.



## Questionnaire

### The questionnaire of the university teacher stress and the consequence 中国高校教师压力及现状调查问卷

Dear academics,

I am a master student of the ISCTE Business School (AACSB accredited school). ISCTE is a public university situated at Lisbon, in Portugal. This research aims to explore the university teachers' stress. There will not be any criteria for neither right nor wrong towards your answers, thus please select the answer which can explain your thoughts or behaviour best. This questionnaire is anonymous, and all the information will be only used for this research.

Thank you so much for participating!

大家好！我是 ISCTE 国际商学院（AACSB 认证）的在读硕士研究生。ISCTE 是一所位于葡萄牙里斯本的公立大学。此次研究主要为了探究中国高校教师面临的压力。答案无正确与错误之分，请给出最能代表您想法或最能解释您的行为的选择。参与此次调查研究的人员均为匿名，所得的全部信息仅用于此次调查研究。非常感谢您的参与！

Please refer to your actual experience in the past year (12 months), answer the questions and tick the blanks accordingly.

请参照您在过去一年（12 个月）里面实际经历，针对表格中的问题，在对应处划“√”

1=Strongly disagree 完全不同意

2=Disagree 不同意

3=Rather disagree 相对不同意

4=Neutral 中立

5=Rather agree 相对同意

6=Agree 同意

7=Strongly agree 完全同意

#### 一. Autonomy Research 工作自主性调查

	1	2	3	4	5	6	7
1. I am allowed to decide how to go about getting my job done (the methods to use).							
2. I am able to choose the way to go about my job (the procedures to utilize).							
3. I am free to choose the methods to use in carrying out my work.							

4. I have control over the scheduling of my work.							
5. I have some control over the sequencing of my work activities (when I do what)							
6. My job is such that can decide when to do particular work activities.							
7. My job allows me to modify the normal way we are evaluated so that I can emphasise some aspects of my job and play down others.							
8. I am able to modify what my job objectives are (what I am supposed to accomplish)							
9. I have some control over what I am supposed to accomplish (what my supervisor sees as my job objectives).							

#### Chinese Version

- 1.我可以决定如何完成我的工作。
- 2.我可以选择自己的工作方式(工作流程)。
- 3.我可以自主选择执行工作的方法。
- 4.我可以决定工作的时间安排。
- 5.我可以控制自己的工作活动的先后顺序。
- 6.我可以决定何时进行某一工作活动。
- 7.我的工作允许我调整常规方式，这样我就可以突出工作的某些方面而淡化其他方面。
- 8.我可以变更工作目标。
- 9.我对应该完成的工作有一定程度的控制。

#### 二. Status conflict investigation 地位冲突调查

	1	2	3	4	5	6	7
1. My team members frequently took sides (i.e., formed coalitions ) during conflicts.							
2. My team members experienced conflicts due to members trying to assert their dominance.							
3. My team members							

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competed for influence.							
4. My team members disagreed about the relative value of members' contributions.							

Chinese Version

- 1.我的团队成员经常会在冲突中按派别站队。
- 2.我的团队成员因为试图维护他们的主导地位而遭受冲突。
- 3.我的团队成员争夺影响力。
4. 我的团队成员对成员的贡献大小意见不一。

三. Techno-complexity Investigation 技术复杂性调查

1. I do not know enough about ICTs (Information and communication technologies) to handle my job satisfactorily.					
2. I need a long time to understand and use new technologies.					
3. I do not find enough time to study and upgrade my technology skills.					
4. I find new recruits to this organisation know more about computer technology than I do.					
5. I often find it too complex for me to understand and use new technologies.					

