

## Research on Excessive Labor of Couriers in Beijing

LIN Yuan<sup>[a],\*</sup>; HUANG Xiaoli<sup>[a]</sup>

<sup>[a]</sup>School of Business, Beijing Wuzi University, Beijing, China.  
\*Corresponding author.

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### Abstract

With the vigorous development of e-commerce, China's express delivery industry ushered in the opportunity of rapid development, courier industry employment increased year by year. At the same time, the excessive labor of couriers has also aroused widespread concern in the society. This paper makes an empirical study on the over labor of expressing employees in Beijing, based on a questionnaire survey. This paper analyzes the current situation of excessive labor of express employees in Beijing. This paper probes into the deep cause of courier overwork. And put forward relevant policy recommendations accordingly.

**Key words:** Courier; Overwork; Evaluation system

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### INTRODUCTION

In recent years, the Beijing express industry has developed rapidly, it absorbs a large number of labor employment. However, due to the impact of the working requirements, professional characteristics and enterprise system of the express industry, there is voluntary or forced overtime or excessive intensity of work, resulting in a certain degree of excessive labor of courier employees, and even the phenomenon of karoshi. If we do not control and intervention, it will inevitably bring adverse effects on social development. Based on this, this paper carries on

the analysis and research on the labor problem of Beijing courier employees. This paper draws on the self-monitoring fatigue scale published by Japan's Ministry of Health—*Labor and Welfare-Self-Diagnosis Questionnaire for Laborers' Fatigue Volume*. The reliability and validity of the scale were good in combination with the specific situation of Chinese express personnel. On the basis of extensive and in-depth investigation of the questionnaires issued, This paper calculates the workload score of courier employees in Beijing, this paper analyzes the status quo of overworking couriers in Beijing from different dimensions and probes into the underlying causes of overwork in couriers, and puts forward relevant policy suggestions accordingly.

### 1. RESEARCH DESIGN

#### 1.1 Research Methods

This study examines Beijing City Express employees excessive labor conditions and characteristics, and to explore the underlying causes of excessive labor courier. It mainly adopts the methods of literature research, questionnaire survey and in-depth interview. SPSS22.0 software was selected for analysis, mainly involving reliability analysis, validity analysis, descriptive statistics analysis and correlation analysis.

#### 1.2 Research Scale

This paper draws on the self-monitoring fatigue scale published by Japan's Ministry of Health—*Labor and Welfare-Self-diagnosis Questionnaire on Laborers' Fatigue Volume*, The scale was revised according to the specific situation of Chinese express personnel. The overwork rating scale includes two parts: The first part (Q1-Q13) investigates the subjective feelings of fatigue among express employees, namely the self-conscious symptoms of fatigue (see Table 1); the second part (Q14-Q18) investigates the feelings of express employees on their work conditions (see Table 2).

**Table 1**  
**Rating Scale for Excessive Labor Among Express Employees (1)**

Serial number	Subject	Never	Rarely	Sometimes	So often	Always
Q1	Impatient, irritable, can't control oneself emotions.	0	1	2	3	4
Q2	Feel uneasy, worry about things, worry about everything.	0	1	2	3	4
Q3	Feeling blue, pessimistic about things.	0	1	2	3	4
Q4	Memory loss, easy to forget things.	0	1	2	3	4
Q5	Can't concentrate, do not want to think about the problem.	0	1	2	3	4
Q6	Brain reflection is not as fast as before, and it is easy to make mistakes.	0	1	2	3	4
Q7	I feel sleepy at work.	0	1	2	3	4
Q8	Not active in work, no motivation.	0	1	2	3	4
Q9	There were symptoms of headache / chest tightness / tinnitus / dizziness / heart discomfort, but there was no abnormality in the hospital.	0	1	2	3	4
Q10	I feel tired and always want to lie down and rest.	0	1	2	3	4
Q11	Sleep quality is not high (insomnia, many dreams).	0	1	2	3	4
Q12	I feel unusually tired when I get up in the morning.	0	1	2	3	4
Q13	Compared with the past, easy fatigue.	0	1	2	3	4

Note. Part one: The conscious state of fatigue.

Guidance: Please draw “√” in the box that best suits your situation based on your health status in the recent one year.

