The mediating role of mental health in the relationship between psychological capital and job burnout: an exploratory study

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Abstract: Nowadays, the job burnout phenomenon is very common in China’s corporations and it seriously affects the individual performance and the relationship between work and family. In this paper, I take the mental health act as an intermediary variable to build the relationship model between psychological capital and job burnout to explore the impact that psychological capital has on job burnout. The research result shows that psychological capital is significantly negatively correlated with job burnout, and mental health plays mediating role in the relationship between psychological capital and job burnout. The research result shows that mental health plays a critical role in the effectiveness between psychological capital and job burnout. And through logical study and test of the effective of psychological capital that on job burnout, finally find the basis for job burnout to separate away from job vocation situation.

Keywords: psychological capital; mental health; job burnout; mediating role; services technology; management technology.


Biographical notes: Xiaolun Cai is a PhD student at the School of Economics and Management, Beijing Jiaotong University. His research directions are human resource development and management and organisation behaviour.

Long Ye is a Professor and Doctoral tutor. His research directions are human resource development and management, organisation behaviour and behavioural safety.

1 Introduction

Nowadays, China is on the situation of lower economic increase and industry upgrade, lots of corporations bear unprecedented pressure. The staffs in the companies show anxious, tired, depressed and diminished personal accomplishment. At the same time, the
acceleration of the advancement of human society is accompanied with the increase of individual perception of employees. In the meanwhile, there will be lots of staff shows negative slackness, depression, interpersonal indifference and low self-accomplishment phenomenon, and when these kind of phenomenon could not be improved soon, there will resulting a comprehensive negative symptoms, which is called ‘job burnout’. ‘Job burnout’ also named as ‘work burnout’, and the expression in English including burnout, professional burn-out and job burnout and so on. It first proposed by the US clinical psychological Freudenberger in 1974 and introduced to the field of psychology. He pointed out that in a profession that dealing with people for a long time, many staff showed a gradually loss of work mood, lack of motivation, a sense of meaning less work, and a series of physiological and psychological problems. Two years later, the US social psychologist Maslach use the word of ‘job burnout’ in another research, and give a comprehensive expression on the phenomenon of job burnout. Gradually, there job burnout study structure is built up (Maslach, 1976). Regarding the study structure of job burnout, scholars recognise the three dimensions structure of Maslach, which including the emotional exhaustion, cynicism and low self-fulfilment, and also verified by lots of researches. Emotional exhaustion is a generalisation of the individual pressure level of job burnout. It refers to that individuals felt capacity deficiency and exhaustion and leading to lack of work motivation when face difficulties or demands at work. The mental status is expressed as tired, fed up, anxious and irritability. Cynicism is a generalisation of interpersonal relationship aspect. It means individuals treat others cold, alienated and indifferent when at work. The mental status expressed as cold and indifferent with co-workers. Low self-satisfaction is a generalisation of self assessment level. It means the individuals felt low fulfilment, meaningless and lack of success experience when at work. The mental status is expressed as cold and indifferent with co-workers. Low self-satisfaction is a generalisation of self assessment level. It means the individuals felt low fulfilment, meaningless and lack of success experience when at work. Mental health has always been studied from the aspects of society, psychology and physiology. Job burnout not only the psychological problems when at work, but also seriously affect the staff performance as well as the family relationships, and even the individual health will also be seriously affected. When human beings always in bad mood, psychological resource would be burnout. Job burnout could cause headache, tired, insomnia, skin illness as well as the digest problems. China begins the study of job burnout late, and it still remains debut on the definition of job burnout, so it is relatively hard to explain the cause and intervention method of job burn out. And lots of scholars study job burnout from work pressure or individual characteristic aspects. There is very limited study of job burnout is from individual interventions, and this brought limited breakthroughs and development. With the raise of positive psychology, through more researchers begin to focus on the transformation from job burnout to work devotions. Maslach and Leither (1997) thinks job devotions including energy, involvement and efficiency, which are relatively correspondent with emotion burnout, depersonalisation and low self-fulfilment of job burnout. Schaufeli et al. (2002) also thinks that job burnout and job devotion are two models that related to staff happiness, and job burnout means less happiness and energy, and job devotion means more happiness and energy. Psychological capital is a higher-order variable, and consists of hope, optimistic,
The mediating role of mental health

