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# Psychological Contract Imbalance and Management of Enterprise Research and Development Personnel

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## Abstract
This paper begins with the definitions of psychological contract imbalance and EVLN behaviors. Then, a theory is proposed to further study the influencing model of EVLN behaviors of psychological contract imbalance on enterprise Research and Development (R&D) personnel. A demonstrative research has been done through questionnaires with the researchers in one of the aircraft design institutes in China. Based on previous studies, statistics analysis has been accomplished with the analysis methods of factor, correlation, path, and regression. Therefore, on the basis of validated hypothesis, the conception and countermeasure are proposed for the psychological contract imbalance and management of enterprise R&D personnel.

**Key words:** Research and development (R&D) personnel; Psychological contract imbalance; Management

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## INTRODUCTION
The phenomena of psychological contract imbalance of would result in different work attitude and behaviour on institution researchers. Thus, the study on influential factors on R&D personnel, as well as the impact of researchers' attitude and behavior on the stability and development of scientific research institutions is a topic which is evitable and of significant practical meaning.

## 1. LITERATURE REVIEW AND DEFINITION

### 1.1 Psychological Contract Imbalances
The definition of psychological contract imbalance is widely used in existing studies; some scholars name it as psychological contract breach, which means the individual cognitive evaluation when organisation breaks the promise to personnel. Others call it as psychological contract violation; it is defined as the individual emotional experience when organization failed to fulfill the promise. In practice, these two concepts are often mix used, even though many studies are so-called psychological contract violation but the research fall into the category of psychological contract breach, which suggests that the definition is not clear. In addition, this concept has a fatal shortage; the psychological contract imbalance is regarded as a kind of static state, while current researches certify that the psychological contract imbalance is a dynamic status, which contains the changing process of cognition, emotional experience, and attitude and behaviour tendency.

Therefore, psychological contract imbalance is regarded as the changing process of complex emotional experience and behavior when group members perceive the breach of organisation. In the writer's view:

Psychological contract imbalance is the researcher cognition towards organisation breach and the accompanied attitude and behaviour tendency.

### 1.2 EVLN Behavior
The EVLN psychological and behavior refers to psychology and behavior tendency when R&D personnel

sense declining job satisfaction. It was carried out by Hirschman in 1970, after the development of Zembrodt & Gunn (1982), Farrell (1983), Farrell Rogers & Mains et al. (1988) development; it has become a well-developed mature model.

EVLN (Hirschman, 1970; Rusbult, 1970) is the four types of psychological and behavioral variables of the first English letter abbreviation; it contains the following four parts:

E (exit) is the action of exit, meaning the psychology and behavior when researcher seek to leave the organization through resignation, transferring, and find a new job.

V (voice) stands for appealing action, also known as the complaint behavior; it means research personnel discuss difficulties with the organization to solve the problem through constructive communication.

L (loyalty) is loyalty behavior (silence behavior), it refers to researcher support the organisation in a public or private way, optimistic but passively waiting for organization situation change.

N (neglect) is to ignore behavior; it refers to negative behaviour by lessening effort, reducing performance, or other anti-organisation behaviour.

The psychological contract EVLN behavior choice tendency refers to the four types of psychological and behavior tendency that R&D personnel may choose when they perceive the organization breach.

### 1.3 Attribution

Attribution is categorized as a term of social psychology, which refers to the process when people deduce the behaviour of themselves or others. Later on, this concept was further deepened, it was defined as observer's perception and judgment on behavior process, the purpose of this is to predict and evaluate the behavior of people, and then further control the environment and behavior (Kelly & Michela, 1980). In Kelly's view, there are three reasons to explain the behaviours—actor, objective and environment. At the same time, he also thinks that the choice of the three explanations depends on three kinds of information, namely, the difference: whether the actor react the same for other behaviour; consistency: whether the behavior is consistent with others under same situation; coherence: does the action happen under other circumstance. The attribution is defined as perception and evaluation of personnel for organizational behavior process.

