

# Significant multiple regression algorithm of construction occupation based on micro-optical characteristics and matrix correlation degree

Na Lu<sup>1\*</sup>, Tianyan Wu<sup>2</sup>

<sup>1</sup>*School of economics and management, Tongji University, Shanghai, China*

<sup>2</sup>*School of Urban Construction and Safety engineering, Shanghai Institute of Technology, Shanghai, China*

*Received 1 March 2014, www.cmnt.lv*

---

## Abstract

In order to research whether the career plateau is negatively related to organizational identification and engagement, whether organizational identification has a positive correlation on engagement, and whether the career plateau has an intermediary role between organizational identity and engagement. The significant theoretical analysis is first introduced into the construction industry organizational behaviour's the relationship model among occupational plateau, organizational identification and engagement, which uses linear regression method to achieve significant computing, and in the analysis of intermediary role the introduced genetic algorithm can accelerate the convergence and cross speed of the calculation. Then, the use of VC program designs the assumptions parametric and algorithmic of significant test, and using the data interface of VC and MATLAB will directly call MATLAB program in VC, finally through the MATLAB program to realize the linear regression analysis, so as to greatly improve the efficiency and accuracy of data analysis.

*Keywords:* micro-optical characteristics, matrix correlation, significance, linear regression, software calling, genetic algorithm code

---

## 1 Introduction

Although the management circles have been many studies for the career plateau, organizational identification and engagement, however among the studies is relatively independent, people is failed to elaborate on the relationship among the three from the whole, at the same time they are the lack of relevant research in the field of construction projects [1,2]. This paper tries to research method on the career plateau, organizational identification and engagement in organizational behaviour, it introduces into the construction field with the construction of industry engineering personnel as the research object, to carry out the relationship research among career plateau, organizational identification and engagement [3]. Through the elaboration and the integration of the relationship and current research among career plateau, organization identity and engagements, this paper puts forward the research hypothesis and construction model.

## 2 Analysis of correlation and intermediary role model

### 2.1 CORRELATION ANALYSIS

The groups of construction industry engineering technical personnel belong to knowledge workers [4]. Compared with non-knowledge workers, knowledge workers have some special characteristics in terms of personal characteristics, psychological needs, values, work methods and

other aspects [5]: (i) having an appropriate expertise and higher personal quality; (ii) having the strong desire of self-realization value, according to Maslow's demand theory, self realization needs of knowledge type employee has higher level, the sense of its achievement is outstanding; (iii) having high creativity and independence; (iv) strong personality and light on authority, the post authority of the traditional organization hierarchy don't have the absolute power and binding power; (v) the working process is difficult to supervise control, the results of the work can not be measured directly; (vi) occupational commitment is higher than organizational commitment, knowledge type staff more reflects on the occupation loyalty, rather than organization loyalty.

The characteristics of knowledge workers determine the construction industry engineering technical personnel knowledge type groups, which are significantly different from the ordinary organization members, so the correlation analysis of organizational behaviour relationship is very important as shown in Figure 1 [6]. This paper uses VC and MATLAB software method, to calculate for the correlation of construction industry technology personnel organization.

VC software has simple structure, easy operation and other performances, but MATLAB has the powerful visualization drawing function, the integrated use of the two kinds of software not only makes the calculation program structure simple, but also can directly draw curve, to make the analysis more intuitive.

---

\* *Corresponding author's* e-mail: lunatju@163.com



FIGURE 1 Schematic diagram of MATLAB and VC software

2.2 INTERMEDIARY ROLE THEORY MODEL

For the three kinds of relations, they not only have two-two relationships, but also have an intermediate condition relation [7]. Thus forming the overall theoretical model of three research variables among occupation plateau, occupation plateau and organizational identification, and they are shown in Figure 2.