**Table 2**  
**Self-Diagnosis Scale of Overworked Conditions (2)**

Serial number	Subject	0	1	3
Q14	Irregular work (e.g. working overtime, etc.)	Less or appropriate	Many	Very much
Q15	It's still working late at night (10 p.m. to 5 a.m.)	Never	Sometimes	So often
Q16	Workday rest, nap time	More	Sometimes	Rarely
Q17	Mental stress from this job	Small	Large	Very large
Q18	This work brings the body burden	Small	Large	Very large

Note. Guidance: Please draw “√” in the box that best suits your situation based on your health status in the recent one year.

In the process of setting the scoring standard, the structural framework and content foundation of this scale are mainly used to refer to the measurement of Japan's fatigue savings Table. Therefore, the theoretical feasibility and feasibility of docking with the scoring criteria are transformed by series of corresponding transformations, Form the scoring criteria of the first part: “0~8” is grade I, 9~20 is grade II, 21~27 is grade III, and more than 28 is grade iv”. The scoring standard of the second part is set

to level 4, among them, “0 is grade A, 1~2 is B, 3~5 is C, and more than 6 is D”. The final degree of excess work is shown in Table 3. It is generally believed that the points of excessive working degree have the possibility of fatigue accumulation in 2~3 points, and it is necessary to improve the current work situation. The “0~1 point” state can be regarded as “safe zone”, and the “2~3” state is regarded as “warning zone”, and the 4~5 state is regarded as “dangerous zone”, and the 6~7 state is regarded as “high risk zone”.

**Table 3**  
**Workload Scores**

		Working conditions			
		A	B	C	D
Body condition	I	0	0	2	4
	II	0	1	3	5
	III	0	2	4	6
	IV	1	3	5	7

**1.3 The Respondents**

From July to August 2017, The author conduct a convenient sample survey of the 16 districts and counties in Beijing, including SF, EMS, tact, Shen Tong, Zhongtong, rhyme, Jingdong, Best Huitong, every day and home delivery, including 10 courier companies. A total of 1,350 questionnaires were distributed in face-

to-face manner, 1,319 questionnaires were collected and 1,217 valid questionnaires were returned, with an effective rate of 92.27%. Among the interviewees, 95.98% of the respondents were male, 4.02% of the women were women, 61.84% of the respondents were aged between 21 and 30, 81.44% were rural household registration, and high school and secondary vocational education accounted

for 51.02%, while middle school and the following education accounted for 39.75%.

#### 1.4 The Test of Reliability and Validity

(a) Reliability test. Reliability refers to the consistency of the same result when the same index or measurement tool is used to measure the same thing repeatedly. It is an effective method to measure whether the comprehensive evaluation system has certain stability

**Table 4**  
**Questionnaire Reliability Analysis**

Cronbach's coefficient	Cronbach's coefficients based on standardized projects	Number of items
.902	.901	18

From the above table, we can see that the scale has good internal consistency, that is, it has good reliability.

(b) Validity test. Validity is a measure of whether the comprehensive evaluation system can accurately reflect the evaluation of the project and requirements. It means that the measuring tool can measure the accuracy of the features to be measured. The higher the validity, the more the measurement results show the features it wants to measure, whereas the lower the validity. In general, we can use the method of factor analysis to judge the

and reliability. According to the reliability criterion proposed by Nunnally (1975) and Ehrehill et al. (1984), the Cronbach's alpha coefficient is considered to be more intrinsically consistent if it is greater than 0.8; if it is between 0.7 and 0.8, it is considered acceptable Reliability value; if less than 0.6, you should re-amend the scale. This study uses the Cronbach's alpha coefficient to test the reliability of the questionnaire, the results shown in Table 4.

construct validity of the scale by KMO coefficient and Bartlett's *s* test statistic. If KMO is greater than 0.5, it shows that factor analysis can be carried out, or it can better verify the concept or proposition; on the contrary, it shows that the construct validity is low. Through SPSS22.0 software analysis, the results of the survey KMO = 0.922 is greater than 0.5, significant at 0.000, as shown in Table 5, it shows that the structure of the excessive labor rating scale has high validity, the indexes can better determine the extent of the excessive labor workers.

**Table 5**  
**Questionnaire Validity Analysis**

KMO Sampling adequacy measure		.922
Bartlett's sphere test	Last read card side	9,469.519
	Degree of freedom	153
	Significance	.000

## 2. THE RESEARCH RESULTS

### 2.1 Beijing Courier Overwork Status

(a) Courier overall workload analysis. From the analysis of the survey results, we can see that the survey data analysis shows that the working conditions in the C-level and D-class number accounted for 79.6% of the sample, more than 70% of the courier employees in irregular work, late at night is still working, no work Daily rest and nap time, resulting in greater mental stress and physical burden. The specific analysis results are shown in Table 6.