### 1.4 Psychological Contract Breaking Promise Cost

Psychological contract breaking promise cost refers to the cost when research personnel violate their responsibility and obligation to the organization. It may be material cost, economic interests, and may also be mental, social status and development opportunities, social reputation, etc. Essentially, it is the psychological conversion process of researcher in terms of the value exchange between individuals and organizations. Psychological contract breaking promise cost refers to the losses and costs of R&D personnel that breaking a promise may bring.

### 1.5 External Market Employment Opportunities

Turnley & Feldman (1999) think that for an individual who is easy to find work elsewhere, is unlikely to continue to work in an organisation where the commitment to staff is not fulfilled. The external market employment opportunities mean the probability of personnel who get the same position in the human resources market.

## 2. RESEARCH DESIGN

### 2.1 Research Purposes

This paper mainly discusses the psychological contract imbalance of researchers, the influencing factors and inherent relation between EVLN behavior choice, and its influence degree.

### 2.2 Research Hypothesis

Hypothesis 1: there is a significant relation between evaluation of organisation's reaction to commitment and EVLN behaviour of researchers, and fulfill degree of commitment has an impact on EVLN behavior choice

Hypothesis 2: R&D personnel attribution of R&D staff of the organization's no-show behavior is positively correlated EVLN behavior choice, namely R&D staff responsibility attributed no-show responsibility to organization, the greater the developers EVLN behavior selection in the propensity to choose the more destructive behavior.

### 2.3 Sample and Research Tool

#### 2.3.1 Sample

We selected 300 researchers from one of the large aircraft design institute in western China, in total, we sent out 300 questionnaires, collected back 279 questionnaires, of which, 274 were valid. Men accounted for 84.5%, and women accounted for 15.5%. The majority of the respondents are 36 to 45 years old age, which stand for 40.2%; followed by 26~35 years old (37.4%). In terms of the education background, undergraduate take 41.5%, followed by master students, (28.7%), PhD students accounted for 29.8%.

#### 2.3.2 Table Design and Constitution

(a) Psychological contract violation table. Usually there are two quantitative methods to measure psychological contract imbalance: Psychological contract violation quantitative statistics and psychological contract satisfaction quantitative statistics. Research indicates that psychological contract violation and psychological contract satisfaction is at two end of continuity. The

higher the psychological contract violation level, meaning higher degree of psychological contract imbalance, then, the lower the psychological contract satisfaction level. On the contrary, the higher the psychological contract satisfaction level, the lower the level of psychological contract violation or imbalance. This article use the psychological contract satisfaction level to reversely measure psychological contract imbalance degree, which means, the lower level of performing organization commitment stand for higher level of psychological contract imbalance. We use 5 points to measure the perform degree, none (i); rarely (ii); medium (iii); basically (iv); completely fulfilling (v).

(b) Attribution of declining responsibility, which is used to examine the internal relation between attribution of declining responsibility and R&D personnel behavior choice. It is measured by three degree, (i) misunderstanding between individual and organizations, (ii) organizational development practical difficulties; (iii) organization intended action.

(c) Job opportunity and breaking promise cost, which is used to measure the internal relation with psychological contract imbalance behavior choice. Job opportunity is measured by researcher's education qualifications, which means higher education degree represent higher external market employment opportunity. Breaking promise cost including material cost, the relationship cost, opportunity cost and emotional cost, etc., which is represented by the working years. The longer an employee works for an organisation, the higher the cost of leaving the group. This hypothesis can be basically verified with practice.

(d) EVLN behavior table. This table is developed on the basis of EVLN table carried out by Rusbult et al. (1998), which including 20 questions in total. Four actions: exit, voice, neglect, loyalty; each action take account of 5 questions. The EVLN behaviour are evaluated with Likert 5 Scale method, namely, completely disagree (i); barely agree (ii); partially agree (iii); basically agree (iv); completely agree (v).

### 2.3.3 Validity Analysis and Reliability Analysis

Exploratory factor analysis and confirmatory factor analysis are conducted to test the validity. The survey data is divided into two parts: 137 for each part, the first half of data is used to conduct exploratory factor analysis, the rest half of the data is used to conduct confirmatory factor analysis.