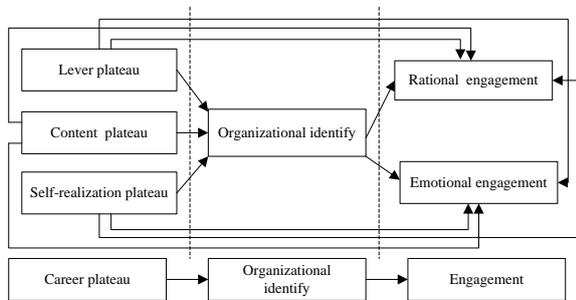


FIGURE 2 The general theoretical model among the career plateau, organizational identification and engagement

Figure 2 shows a schematic diagram of the mediating role of organizational identification, it can be seen from the chart that the hierarchical plateau, content plateau and self realization plateau in the career plateau have a certain relationship with the organizational identification, and organizational identification can adjust the occupation plateau on the influence of engagement.

3 Organizational behaviour relationship multiple linear regression significance analysis of mathematical model and algorithm design

Multiple linear regressions can solve the analysis of multi variable significant problems, and the genetic crossover algorithm can make the research more accurate intermediary role. This paper uses the two methods that are respectively established significant analysis model of organizational behaviour relationship [8].

3.1 MULTIVARIATE LINEAR REGRESSION SIGNIFICANCE TEST MATHEMATICAL MODEL

Multiple linear regression analysis can be converted into the analysis of multiple regressions. In linear regression, there are two variables, where  $x$  is the common variables that can be observed and controlled, it is often called the

independent variable or control variables;  $y$  is a random variable that is often called the dependent variable or response variables [9,10]. In the process of analysis, correlation studies can be assumed that the occupation plateau, organizational identification and engagement are respectively  $x$  variable or  $y$  variable, through the scatter diagram or computing the correlation coefficient to judge the remarkable linear relationship between  $x$  and  $y$ , so as to obtain regression equation:

$$\hat{y} = b_0 + bx \tag{1}$$

The residual equation is:

$$v_i = y_i - \hat{y} = y_i - b_0 - bx_i, \quad t = 1, 2, \dots, N \tag{2}$$

According to the principle of least square, we can obtain regression coefficients  $b_0$  and  $b$ , the equations are written in the matrix form of least square method:

$$Y = \begin{pmatrix} y_1 \\ y_2 \\ \vdots \\ y_N \end{pmatrix}, X = \begin{pmatrix} 1 & x_1 \\ 1 & x_2 \\ \vdots & \vdots \\ 1 & x_N \end{pmatrix}, \hat{b} = \begin{pmatrix} b_0 \\ b \end{pmatrix}, V = \begin{pmatrix} v_1 \\ v_2 \\ \vdots \\ v_N \end{pmatrix} \tag{3}$$

Then the matrix form of error equations is

$$Y - X\hat{b} = V \tag{4}$$

where  $V = Y - X\hat{b}$ , set the equivalent accuracy of measured value  $y_i$ , there is:

$$\hat{b} = (X^T X)^{-1} X^T Y \tag{5}$$

3.1.1 Analysis of the variance of regression equation

The variance of regression equation is the squares sum of total, namely it is the variation between  $N$  observations:

$$S = \sum_{t=1}^N (y_t - \bar{y})^2 = l_{yy}, v_S = N - 1 \tag{6}$$

where:

$$U = \sum_{t=1}^N (y_t - \bar{y})^2 = bl_{xy}, v_U = 1 \tag{7}$$

$$Q = \sum_{t=1}^N (y_t - \hat{y}_t)^2 = l_{yy} - bl_{xy}, v_Q = N - 2,$$

where  $U$  represents a regression square sum, it reflects the change of  $y$  part in the total variation that is caused by the linear relationship between  $x$  and  $y$ ;  $Q$  represents the residual sum of squares, it reflects all observation points to the residual error of the regression line, namely the effect of other factors on  $y$  variation.

