

# An investigation on the food-delivery men group

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## ABSTRACT

This paper mainly studies - with a combined qualitative and quantitative approach - the actual work conditions of food-delivery men in the context of gig-economy in China and investigated people's cognition and attitude towards this group. In the part of the qualitative analysis, we interviewed 5 food-delivery men with average work experience of more than 2 years to deeply understand the current human rights situations of the ordinary workers in the industry. The results showed that the work intensity of takeaway riders is extremely high, and there were some potential safety hazards embedded in their work; the salary system as well as the compensation and reward systems require serious improvement to increase workers' working conditions. More particularly, we identified multiple sources of job pressure that are widely present among the takeaway riders. In our quantitative analysis, we recorded the opinions from 173 participants on four major dimensions: the impression towards the food-delivery men, the willingness to help deliverymen, the perceived task difficulties of the food delivery work, as well as the perceived pay and security held by the food-delivery men. Through correlation and regression analysis, we found positive relationships between the frequency of ordering takeout service and the residential area. We have also observed that one's impression towards the deliverymen was positively related to their willingness to help the group as well as the perceived difficulties of the job. Finally, the practical significance, limitations, and future directions were discussed.

**Keywords:** Food-delivery men, work situation, public cognition

## 1. INTRODUCTION

In the past few decades, along with the rapid development of China's Internet and its penetration into all walks of life, great changes have taken place in the traditional catering industry. The online catering industry has emerged in China and gradually attracted a huge user group and occupied an important proportion of the catering industry. Recently, the China Internet Network Information Center (CNNIC) released the 45th statistical report on the development of the Internet-related service in China. According to the report [1], by March 2020, the number of online takeout users in China has reached 398 million, accounting for 44.0% of the total Internet users; the number of mobile online takeout users has reached 397 million, accounting for 44.2% of the mobile Internet users. Obviously, to improve the convenience of people's everyday life, the online catering industry has grown in size and has become a new economic force driving the growth of China's catering industry.

The increasing demand for online catering also provides a large number of job opportunities for society, the largest proportion of which is the job demand for food deliveryman. In order to solve the urgent need for a huge amount of labor forces and to reduce the cost of the company, the work mode of the gig-economy is rapidly formed in the online catering industry. As a result, a large number of food-deliveryman appeared on the streets of the

city to provide delivery service. Even during the outbreak, a large number of food-delivery men still appear on the streets to provide delivery services. The image of these deliverymen was so remarkable that they appeared on the cover of Times magazine in March [2], and they were picked as heroes during the coronavirus outbreak.



Figure 1 Gao Zhixiao on the cover of Time magazine  
TIME

China's leading Internet online catering corporations, ELEME, and MEITUAN are currently employing a huge number of deliverymen as the main source of labor. The group enjoys pretty much homogeneous demographic

characteristics: according to the “2020 ELEME Food Deliveryman Research Report” released by ELEME [3], at the beginning of 2020, the average age of food deliveryman is 31 years old, 80% of them are from rural areas, 56% of them have second jobs (therefore working part-time as the deliverymen), and 27% of them think their work is respected by the outside world.

Because of the major impact of the online catering services and the large population - with an astonishing rate of growing - of the group of food-delivery men, a systematic sociological and psychological investigation on their working conditions and how are they perceived by society is of urgent importance. It not only provides us a vivid picture of the group through a scientific lens but, more importantly, offers decision-makers critical insights in preventing the group of food-delivery men by proposing necessary regulations and laws, as well as offering psychological support and guidance

Despite the need for sociological and psychological research on food-delivery men, as far as we are concerned, the research about the food delivery service almost exclusively focuses on the operation mode of different companies and the consumer behavior of the customers.