Chinese Version

- 1.我对 ICT（信息和通信技术）了解不足，无法令人满意地处理工作。
- 2.我需要很长时间才能了解和使用新技术。
- 3.我没有足够的时间学习和提升我的科技技能。
- 4.我发现新员工比我更了解计算机技术。
- 5.我常常觉得掌握和使用新技术太复杂了。

四: Self-efficacy Investigation 自我效能调查

	1	2	3	4	5	6	7
1. My new job is well within the scope of my abilities.							
2. I do not anticipate any problem in adjusting to work in this organisation.							
3. I feel I am overqualified for the job I will be doing.							
4. I have all the technical knowledge I need to deal with my new job, all I need now is practical experience.							
5. I feel confident that my skill and abilities equal or exceed those of my future colleagues.							
6. My past experiences and accomplishments increase my confidence that I will be able to perform successfully in this organisation.							
7. I could have handled a more challenging job than the one I will be doing.							
8. Personally speaking, my job exactly satisfies my expectations of myself. (R)							

Chinese Version:

1. 我新的工作完全在我的能力范围内。
2. 我预期我能适应新单位的工作。
3. 我觉得自己完全胜任这份工作。
4. 我掌握了处理工作所需要的技术知识，现在我需要的只是实践经验。
5. 我对自己超越未来同事的技术能力充满信心。
6. 我过去的经验和成就增强了我在本单位完成好工作的自信。
7. 我应该可以完成更具挑战性的工作。
8. 说实话，我的工作刚好满足我对自己的期望。

五：Exhaustion 精疲力竭调查

- 1=Never 从来不  
2=Seldom 几乎不  
3=Sometimes 有时  
4=Often 经常  
5=Always 总是

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	1	2	3	4	5
1. At work, I feel mentally exhausted.					
2. Everything I do at work requires a great deal of effort.					
3. After a day at work, I find it hard to recover my energy.					
4. At work, I feel physically exhausted.					
5. When I get up in the morning, I lack the energy to start a new day at work.					
6. I want to be active at work, but somehow, I am unable to manage.					
7. When I exert myself at work, I get tired quicker than normal.					
8. At the end of my working day, I feel mentally exhausted and drained.					

Chinese version:

- 1.工作中，我感到精神疲惫。
- 2.工作中所做的每一件事都需要我付出极大的努力。
- 3.经过一天的工作后，我发现很难恢复精力。
- 4.工作中，我感到身体很疲惫。
- 5.当早上起床时，我感到自己缺乏精力去开启新一天的工作。
- 6.我想在工作中积极一点，但我有些力不从心。
- 7.当我努力投入工作时，我比平时更快感到疲劳。
- 8.当结束一天的工作时，我感到精神上极度疲倦。

Please talk a little bit about your opinions and feelings toward how to copy with university teachers' stress.

请您简要谈谈您对高校教师如何应对压力的看法与感受。

1. What is your gender? 您的性别?

- a. Male 男 b. Female 女

2. What is your age? 您的年龄?

- a. 26-30 b. 31-35 c. 36-40 d. 41- 45 e. 46-50 f. 51-55 g.  $\geq 56$

3. How many years have you been teaching? 您的教龄?  
a. 1-5 b. 6-10 c. 11-15 d. 16-20 e. 21-25 f.  $\geq 26$
4. What is your education level? 您的学位?  
a. Bachelor degree 学士 b. Master degree 硕士 c. Doctoral degree 博士  
d. Others 其它
5. What is your title? 您的职称?  
a. Lecturer 讲师 b. Associate Professor 副教授 c. Professor 教授
6. What is your current job function? 您的工作职责?  
a. 授课 Teaching b. 授课及学术研究 Teaching and Research  
c. 学术及行政管理 Academic and administration
7. What is your job status? 您的工作形式?  
a. Permanent 编制 b. Temporary 合同制 c. Other 其他
8. What is your subject category? 您的学科范畴?  
a. 文科 (含艺术/经管/法学) Art b. 理科 (含农学和医学) Science  
c. 工科 Engineering d. 其它 Other
9. What is your marital status? 您的婚姻状态?  
a. Married 已婚 b. Single 未婚 c. Other 其他
10. Have you ever been under loan pressure or are under loan pressure now (mortgage/ car loan, etc.)? 您曾有过贷款压力或正在承受贷款压力 (房贷/车贷等)?  
a. Yes 是 b. No 否

Thanks for your answers. 感谢您的回答。