3.1.2 Regression equation significant F test method

The basic idea of regression equation significant  $F$  test method is that whether or not significantly depends on the

$U$  and  $Q$  size, if  $U$  is greater and  $Q$  is smaller, the linear relationship between  $X$  and  $Y$  shows the more close. The calculated statistics expression  $F$  is as follows:

$$F = \frac{U/v_U}{Q/v_Q} \tag{8}$$

For the linear regression, it is

$$F = \frac{U/1}{Q/(N-2)} \tag{9}$$

To check the  $F$  distribution table, according to the given significance level  $\alpha$  and known freedom 1 and  $N-2$  to test,

if  $F \geq F_{0.01}(1, N-2)$ , regression is highly significant at the 0.01 level;

if  $F_{0.05}(1, N-2) \leq F < F_{0.01}(1, N-2)$ , regression is significant at the 0.05 level;

if  $F_{0.10}(1, N-2) \leq F < F_{0.05}(1, N-2)$ , regression is significant at the 0.1 level;

if  $F < F_{0.10}(1, N-2)$ , regression is not significant.

### 3.2 INTERMEDIARY ROLE GENETIC ALGORITHM MATHEMATICAL MODLE

Firstly, considering the influence of independent variables  $X$  on the dependent variable  $Y$ , if the independent variable  $X$  is affected by other variables  $M$  to influence the dependent variable  $Y$ , it is called the other variables  $M$  as the intermediary variable.

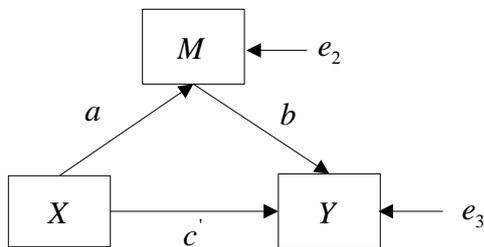


FIGURE 3 Schematic diagram of the intermediary role

As shown in Figure 3, under the effect of intermediate variables, assuming  $M$  expression is  $M = bx + b_1$ , then linear regression equation can be written as:

$$\hat{y} = Mb + bx + b_2 \tag{10}$$

$\hat{y}$  can use the form of random sequence, which can be variable genetic algorithm coding:

$$\{x_{t-1}, y_{t-1}^1, y_{t-1}^2, \dots, y_{t-1}^n\}, x_{t-1} \in R \tag{11}$$

For each network node, there are  $\{Y_e^1, Y_e^2, \dots, Y_e^n\}$  and  $\{M_f^1, M_f^2, \dots, M_f^n\}$ , we need to spatial crossover and mutation copy operation:

$$\begin{aligned} \bar{Y}_e^j &= zY_e^j + (1-z)Y_e^j, \\ \bar{Y}_f^j &= (1-z)Y_f^j + zY_f^j, j = 1, 2, \dots, n, \end{aligned} \tag{12}$$

where  $x$  is the forms of random number, and  $x \in [0,1]$ . Through the crossover and mutation operations, we can be easier to get the regulatory role of intermediary variables.

### 3.3 PROGRAM DESIGN

In the VC environment, calling MATLAB procedure has many kinds of ways. Now, the used  $m$  files by the MATLAB program are compiled into dynamic link library file is available for the C++ call. The used MATLAB command is: mcc-t-W lib:libfilename-T link: lib filename, where libfilename compiler gets a dynamic link library file name, filename is a file name of m file, the m file must be the form of a function. After the command execution, we can get libfilename.lib, libfilename.dll, libfilename.h files, in which the main VC program of significance tests is as follows:

```

x_ba=mean(x_i);
y_ba=mean(Y);
St_square=sum(Y.^2)-n*y_ba^2;
lxy=sum((xi-ones(n,1))*x_ba).*((Y-y_ba)*ones(1,k));
Sr_square=sum(beta_mao(2:end).*lxy);
Se_square=St_square-Sr_square;
c_flag=Sr_square/Se_square;
F_alpha=input('>>>>> Input the significant level (0<a<1)a= ');
while ~(isscalar(F_alpha) && F_alpha<1 && F_alpha>0)
F_alpha=input(' Enter a number greater than 0, less than 1,a= ');
end
F_fenweidian=finv(1-F_alpha,k,n-k-1);
c=k/(n-k-1)*F_fenweidian;
if c_flag>c
fprintf(['\r The significance test of regression
equation(H0 : \beta1=\beta2=...=k=0)' ...
\r After computing: refuse H0, original assumption does not hold'])
else
fprintf(['\r The significance test of regression
equation(H0:\beta1=\beta2=...=k=0)' ...
\r After computing: accept H0, original hypothesis.'])
end
    
```

