

Research Article

Psychological Factors and Innovation Performance of Scientific and Technological Personnel: The Mediating Role of Proactive Behavior and the Moderating Role of Organizational Support

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The personal innovation of scientific and technological personnel not only provides the fundamental power for the innovation of enterprises, but also lays a solid foundation for enterprises innovation. In current study total 1050 scientific and technical staff questionnaires, empirical analysis of individual psychological contracts, psychological capital on personal proactive behavior of the employees, and a unique performance mechanism were used. The result can be drawn that the psychological contract of an individual and psychological capital factors on personal proactive behavior are more meaningfully and positively linked to innovation performance, intermediary between individual innovation performance, organizational support in individual psychological contracts, psychological capital, and proactive behavior.

1. Introduction

With the in-depth development of Internet technology and economic globalization, the business environment of enterprises is increasingly dynamic and changeable, and innovation has become a necessary means and an important way for enterprises to grow and obtain sustainable competitive advantages [1]. The personal innovation of employees not only provides the fundamental driving force for the innovation of the enterprise but also lays a solid foundation for enterprise innovation [2]. The proactive behavior of employees is closely related to innovation [3] and is an important driving factor for innovation [4]. Reasonable development and management of it can provide effective ways to stimulate employees' positive energy and break through innovation dilemmas [5]. Being risky and dangerous, individuals, on the other hand, should avoid proactive behavior. What are the internal psychological factors that encourage individual employees to implement such risky inputs? What is the relationship between proactive behaviours and innovation performance? How can organizations effectively stimulate and support employees?

The proactive behaviours of guiding employees are still in short supply and need to be clarified.

This paper takes scientific and technological personnel of high-tech enterprises in the Guangdong and Hong Kong, Macau Dawan District, as research objects, and explores the relationship between individual psychological factors, organizational support, proactive behavior, and individual innovation performance by constructing an empirical research framework, providing new knowledge for proactive behavior theory and practical reference for enterprise managers.

Following are review and assumptions.

1.1. Psychological Factors of Scientific and Technological Personnel and Individual Innovation Performance. Amabile believed that individual innovation performance "refers to the useful and novel ideas put forward by employees for the problems they encounter in the process of work" [6]. Han et al. thought innovation performance could be discussed and studied from innovation willingness, innovation action, and innovation promotion [7]. Pieterse

et al. pointed out that the innovation performance of employees was generated by a series of processes such as problem identification, generation of new ideas, planning, and expansion of new ideas [8]. Yu et al. proposed that employee innovation performance referred to novel and useful ideas, products, processes, services, or methods generated in the process of interaction between employees and organizations [9]. In summary, individual innovation performance is the result of innovative ideas proposed by employees to improve corporate performance.

Innovation performance is an externalization process that may occur after the external environment acts on individual employees through selective perception [10]. When the psychological needs of employees are met, it may be easier to promote the improvement of innovation performance. Therefore, understanding the psychological factors of corporate employees is very important. This topic mainly studies the psychological contract and psychological capital of individual employees.

Psychological contract was put forward by Argyris in the 1960s [11]. Different scholars have different understanding of psychological contract. Levinson and others believed that psychological contract is the expectation of each other that the organization and employees have agreed in advance in the employment relationship [12]. Schein believed that psychological contract was “the expectation not written between each member of the organization working at any time and different supervisors and other members of the organization” [13]. Kotter believed that psychological contract was “an implicit contract with specific expected pay and expected return between individuals and organizations” [14]. Dunahee and Wangler believed that psychological contract was “The psychological agreement between employees and organizations that binds them together” [15]. The above scholars define the psychological contract between the organization and employees. Other scholars, such as Rousseau, believed that psychological contract was “employee’s expectations for employers and their mutual responsibility and obligations” [16]. Turnley and others believed “The psychological contract consists of the cognition of the obligations that employees think the organization should perform for them and the cognition of the obligations that they should perform for the company” [17]. These scholars only looked at the psychological contract with the organization from the perspective of individual employees, which was also the perspective of this study.

