

An Empirical Study on the Relationship Between Time Stress and Employee Creativity

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Abstract: In order to develop itself and occupy the market first, enterprises must innovate and create in a limited time, which brings time pressure to employees. Time pressure can be divided into two types: challenging and obstructive. Challenging and obstructive time pressure has different effects on employees. Therefore, this paper establishes a model of challenge-obstructive time pressure and employee creativity, explores the relationship between challenge-obstructive time pressure and employee creativity, and makes contributions to the good development of enterprises, the formulation of management strategies and the improvement of employee creativity.

Keywords: Time Pressure; Creative Ability

1 Introduction

With the rapid development of the social economy, both enterprises and employees will face severe challenges. On the one hand, in order to achieve good development, enterprises need to seize the opportunity in market competition, which inevitably requires employees to have higher and higher time requirements to complete their work, and the sense of urgency of time brings enormous pressure to employees; On the other hand, if a company wants to maintain a competitive advantage in the market and stand invincible, it must innovate. Innovation is the core of a company. Without innovation, a company loses its core competitiveness, and its development cannot be separated from the support of innovation. One of the sources of innovative behavior is employees who are on the front line of the company. The creative ideas and suggestions of employees can best reflect the problems that exist in the company. The creativity of employees is an important means for enterprises to maintain competitive advantages and resist growth risks.

Research suggests that not all time pressures can bring positive energy and have a positive impact on businesses. Time pressure can be divided into two types: challenging and obstructive, and the impact and effect of challenging obstructive time pressure on employees are also different. Therefore, studying the relationship between time pressure and creativity is of great significance.

2 Research hypotheses and theoretical models

2.1 Research Hypothesis

Scholars Chong et al (2011) classified time pressure into challenging and obstructive time pressures. Challenging time pressure refers to an individual's experience of stress caused by challenging factors such as the complexity, urgency, and importance of work tasks in a work environment that lacks time. According to literature review, challenging time pressure can generally have a positive impact on individuals and organizations. Challenging time pressure can achieve the goal of enhancing individual creativity by improving their flexibility cognition (Fan Xiaoqian, 2020). Challenging time pressure can help individuals adjust their work attitude and risk free work mindset, improve their level of effort, and solve problems encountered, fully engage in creative work tasks, and ultimately

achieve the goal of improving their creativity level.

Faced with challenging work that is difficult to overcome, employees try to come up with creative solutions within a limited time frame and creatively complete challenging tasks. This is because after achieving work goals, potential benefits can enable employees to realize their own value and enjoy the sense of achievement and joy that work brings. In summary, hypothesis Ha is proposed:

Ha: There is a significant positive relationship between challenging time pressure and employee creativity.

Obstructive time pressure refers to an individual's experience of stress caused by obstacles in a time-sensitive work environment, such as unexpected events, unreasonable work arrangements, etc. Previous literature has shown that obstructive time pressure generally has a negative impact on individuals and teams. Under obstructive pressure, employees' psychological state and emotions tend to be negative and unstable. But this does not necessarily mean that negative emotions and factors will necessarily lead to negative consequences. In Chinese history, the example of King Goujian of Yue, who "endured hardship and tasted gall", proves this point. King Goujian eventually regained his lost territory in an extremely difficult environment. In literature research, such as Chong et al. (2011) the results were contrary to expectations and did not find that obstructive time pressure significantly reduced the ratings of team members and stakeholders.

Under obstructive time pressure, employees are more concerned about whether they can complete tasks on time within a limited time frame. Although employees may experience negative emotions such as tension and anxiety, they also realize that as a member of the team, they must complete the tasks assigned by the team. Under the influence of external motivation, employees will do their best to find efficient ways and means to solve problems, so that they can fully devote themselves to creative work tasks with a "burning their bridges" mentality, thus creating creative abilities in completing extremely difficult work tasks. In summary, hypothesis Hb is proposed:

Hb: There is a significant positive relationship between obstructive time pressure and employee creativity.

2.2 Theoretical Model

This article explores the positive impact of time pressure, a

challenge faced by employees, on their personal creativity. On the basis of existing research results, this paper proposes hypotheses and establishes a theoretical model as shown in Figure 1.

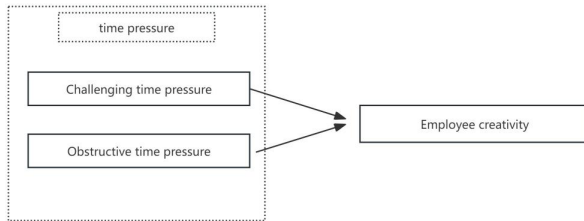


Figure 1 Theoretical Model

3 Data analysis and hypothesis testing

3.1 Data sources

This article draws on mature classic scales from authoritative research both domestically and internationally, and makes slight adjustments to the wording and expression of the questions based on actual situations. A questionnaire is created and published for online research. The data comes from employees of multiple companies in various provinces of China, such as Guangdong, Beijing, and Zhejiang. The research subjects mainly come from employees engaged in innovation and creation activities. The survey questionnaire is filled out independently by employees online. A total of 250 questionnaires were distributed in this survey, and 220 were collected. After screening for questionnaires with obvious errors in logic and other unqualified questionnaires, a total of 206 valid questionnaires were received.

3.2 Data Validation

By analyzing the demographic variables of the overall sample, the basic information of the surveyed individuals was obtained, with 48.54% being male and 51.46% being female. The gender ratio remained relatively 1:1, indicating a uniform distribution of genders; About 80% of the surveyed subjects in this article are under the age of 45; In terms of education level, about 90% of the respondents have a college degree or above, indicating that the total sample meets the basic situation of the survey subjects in this article.