(a) Single factor analysis—Exit

Exploratory factor analysis is assessed by using principal component analysis (PCA) method. Single factor structure model is developed by extract according to the principle of characteristic roots is greater than 1 and the varimax orthogonal rotation method. This model indicates that total variance is 57.815%, factors are shown in Table 1.

**Table 1**
**Single Factor Analysis Matrix—Exit**

| | Component |
|---|---|
| | 1 |
| A1 | 0.746 |
| A2 | 0.738 |
| A3 | .795 |
| Total variance | 57.815% |

Then, the confirmatory factor analysis was conducted using the rest half of the data, the measurement indicator is as follows:

X2 / df = 3.74, GFI = 3.74, CFI = 0.91, RMSEA = 0.069, NNFI = 0.94, IFI = 0.92.

Since X2 / df < 5, RMSEA is less than 0.080, CFI/GFI and IFI were both greater than 0.90, the model fitting is well and can be accepted; the model structure validity is reliable.

(b) Single factor analysis—Neglect

Exploratory factor analysis is assessed by using principal component analysis (PCA) method. Single factor structure model is developed by extract according to the principle of characteristic roots is greater than 1 and the varimax orthogonal rotation method. This model indicates that total variance is 48.771%, and factors are shown in Table 2.

**Table 2**
**Single Factor Analysis Matrix—Neglect**

| | Component |
|---|---|
| | **1** |
| A4 | .592 |
| A5 | .730 |
| A6 | .681 |
| A7 | .778 |
| Total variance | 48.771% |

Then, the confirmatory factor analysis was conducted using the rest half of the data, the measurement indicator is as follows:

X2 / df = 4.10, GFI = 0.92, CFI = 0.92, RMSEA = 0.081, NNFI = 0.93, IFI = 0.92.

Since X2 / df < 5, RMSEA is approximately equal to 0.080, CFI/GFI and IFI were both greater than 0.90, the model fitting is well and can be accepted; the model structure validity is reliable.

(c) Single factor analysis—Voice

Exploratory factor analysis is assessed by using principal component analysis (PCA) method. Single factor structure model is developed by extract according to the principle of characteristic roots is greater than 1 and the varimax orthogonal rotation method. This model indicates that total variance is 51.319%, factors are shown in Table 3.

**Table 3**
**Single Factor Analysis Matrix—Voice**

| | Component |
|---|---|
| | 1 |
| A8 | .738 |
| A9 | .634 |
| A10 | .709 |
| A11 | .777 |
| Total variance | 51.319% |

Then, the confirmatory factor analysis was conducted using the rest half of the data, the measurement indicator is as follows:

X2 / df = 2.99, GFI =0.93, CFI = 0.93, RMSEA = 0.071, NNFI = 0.92, IFI = 0.91.

Since X2 / df < 5, RMSEA is less than 0.080, CFI/GFI and IFI were both greater than 0.90, the model fitting is well and can be accepted; the model structure validity is reliable.

(d) Single factor analysis—Loyalty

Exploratory factor analysis is assessed by using principal component analysis (PCA) method. Single factor structure model is developed by extract according to the principle of characteristic roots is greater than 1 and the varimax orthogonal rotation method. This model indicates that total variance is 69.058%, factors are shown in Table 4.

**Table 4**
**Single Factor Analysis Matrix—Loyalty**

| | Component |
|---|---|
| | 1 |
| A12 | .872 |
| A13 | .861 |
| A14 | .837 |
| A15 | .749 |
| Total variance | 69.058% |

Then, the confirmatory factor analysis was conducted using the rest half of the data, the measurement indicator is as follows:

X2 / df = 3.81, GFI = 0.91, CFI = 0.92, RMSEA = 0.078, NNFI = 0.91, IFI = 0.92.

Since X2 / df < 5, RMSEA is less than 0.080, CFI/GFI, IFI were both greater than 0.90, the model fitting is well and can be accepted, the model structure validity is reliable.