Zhang and Liao divided psychological contract into transaction contract, relationship contract, and development contract [18]. Xue et al. pointed out that material incentive in transaction contract, employee promotion in relationship contract, and emotional appeal were the psychological contract factors affecting employee performance [19]. Wang et al. empirically believed that the psychological contract had a significant forward impact on performance [20]. Luthans’ definition of psychological capital was widely accepted. Luthans et al. pointed out that “psychological capital is the psychological state that individuals display in line with the standard of positive organizational behavior” [21]. In 2007, Luthans revised the definition of psychological capital were

“the self-efficacy, hope, toughness and optimistic psychological state of the individual in the process of growth and development” [22]. An empirical study such as that by Sweetman et al. pointed out that the overall psychological capital and various dimensions had a significant positive impact on innovation performance [23]. Wu and You believed that employees’ positive psychological state would have a positive impact on enterprise innovation performance [24]; Shen found that the psychological capital had a positive effect on innovation performance, and the knowledge acquisition had played an intermediary effect between psychological capital and innovation performance [25]. In the study of Xu and Li with Tu Youyou’s research object, the root theory is used to find that psychological capital had positive significance for innovation performance [26].

In summary, we think that psychological contract and psychological capital factors of scientific and technological personnel can positively predict the individual innovation performance of employees. Therefore, it can be assumed that

H1: psychological factors of science and technology personnel are significantly positively correlated with innovation performance

H1a: psychological contract is significantly positively correlated with innovation performance

H1b: psychological capital is significantly positively correlated with innovation performance

1.2. Innovation Performance and Individual Proactive Behavior. Different scholars defined different perspectives on proactive behavior, such as “proactive behavior is the work behavior of employees independent, expected, and proactive” [27]; “it is an employee’s intentional behavior that is future oriented and tries to change their situation” [28]; it is the behavior of employees spontaneously, intended to change or improve their own conditions or situation [29]; “it is a tendency to stabilize the environmental changes in the employee, which can actively complete the work, willing to change the environment in a timely manner, not by environmental constraints” [30]. To sum up, proactive behavior is a future-oriented and spontaneous change behavior of individual employees, which can positively predict the individual innovation performance of employees, so it can be assumed that

H2: proactive behavior is significantly positively correlated with individual innovation performance

1.3. Psychological Factors and Proactive Behavior of Scientific and Technological Personnel. According to Hou et al., employees’ psychological contracts were in good shape and situation, which could encourage them to actively invest more, thereby stimulating individual innovation behavior [31] and enhancing employees’ ability to predict events in the future organizational environment [32]. It developed the value hidden in positive psychology, enhancing employees’ pressure resistance, promoting innovation to become an internal requirement of enterprise employees, and reshaping

the value hidden in positive psychology with more confidence and work achievements [33]. Li and Li believed that psychological contract could make employees think their work was full of meaning or feel good about themselves so that employees would actively assume more responsibilities, stimulated inspiration and obtained new ideas in continuous exploration and enterprising [34]. Dong and Gao confirmed that the psychological capital as a positive psychological state, the confidence, hope, optimism, and toughness dimension of the psychological capital, enabled the employees to have an internal incentive so that they experienced positive intrinsic emotions [35].

To sum up, we think psychological contract and psychological capital factors of scientific and technical personnel are able to positively predict employee's proactive behavior, so we assume the following:

H3: psychological factors of scientific and technical personnel are significantly positively correlated with proactive behavior

H3a: psychological contract is significantly positively correlated with proactive behavior

H3b: psychological capital is significantly positively correlated with proactive behavior

1.4. A Mediation Role of Proactive Behavior. Hou et al. showed that intrinsic motivation and psychological contract were the most direct antecedents of innovation performance, and psychological contract also indirectly affected innovation performance through the intermediate role of intrinsic motivation [36]. Zhang research showed that cultivating and improving psychological capital could enable enterprise employees to meet their competency, autonomy, and relationship needs so as to stimulate internal work motivation and produce innovative performance [37]. Xiong et al. believed that positive psychological capital would promote employees to continuously shape themselves, actively cultivated good psychological quality, enthusiastically and optimistically tapped their potential in career development, and constantly pursued self-realization. In this process, innovation had become a derivative of their personal development, thus improving individual innovation performance [38].