self-efficiency as well as tenacity. As an independent concept, the meaning of psychological capital is far more beyond the summation of the four aspects, and psychological capital is an endogenous positive variable that formed by the four dimensions. To individuals, psychological capital is relatively competitive, scarcity and irreplaceable, it can modify the cognitive process, improve the mental health and improve the individual’s negative behaviour. The paper find out the clear intervention process through the individual psychological capital aspects, together with the theory of self-regulation, social exchange theory and equity theory to find the possibility of solve job burnout problem through psychological capital transmission mechanism. And build up the basis for the individual intervention study.

2 Related literatures and hypothesis

2.1 Psychological capital and job burnout

The word ‘psychological capital’ occurs in the concept of economic field. The US economist Goldsmith et al. (1997) thought that psychological capital is the concept that integrated of individual attitude and cognition towards work, ethics, self and life believes, and all these could affect the efficiency of individual production. Later the concept is begin to considered by positive psychologist and positive organisational behaviourists, and the father of positive psychology Seligman and Csikszentmihalyi (2000) thought that should include the mental factors that could bring positive individual behaviour into to the research realm of psychological capital, thus caused a lot of discussion on the psychological capital. Luthans (2002) bring positive psychology into the organisational administration field and the positive organisational behaviour was born. Positive organisational behaviour more focus on the research and study field of oriented positive factors and could be measured, developed and managed and high-performance related psychological resource or factors. Within them the research of self-fulfilment, hope, optimistic, happiness, tenacity and the emotional intelligence are all very typical. With the development of positive organisational behaviour, Luthans and Youssef (2004) bring out the concept of psychological capital with the angle of positive organisational behaviour and point out that psychological capital is a mental status that could affect individual positive organisation behaviour.

In the study of the relationship between psychological capital and job burnout, some researchers use the two-dimensional scale of localisation to measure psychological capital. In the study of psychological capital and job burnout of middle school PE teachers, Wei (2012) found that transactional psychological capital had a significant negative effect on PE of middle school PE teachers, which could explain the 13.3% variance of job burnout and but the interpersonal the influence of psychological capital on job burnout is not significant. For this two dimensions of psychological capital scale, each dimension includes four sub-dimensions, and the total eight dimensions comprise forge ahead, tough and tenacious, optimistic and hope, confident and bold, inclusive forgiveness, modesty and stability, thanksgiving and dedication, respect and comity. Though added in more human relationship related concept indicators of China situation, whether the multi-dimensions could fit in the concept’s logical structure is still lack of theory support. So the researches tend to adapt to PCQ-24 or revised PCQ-24 to measure and gathered lots of research results. Such as the 160 low salary staff research (Yan et al.,
found that, low salary staff’s psychological capital and job burnout have a very significant negative relationship, and psychological capital dimensions and job burnout dimensions got relatively high correlation. Psychological capital have negative predictive effectiveness towards job burnout’s three dimensions and the low salary staff with low psychological capital will lead to relative serious individual job burnout. Li and Zhou (2013) conducted a research on 800 telephone customer service staff, and found that psychological capital had a significant negative impact on job burnout. In the same year, Wang Ding and Wang Ligang found that psychological capital dimensions and job burnout dimensions had negative correlations. Psychological capital has negative predictive effect on the knowledge workers’ job burnout after controlling the three demographic variables of the gender, age and marital status. Self-efficacy, tenacity and optimistic these three dimensions all could forecast the job burnout situation, and hope could significantly forecast the low accomplishment. Based on all above findings, psychological capital all have significantly negative impact on job burnout in different fields and employees. The psychological capital is an absolutely positive state variable, and job burnout is an absolutely negative state variable, but we could not announce that the low psychological capital leads to job burnout. But psychological capital and job burnout are having closely negative correlation, so there might be some intervening variable.