Using the VC and MATLAB data interface, we can directly call MATLAB program in VC, and then through the MATLAB program to realize the linear regression analysis, the main program of MATLAB linear regression analysis is as follow:

```

function yy=model(beta0,X)
a=beta0(1);
b=beta0(2);
c=beta0(3);
d=beta0(4);
e=beta0(5);
f=beta0(6);
x1=X(:,1);
x2=X(:,2);
x3=X(:,3);;
yy=a*x1+b*x2+c*x3
    
```

#### 4 Analysis of occupation plateau, organizational identification and engagement relationship significantly

##### 4.1 ORGANIZATION BEHAVIOUR STRUCTURE HYPOTHESIS

###### 4.1.1 Occupation plateau structure study and hypothesis

In the structure study of traditional occupation plateau, the two dimensions of hierarchical plateau and content plateau are got most recognition. Research on the third and the fourth elements has the larger differences, which are respectively structure plateau, personal plateau, career plateau and other kinds of argument [11]. Previous research is built on the basis of results on universality, and the knowledge type group of constructing industry engineering technical personnel on the influence of the author may exceed the organization members basic attributes itself. Therefore, it is necessary to put forward more in line with the measuring method of group characteristics, which will significantly help for the study of pertinence and accuracy. The author believes that the structure of occupation plateau should contain the three dimensions of hierarchical plateau, content plateau, self realization plateau, so the authors propose the first hypothesis:

H1: For the study of construction industry engineering technical personnel career plateau, the structure can be divided into three dimensions that is hierarchical plateau, content plateau and self-realization plateau.

###### 4.1.2 Organizational identification structure study and hypothesis

So far, foreign organizational identity research has the most influential results combination [12]: (i) Patchen agreed to concept that will be introduced organizational research, and put forward to three dimensions of organizational identification that are similarity, membership and loyalty; (ii) Cheney was three dimensional theory based Patchen as the basis, and proposed the OIQ measurement table of 30, which is later simplified to 25; (iii) Miller conducted reconsider and re validation on the OIQ scale, which is simplified as 12. But the domestic research started late, so the research range of organizational identity is cognition of organizational members for organization. On the basis of this, forming the emotion feedback on the organization limits to the psychological and emotional level. Therefore, hypothesis 2 is proposed:

H2: organizational identification is a multi-dimensional concept, it includes three dimensions of loyalty, members and similar.

###### 4.1.3 Engagement structure study and hypothesis

Engagement will be divided into two dimensions by Towers Perrin consulting company, the first dimension is "rational dedication", namely the organization members should work hard because of existing compensation, improving skills and other aspects; the second dimension is

"emotional dedication", namely dues to work itself interested or personal potential expectation, the staff can give full play to work hard, the characteristics of this division method and knowledge group are more match, these will be more helpful to explore the impact of engagement factors and mechanism of the knowledge workers, so the improved hypothesis is:

H3: For the study of construction industry engineering technical personnel engagement, the structure can be divided into two dimensions of rationality and sensibility.

##### 4.2 HYPOTHESIS AND ANALYSIS OF CAREER PLATEAU, ORGANIZATIONAL IDENTIFICATION AND ENGAGEMENT RELATIONSHIP

This paper adopts the form of the questionnaire to carry on the research of organizational behaviour, the survey questionnaire is 1025, and recycling effective questionnaire is 990, but the effective rate of questionnaire survey is 96.59%. The survey questionnaire data uses VC and MATLAB unified computing method, interview results convert into a percentage, so as to discuss. At last, the results of data analysis are compared the questionnaire survey and interviews, in order to more accurately describe the mediating effect of career plateau, organizational identification and engagement correlation, which can improve the credibility of the research.