Liang [4] shows online food delivery (OFD) is an important way for many restaurants to get in contact with consumers and to boost their sales. Ha DN [5] does a research on the operation mode of delivery platform, the research found the business owners adopt different approaches in providing online ordering service to their customers with the intention to ease the ordering process that the customers encounter. For example, restaurants created their own websites, mobile apps, and (or) text messages for customers to place orders. Sun [6] explains the current business model of the online catering service as crowdsourcing logistics, and further argued this model, compared to other business models, provides an efficient, low-cost approach to food delivery. More recently, Li et al. [7] review and criticize the sustainability of this business model. Research on consumer behavior in the context of online delivery service studied some of the factors that influence consumer motivation. More specifically, Goh et al. [8] verify that the rapid advances and developments in information and communication technologies change people’s consumption preferences. For example, people are used to getting cooked meals delivered to their doorstep by online ordering rather than calling restaurants according to the paper version of the menu. In this process,

consumers will collect more information and compare as many similar products as possible before purchasing. Besides, O’Keefe et al. [9] find people can make their opinions easily accessible to other Internet users via message boards, forums, or online communities.

Although the aforementioned studies provide interesting discussion and results on the analysis of the business model and the consumer behavior in the context of online delivery service, unfortunately, very few studies so far have tried to look through the living conditions of these deliverymen and (or) people’s perception towards the group. The only exception – a recent study by Zhang et al. [10] identifies personal characteristics that were associated with risk perceptions of food-delivery men. The current study tries to close this research gap with a combined qualitative and quantitative approach.

The article will be structure as follows. The second and third sections will dedicate to the report of the qualitative analysis and quantitative analysis, respectively. The implications, limitations as well as future directions will be detailed in the following section.

## 2. QUALITATIVE ANALYSIS

### 2.1. Objects and Methods

#### 2.1.1. Interviewees

The interviewees were on-the-job food-delivery men. We applied a random recruitment procedure and selected the interviewees based on the following criteria: 1. The interviewees should be employed in either of China’s leading Internet online catering corporations (ELEME and MEITUAN); 2. Their work experience as a deliveryman should be more than or equal to 1 year; 3. They should not work only occasionally as a delivery-man; instead, they should work at least 20 hours per week on their duty. After careful selection, we determined a list of 5 interviewees from the top two companies (two from ELEME and three from MEITUAN). All of them were male; the average age was  $(32 \pm 5)$  years; the average length of working is  $(2 \pm 0.5)$  years. The basic information of interviewees is summarized in Table 1.

Table 1 Basic information of interviewees

Number	Gender	Age	The accumulated working time/year	Work type	Work area	Company
A1	Male	34	4	part-time	Beijing	MEITUAN
A2	Male	31	3	part-time	Beijing	MEITUAN
A3	Male	33	2	full-time	Beijing	ELEME
A4	Male	27	2	full-time	Zhejiang Province	MEITUAN
A5	Male	28	1.5	part-time	Zhejiang Province	ELEME

## *2.1.2. Research process*

### 2.1.2.1. Interview outline.

According to the method of sociological investigation, the interview outline was drawn up in the form of a personal semi-structured interview. The preliminary interview outline was then formally modified by an expert in the field. Furthermore, we continued to improve the outline during the pre-interview of two food-delivery men. The formal interview outline includes the questions on the daily work requirements, the safety assurance of delivery, the salary system, the reward and punishment mechanisms as well as their major sources of work pressure.

### 2.1.2.2. Interview process.

After informing the purpose of the interview and signing the informed consent form, each interviewee was interviewed in a semi-structured way for 30-60 minutes. All interviews were recorded and transcribed.

### 2.1.2.3. Data coding.

Content analysis was used to encode the verbatim manuscript sentence by sentence. After the completion of the text coding, the coders checked and discussed the coding results to construct the consensus concerning the general classification of the content. Furthermore, based upon the content classification identified, the coders joined their forces and further integrated the data into core ideas and themes.