We hypothesise that H1: psychological capital and job burnout is negative correlated and there are intervening variables.

2.2 The statement of correlation between mental health and job burnout

There are lots of researches about mental health and job burnout and the result are similar. Such as, Lee et al.’s (1996) research shows that emotional exhaustion and personality disintegration are the core factors of job burnout and mental health. Feng et al.’s (1998) research also shows that, the correlation of doctors’ mental health status and job burnout are relatively high. In the three dimensions of job burnout, emotional exhaustion and individual mental health are having a more closed correlation. Research of bank staff (Jiang and Zhang, 2004) found that, job burnout could lead to individual negative emotions, such as depression, anxiety, low-confidential and so on. In the same year, the research of Liu Xiaoming also found that, the job burnout status and mental health status are having a very clear positive correlation of junior school teachers. The three factors of job burnout and the nine factors of mental health are showing relatively positive correlation, which is means that the higher the teachers’ job burnout, the lower status of their mental health and with the job burnout goes heavier, the teachers’ mental health status are going lower. A study of Pan (2009), which was acupointed by massage methods, shows that job burnout’s emotion exhaustion dimension has a positive correlation with the two dimensions of personality disintegration and the nine factors of mental health. Zheng (2010) tested 258 nurses through job burnout test (MBI) and general mental health test (GHQ), and the result shows that job burnout and mental health have a positive correlation. Rong et al.’s (2012)’s research of train drivers’ job burnout effect factors’ analysis also found that job burnout and mental health have a clear correlation. In the empirical study of relationship between job burnout and mental health mostly result shows that job burnout and mental health have positive correlation. And within it, the dimension of emotion exhaustion and mental health are most notable.

We hypothesise that H2: job burnout and mental health have positive correlation.
2.3 Psychological capital and mental health’ correlation

In the research of psychological capital and mental health, the researchers’ focus on different angles. A lot of foreign researchers more tend to use the concept of ‘physical and mental healthy’, for example Cole’s (2006) research on the reemployment of the unemployed found that psychological capital and mental health is in positive correlation. The health here means on both mental and physical, and Cole is used SF-36 health scale to reflect the physical symptom. Avey et al. (2010) analysed the relationship between psychological capital and mental health of employees in different departments and found that there was a close relationship between psychological capital and mental health of employees. And the impact of psychological capital on mental health is getting bigger with the time goes by. In which mental health emphasises whether the individual fits good in life and it is also a kind of well-being, but the research is more emphasis psychological level compared with Cole’s research.

Domestic scholars are more focus on psychological symptoms and more use sc1-90 scale. Such as in the study of relationship between psychological capital and mental health by Zhang Kuo, found that psychological capital had correlation with the indicators of mental health level such as self-respect, emotional balance, internal control, psychological capital and self-esteem. Zhu Lifang’s study also found that the self-efficacy, optimism, toughness, hope in psychological capital was negatively correlated with mental health total score and its nine factors. Pan and Zhou (2009) found psychological capital of poverty-stricken college students had a significant positive correlation with their mental health level, after controlled some variables such as gender, age, major and grades in the research of poverty-stricken college students’ psychological capital, coping style and mental health.

Above all, we can see that psychological capital and mental health are in positive correlation. The scholars are all agree the definition of psychological capital and job burnout, but there is some controversial on the definition of mental health. The definition of mental health by World Health Organization is that mental health is not only without psychological barriers, but also including subjective well-being, self-efficacy, autonomy, competence, the recognition ability of intellectual and emotional potential of individuals. Mental health also means a well-being status, in this status, individuals could recognise one’s ability, cope with normal pressures in life, accomplish the job in efficiency, and could do contribution to the society. The writer believes that mental health is a measure of the individual psychological states, and is could be divided into different grades from the vibration up to the decadent malaise, and mental health and physical health is an integrated whole and also could do mutual influence.