To sum up, we believe that individual psychological contract and psychological capital will have an impact on individual employees' innovation performance through the intermediary of individual proactive behavior. So we assume that

H4: proactive behavior mediates the relationship between individual psychological factors and innovation performance

H4a: proactive behavior mediates the relationship between psychological contract and innovation performance

H4b: proactive behavior mediates the relationship between psychological capital and innovation performance

1.5. Regulatory Role of Organizational Support. Environmental factors would have an important impact on individual performance. As an important environmental factor of employee innovation, organizational support may play an intervention role in the promotion of proactive behavior, innovation performance, and innovation performance by individual psychological factors. Eisenberge et al. thought that organizational support referred to "the overall feeling of employees in an organization to how much the organization values their contributions and cares about their welfare" [39]. Ling et al. believed that "Organizational Support is the view of employees to treat them to contribute and care about their interests" [40]. Mckenny et al. found that organization support included respect (emotion) support, benefit support, and toolbery support in three dimensions [41]. According to the social exchange theory, an organization's support for an employee's work attitude and performance has a favorable impact. Employees believe that organizational support can raise employees' expectations for the outcomes of their hard work and emphasize the favorable impact of the reciprocity principle on their work attitudes. The greater the impact on employee's individual psychological contract and psychological capital, the more beneficial will be employee's behavior to the organization. Ajzen et al. [42] pointed out that when employees felt organizational support, they would have the responsibility and obligation to repay the enterprise and worked with higher focus and enthusiasm, which made it easier to produce positive behavior and attitude, resulting in higher innovation performance.

In conclusion, we believe that organizational support will play a regulatory role in individual psychological contract, psychological capital factors, proactive behavior, and individual innovation performance. So we assume that

H5: organizational support moderates the relationship between individual innovation performance and psychological factors

H5a: organizational support moderates the relationship between innovation performance and psychological contract

H5b: organizational support moderates the relationship between innovative performance and psychological capital

H6: organizational support moderates the relationship between innovation performance and proactive behavior

H7: organizational support moderates the relationship between proactive behavior and individual psychological factor

H7a: organizational support moderates the relationship between proactive behavior and psychological contract

H7b: organizational support moderates the relationship between proactive behavior and psychological capital

In summary, the research framework is shown in Figure 1.

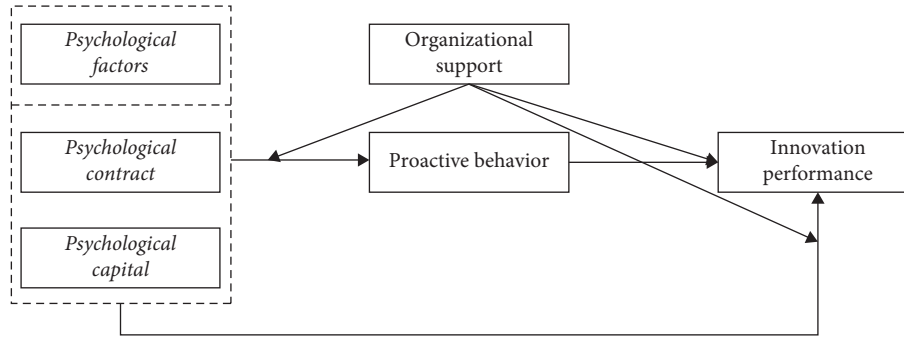


FIGURE 1: Research framework.

TABLE 1: Sample demographic characteristics.

| Value | Detail | Numb | Percentage of total number of people | Variable | Detail | Numb | Percentage of total number of people |
|-----------|---------------|------|--------------------------------------|-------------------|------------------|-------|--------------------------------------|
| Sex | Male | 550 | 52.38 | Age | $Y \leq 25$ | 20 | 1.9 |
| | Female | 500 | 47.62 | | $25 < Y \leq 35$ | 380 | 36.19 |
| | | | | | $35 < Y \leq 45$ | 500 | 47.62 |
| | | | | $45 < Y$ | 150 | 14.29 | |
| Education | Specialist | 20 | 1.9 | Length of service | $Y \leq 1$ | 30 | 2.86 |
| | Undergraduate | 280 | 26.67 | | $1 < Y \leq 5$ | 160 | 15.24 |
| | Master | 690 | 65.71 | | $5 < Y \leq 10$ | 210 | 20.0 |
| | PHD | 60 | 5.72 | | $10 < Y$ | 650 | 61.9 |