**Table 6**  
**Courier Overall Workload Analysis**

Grade	Frequency	Proportion
A (0)	22	1.81%
B (1-2)	226	18.59%
C (3-5)	492	40.46%
D (more than 6)	476	39.14%

(b) Symptoms of fatigue. From the analysis of the survey results, we can see that the number of grade III and grade IV of fatigue symptoms accounts for 96.54%

of the sample, and the vast majority of express employees face a higher level of self-perceived fatigue. The specific analysis results are shown in Table 7.

**Table 7**  
**Courier Fatigue Symptoms**

Grade	Frequency	Proportion
I (0-8)	0	0.00%
II (9-20)	42	3.46%
III (21-27)	139	11.45%
IV (28以上)	1,033	85.09%

(c) The degree of work load. In Table 3, the burden of couriers is calculated, and the results are shown in Table 8.

**Table 8**  
**Job Burden of Couriers**

Workload	Frequency	Proportion
Safe area (0-1)	45	3.71%
Warning area (2-3)	213	17.55%
Danger zone (4-5)	487	40.12%
High-risk area (6-7)	469	38.63%
Sum	1,214	100.00%

According to the results of the above table, among the respondents, in a safe area (0, 1) accounted for 3.71%, warning area (2, 3) accounted for 17.55%, danger zone (4, 5) accounted for 40.12%, high-risk area (6-7) accounted for 38.6%, more than half of the express staff workload degree is higher, shows the tendency of excessive labor.

### 2.2 Cause Analysis of Beijing Couriers Over Work

In this study, we first made nonparametric correlation analysis between the causes of the excessive labor and the workload, Spearman correlation coefficient and Kendall correlation coefficient are used for correlation coefficient

**Table 9**  
**Correlation Between Survival Pressure and Work Load**

			Score	E1
Kendall tau_b	Score	Correlation coefficient	1.000	.135**
		Significance (two-tailed)	.	.000
		N	1,214	1,214
	E1 Survival pressure	Correlation coefficient	.135**	1.000
		Significance (two-tailed)	.000	.
		N	1,214	1,214
Spearman rank correlation coefficient	Score	Correlation coefficient	1.000	.159**
		Significance (two-tailed)	.	.000
		N	1,214	1,214
	E1 Survival pressure	Correlation coefficient	.159**	1.000
		Significance (two-tailed)	.000	.
		N	1,214	1,214

\*\* . The correlation is significant at 0.01 level (two-tailed).

(b) Influence of company system. Firstly, the compensation structure of couriers directly affects the degree of overwork. In the survey couriers, 69.4% of the salary is a fixed salary + commission, 22.2% of the courier has only Commission, and for them, they earn higher incomes only when they work hard, work time longer. In the long term, the working burden of couriers has increased significantly, which has a serious impact

analysis. Its range of value from 1 to 1,0 indicates that the two variables are irrelevant, positive value means positive correlation, negative value means negative correlation, the greater the value is, the stronger the correlation is, thus the influence of personal cause, company level and social environment on work load degree is obtained.

(a) Survival pressure faced by individuals. As can be seen from Table 9, the survivors' pressure of subsistence and job load are significantly correlated with the stress burden. The correlation coefficients of Kendall coefficient and Spearman rank are 0.135 and 0.159, respectively. The greater the pressure of personal survival, the higher the burden on people's work.

on their own physical and mental health. It can be seen from table 10, the remuneration by commission increase and work load was significantly correlated, and Kendall Coefficient and Spearman rank correlation coefficient were 0.084 and 0.099, that is, pay by commission to increase the workload was positively correlated , The more commission, the higher the degree of work load.

**Table 10**  
**The Correlation Between Compensation Structure and Overwork**

			Score	E2
Kendall tau_b	Score	Correlation coefficient	1.000	.084**
		Significance (two-tailed)	.	.000
		N	1,214	1,214
	E2 The longer the working hours, the higher the salary	Correlation coefficient	.084**	1.000
		Significance (two-tailed)	.000	.
		N	1,214	1,214
Spearman rank correlation coefficient	Score	Correlation coefficient	1.000	.099**
		Significance (two-tailed)	.	.001
		N	1,214	1,214
	E2 the longer the working hours, the higher the salary	Correlation coefficient	.099**	1.000
		Significance (two-tailed)	.001	.
		N	1,214	1,214

\*\* . The correlation is significant at 0.01 level (two-tailed).