Above all, the conclusion of the relationship between psychological capital and job burnout are very integrated, they showed negative correlation. Most opinions tend to believe job burnout affected psychological capital, but there is no test on their relationship of cause and effect. Job burnout is a variable that affected by situations, it only happens in working situations, or it could be confused with depression. Psychological capital and mental health are relative open concept, means there is no limitation of situation when describe both concepts, and they shows positive correlation. If we take job burnout as a negative status when mental health goes low, thus, the neutral variable mental health is possibly the intervening variable between psychological capital and job burnout.

We hypothesise that H3: psychological capital affects mental health positively.
We hypothesise that H4: mental health is possibly the intervening variable between psychological capital and job burnout.

3 Structural equation based on PLS algorithm

The structural equation model is a measurement research technique that integrates measurement and analysis. It can simultaneously estimate the measurement and potential variables in the model. It cannot only estimate the measurement error of measurement variables, but also evaluate the measured information degree and validity. From the structural point of view, SEM can be divided into structural equations and measurement equations of two parts, the structural equation is used to describe the relationship between latent variables, measurement equations used to describe the relationship between latent variables and explicit variables.

\[
\eta = \beta \eta + \Gamma \xi + \zeta \tag{1}
\]

\[
y = \Lambda \eta + \varepsilon \tag{2}
\]

\[
x = \Lambda \xi + \delta \tag{3}
\]

Equation (1) is a structural model that relates the latent variables to the coefficient matrix \( \beta \) and \( \Gamma \) the error vector. Equations (2) and (3) are the measurement models by which the observed variables are linked to the corresponding latent variables \( \eta \) and \( \xi \). After the model is set up, we can use the PLS algorithm to estimate the parameters of the model, and then solve the whole structural equation model. \( N \) denotes the sample size, and the sample observations \( x_h \) and \( y_k \) are denoted by \( x_{hn} \) and \( y_{kn} \), where \( n = 1 \ldots N \), and all the data have been normalised.

PLS algorithm consists of three steps:

Step 1 Through repeated iterations to obtain latent variable estimates, the specific steps are as follows:

\[
LX_n = f_1 \sum_n (\omega_{h_k} x_{1kn})
\]

\[
LY_n = f_2 \sum_x (\omega_{2k} y_{1kn})
\]

In which, \( f_1, f_2 \) are normalisation operator, so there is

\[
f_1 = \pm \sqrt[1/2]{\frac{1}{N} \left[ \sum_n \left( \sum_{h_k} (\omega_{h_k} x_{1kn}) \right)^2 \right]^{1/2}}
\]

\[
f_2 = \pm \sqrt[1/2]{\frac{1}{N} \left[ \sum_x \left( \sum_{2k} (\omega_{2k} y_{1kn}) \right)^2 \right]^{1/2}}
\]

According to the selected weight relationship

\[
LY_n = \sum_n (\omega_{h_k} x_{1kn}) + d_n
\]

\[
y_{1kn} = \omega_{2k} LX_n + d_{2kn}, \quad k = 1, 2, 3
\]
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The loop iteration termination condition is as follows:

\[ |\omega_s^{(s)} - \omega_s^{(s+1)}| < 10^{-5} \quad \text{or} \quad \left| \|\omega_s^{(s)} - \omega_s^{(s+1)}\| / \omega_s^{(s)} \right| < 10^{-5} \]

Number of iterations <MAX_STEP (maximum allowed iteration step).

where \( s \) and \( s + 1 \) represent the iteration of step \( s \) and \( s + 1 \), respectively, and are the weighting coefficients of iteration at step \( s \) and \( s + 1 \).