###### 4.2.1 Analysis of the effect of career plateau on the organizational identification

In modern society, work has multiple meaning for everyone, which not only has material implications, but also includes personal development, spiritual content and so on. The vertical promotion is one of the direct means and important way to achieve personal development, personal satisfaction and personal value. With the economic development and social progress, including management idea, hierarchical reduction and other subjective and objective environment have taken place in great changes, which lead to accelerate the arrival of personal career plateau state. Combined with the structure and dimension of the career plateau, the author thinks that career plateau is composed of three dimensions that are hierarchical plateau, content plateau and self realization plateaus, to analyze the impact of career plateau on employee organizational identification can be done from the following three aspects:

a) Analysis of the effect of level plateau on organizational identification: in the occupation plateau problem, the effect of level plateau is undoubtedly major aspects. The vertical promotion is one of the direct means and important way of achieving personal development, personal satisfaction and personal value. A slim chance of promotion will directly lead to decline in employee incentive degree, affecting the degree of recognition on the organization. Usually, people will expect the company to give personal effort behavior with the corresponding forms of recognition, when people

realize that they are in a level plateau state, individual performance, individual contribution and personal ability cannot obtain the corresponding promotion opportunities in return, they will be psychological distress, and thus reduce the degree of recognition on the organization.

- b) Analysis of the effect of content plateau on organizational identification: when people cannot learn new knowledge and new skills from the work, they are called content plateau state in management. For the employees, work is the only program, execution and certainty in the long-term content plateau state, and no challenge. At the same time, the content plateau means work content stale and boring, and has a negative impact on organizational identification.
- c) Analysis of the effect of self-realization plateau on the organizational identification: in addition to reduce promotion opportunities and lack of new work accidents, occupation plateau also affects the people to pursuit the aim of self-realize value. For the knowledge workers, the problem is greater than level plateau and content plateau for the impact on organizational identification. Therefore, based on the research object characteristic, this paper introduces self-realization plateau variables. So far, the introduction of self-realization plateau is the first time to study the plateau.

When employees are in the current organization, they believe that they can not obtain further promotion, learning new knowledge and skills and fail to self realization goal, reducing the organization's identity. The author hypothesis is:

- H4: career plateau has significant negative correlation effects on organizational identification;
- H4a: level plateau has significant negative correlation effects on organizational identification;
- H4b: content plateau has significant negative correlation effects on organizational identification;
- H4c: self-realization plateau has significant negative correlation effects on organizational identification.

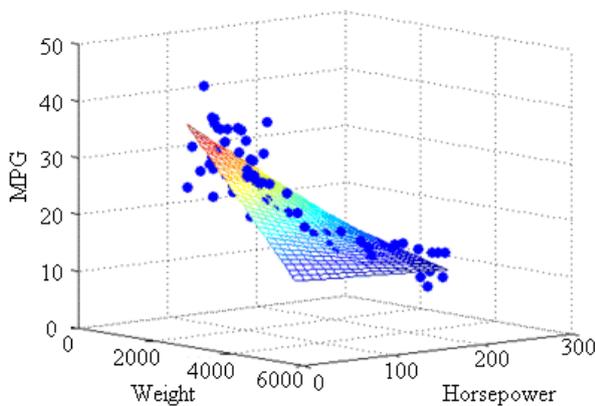


FIGURE 4 Cloudy regression curve

Figure 4 shows the multiple regression analysis curve of using MATLAB rendering, in which each variable all corresponds to a linear regression curve, the whole of the curve show three-dimensional curve structure as shown in

Figure 4. Through calculating, the convergence curve is shown in Figure 5.

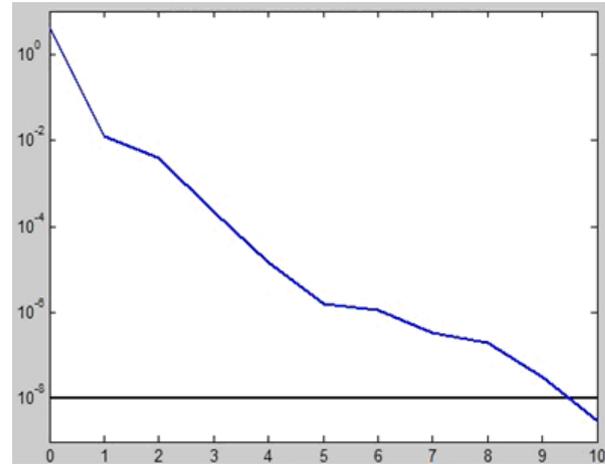


FIGURE 5 Linear regression error convergence curve

Figure 5 shows the error convergence curve of linear regression. It can be seen from Figure 5 that the error analyzes to the tenth step by means of iteration, the error has been reduced to below  $10^{-8}$ , achieving higher accuracy and good convergence.