(c) The company's physical examination system affects the degree of overwork of couriers. As can be seen from Table 11, regular physical examination and work load of employees are significantly correlated, and the correlation coefficients of Kendall Coefficient and Spearman Coefficient are -0.078 and -0.093, respectively, that is, the

regular health examination is negatively correlated with the work load, because the company regularly organize employee health examination can discover the health problems of their own employees, reduce the occurrence of excessive labor by corresponding adjust the work burden.

**Table 11**  
**Correlation Between Regular Physical Examination and Workload**

			Score	F3
Kendall tau_b	Score	Correlation coefficient	1.000	-.078**
		Significance (two-tailed)	.	.001
		<i>N</i>	1,214	1,214
F3 Regular physical examination	Score	Correlation coefficient	-.078**	1.000
		Significance (two-tailed)	.001	.
		<i>N</i>	1,214	1,214
Spearman rank correlation coefficient	Score	Correlation coefficient	1.000	-.093**
		Significance (two-tailed)	.	.001
		<i>N</i>	1,214	1,214
F3 Regular physical examination	Score	Correlation coefficient	-.093**	1.000
		Significance (two-tailed)	.001	.
		<i>N</i>	1,214	1,214

\*\* . The correlation is significant at 0.01 level (two-tailed).

(d) The company organizes the staff regularly to carry out sports activities, which affects the degree of Courier overwork. As shown in Table 12, there was a significant correlation between regular physical activity and work load, and the correlation coefficient between Kendall

correlation coefficient and Spearman rank correlation coefficient was -0.069 and -0.08, Sports activities are conducive to enhancing the physical fitness of employees, which accordingly reduce the workload burden to avoid overwork consequences.

**Table 12**  
**Correlation Between Regular Sports Activities and Work Load**

			Score	F4
Kendall tau_b	Score	Correlation coefficient	1.000	-.069**
		Significance (two-tailed)	.	.004
		<i>N</i>	1,214	1,214
F4 Regularly organize staff to carry out sports activities	Score	Correlation coefficient	-.069**	1.000
		Significance (two-tailed)	.004	.
		<i>N</i>	1,214	1,214
Spearman rank correlation coefficient	Score	Correlation coefficient	1.000	-.080**
		Significance (two-tailed)	.	.005
		<i>N</i>	1,214	1,214
F4 Regularly organize staff to carry out sports activities	Score	Correlation coefficient	-.080**	1.000
		Significance (two-tailed)	.005	.
		<i>N</i>	1,214	1,214

\*\* . The correlation is significant at 0.01 level (two-tailed).

(e) The government lacks reasonable supervision over working hours. In the mathematical statistical analysis of this issue, we found that there is a significant correlation between the government's lack of supervision over the working hours of staff and their work load.

The correlation coefficients of Kendall's correlation coefficient and Spearman's correlation coefficient are 0.201 and 0.239, respectively, that is, the more time lacks regulation, the higher the burden on work. As shown in Table 13.

**Table 13**  
**The Correlation Between Government Lack of Supervision and the Burden of Work**

			Score	F2
Kendall tau_b	Score	Correlation coefficient	1.000	.201**
		Significance (two-tailed)	.	.000
		N	1214	1214
F2 Government lack of supervision	F2 Government lack of supervision	Correlation coefficient	.201**	1.000
		Significance (two-tailed)	.000	.
		N	1214	1214
Spearman rank correlation coefficient	Score	Correlation coefficient	1.000	.239**
		Significance (two-tailed)	.	.000
		N	1214	1214
F2 Government lack of supervision	F2 Government lack of supervision	Correlation coefficient	.239**	1.000
		Significance (two-tailed)	.000	.
		N	1214	1214

\*\* . The correlation is significant at 0.01 level (two-tailed).

### COUNTERMEASURES AND SUGGESTIONS

(a) Strengthening labor law enforcement

The labor law should implement the safeguards for workers ‘right to rest. The government should strengthen the supervision over the working hours of employees. The employer should formulate measures to guarantee the workers’ right to rest. Labor administration departments should impose strict sanctions on employers that violate the right of workers to rest.

(b) Courier units should standardize the management system

Employers establish a healthy and sustainable human resources management philosophy. Clear staff is their stakeholders, from the long-term benefits both employers and employees to develop management system, such as: control workload, reasonable arrangements for working hours, to ensure courier’s physical and mental health.

(c) Courier should pay attention to their own regulation

Courier practitioners should work according to the rules of the biological clock, must not violate, and interfere with their own laws of physiology. At the same

time, strengthen the three meals nutrition, to maintain their own energetic, fatigue resistance.

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