2. Research Design

2.1. Samples. We surveyed university teachers and high-tech enterprises in the Greater Bay Area. We investigated through the “Questionnaire Star” network platform and sent QR codes to students, friends, and acquaintances through WeChat to collect 1,050 answers. The recovery rate was 90.0% and the effective rate is 100%.

The final valid sample population statistics are shown in Table 1.

2.2. Research Tools. Based on the existing maturity scale, the questionnaire is adjusted properly, and all variables are measured using the 5-point Likert method.

Individual psychological factors: psychological contract mainly refers to the scale developed by Li [43] and Rousseau [16]. Psychological capital is mainly referred to the psychological capital quantitative number developed by Luthans [22] (Psychological Capistionnaire, referred to as PCQ).

Organizational support: for reference, Ling et al. [40] and Eisenberger et al. [39] developed scale.

Individual proactive behavior: the scale prepared by Parker et al. [29].

Individual innovation performance: the scale prepared by Han et al. [7] and Janssen et al. [44].

3. Data Analysis

3.1. Reliability Analysis. The Cronbach’s A coefficient is used to assess the measurement item’s reliability. Table 2 shows that Cronbach’s A coefficient of psychological contract was

TABLE 2: Cronbach’s A coefficient test value.

| Scale | Cases | Cronbach’s value |
|------------------------|-------|------------------|
| Psychological contract | 2 | 0.672 |
| Psychological capital | 3 | 0.829 |
| Organization support | 3 | 0.861 |
| Proactive behavior | 3 | 0.823 |
| Innovation performance | 4 | 0.881 |

0.672, which is higher than 0.6, indicating that the research data was reliable. Psychological capital, organizational support, proactive behavior, and innovation performance all had Cronbach’s A coefficient values of 0.829, 0.861, 0.823, and 0.881, respectively, all of which were greater than 0.8, indicating that the research data was reliable and could be used for future analysis.

3.2. Validity Analysis. Bartlett sphericity and KMO test were used for validity verification. From Table 3, psychological capital KMO value was 0.711, greater than 0.7, a good description was better; organization supports KMO value was 0.696, proactive behavior KMO value was 0.685, greater than 0.6, explain degree acceptance. Innovative performance KMO value was 0.802, greater than 0.8, with very good validity. There were only 2 psychological contract studies, and the KMO value was 0.5 in any case. The Bartlett sphericity test of psychological contract, psychological capital, proactive behavior, organizational support, and innovation performance all reached 0.01 significance level, suitable for factor analysis, indicating good validity of research items.

TABLE 3: KMO and Bartlett test values.

| | | Psychological contract | Psychological capital | Organization support | Proactive behavior | Innovation performance |
|--------------------------|------------------------|------------------------|-----------------------|----------------------|--------------------|------------------------|
| KMO | | 0.500 | 0.711 | 0.696 | 0.685 | 0.802 |
| | Approximate chi-square | 32.199 | 117.702 | 155.640 | 120.646 | 242.078 |
| Bartlett sphericity test | df | 1 | 3 | 3 | 3 | 6 |
| | p | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

3.3. *Analysis of Homology Deviation.* Confirmatory factor analysis is used to examine the homogeneous deviation (CMV) (CFA). It means that all measurement items (measurement items relating to all variables) are grouped together and analysed as a single factor. If the model's fitting indicator, such as the χ^2/df , RMSEA, RMR, and CFI, does not meet the required standard, it shows that the model's fitting is poor, and all measurements should not be the same as one factor. As a result, the data passes the Common Method Divergence (CMV) test, indicating that there is no homology deviation.