In the reliability analysis of EVLN behavior questionnaire, the Cronbach's alpha coefficient is 0.849, which indicates that the reliability standard is well for the measurement table.

## 3. DATA ANALYSIS

### 3.1 Organizational Psychological Contract Fulfillment and Behavior Choices of R&D Personnel EVLN

#### 3.1.1 Correlation Analysis Psychological Contract Fulfillment Degree of R&D Personnel EVLN Behavior Choices

As Table 5 shows, there exists a negative correlation between three dimensions of organizational responsibilities and different levels of "Exit Behavior", and professional development responsibilities have reached a significant level. This indicates that among the three responsibilities, especially the professional development responsibilities, the lower the fulfillment degree of organization is, the more possibility the researchers will take the "Exit Behavior". The normative responsibilities and career development responsibilities of dimensional factors in organizational responsibility are highly negative related to ignoring behavior and calling behavior, which shows the lower the fulfill degree of organizational responsibilities and career development responsibility are, the more possibility the researchers chose calling behavior.

**Table 5**
**Psychological Contract Performance Spearmen Related to R&D Staff EVLN Behavior Choice**

| | Exit behavior | Ignoring behavior | Calling behavior | Loyalty behavior |
|---|---|---|---|---|
| Normative responsibility | -.120 | -.279(**) | -.282(**) | .213(**) |
| Responsibility for career development | -.262(**) | -.354(**) | -.159(**) | .588(**) |
| Team-building responsibilities | -.142(*) | -.094 | -.079 | .406(**) |
| N | 271 | | | |

#### 3.1.2 Regression Analysis on the Fulfill Degree of Organizational Responsibility and R&D Personnel EVLN Behavior Choices

To further explore the influence of three factors' fulfill degree on researchers' EVLN behavior by using multiple regression techniques. Take the three factors of organizational responsibility as independent variables, and researchers' EVLN behavioral tendencies as the dependent variable to do regression analysis. The regression results were shown in Table 6.

**Table 6**
**Regression Analysis on the Influencing Factors and Researchers' EVLN Behavior**

| | R&D personnel EVLN behavior | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Exit behavior | | Ignoring behavior | | Calling behavior | | Loyalty behavior | |
| | Beta | t | Beta | t | Beta | t | Beta | t |
| Normative responsibility | -.005 | -.074 | -.287 | -4.848 | -.356 | -5.869 | .083 | 1.748 |
| Responsibility for career development | -.424 | -7.157 | -.292 | -5.091 | -.352 | -3.532 | .552 | 12.012 |
| Team-building responsibilities | -.058 | -.995 | -.045 | -.797 | .044 | 0.760 | .295 | 6.517 |
| R2 | %19.5 | | 24.5% | | 21.1% | | 51.6% | |

The results showed that, in the "Exit behavior" regression analysis, three factors explained 19.5% of variance. The predicted force of responsibility for career development to "Exit behavior" has reached a significant level, has a significant negative impact, and the other two hasn't. From the regression analysis of Ignore behavior, the three factors of organizational responsibilities explained 24.5% of the total variance, in which, the predicted force of normative responsibilities and career development to the "ignore behavior" has reached a significant level, with significant negative predictive power. In the "call behavior" regression analysis, the three factors of organizational responsibilities explained 21.1% of the total variance, the predictive power of regulatory responsibilities and career development responsibilities was significant, with significant negative predictive power, and however, team-building responsibilities forecast force is lower. In the "loyal behavior" regression analysis, three dimensions of responsibility of responsibility explained 51.6% of the total variance, and the predictive power of career development responsibility and team-building responsibilities reached a significant level, with a positive predictive power.