The iteration process is as follows:

1. take the initial value \( \omega_{s_1}^{(1)} = 1 \), when \( k = k_0, \omega_{s_2}^{(1)} = 0 \), when \( k \neq k_0 \), here \( 1 \leq k_0 \leq 3 \)
2. take \( \omega_{s_1}^{(s)} \) and \( \omega_{s_2}^{(s)} \) and according to the formula, calculation \( f_1 \) and \( f_2 \), and then according to the formula to calculate \( \xi \) and \( \eta \), the estimate value \( L_X \) and \( L_Y \)
3. use \( L_X \) and \( L_Y \), to calculate \( s_{xy} \) and \( s_{yx} \), according to the formula
4. use \( s_{xy} \) and \( s_{yx} \), to calculate \( U_x \) and \( U_y \), according to the formula
5. use \( U_x \) and \( U_y \), and according to the formula, to re-calculate the weight and

regression of \( \omega_{s_1}^{(s+1)} \) and \( \omega_{s_2}^{(s+1)} \). If \( \omega_{s_1}^{(s+1)} \) and \( \omega_{s_2}^{(s+1)} \) satisfies the loop
condition, then stop the iteration. Otherwise, processed to step 2.

According to the derivation of above mathematical model, the iterative process
is repeated in the above formula 2–5 until it meets a set of iterative termination
criteria.

Step 2 The estimated values of the \( L_{Xn}, L_{Yn} \) latent variables obtained by the first step
are respectively regressed with the corresponding indicator observation values to
obtain:

1. block structure (external relation)
   \[
   x_{hn} = p_{1h} L_{Xn} + \varepsilon_{1hn} \\
   y_{hn} = p_{2h} L_{Xn} + \varepsilon_{2hn}
   \]
   in which \( \varepsilon_{1hn}, \varepsilon_{2hn} \) are the residual, and \( p_{1h}, p_{2h} \) are the regression coefficient
   (measured model coefficient)
2. internal relation
   \( L_{Xn} \) and \( L_{Yn} \)'s regression equation is as follows:
   \[
   L_{Xn} = b_1 L_{Xn} + \varepsilon_n
   \]
   where \( \varepsilon_n \) is the residual, \( b_1 \) is the coefficient (structural model coefficient).

Step 3 Find the mean, and provide the initial relationship.

\[
\bar{L}_X = f_1 \sum_h (\omega_{1h} x_h) \\
\bar{L}_Y = f_2 \sum_k (\omega_{2k} y_k)
\]
The intercept terms are:
\[
\begin{align*}
  p_{b_i} &= \bar{x}_i - p_{b_i} L \bar{X} \\
  p_{k_i} &= \bar{y}_k - p_{k_i} L \bar{X} \\
  b_i &= \bar{y}_i - b_i L \bar{X}_i 
\end{align*}
\]

Till now, the entire PLS path model is solved.

4 Empirical analysis

4.1 Data structure analysis

In order to ensure the effectiveness of this measurement, so selected a Beijing bank phone sales staff as the sample, telephone sales staff are emotional workers and they are easy to burnout groups. To make sure the authenticity of the measurement, we have each person was numbered in advance and using anonymous fill. All the questionnaires are sealed into the envelope after staff filled in and the entire process the leaders of the staff are not evolved. In order to avoid the deviation of common method, we divided the questionnaire into three independent parts, including psychological capital, mental health as well as job burnout.

The test evolved 381 staff, and the effective questionnaire that selected back is 343. The effective rate was 90%, in which 49% is male and 51% is female. The 70% working experience are about three to ten years. Bachelor degree accounted for 64%, accounting for 36% of other qualifications. Aged 24–35 years as the main group accounted for 85%.

Factor analysis of the questionnaire can help to find the ‘structural validity’ of the questionnaire, as shown in Table 1.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>The test of KMO and Bartlett</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficient Kaiser-Meyer-Olkin measure</td>
<td>0.832</td>
</tr>
<tr>
<td>Bartlett ’s sphericity test</td>
<td>Approximate chi-square</td>
</tr>
<tr>
<td>df</td>
<td>182.089</td>
</tr>
<tr>
<td>Sig.</td>
<td>73</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 1 KMO> 0.5, indicating that the model can be factor analysis. In addition, the Bartlett spherical test chi-square value of 182.089 (73 degrees of freedom) has reached a significant level, indicating that there is a common influencing factor in each matrix in the parent sample, so the model can carry out factor analysis. In this paper, the 51 questions in the questionnaire are analysed by SPSS 17.0. The rotated factor load matrix can be defined as three independent factors: the questionnaire design is consistent with the article.