## **2.2. Results**

### *2.2.1. Daily work requirements and safety assurance of delivery*

#### 2.2.1.1. Entry criteria for food-delivery men.

With respect to the education level, three of the interviewees had a high school diploma while the other two did not receive any high school education. When coming to the industry, three of them applied on their own mobile app while the others were referred by their friends. All of them agreed that the requirements of the job were relatively easy-to-meet as only the health certificates and the vehicles were required.

#### 2.2.1.2. Work intensity and duration.

Four of them indicated that they worked an average of 10-12 hours a day, and the other mentioned 8-10 hours. Three of the food-delivery men in Beijing received an average of 45-55 orders a day and rode 140-150 kilometers. Two food-delivery men in Zhejiang Province received 35-45 orders, with an average of 100-110 kilometers per day. All the five respondents said that the busiest hour of the day was from 11:00 to 12:00 a.m., 5.00 p.m. to 8:00 p.m., as well as 10:00 p.m. to 2:00 a.m. (especially for summer). One of the food-delivery men in Beijing received 1068 nighttime orders from 21:00 to 4:00 a.m. These account for 30% of his total business volume in that month. All five respondents said that although the working hours can be arranged freely, the actual monthly rest time is within five days on average.

#### 2.2.1.3. Reported differences between part-time workers and full-time workers.

Three of the full-time food-delivery men said that the manager adopted different management strategies towards the full-time versus part-time riders. More specifically, the managers were stricter to the full-timers, as indicated by more items assessed and more money deducted (because of poor customer evaluation, overtime rate, and many other reasons). For them, it is difficult - if not impossible - to ask for a leave, and it is especially prohibited to ask for leave under bad weather conditions. The order they received cannot be rejected. The two part-time delivery couriers, on the other hand, claimed there was less management in the group and the time could be arranged by themselves. However, their excessive freedom came with a price: while the two full-time riders participated in the social security system (for which the company is required to subsidize) as well as the social medical insurance, the part-timers could not participate in the social security system and received extremely little insurance (as little as 3 RMB per day).

#### 2.2.1.4. Safety protection and hidden danger.

All five food-delivery men said that the company provided basic protective equipment for the delivery staff, such as uniforms and helmets. However, the company did not check the quality of this equipment by any means. Two of the food-delivery men had (minor) traffic accidents previously, but because of the no major injuries presented, they did not receive any compensation.

### *2.2.2. Salary system, reward and punishment mechanism*

#### 2.2.2.1. Salary system.

Two the full-time food-delivery men said their wages included a base salary of 1500 to 2000 RMB (provided at least 400 orders were completed this month; if this requirement was not met, the base salary was not included.), and the excess was calculated by the unit price. Three part-time food-delivery men said that the salary did not include the base salary, all were calculated according to the odd number and unit price. The five food-delivery men all said that the income from. The cities of their work also matter: the average price was 7 RMB per order in Beijing, and 5 RMB per order in Zhejiang.

#### 2.2.2.2. Reward mechanism.

The companies of five food-delivery men (ELEME, MEITUAN) used a similar rating system to reward and motivate employees. The company sets an occupational ladder that includes seven levels. In the evaluation, the several ways to speed up the upgrade include: the total number of orders sent, on-time rate, praise rate, and special period of delivery (e.g., rush hours and bad weather). People with low-grade were mainly affected by two ways: the delivery fees were generally falling; would not assign orders in the same direction to the riders with low grade. People with high-grade mainly benefited from an increasing number of allowed rejection as well as received more orders coming from the same direction.

#### 2.2.2.3. Punishment mechanism.

Four major financial penalties were identified by the riders. The first - also the most common reason for issuing a fine - was delayed completion of the delivery. Second, if the food was damaged or broken (such as spilling drinks or soup), and the responsibility was deemed to be taken by the food-delivery men, they would receive a fine. Although in theory, it is possible to appeal for the company's decision, because of the excessive difficulties of offering valid evidence, in our interviews, all of the deliverymen said they would never want to appeal. The third situation is about canceling the order allocated by the system more often than allowed. The fourth situation was related to negative comments from the customers. For example, if the customer has not received the food yet the deliverymen assured the food has been sent, they would be fined for 20 to 50 RMB. In addition, 20 RMB would be deducted if the deliveryman received negative comments.