This time put all 15 measurement items into one factor for CFA analysis, and the model fitting indicator was obtained as shown in Table 4:

Table 4 shows that the χ^2/df is 5.089, higher than standard (<3), and the four indicators of CFI, GFI, NFI, and NNFI are all lower than 0.7. The standard value of obvious deviation (>0.9), the RMSEA is higher than 0.10, and the RMR is higher than 0.05, also indicating the deviation standard value. Other indicators, for example, AGFI, PGFI, IFI, and PNFI, are all less than 0.7, and the severity deviation is higher than 0.9, and thus, the model fit quality is very bad, that is, the research scale data cannot be focused into a factor, namely, it shows that there is no homologous deviation problem.

3.4. *Data Analysis.* To investigate the relationship between the two variables, conduct a Pearson correlation study on each variable and utilise the Pearson correlation factor to describe the strength of the relevant association and relationship. The specific correlation coefficient values are shown in Table 5.

From Table 5, we can see that psychological contract, psychological capital, organizational support, proactive behavior, and entrepreneurial performance are all positive numbers greater than 0.4, and the significance of 0.01 levels, thus explaining the above 5 items have a significant positive correlation between each other.

3.5. *Correlation and Mediating Effect Test.* The main research variables have a link, according to Pearson correlation analysis. Based on this, the stepwise regression approach is used to further test the variables' relationships, revealing the causal link and mechanism of effect between variables.

Model 1 takes a psychological contract, psychological capital as an argument, and atrial behavior as a result of returning to variables to verify the relationship between

psychological contract and psychological capital on innovative proactive behavior.

Model 2 uses a psychological contract, psychological capital as an argument, and innovative performance as a result of returning due to variables, to verify the relationship between psychological contract and psychological capital on innovation performance. After adding proactive behavior to Model 2; after Model 3 joins the proactive behavior based on the model, it is still based on innovative performance as a variable, verifying psychological contract, psychological capital, and proactive behavior on innovation performance; finally using step-by-step regression analysis mediating role.

From Table 6 Model 2, the psychological contract and the proactive performance return coefficient value is 0.142, the *T* value is 2.093, and it is remarkable at 0.05 level, indicating the psychological contract is significantly positive influence, so that H1a is established; the psychological capital and innovative performance regression coefficient is 0.385, the *T* value is 4.772, and it is remarkable at 0.01 level, indicating the psychological capital is significantly positive influence, so that H1b is established, then H1: psychological factors of science and technology personnel are significantly positively correlated with innovation performance must also be established.

From Table 6 Model 3, the *F* value change exhibits significance ($p < 0.05$) on the basis of Model 2, which means that the model is explained after the proactive behavior is added. In addition, the R^2 is rising from 0.352 to 0.586, meaning proactive behavior can be an explanation of 23.4% for innovative performance. Specifically, the proactive behavior regression coefficient value is 0.676 and has a significant property ($T = 7.404$, $p < 0.01$), meaning proactive behavior has a positive influence relationship of innovation performance. Therefore, it is assumed that H2 is established.

From Table 6 Model 1, it is known that the psychological contract and the proactive behavior return coefficient value is 0.182, the *T* value is 3.010, and it is remarkable at 0.01 level, indicating the psychological contract is significantly positive and influential, so it is assumed that H3a is established; the number of psychological capital and proactive behavior is 0.452, the *T* value is 6.297, and it is s remarkable at 0.01 level, indicating the psychological capital is significantly positive and influential. Therefore, assuming that H3b is established, then H3 must also be established. Therefore, it is assumed that H4a: proactive behavior mediates the relationship between psychological contract and innovation performance, and H4b: proactive behavior mediates the relationship between psychological capital and innovation performance. Then H4 is established.