Multicollinearity test uses the variance inflation factor VIF value, test value can be accepted among 1-5, if VIF is greater than 10, it indicates the existence of serious multicollinearity, and is close to 1.

TABLE 1 Career plateau significant multiple regression analysis

Career plateau	organizational identification (b)	VIF
Level plateau	-0.126	2.32
Content plateau	-0.129	1.28
Self-realization plateau	-0.123	1.19

Table 1 shows the significant multiple regression calculation results of career plateau, it can be seen from the table, the hierarchical plateau, content plateau and self-realization plateau are positive correlated with organizational identification. VIF is hovering among 1-5, which is an acceptable result, so as to verify the hypothesis.

#### 4.2.2 Analysis of the effect of occupation plateau on engagement

The relationship between occupation plateau and engagement is many similarities in the relationship between organizational identifications, but the difference between two pairs of relations is obvious. From the organizational identification and engagement itself, the former reflects a relationship, namely the relationship between employees' self-concept and organization is the confirmation of self identity and seek in the organization; the latter mainly refers to the relationship between employee personal and work roles, which reflects its efforts to participate in the degree of the work. Management practice tells us that the different dimensions of occupation plateau are also different for the effect of organizational identification and engagement. Of course, they also have important similarities, occupation

plateau can not only directly affect the engagement, but also can indirectly influenced engagement by influencing organizational identification, and it is to examine the mediating role in this paper. Similarly, occupation plateau also includes three aspects on engagement impact.

- a) Analysis of the effect of hierarchical plateau on engagement: when there is level plateau, engagement behaviour can no longer improve development space of personal occupation career, according to strengthen the theory of Skinner, it will lead to decline in personal engagement. In many research on the career plateau, all of these can be verified. In the study of Hall, Stout, Lemire, Lee and Clark, they also examine the relationship between level plateau and engagement, and the hierarchical plateau will cause the staff to have low participation of the work; Orpen, Gerpott, Domsch, Burke etc. have also found through the study that level plateau lead to the lower work engagement and satisfaction on management. On the cognitive differences of organizational identification, they also have engagement problem, these studies also directly or indirectly validate the relationship between hierarchical plateau and engagement, to support hierarchical plateau leads to the view of engagement drop.
- b) Analysis of the effect of content plateau on engagement: in daily work and management practice, because the boring job content leads to very common engagement slipping phenomenon, this is similar to the content plateau on the engagement influence mechanism. Engagement itself is a reflection of the relationship between employee personal and work role, therefore employee is whether or not reflects the engagement above for the recognition of work content.
- c) Analysis on the effect of self-realization plateau on engagement: self-realization plateau refers that work can give members bring a sense of achievement, honour and self-realization opportunities. For the knowledge type employee, self-realization demand is greater than the chance of promotion and job content on the greater effect of individual behaviour and cognition judgment, which is decided by the special nature of knowledge workers.

The author thinks that organizational identification and engagement should have a significant positive correlation effect. According to the description of Towers Perrin consulting company, rational professionalism more reflects the members dependent on the organization and the basic professional quality of organization members, and emotional dedication will be reflected in the work of passion and creativity. It can be said that the higher education of construction industry engineering technical personnel and education can basically guarantee the basic stability of professional quality in any case, but in the aspects of work passion and creativity, there may be a more significant effect of perceived organizational identification. Aiming at these problems, the author hypothesis is:

H5: organizational identification has significant positive correlation effect on engagement;

H5a: organizational identification has significant positive correlation effect on rational professionalism;

H5b: organizational identification has significant positive correlation effect on emotional dedication.