### *2.2.3. The three sources of work pressure*

#### 2.2.3.1. Pressure from customers.

All of the five food-delivery men interviewed said that part of the pressure came from customers. As a service industry, consumer satisfaction was always the ultimate goal. However, to satisfy the consumers is a difficult task for the deliverymen, as the quality of the service depends on many factors in addition to their intention and efforts, including the time constraints, the busy work schedule, as well as potentially long travel distance. These factors may all result in a failure to meet all of the consumers' needs. What's more, all of the five food-delivery men said as they were the only service staff who directly contacted the consumers during the whole ordering and delivery process, they were in many times criticized for non-delivery related reasons, such as the taste of the food.

#### 2.2.3.2. Pressure from the company.

All of the deliverymen said in the interview that another important part of the pressure comes from the company. The company's strict evaluation standards and punishment system would directly affect their salary and thereby put on a direct pressure on them. In addition, the competition between companies would indirectly create work pressure on food-delivery men. In order to improve the customer experience and thereby attracts more customers to their side, the company would reduce the delivery time and delivery service fee. Unfortunately, the two giants chose to transfer the reduction of the cost to their riders and resulted in constantly decreasing compensation for each order delivered as well as the increase of the workload.

#### 2.2.3.3. General pressure.

All of the five food-delivery men said that delivery was more than physical enduring. It is also mentally exhaustive. They not only regularly face the complex and even erroneous address, but also have to pay constant attention to the route navigation and avoid any violation of the traffic rules. The mental pressure was especially prevalent during the peak hours in which they had consecutive orders with limited time. To not totally screw up the delivery service, they had to keep at a high-stress level during the whole rush hours.

## **3. QUANTITATIVE ANALYSIS**

### ***3.1. Methods***

In the current study, 173 participants were recruited from popular social media in China. All of them have completed

the questionnaire successfully with no missing values. Among them, 124 were female participants and 49 were male participants. The average age of participants was 21.5, and they resided either in mainland China or overseas.

**3.2. Measures**

*3.2.1. Independent Variables*

In the current study, a set of background and demographic variables were involved as independent variables. These variables included gender (coded as a dummy variable), age of the participants (coded as a numeric variable), resident area (coded as a categorical variable, involving three categories: tier-1 cities, tier-2 and tier-3 cities, overseas areas), and education level of respondents (coded as a categorical variable, involving four categories: junior high school, equivalent or lower; senior high school, equivalent or lower; bachelor degree or equivalent; master degree, equivalent, or higher).

*3.2.2. Dependent Variables*

To examine participant’s cognition and attitude towards food-delivery men, we have measured a set of four dimensions: impressions towards food-delivery men, work difficulties, pay and security, and willingness for help if they were approached by food-delivery men. Each dimension included two questions and participants were instructed to indicate, on a 10-point Likert scale, to what extent would they describe themselves with one of the options mentioned. For “impressions towards food-delivery men”, we guided participants to score the work evaluation and overall impression of food-delivery men. For the dimension of work difficulty, we asked the participants about their cognition and attitude towards the difficulty and intensity of food delivery work. In the dimension of pay and security, we collected the participants' attitudes towards the salary and security measures of food-delivery men.

**3.3. Results**

*3.3.1. Descriptives*

In general, we have viewed an encouraging picture with regard to the impression of deliverymen. More specifically, the average impression towards the group was quite positive (almost 8 out of 10), while people also considered their works demanding, and, correspondingly, would love to help them if necessary. Moreover, people understand that the pay and security received was not satisfactory (lower than 5 out of 10).