After the construction validity test, the literature next needs to carry on the analysis to the consistency and the reliability test of the model measurement scale. The three latent variables in the questionnaire were measured by the attribute design (i.e., independent and different problems). Whether these attributes can really reflect the actual meaning of
The three latent variables are usually measured by the Cronbach $\alpha$ consistency index. The higher the Cronbach $\alpha$ scale, the higher the reliability of the scale, indicating that the reliability of the questionnaire design is better. Based on the three-level indicator data obtained from the questionnaire, the five-level Likert quantity was applied to the model analysis, so that the Cronbach $\alpha$ of the whole questionnaire conformed to a minimum of 0.6.

4.2 Psychological capital and job burnout analysis

4.2.1 Original model

The paper presents the variables and variable structure model diagram shown in Figure 2, which can explain the structure of each variable in the model in detail.

![Variable and variable structure](image)

The model fitting results are shown in Table 2. The results are as follows: the PGFI index, RMSEA index, PNFI index, GFI index, AGFI index, NFI index, CFI index and TLI index.

It can be seen from Table 2 that the important indicators of these models are not within the allowable range; other statistical indicators within the allowable range of the model, the model needs to be amended.

<table>
<thead>
<tr>
<th>Index name</th>
<th>$\chi^2$/df</th>
<th>PGFI</th>
<th>RMSEA</th>
<th>PNFI</th>
<th>GFI</th>
<th>AGFI</th>
<th>NFI</th>
<th>CFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>7.59</td>
<td>0.427</td>
<td>0.139</td>
<td>0.594</td>
<td>0.920</td>
<td>0.827</td>
<td>0.960</td>
<td>0.965</td>
<td>0.943</td>
</tr>
<tr>
<td>Value accepted</td>
<td>1-5</td>
<td>&gt;0.5</td>
<td>&lt;0.08</td>
<td>&gt;0.5</td>
<td>&gt;0.7</td>
<td>&gt;0.7</td>
<td>&gt;0.8</td>
<td>&gt;0.8</td>
<td></td>
</tr>
</tbody>
</table>

4.2.2 Model modification

The paper presents the variables and variable structure model diagram shown in Figure 4, which can explain the structure of each variable in the model in detail.
After model running, the model fitting results of PGFI index, RMSEA index, PNFI index, GFI index, AGFI index, NFI index, CFI index and TLI index are shown in Table 3.

**Table 3**  The fitting value

<table>
<thead>
<tr>
<th>Index name</th>
<th>$\chi^2$/df</th>
<th>PGFI</th>
<th>RMSEA</th>
<th>PNFI</th>
<th>GFI</th>
<th>AGFI</th>
<th>NFI</th>
<th>CFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>1.035</td>
<td>0.107</td>
<td>0.01</td>
<td>0.143</td>
<td>0.997</td>
<td>0.976</td>
<td>0.999</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Value accepted</td>
<td>1–5</td>
<td>&gt;0.5</td>
<td>&lt;0.08</td>
<td>&gt;0.5</td>
<td>&gt;0.7</td>
<td>&gt;0.7</td>
<td>&gt;0.7</td>
<td>&gt;0.8</td>
<td>&gt;0.8</td>
</tr>
</tbody>
</table>

**Figure 4** Variable and variable structures (see online version for colours)

**Figure 5** Model path (see online version for colours)
It can be seen from Table 3 that the important indicators of these models are basically within the allowable range, so the model need not be modified.

Figure 5 shows the path of the model after running.

To ensure that the model supports the null hypothesis, the absolute value of t should be greater than 1.96 and the p value should be less than 0.05. The results of the model are shown in Table 4.