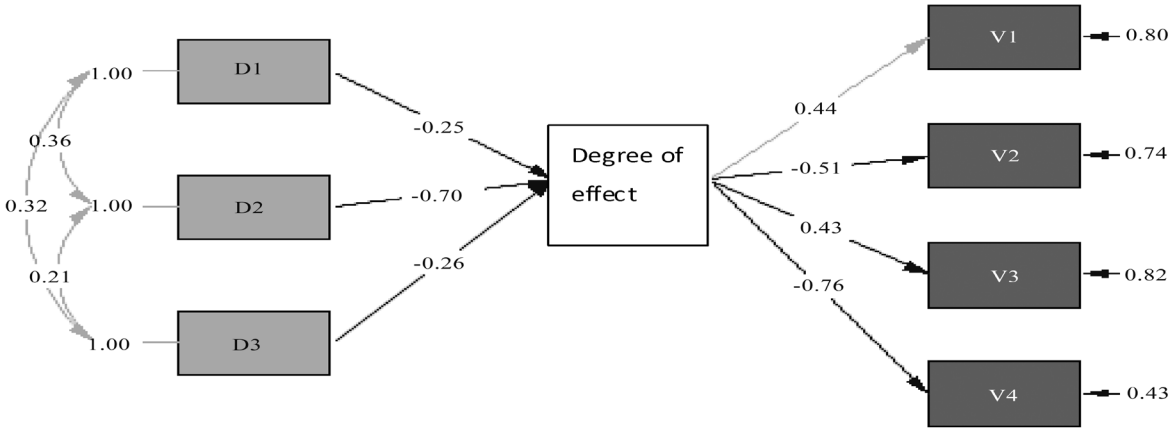


**Figure 1**
**Path Analysis Diagram on Fulfillment Degree of Organizational Responsibility and R&D Personnel EVLN Behavior Choices**

### 3.1.3 Results of Fulfill Degree of Organizational Responsibility and R&D Personnel EVLN Behavior Selection Path Analysis

Path analysis (path analysis) was first proposed and developed by biologist Wright (1960) as a causal model analysis technique. It consists of the road map; based on which to get the correlation coefficient and path coefficient equation; and effect decomposition as the third parts. Path analysis consist two expressions, one is structural equation forms, and the other one is the path diagram form. This paper chose diagram form for analyzing. In the road map, the rectangular boxes represent observable variables; straight arrows indicate the assumed causal relationship between the variables, the arrows point the cause variable to outcome variable. The curved double-headed arrows indicate that two variables are related, but no causal relationship between them. Variables without box are a part of the equation that are not being interpreted. It means that there is no direct contact between the variables if the variables are not connected.

We use lisrel8.70 to do path analysis on relationship between the fulfill degree of organizational responsibility and R&D personnel EVLN behavioral choices, and use road map as the form of expression. The results were shown in Figure 1. the results show that the three dimensions of organizational responsibility exists a high degree of positive correlation and the researchers' EVLN behavior choice has the same effect, the effect of career development responsibility is the highest, and the path coefficient is -0.70; While normative effect of

responsibility and team building responsibilities are -0.25 and -0.26 respectively. The total effect of fulfill degree of Organizational responsibility on the path coefficients of R&D personnel EVLN behavioral choices are 0.44 (exit behavior), 0.51 (ignoring behavior), 0.43 (calling behavior), -0.76 (exit behavior) respectively.

## 3.2 Adjustment Factors and R&D Personnel EVLN Behaviors

### 3.2.1 Correlation Analysis of Adjustment Factors and Researchers Behavioral EVLN

As shown in Table 7, the statistics showed that the adjustment factors are significantly related to "Exit Behavior" and "Ignoring Behavior ". The "attribution" and "employment opportunities of outside markets" and "Exit Behavior" and "ignore behavior" were positively correlated, and "renege cost" and "Exit Behavior" and "Ignoring Behavior" were negatively correlated. "Attribution" and "loyalty behavior" showed a significant negative correlation, but with little relationship with "calling behavior". "Employment opportunities of outside markets" and "renege cost" and "appeal Behavior" and "loyalty behavior" have a higher correlation. The "employment opportunities of outside markets" and "calling behavior " was positively correlated, and with negative correlation with" loyalty behavior". "Renege cost" and "loyalty behavior" are of significant positive correlation, but with "Calling Behavior" are in general.