We have further visualized the distribution of each variable, which again demonstrated an encouraging picture. A vast majority of people hold a positive impression towards deliverymen, considered the work of deliverymen difficult and would very much love to help them in due course. Furthermore, only a few people considered the pay and security of deliverymen to be extremely low or extremely high; most people viewed the pay and security to be moderate. The visualization also offers us an informative perspective with regard to the frequency of ordering delivery services: with more than half people ordered delivery service more than 4 times a week, our data confirmed observations made from the industrial report that nowadays takeout services have become a non-neglectable part of the catering industry.

*3.3.2. The mean and distribution of the data*

*Note:* The frequency of takeout was evenly distributed among participants.

*Note:* The overall impression of the participants mainly focused on the range of 7-10 points (out of 10 points), which showed that the participants generally had a good impression on this group.

*Note:* The difficulty of food-delivery men was concentrated in the range of 5-9 points (out of 10 points), which reflected that the participants generally thought that the work difficulty of this group was high. Only 18 people (about 10% of the total number) thought that the work difficulty was less than 5 points.

*Note:* The scores of participants for the pay and security of food-delivery men were generally concentrated in 3-6 points, which indicated that the participants thought that the rider's salary and security were low- to- moderate.

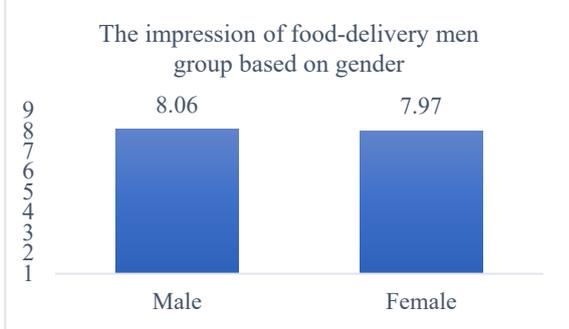
*Note:* The participants were very willing to help the takeaway riders when necessary. Nearly 73% of the respondents' willingness to help was concentrated in the range of 8 to 10, indicating a generally high willingness to help the deliverymen. Most notably, only 9 participants scored lower than 4 in their willingness to help the deliverymen.

*3.3.3. The relationships between demographics and focal variables*



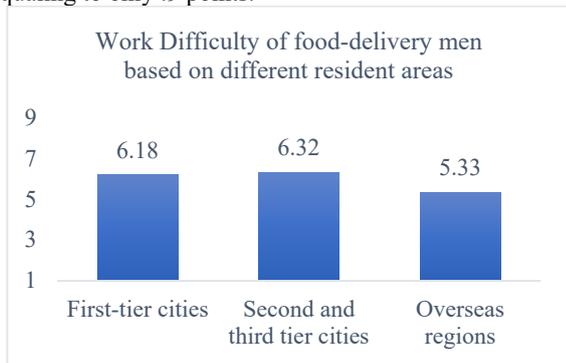
**Figure 2** The impression of the food-delivery men of people from different residential areas

According to figure 2, the impression of food-delivery men was comparable among the participants who lived in first-tier cities and second-to-third-tier cities, as they fluctuated around 8 points. The impression score of overseas respondents for takeaway riders, however, was considerably lower, with an average score of about 6.6.



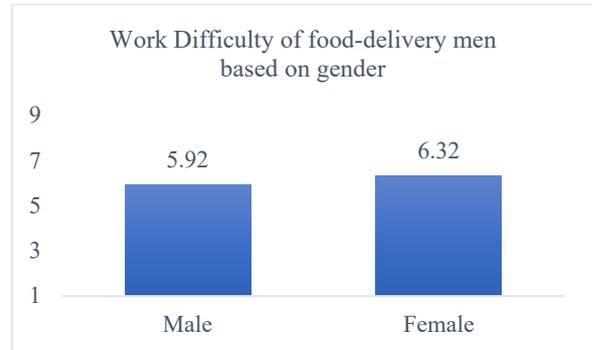
**Figure 3** The impression of food-delivery men group based on gender

The impression of takeaway riders rated by male and female respondents were very comparable, with difference equaling to only .9 points.