Table 4  The results of model

<table>
<thead>
<tr>
<th>Path coefficient</th>
<th>Standard deviation</th>
<th>T value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job burnout ← Psychological capital</td>
<td>−.618</td>
<td>.068</td>
<td>−9.128 ***</td>
</tr>
<tr>
<td>X4 ← Psychological capital</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X3 ← Psychological capital</td>
<td>.951</td>
<td>.064</td>
<td>14.943 ***</td>
</tr>
<tr>
<td>X2 ← Psychological capital</td>
<td>.913</td>
<td>.063</td>
<td>14.382 ***</td>
</tr>
<tr>
<td>X1 ← Psychological capital</td>
<td>.749</td>
<td>.139</td>
<td>5.408 ***</td>
</tr>
<tr>
<td>X7 ← Job burnout</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X6 ← Job burnout</td>
<td>.827</td>
<td>.154</td>
<td>5.357 ***</td>
</tr>
<tr>
<td>X5 ← Job burnout</td>
<td>.569</td>
<td>.116</td>
<td>4.898 ***</td>
</tr>
</tbody>
</table>

H1 Psychological capital and job burnout is negative correlated and there are intervening variables.

It can be found that the t-value is equal to −9.128, which is greater than the critical value of t-value 1.96, and the p-value is far less than 0.001, which is less than 0.001. Therefore, the model supports the hypothesis of H1, i.e., psychological capital affects job burnout.

Figure 6 Variables and variable structures (see online version for colours)
4.3 Psychological capital conduction effectiveness analysis

4.3.1 Original model

This paper presents the variables and variable structure model shown in Figure 6, which can explain the structure of each variable in the model in detail.

After the model was run, the model fitting results of $\chi^2/df$, PGFI index, RMSEA index, PNFI index, GFI index, AGFI index, NFI index, CFI index and TLI index are shown in Table 5.

<table>
<thead>
<tr>
<th>Index name</th>
<th>$\chi^2/df$</th>
<th>PGFI</th>
<th>RMSEA</th>
<th>PNFI</th>
<th>GFI</th>
<th>AGFI</th>
<th>NFI</th>
<th>CFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>5</td>
<td>0.531</td>
<td>0.04</td>
<td>0.673</td>
<td>0.912</td>
<td>0.848</td>
<td>0.946</td>
<td>0.956</td>
<td>0.938</td>
</tr>
<tr>
<td>Value accepted</td>
<td>1–5</td>
<td>&gt;0.5</td>
<td>&lt;0.08</td>
<td>&gt;0.5</td>
<td>&gt;0.7</td>
<td>&gt;0.7</td>
<td>&gt;0.7</td>
<td>&gt;0.8</td>
<td>&gt;0.8</td>
</tr>
</tbody>
</table>

It can be seen from Table 5 that the important indicators of these models are not within the allowable range; other statistical indicators in the model to allow the range, the model needs to be amended.

4.3.2 Model modification

This paper presents the variables and variable structure model shown in Figure 8, which can explain the structure of each variable in the model.

Figure 8 Variables and variable structures (see online version for colours)
The results of model fitting are shown in Table 6: PGFI index, RMSEA index, PNFI index, GFI index, AGFI index, NFI index, CFI index and TLI index.

<table>
<thead>
<tr>
<th>Index name</th>
<th>$\chi^2$/df</th>
<th>PGFI</th>
<th>RMSEA</th>
<th>PNFI</th>
<th>GFI</th>
<th>AGFI</th>
<th>NFI</th>
<th>CFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>2.44</td>
<td>0.554</td>
<td>0.065</td>
<td>0.537</td>
<td>0.972</td>
<td>0.924</td>
<td>0.984</td>
<td>0.990</td>
<td>0.978</td>
</tr>
<tr>
<td>Value accepted</td>
<td>1–5</td>
<td>&gt;0.5</td>
<td>&lt;0.08</td>
<td>&gt;0.5</td>
<td>&gt;0.7</td>
<td>&gt;0.7</td>
<td>&gt;0.7</td>
<td>&gt;0.8</td>
<td>&gt;0.8</td>
</tr>
</tbody>
</table>

It can be seen from Table 6 that all the important indicators of these models are within the allowable range; other statistical indicators are within the allowable range of the model, so the model need not be modified.