TABLE 2 Organizational identification significant multiple regression analysis

Engagement	Organizational identification (b)	VIF
Rational professionalism	0.225	1.25
Emotional dedication	0.322	3.22

Table 2 shows the significant multiple regression calculation results of organizational identification, it can be seen from the table, the hierarchical plateau, content plateau and self-realization plateau are positive correlated with organizational identification. VIF is hovering among 1-5, which is an acceptable result, so as to verify the hypothesis.

#### 4.2.3 Analysis of the effect of organizational identification on engagement

Although this paper studies the effect of occupation plateau problem on organizational identification and engagement, however because of the influence of organizational identification on engagement namely intermediary function exists, to conduct necessary analysis research for the relationship between organizational identification and engagement. Organizational identity reflects a kind of relation, namely the relationship between employees' self-concept and organization is the confirmation of the self-identity and seeking in the organization; engagement refers to the relationship between employees individual and job role, their efforts participate in the degree of the work. There is an important relationship between them, and the increasing of individual on the organization identity is conducive to enhance the engagement on job. In the study of career plateau, the intermediary role of organizational identity enhances the influence degree of career plateau on engagement and other aspect.

Study on the relationship between existing career plateau and engagement thinks that career plateau has a significant negative correlation effects on the engagement, the author hypothesis is:

H6: occupation plateau has significant negative correlation effect on engagement;

H6a: level plateau has significant negative correlation effects on rational professionalism;

H6b: level plateau has significant negative correlation effects on emotional engagement;

H6c: content plateau has significant negative correlation effects on rational professionalism;

H6d: content plateau has significant negative correlation effects on emotional engagement;

H6e: self-realization plateau has significant negative correlation effects on rational professionalism;

H6f: self-realization plateau has significant negative correlation effects on emotional engagement.

TABLE 3 Engagement significant multiple regression analysis

Occupation plateau	Emotional engagement (b)	Rational professionalism (b)	VIF
Level plateau	-0.221	-0.125	1.33
Content plateau	-0.235	-0.328	1.28
Self-realization plateau	-0.329	-0.227	1.11

Table 3 shows the significant multiple regression calculation results of organizational identity, it can be seen from the table, the hierarchical plateau, content plateau and self-realization plateau are negatively correlated with engagement. VIF is hovering among 1-5, which is an acceptable result, so as to verify the hypothesis.

4.2.4 Research hypothesis and analysis of the mediating role of organizational identification

Occupation plateau is organization members' career at the peak point of the state, it reflects the occupation development status of organization members; organizational identification is a member of the emotional feedback in the cognitive basis; dedication is a member of the actual work attitude and behaviour in the organization. The three definition itself reflect the periodical process from the current situation to the psychological and then to action. Usually, psychological should play a mediating role between occupation state and behaviour.

- H7: organization identity has intermediary role in the relationship between occupation plateau and engagement.  
From the sub model, we assume:
- H7a: organization identity has intermediary role in the relationship between level plateau and emotional engagement;
- H7b: organization identity has intermediary role in the relationship between level plateau and rational engagement;
- H7c: organization identity has intermediary role in the relationship between content plateau and rational engagement;
- H7d: organization identity has intermediary role in the relationship between content plateau and emotional engagement;
- H7e: organization identity has intermediary role in the relationship between self-realization plateau and rational engagement;
- H7f: organization identity has intermediary role in the relationship between self-realization plateau and emotional engagement.

In this study, the main test organization identity has the intermediary role in career plateau and engagement, inspection order is career plateau (independent variable X) –

References

[1] Luo M, Luo F, Chen M 2014 The compensation satisfaction of the individual characteristics, job characteristics and agricultural enterprise employee satisfaction *Journal of Huazhong Agricultural University (Social Science Edition)* 2 112-6 (in Chinese)  
 [2] Pang B 2013 Impact of salary management fairness on employees

organizational identification (intermediary variable M) – engagement (dependent variable Y), the detailed results are shown in Table 3.