**Figure 4** Work Difficulty of food-delivery men based on different resident areas

There were little differences in the ratings with regard to work difficulties of food-delivery men among the respondents who lived in first-tier cities and second-to-third-tier cities. However, participants living in overseas regions had very different perception in this aspect; they scored almost 20% lower than those living in mainland China.



**Figure 5** Work Difficulty of food-delivery men based on gender

Both male and female participants thought it difficult to work as food-delivery men. Compared with the male participants, the female participants thought the work of the food-delivery men more difficult, in accordance with the general stereotype of the job role.

### 3.3.4. Correlation analysis

Table 2 The means, standard deviations, and correlations among variables

	M	SD	1	2	3	4	5	6	7	8	9
<b>1.Gender</b>	1.717	.452	1.00								
<b>2.Age</b>	1.832	.507	-.158*	1.00							
<b>3.Area</b>	1.457	.533	-.087	-.016	1.00						
<b>4.Education</b>	1.110	.365	-.057	.415**	-.020	1.00					
<b>5.Frequency</b>	4.624	3.062	-.035	.102	-.261**	.006	1.00				
<b>6.Impression</b>	7.908	1.660	-.066	-.019	.022	-.007	-.031	1.00			
<b>7.Help</b>	8.283	1.978	-.059	-.028	.048	-.035	-.005	.465**	1.00		
<b>8.Work difficulty</b>	7.327	1.647	.059	-.174*	-.058	-.108	-.056	.236**	.101	1.00	
<b>9.Pay &amp; security</b>	4.902	1.505	-.028	-.026	.089	-.065	-.060	.027	.004	.029	1.00

Note: \*  $p < 0.05$  \*\*  $p < 0.01$

According to the correlation analysis in Table 2, we found a strong negative correlation between the frequency of using delivery services and residential areas. More specifically, the frequency of ordering food delivery services from participants coming from first-tier cities, second-and-third-tier cities, and overseas regions decreases in turn. In addition, there is a strong positive correlation between participants' willingness to help and their impression of the food-delivery men group such that the better the impression towards the deliverymen, the stronger the willingness to help them out. Also, there is a negative correlation between the age of participants and the perception of the difficulty of the job. In other words, compared to the younger participants, the elder would consider the task to be less demanding. Finally, there is a strong positive correlation between participants' perception of food delivery men's work difficulties and their

impression of the group, indicating that the better the impression of food-delivery men, the higher the degree of work difficulties perceived.

### 3.3.5. Regression analysis

To further establish and distinguish the unique effect of demographics on various dependent variables and partial out confounding effects, we have conducted a series of regression analyses with the four criterion variables (i.e., the impression of the food-delivery men, the willingness to help deliverymen, the perceived task difficulties of the food delivery services, as well as the perceived pay and security held by the food-delivery men) serving as dependent variables.

Table 3 The results of the regression analysis in predicting perceptions towards the food delivery men

Variable	B	95% CI	$\beta$	t	p
Gender	-0.543	[-1.553, 0.467]	-0.148	-1.054	0.294
Age	-0.106	[-0.662, 0.450]	-0.032	-0.372	0.710
Area	0.392	[-0.459, 1.242]	0.126	0.902	0.368
Education	0.062	[-0.706, 0.830]	0.014	0.159	0.874
Frequency	0.002	[-0.366, 0.370]	0.003	0.010	0.992
Gender* Frequency	0.068	[-0.112, 0.247]	0.229	0.739	0.461
Area* Frequency	-0.093	[-0.260, 0.075]	-0.254	-1.084	0.280

Note:  $R^2=0.015$ , CI= confidence interval for B

It can be seen from Table 3 that gender, age, area, education frequency, the interaction between gender and frequency as well as the interaction of area and frequency have no obvious effect on participants' impression of the

food-delivery men group. The above variables can explain the reasons for the 1.5% change in participants' impressions.