3.2.1 Scale reliability and validity testing

This article uses Cronbach's alpha coefficient for reliability testing in the questionnaire sample. Cronbach's alpha coefficient value range and reliability effect: 0.80-0.90 is very good, 0.70-0.80 is quite good. After testing, the Cronbach's alpha coefficients of all variables are above 0.8, indicating good consistency between each scale, and further research can be conducted.

And validity is to measure the effectiveness of the scale used, mainly to confirm whether the measured data can accurately reflect. Exploratory factor analysis was used to test the construct validity of the scale. After testing, the KMO values for challenging time pressure, obstructive time pressure, and employee creativity were 0.653, 0.72, and 0.720, respectively, all greater than 0.65; And the Bartlett sphericity test results all meet the significance requirements, indicating that the structural validity of all scales in this article is good.

3.2.2 Correlation analysis

Correlation analysis is a test of whether there is a correlation

between the independent variable and the dependent variable, in order to examine the degree of closeness between the two variables. This article uses Pearson correlation coefficient for correlation testing, and the mean, standard deviation, and correlation coefficient matrix of each variable are shown in Table 1. There is a significant positive correlation between challenging time pressure and employee creativity ($R=0.849$, $P<0.01$), indicating that individuals with high challenging time pressure have higher creativity; There is a significant positive correlation between obstructive time pressure and employee creativity ($R=0.885$, $P<0.01$), indicating that individuals with high obstructive time pressure also have higher creativity. Overall, this conclusion is consistent with the theoretical hypothesis that there is a certain correlation between time pressure and variable creativity involved in this article. The above correlation analysis results also provide a basis and guarantee for the subsequent influencing factors of hypothesis testing.

Table 1 Correlation Analysis

| | Challenging time pressure | Obstructive time pressure | Employee creativity |
|---------------------------|---------------------------|---------------------------|---------------------|
| Challenging time pressure | 1 | | |
| Obstructive time pressure | .926** | 1 | |
| Employee creativity | .849** | .885** | 1 |

**At the 0.01 level (double tailed), the correlation is significant

3.2.3 Regression analysis of time pressure on employee creativity

This article uses multi-layer linear regression to verify the proposed hypothesis. In the regression analysis, it was found that education did not have a significant impact on each dimension, so it was not included in the later regression analysis. Table 2 shows the regression analysis results of time pressure on employees' creativity.

Table 2 Regression of Time Pressure on Employee Creativity

| | variable quantity | Employee creativity | | |
|----------------------|---------------------------|---------------------|--------|---------|
| | | M1 | M2 | M3 |
| | (Constant) | 1.712 | 0.56 | 0.578 |
| control variable | age | 0.333 | 0.148 | 0.103 |
| | Your work experience | 0.344 | 0.167 | 0.124 |
| independent variable | Challenging time pressure | | 0.601 | |
| | Obstructive time pressure | | | 0.664 |
| R2 | | 0.66 | 0.777 | 0.81 |
| F | | 197.21 | 234.04 | 286.525 |
| P | | 0 | 0 | 0 |

Equation M1 shows the relationship between the control variables age, years of work experience, and the dependent variable employee creativity; Equation M2 refers to the relationship between demographic variables (such as age, years of work experience, etc.) and the impact of challenging time pressure and the dependent variable employee creativity after adding the independent variable challenging time pressure. The R^2 of variance M2 is 0.777, which is greater than 0, indicating that the addition of the independent variable challenging time pressure improves the overall fit of the model.

In addition, the beta coefficient of the independent variable challenging time pressure on employee creativity in M2 is 0.601 ($P<0.001$), indicating a significant positive relationship between challenging time pressure and employee creativity. Hypothesis Ha holds true. Similarly, the obstructive time pressure in equation M3 has a significant impact on employees' creativity ($R^2=0.81>0$, $\beta=0.664$, $P<0.001$). The fitting effect of the model was optimized with the addition of obstructive time pressure, indicating a significant positive relationship between obstructive time pressure and employee creativity, verifying hypothesis Hb.

4 Conclusion

4.1 Summary of Hypothesis Test Results

This article explores the relationship between challenging obstructive time pressure and employee creativity. The validity of all assumptions is shown in Table 3.

Table 3 Hypothesis Test Results

| Assuming Content | Verification Conclusion |
|--|-------------------------|
| Hb: There is a significant positive relationship between obstructive time pressure and employee creativity | establish |

5 Research conclusions and recommendations

5.1 Research Conclusion

This article explores the relationship between challenging

obstructive time pressure and employee creativity. All questionnaires were conducted online, with a total of 206 valid responses collected. After empirical analysis of the data, the conclusion was drawn that time pressure can positively affect individual creativity.

The test results of the relationship between challenging obstructive time pressure and employee creativity show that challenging obstructive time pressure has a significant positive driving effect on employee creativity. When employees' sense of time pressure increases, their creative ability also improves. Challenging factors in challenging time pressure can trigger individuals' intrinsic motivation, enabling them to actively engage in positive behavior and produce creative outcomes; Obstructive factors in obstructive time pressure can trigger external motivation for individuals to complete tasks, and individuals will try their best to complete difficult tasks and produce creative results.

5.2 Suggestions

Reasonably consider time pressure. Individuals usually have a psychological aversion to time pressure, but in fact, pressure does not necessarily have serious consequences. On the contrary, both challenging and obstructive time pressure can have a positive impact on creativity. Therefore, in management practice, managers should actively promote relevant knowledge, guide employees to establish a correct concept of time pressure, stimulate employees' divergent thinking and creative fluency, and provide a positive working environment for employees' creativity.

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