TABLE 4: CFA analysis model fitting index.

| Index | χ^2 | df | p | χ^2/df | GFI | RMSEA | RMR | CFI | NFI | NNFI |
|----------------------|----------|-------|-------|-------------|-------|-------|------------------------|------------------------|-------|-------|
| Judge standard Value | — | — | >0.05 | <3 | >0.9 | <0.10 | <0.05 | >0.9 | >0.9 | >0.9 |
| | 457.972 | 90 | 0.00 | 5.089 | 0.577 | 0.197 | 0.101 | 0.592 | 0.545 | 0.524 |
| Other index | TLI | AGFI | IFI | PGFI | PNFI | SRMR | AIC | BIC | | |
| Judge level Value | >0.9 | >0.9 | >0.9 | >0.9 | >0.9 | <0.1 | The smaller the better | The smaller the better | | |
| | 0.524 | 0.436 | 0.599 | 0.433 | 0.468 | 0.138 | 3240.873 | 3320.492 | | |

TABLE 5: Pearson values of research variables.

| | Psychological contract | Psychological capital | Organization support | Proactive behavior | Innovation performance |
|------------------------|------------------------|-----------------------|----------------------|--------------------|------------------------|
| Psychological contract | 1 | | | | |
| Psychological capital | 0.481** | 1 | | | |
| Organization support | 0.805** | 0.465** | 1 | | |
| Proactive behavior | 0.492** | 0.643** | 0.596** | 1 | |
| Innovation performance | 0.415** | 0.553** | 0.439** | 0.749** | 1 |

* $p < 0.05$; ** $p < 0.01$.

TABLE 6: Mediation effect model of proactive behavior.

| | Model 1 Proactive behavior | Model 2 Innovation performance | Model 3 Innovation performance |
|------------------------|-------------------------------|-----------------------------------|-----------------------------------|
| Psychological capital | 0.452 (6.297**) | 0.385 (4.772**) | 0.080 (1.038) |
| Psychological contract | 0.182 (3.010**) | 0.142 (2.093*) | 0.019 (0.339) |
| Proactive behavior | | | 0.676 (7.404**) |
| R^2 | 0.473 | 0.352 | 0.586 |
| Adjust R^2 | 0.441 | 0.313 | 0.556 |
| F value | $F(6, 98) = 14.689, p < 0.01$ | $F(6, 98) = 8.883, p < 0.01$ | $F(7, 97) = 19.628, p < 0.01$ |

* $p < 0.05$, ** $p < 0.01$, the value outside the bracket is the regression coefficient b value, and the value inside the bracket is the T value.

From Table 6 Model 3, it is also known that after joining the previous behavior on a Model 2, although proactive behavior has a significant positive impact relationship to innovation performance, the regression coefficient of psychological contract becomes 0.019, the T value is 0.339, which is not significant at 0.05, indicating the psychological contract is no longer influenced by innovation performance. The regression coefficient of psychological capital becomes 0.080, the T value is 1.038, and it is not significant at 0.05, indicating that psychological capital no longer positively affects innovation performance. As a result, proactive behavior may be demonstrated to play a totally mediating role in psychological contracts, psychological capital, and inventive performance. Therefore, assuming that H4a: proactive behavior mediates the relationship between psychological contract and innovation performance and H4b: proactive behavior mediates the relationship between psychological capital and innovation performance is established. Then H4: proactive behavior mediates the relationship between individual psychological factors and innovation performance must also be established.

3.6. Test of Regulating Effect

3.6.1. Organization Support Adjustment Effect Inspection between Innovation Performance and Individual Psychological Factors. Table 7 shows that independent variables of

Model 4 are psychological capital, psychological contract, and dependent variable are innovation performance. In Model 5, the regulatory variable organizational support is added on Model 4. In Model 6, the product term of psychological contract and organizational support is added on Model 5, and in Model 7, the product term of psychological capital and organizational support is added on Model 5.

As can be seen from Model 6 in Table 7, the F value of Model 5 to Model 6 changes significantly ($p = 0.004 < 0.01$), and the interaction item between psychological contract and organizational support shows significant ($t = 2.941, p = 0.004 < 0.01$), which means the influence range of adjustment variable organizational support is significantly different at different levels, when psychological contract affects innovation performance. So H5a: organizational support moderates the relationship between innovation performance and psychological contract.