**Table 7**
**Adjustment Factors and R&D Personnel Behavioral Choices Are of Spearmen Correlation**

| | Exit behavior | Ignoring behavior | Calling behavior | Loyalty behavior |
|---|---|---|---|---|
| **Attribution** | .421(**) | .160(**) | .031 | -.198(**) |
| **Employment opportunities of outside markets** | .347(**) | .305(**) | .742(**) | -.146(*) |
| **Psychological contract renege costs** | -.444(**) | -.237(**) | -.120(*) | .341(**) |
| **N** | 271 | | | |

**Table 8**
**Regression Analysis of Adjustment Factors and R&D Personnel EVLN Behavioral Choices**

| | R&D personnel EVLN behavior | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Exit behavior | | Ignoring behavior | | Calling behavior | | Loyalty behavior | |
| | Beta | t | Beta | t | Beta | t | Beta | t |
| Employment opportunities of outside markets | .340 | 6.497 | .058 | .958 | -.147 | -3.462 | -.122 | -2.018 |
| Attribution | .202 | 3.914 | .259 | 4.317 | .786 | 18.725 | -0.056 | -.943 |
| Psychological contract renege costs | -.283 | -5.411 | -.159 | -2.615 | .031 | .729 | .287 | 4.741 |
| | 35.3% | | 12.8% | | 57.4% | | 13.2% | |

### 3.2.2 Regression Analysis of Adjustment Factors and Researchers' Behavioral EVLN

Using regression analyses validate the relations of adjustment factors and R&D personnel EVLN behavior choices. As shown in Table 8, in regression analysis on "Exit behavior", the adjustment factors explained 35.3% of the total variance. Three adjustment factors were of significant predictive level, and attribution and employment opportunities showed positive predictive power, while the cost of psychological contract renege has negative predictive power. The regression analysis on ignoring behavior showed that three factors explained 12.8% of the total variance. "Attribution" factor and the "psychological contract renege cost" reflect the strong predictive power, which "attribution" is of positive prediction, and "renege cost" is of negative predictor. But the employment opportunities of outside markets do not reflect an acceptable predictive power. The regression analysis on calling behavior showed that three factors explained 57.4% of the total variance, in which attribution shows strong positive predictive power, while the outside market showed a negative predictive power, but the predictive power is in general. The regression analysis on loyalty behavior showed that three factors explained 13.2% of the total variance, in which the psychological contract renege costs have significant positive predictive power, the employment opportunities of outside market also showed some negative predictive power, but attribution have a low predictive power on loyalty.

## 3.3 Discussion and Analysis

### 3.3.1 Organizational Responsibility and Influence of R&D Personnel EVLN Behavioral Choices

The correlation analysis and regressions analysis on organizational responsibility and the tendency of R&D personnel EVLN behavioral choices show that organizational responsibility or degree of commitment to compliance has significant influence on tendency of R&D personnel EVLN behavioral choices when organizations missed appointments, that is to say, R&D personnel imbalance degree of psychological contract is directly related to their behavioral choices, and organizational responsibility degree of fulfillment on each dimension tend to have different effects on researchers behavioral

choices , the results also verify the correctness of the hypothesis 1 .

(a) Normative responsibility and R&D personnel EVLN behavioral choices. The lateral inspection on the relationship between normative responsibility and R&D personnel EVLN behavioral choices shows normative responsibility is lowly correlated to "exit behavior" while is highly correlated to the other three behavioral choices. It indicates that normative responsibility which regards material rewards and basic working conditions as the core is still paying attention to R&D personnel. That, because of the differences on the degree of economic development and the culture , R&D personnel in research institutions in China is different from that is in western countries. Normative responsibility is attaches great importance to R&D personnel in China mainly because material compensation and working conditions is an important measure that people realize their own value and status. The conclusion of regression analysis also indicates violation of normative responsibility did not have much predictive power for the loyalty of R&D staff. When the organization missed normative content, they are more likely to take more verbal actions and ignore the behavior. They may communicate with the organization through some innovative ways, or they may also take one o'clock silent and wait, looking for opportunities to leave the disruptive behavior.