Figure 9 Model path (see online version for colours)

Figure 9 shows the path after the model runs.

To ensure that the model supports the null hypothesis, the absolute value of $t$ should be greater than 1.96 and the $p$ value should be less than 0.05. The results of the model are shown in Table 7.

H2 Job burnout and mental health have positive correlation.

It can be found that the $t$-value is –4.613, which is greater than the critical value of $t$-value 1.96, and the $p$-value is far less than 0.001, which is less than the significance level of 0.001. Therefore, the model supports H2’s null hypothesis that mental health influence burnout.

H3 Psychological capital affects mental health positively.
Table 7 The results of model

<table>
<thead>
<tr>
<th>Path coefficient</th>
<th>Standard deviation</th>
<th>T value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental health --&gt; Psychological capital</td>
<td>.485</td>
<td>.050</td>
<td>9.705</td>
</tr>
<tr>
<td>Job burnout --&gt; Psychological capital</td>
<td>-.103</td>
<td>.046</td>
<td>-2.260</td>
</tr>
<tr>
<td>Job burnout --&gt; Mental health</td>
<td>-.545</td>
<td>.118</td>
<td>-4.613</td>
</tr>
<tr>
<td>X5 --&gt; Job burnout</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X6 --&gt; Job burnout</td>
<td>1.480</td>
<td>.238</td>
<td>6.220</td>
</tr>
<tr>
<td>X7 --&gt; Job burnout</td>
<td>1.611</td>
<td>.287</td>
<td>5.618</td>
</tr>
<tr>
<td>X1 --&gt; Psychological capital</td>
<td>.862</td>
<td>.089</td>
<td>9.734</td>
</tr>
<tr>
<td>X2 --&gt; Psychological capital</td>
<td>.913</td>
<td>.064</td>
<td>14.296</td>
</tr>
<tr>
<td>X3 --&gt; Psychological capital</td>
<td>.970</td>
<td>.064</td>
<td>15.115</td>
</tr>
<tr>
<td>X4 --&gt; Psychological capital</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X10 --&gt; Mental health</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X8 --&gt; Mental health</td>
<td>.776</td>
<td>.087</td>
<td>8.967</td>
</tr>
<tr>
<td>X9 --&gt; Mental health</td>
<td>1.081</td>
<td>.078</td>
<td>13.878</td>
</tr>
</tbody>
</table>

It can be found that the value of t is equal to 9.705, which is larger than the critical value of 1.96. At the same time, the value of p is far less than 0.001, which is less than the significance level of 0.001. Therefore, the model supports H3’s null hypothesis that psychological capital affects mental health.

H4 Mental health is possibly the intervening variable between psychological capital and job burnout.

It is found that the value of t is equal to -2.260, which is greater than the model critical value of t = 1.96, and the p value is less than 0.05, which is less than the significance level of p value 0.05. Therefore, the model supports the hypothesis of H4, i.e., mental health is possibly the intervening variable between psychological capital and job burnout.

5 Conclusions

According the combination study of 4.2 and 4.3, we could found that the relationship between mental health and job burnout is positively correlated; psychological capital and mental health are positively related; also proved that mental health in mental capital and job burnout of the relationship between mental health and job burnout Influence played a part of the intermediary role. The psychological capital is not related to occupational burnout, but psychological capital is not the occupational influence of occupational burnout. It is through some intermediary variables to affect the transmission of occupational burnout. We can regard the job burnout as a kind of psychological symptom which occurs in occupational situation, and which is caused by certain events and long-term stress of the mental health at work. Psychological capital is a kind of
intervening state variables, which can resist, regulate and buffer the potential harm to mental health. We can improve the individual’s mental health by intervening the psychological capital of the individual and reduce the degree of job burnout.

References