As can be seen from Model 7 in Table 7, F value from Model 5 to Model 7 changes significantly ($p = 0.002 < 0.01$), and the interactive item supported by organizational support and psychological capital has shown significance ($T = 3.225, p = 0.002 < 0.01$), which means that when psychological capital affects proactive behavior, the moderating variable organizational support has significant differences at different levels. So the hypothesis H5b: organizational support moderates the relationship between innovative performance

TABLE 7: Moderating effect model of organizational support between individual psychological factors and innovation performance.

| | Model 4 | Model 5 | Model 6 | Model 7 |
|---|-----------------------------|------------------------------|------------------------------|-------------------------------|
| Psychological capital | 0.385 (4.772**) | 0.361 (4.448**) | 0.339 (4.324**) | 0.372 (4.795**) |
| Psychological contract | 0.142 (2.093*) | 0.009 (0.085) | 0.016 (0.166) | 0.000 (0.002) |
| Organizational support | | 0.186 (1.724) | 0.211 (2.028*) | 0.181 (1.757) |
| Psychological contract * organizational support | | | 0.161 (2.941**) | |
| Psychological capital * organizational support | | | | 0.267 (3.225**) |
| R ² | 0.352 | 0.372 | 0.423 | 0.433 |
| Adjust R ² | 0.313 | 0.326 | 0.375 | 0.386 |
| F value | F (6, 98) = 8.883, p < 0.01 | F (7, 97) = 8.192, p < 0.01 | F (8, 96) = 8.814, p < 0.01 | F (8, 96) = 9.163, p < 0.01 |
| ΔR ² | 0.352 | 0.019 | 0.052 | 0.061 |
| ΔF value | F (6, 98) = 8.883, p < 0.01 | F (1, 97) = 2.973, p = 0.088 | F (1, 96) = 8.647, p = 0.004 | F (1, 96) = 10.400, p = 0.002 |

Dependent variable: innovation performance. *p < 0.05, **p < 0.01, the value outside the bracket is the value of regression coefficient b, and the value inside the bracket is the value of T.

TABLE 8: Moderating effect model of organizational support between individual proactive behavior and innovation performance.

| | Model 8 | Model 9 | Model 10 |
|---|------------------------------|------------------------------|------------------------------|
| Proactive behavior | 0.749 (11.258**) | 0.752 (8.930**) | 0.753 (8.913**) |
| Organizational support | | -0.003 (-0.053) | -0.010 (-0.147) |
| Proactive behavior * organizational support | | | 0.043 (0.584) |
| R ² | 0.580 | 0.580 | 0.582 |
| Adjust R ² | 0.559 | 0.554 | 0.551 |
| F value | F (5, 99) = 27.356, p < 0.01 | F (6, 98) = 22.567, p < 0.01 | F (7, 97) = 19.262, p < 0.01 |
| ΔR ² | 0.580 | 0.000 | 0.001 |
| ΔF value | F (5, 99) = 27.356, p < 0.01 | F (1, 98) = 0.003, p = 958 | F (1, 97) = 0.341, p = 0.560 |

Dependent variable: innovation performance. *p < 0.05, **p < 0.01, the value outside the bracket is the value of regression coefficient b, and the value inside the bracket is the value of T.

and psychological capital. So assumed that H5: organizational support moderates the relationship between individual innovation performance and psychological factors are also established.

3.6.2. *Organization Support Adjustment Effect Inspection between Innovation Performance and Individual Proactive Behavior.* Model 8's dependent variable innovation performance and independent variable proactive behavior are shown in Table 8, while Model 9 adds the support of regulatory variable organization to Model 8 and Model 10 adds the product term of interaction term, proactive behavior, and organization support to Model 9.

According to Model 10 in Table 8, the change of F value from Model 9 to Model 10 is not significant ($p = 0.560 > 0.05$), and the interaction between psychological contract and organizational support is not significant ($t = 0.584, p = 0.560 > 0.05$). From the comparison between Model 8 and Model 10, it can be observed that when proactive behavior has an influence on innovation performance, the adjustment variable organizational support has the same impact range at various levels. Assume that H6 has been established.

3.6.3. *Organization Support Adjustment Effect Inspection between Individual Psychological Factors and Proactive*

Behavior. According to Table 9, the independent variables of Model 11 are psychological contract, psychological capital, and dependent variable proactive behavior. Model 12 adds the regulatory variable organizational support on Model 11, Model 13 adds the product term of interaction term, psychological contract and organizational support on Model 12, and Model 14 adds the product term of interaction term, psychological capital, and organizational support based on Model 12.