(b) Analysis on responsibility for career development and R&D personnel EVLN behavioral choices. The lateral inspection on the relationship between responsibility for career development and R&D personnel EVLN behavioral choices shows that responsibility for career development .is significantly correlated to each item of R&D personnel EVLN behavioral choices. The conclusion of regression analysis also indicates responsibility for career development has predictive power for the behavior of R&D personnel. Developing a strong predictive power reflects the R&D staff have a strong pursuit of personal growth and self-realization characteristics, the degree of this element of satisfaction for them have a fundamental impact on the relationship with organizations . Especially the significantly predictive for the exit behavior and loyalty behavior indicates that the career development and personal growth of R&D personnel are the most valued content in the psychological contract content.

(c) Team-building responsibilities and R&D personnel EVLN behavioral choices. The lateral inspection on the relationship between responsibility for career development and R&D personnel EVLN behavioral choices shows that team-building responsibilities is highly relevant to the loyalty to the organization of R&D personnel. The conclusion of regression analysis also indicates this responsibility has some predictive power for the loyalty of R&D personnel, not the same as the other behaviors. The reason why the team-building responsibilities is closely related to the R&D personnel EVLN behavioral choices is perhaps due to the characteristics of work and their needs. The work of the R&D personnel is mainly innovative activities, and team oriented collaboration has become their main work. If the organization missed appointments in team-building responsibilities, it will be a direct threat to the career development and the realization of personal value of R&D personnel, so the team-building responsibility and loyalty has a high degree of correlation and predictive power to the R&D staff.

### 3.3.2 Adjustment Factors and R&D Personnel EVLN Behavioral Choices

These statistical results showed that the adjustment factors are closely related to the R&D personnel EVLN behavior choices, and each of the specific factors that have different influence on different behaviors, which further proves the correctness of the hypothesis 2.

Further investigate the relationship between them, the following conclusions can be drawn.

First, when researchers perceive the behavior of organizational responsibility missed appointments subjective intent component is higher, the more they tend to make destructive behavior choices, which will reduce the loyalty to the organization. Further analysis of R&D personnel EVLN internal linkages between the behaviors can be drawn: in the connective chain loyalty behavior—verbal actions behavior—ignored behavior—exit behavior, the behavior increases of the extent of damage the relationship between the organization and R&D personnel, namely exit behavior is the most destructive behavior choices while loyal behavior is the least. Based on this analysis, the conclusion of the correlation attribution between the factors and research and development personnel EVLN behavioral choices also showed that correlation attribution and exit behavior are highly positive related, and ignored behavior and verbal actions behavior are of successive appeals reduced, and loyalty reaches a significant negative related.

From the lateral inspection to the result of regression analysis, we can see attribution results are easier to predict the behavior of generating calls. We believe that it is likely to be relevant to the characters R&D personnel is not afraid of power and their distinctive characteristics, but it also reflects the status of the R&D personnel is different from the general in the organization.

Second, from the lateral inspection to the relationship between the external market opportunities and R&D personnel employment, it is not difficult to find employment opportunities with the external market behavior choices have a high degree of correlation .That is, under normal circumstances the external job market is more developed. The more employment opportunities when the psychological contract is violated when they choose, the greater the probability of disruptive behavior. Regression analysis is further revealed that the external job market and exit behavior has a significant correlation, and the external job market is more developed, R&D

personnel is more likely to opt out of behavior to deal with the organization's missed appointments. Meanwhile, the external market employment opportunities and organizational loyalty also has a high degree of negative correlation, and it from another aspect proved this intrinsic relationship.

Third, from the lateral inspection to the relationship between renege cost and EVLN behavior, it can be found that renege cost tend to exist a more significant correlation with each item of R&D personnel behavioral choices. Regression analysis is further evidence that the cost renege have more significant predictors on exit behavior, ignoring the behavior, and loyalty behaviors. Renege cost have significant predictive power to R&D personnel EVLN behavioral tendencies, which is further proof that the psychological contract R&D personnel selection process imbalance is also a behavioral psychology operation. High renege cost is a very important constraint to R&D personnel behavior, which explains why R&D personnel do not take drastic way to deal in hurry when the organization is in trouble in the development or even in some cases the organization come into willful default.