TABLE 4 The intermediary role significant results of organizational identification

Occupation plateau	R1 <sup>2</sup>	R2 <sup>2</sup>	ΔR <sup>2</sup>
H7a	0.212	0.220	0.008
H7b	0.238	0.244	0.006
H7c	0.321	0.328	0.007
H7d	0.125	0.127	0.002
H7e	0.132	0.132	0.000
H7f	0.112	0.113	0.001

For the regulation intermediary role of organizational identity, we first do the regression of engagement (dependent variable Y) on occupation plateau (independent variable X) and organizational identification (intermediary variable M) to determinate coefficient R<sub>1</sub><sup>2</sup>. We second do the regression R<sub>2</sub><sup>2</sup> of engagement (dependent variable Y) on occupation plateau (independent variable X), organizational identification (intermediary variable M) and XM regression; in the results of study, R<sub>2</sub><sup>2</sup> is significantly higher than R<sub>1</sub><sup>2</sup>, the organizational identification (intermediary variable M) is mediation effect. As can be seen from Table 3, most intermediary role has the higher significant, so we can determine the organizational identification moderating effect on occupation plateau and engagement.

5 Conclusion

- 1) This paper establishes the mathematical model of building industry organizational behaviour significant analysis, it is the use of multiple linear regressions to establish the correlation model of organizational behaviour, using genetic algorithms establishes the intermediary role model, and then using VC and MATLAB compile the calculation program.
- 2) Through the VC to call MATLAB linear regression toolboxes file M, the significant analysis of professional plateau, organizational identification and engagement can obtained multiple linear regression curve and convergence error, finally the use of F test calculates the correlation and the mediating role of organizational behaviour.
- 3) Through the calculations, it shows that career plateau has negative correlation on organizational identification and engagement, organizational identification has a positive correlation on employee engagement, and career plateau has an intermediary role between organizational identity and engagement.

Acknowledgments

This Project supported by the National Natural Science Foundation of China (Grant No. 71403173).

pay satisfaction *Human resource management* 8 352-8 (in Chinese)  
 [3] Han R, Li J 2013 Impact of the civil service pay fairness, effect satisfaction on behavioral performance *Economic reform* 3 89-92 (in Chinese)  
 [4] Chen X, Jia C 2013 The empirical study of the relationship between

- employees' pay satisfaction and job performance *Social scientists* **3** 670-5 (in Chinese)
- [5] Chen J, Wang T 2012 Analysis of the psychology of college teachers engineering behavior *Study of higher education vocational* **3** 45-9 (in Chinese)
- [6] Wen D 2012 Analysis of college students' ideological and political education under the view of psychological development *Journal of Liaoning higher vocational education* **12** 210-6 (in Chinese)
- [7] Chen J, Chong C 2011 Discussion on college counselors' professional growth based on professional role analysis *New West (second half)* **1** 102-5 (in Chinese)
- [8] Zhu J, Lin Z 2010 Discussion on our school young teacher professional role forming characteristics and exploration career development planning *Human resource management* (06) (in Chinese)
- [9] Guo Z 2012 On the judicial system ethics and virtue ethics judge character 2012 *Journal of Hehai University (Philosophy And Social Science Edition)* **2** 152-4 (in Chinese)
- [10] Liu C 2011 Analysis of the impact of pay management fairness on staff salary satisfaction *Human resources* **12** 76-80 (in Chinese)
- [11] Meng Z 2011 On medical professionalism promotion factor *Chemists (second half)* **7** 23-8 (in Chinese)
- [12] Zhang Y, Li H 2011 From the traditional medical ethics to modern medical professionalism – Modern transformation of Chinese traditional medical ethics *Medicine and philosophy (humanities and social medical science edition)* **6** 56-60 (in Chinese)

## Authors



**Lu Na, May 1974, Feicheng City, Shandong province, China.**

**Current position, grades:** doctor at Tongji University School of Economics and Management (China).

**University studies:** city management and construction project management.

**Research interests:** engineering management, mathematical model.



**Tianyan Wu, January 1979, Shanxi, Jinzhong, China.**

**Current position, grades:** doctor's degree, associate professor.

**University studies:** PhD at Tongji university, Management science and Engineering.

**Scientific interests:** city management, the real estate management, construction project management.

**Publications:** 20.