According to Model 13 in Table 9, the F value from Model 12 to Model 13 changes significantly ($p = 0.001 < 0.01$), and the interaction items between psychological contract and organizational support show significant ($t = 3.339, p = 0.001 < 0.01$), which means that when psychological contract affects proactive behavior, the influence range of regulatory variable organizational support is significantly different at different levels. Therefore, assumed that H7a: organizational support moderates the relationship between proactive behavior and psychological contract is established.

According to Model 14 in Table 9, the F value from Model 12 to Model 14 changes significantly ($p = 0.006 < 0.01$), and the interaction item between psychological capital and organizational support shows significant ($t = 2.798, p = 0.006 < 0.01$). It suggests that the effect range of regulatory variable organizational support on proactive behavior is considerably varied at various levels

TABLE 9: Moderating effect model of organizational support between individual psychological factors and proactive behavior.

| | Model 11 | Model 12 | Model 13 | Model 14 |
|---|-----------------------------------|-----------------------------------|------------------------------------|-----------------------------------|
| Psychological capital | 0.452(6.297**) | 0.406(5.961**) | 0.386(5.925**) | 0.414(6.284**) |
| Psychological contract | 0.182(3.010**) | -0.073(-0.843) | -0.065(-0.798) | -0.079(-0.947) |
| Organizational support | | 0.354(3.916**) | 0.378(4.378**) | 0.351(4.010**) |
| Psychological contract * organizational support | | | 0.152(3.339**) | |
| Psychological capital * organizational support | | | | 0.197(2.798**) |
| R^2 | 0.473 | 0.545 | 0.593 | 0.580 |
| Adjust R^2 | 0.441 | 0.513 | 0.559 | 0.545 |
| F value | $F(6,98) = 14.689,$ $p < 0.01$ | $F(7,97) = 16.624,$ $p < 0.01$ | $F(8,96) = 17.461,$ $p < 0.01$ | $F(8,96) = 16.549,$ $p < 0.01$ |
| ΔR^2 | 0.473 | 0.072 | 0.047 | 0.034 |
| ΔF value | $F(6,98) = 14.689,$ $p < 0.01$ | $F(1,97) = 15.339,$ $p < 0.01$ | $F(1,96) = 11.149,$ $p = 0.001$ | $F(1,96) = 7.830,$ $p = 0.006$ |

Dependent variable: proactive behavior. * $p < 0.05$, ** $p < 0.01$, the value outside the bracket is the value of regression coefficient b , and the value inside the bracket is the value of T .

when psychological capital is involved. As a result, it is demonstrated that H7b: organizational support moderates the link between proactive behavior and psychological capital. It is also true that H7: organizational support moderates the relationship between proactive behavior and individual psychological factor.

4. Conclusions

Enterprises can use psychological contract and psychological capital to stimulate employees' proactive behavior and enhance individual innovation performance. Enterprise managers hide the positive psychology of technology employees through psychological contracts and psychological capital development. This research integrates psychological contract and psychological capital. It has been confirmed that the psychological capital and psychological contract are positively correlated with individual proactive behavior and innovation performance. The proactive behavior is also positively correlated with individual innovation performance. Through organizational support, businesses may encourage proactive behavior among employees and improve individual innovation performance. It motivates employees to take the initiative to improve their individual innovation performance by instilling proactive behavior in them. The results show that the proactive behavior mediates the relationship between individual psychological capital, psychological contract factor, individual innovation performance, and organizational support. The employee's individual innovation performance is improved by strengthens the influence of individual proactive behavior of employees. Since such behaviours are not purely passive, therefore, if companies want to improve the individual innovation performance, the key is to stimulate employees' proactive behaviours and then they can improve the individual innovation performance.

The collection of questions parallel to other work can lead to lessen the risk of deviating from the same source approach, in future by adopting combination of horizontal and vertical field survey method the persuasiveness of work

might be obtained. The current research only worked on psychological factors and organizational support on proactive behavior and innovation performance. More factors, such as job characteristics, should be added in future research to make the analysis more comprehensive and detailed.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that they have no competing interest.

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