## 4. COUNTERMEASURES AND SUGGESTIONS

The objective of studying psychological contract imbalance of scientific researchers also lies in exploring how to eliminate the sense of psychological contract violation and negative influence, and to reconstruct a positive psychological contract.

### 4.1 Eliminate Misunderstanding Through Full Communication

Records shows the insufficient subjective cognition of researchers on organizational psychological contract is one of the decisive factors that personnel take negative even destructive way in response to organizational behavior. The root reason of insufficient organization responsibility usually has three factors: first, the understanding gap on responsibility commitment which exist in the both sides; second, external factor which make organisation cannot afford to pay; third, the organization deliberately default. When first and second kinds of situations occur, the most effective solution is good communication between both parties.

Communication behavior is one of the biggest factors which affecting the result of the psychological contract. In a organization with more effective communication, the content of the psychological contract become more clearly, the psychological contract breach are less likely to happen, even when psychological contract violation occurs, researchers are less sensitive, and directly report it out. In practice, the insufficient responsibility caused by misunderstanding could be clearer through communication again, and it is effective to reach the agreement and eliminate the sense of psychological contract violation. For short commitment caused by temporary organizations development difficulties, frank communication is needed, to give objective explanation to researchers in order to get the understanding and support is, of course, an effective way to reconstruct positive psychological contract.

### 4.2 Rebuild Trust Relationships

Trust is the expectation, assumptions, or beliefs of other parties' behaviour will be good, or at least not damage their interests. Some scholars also define it as: the belief on other people's kindness during their interaction. There are three kinds of trust: trust based on deterrence, trust on the basis of experience; trust based on identification. Trust between organizations members are usually based on the experience.

The establishment of the trust relationship is the foundation of maintaining harmonious relations between organisational members. It provides the stable expectations to researchers in pursuit of long-term interests, and clear rules of repeated game. Though written contract has defined the punishment of declining for parties, the R&D staff and employees fulfill their obligations and responsibilities, rather than to escape punishment. Personnel perform their responsibility since they believe organisation will cherish their reputation, namely, the developers believe that if organisation fails to perform his responsibilities, it will not be able to obtain and retain outstanding researchers. Meanwhile, the organization's agent also believe that the researcher know that if they don't commit, they will lose the opportunities within the organization. Such a trust relationship is the intrinsic motivation and mechanism for organization and researchers.

In one-time or short-term trading activities, organization may gain interests by violating obligation. However in long-term or multiple businesses, an organisation losing its credit will suffer a huge loss. For the organization, to establish a long-term exchange relationship with its members can bring higher returns to organization. The longer the relationship between them, the higher level of trust; the stronger the psychological contract between researcher and firm, the benefit of organization is higher.

Therefore, organizations should improve the fulfillment of their psychological contract, win the trust and recognition from researchers, to establish a trust relationship between both sides, so as to improve the psychological contract fulfillment degree of each other.

### 4.3 Improve Complementary Investments & Integrate Interest

Modern organizations are facing growing uncertainty and more fierce competition during their development. Researchers are the basis of the formation and keeping the competitive advantage, they are facing wider employment opportunities and temptations than normal staff. In order to increase the loyalty of developers, institution must

increase complementary investment on R&D staff. On one hand, to provide opportunity for personal growth and career development, and to increase the dependence of researchers, one the other hand, it also increase the cost of the developers default of promise.

### 4.4 Attribution Training

Studies show that when researchers attributed reasons of organizational psychological contract violation to the objective reasons, the negative impact is far smaller than subjective responsibility attributed to the organization. The attribution method can be educated and trained in a certain way. Therefore, managers should be good at observing and understanding the attribution style and characteristics of employee, give them timely guidance towards objective reason for attribution when psychological contract imbalance phenomenon occurs.

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