Table 4 The results of the regression analysis in predicting willingness to help food-delivery men

Variable	B	95% CI	$\beta$	t	p
Gender	-0.083	[-1.285, 1.120]	-0.019	-0.135	0.893
Age	-0.136	[-0.798, 0.527]	-0.035	-0.401	0.689
Area	0.677	[-0.336, 1.690]	0.182	1.309	0.192
Education	-0.144	[-1.058, 0.771]	-0.026	-0.308	0.759
Frequency	0.226	[-0.212, 0.665]	0.350	1.012	0.313
Gender* Frequency	-0.030	[-0.243, 0.184]	-0.084	-0.272	0.786
Area* Frequency	-0.122	[-0.321, 0.077]	-0.281	-1.199	0.232

Note:  $R^2=0.017$ , CI= confidence interval for B

As shown in Table 4, gender, age, area, education frequency, the interaction of gender and frequency, and interaction of area and frequency have no influence on

participants' willingness for helping food-delivery men. The above variables can explain 1.7% of the variation in participants' willingness to help.

Table 5 The results of the regression analysis in predicting work difficulties of food-delivery men

Variable	B	95% CI	$\beta$	t	p
Gender	0.295	[-0.690, 1.280]	0.081	0.588	0.558
Age	-0.502	[-1.045, 0.040]	-0.155	-1.816	0.071
Area	0.181	[-0.648, 1.011]	0.059	0.429	0.669
Education	-0.221	[-0.969, 0.528]	-0.049	-0.578	0.564
Frequency	0.166	[-0.193, 0.525]	0.308	0.905	0.367
Gender* Frequency	-0.036	[-0.211, 0.138]	-0.125	-0.409	0.683
Area* Frequency	-0.097	[-0.260, 0.067]	-0.267	-1.158	0.248

Note:  $R^2=0.049$ , CI= confidence interval for B

The result is shown in Table 5 and it shows that gender, area, education frequency, the interaction of gender and frequency, and the interaction of area and frequency have no effect on participants' cognitions about work difficulties for food-delivery men. Age has a near

significant effect on participants' cognitions about work difficulties towards food delivery, showing negative relation. The above variables can explain 4.9% of the variation in participants' perceptions of work difficulties.

Table 6 The results of the regression analysis in predicting anticipated pay and security for food-delivery men

Variable	B	95% CI	$\beta$	t	p
Gender	0.576	[-0.322, 1.475]	0.173	1.257	0.211
Age	0.033	[-0.462, 0.528]	0.011	0.131	0.896
Area	-0.351	[-1.108, 0.406]	-0.124	-0.909	0.365
Education	-0.398	[-1.082, 0.285]	-0.097	-1.142	0.255
Frequency	0.032	[-0.295, 0.360]	0.065	0.192	0.848
Gender* Frequency	-0.153	[-0.312, 0.007]	-0.573	-1.88	0.062
Area* Frequency	0.144	[-0.005, 0.293]	0.437	1.897	0.060

Note:  $R^2=0.050$ , CI= confidence interval for B

Regression output for pay and security for food-delivery men are given in Table 6 and gender, age, area, and education frequency have no strong influence on participants' cognitions about pay and security for food-delivery men. The effect of area and gender on reported pay and security was moderated by frequency and the above variables can explain the 5.0% change in participants' perceptions of food-delivery men pay and security.

more job opportunities and, unfortunately at the same time, - a lack of social security because of the lag of preventive laws and regulations. The gap between existing laws that were not designed for the new type of employment relations and the peculiarities of the new labor relations signifies the necessities of the current research - we need to conduct an in-depth study on the actual working conditions, regulations, compensations, and benefits, psychological stress, as well as how are they perceived by the ordinary people and thereby make practical recommendations to policy-makers and citizens alike. To address these questions, the current research utilizes a hybrid method that encompasses both qualitative and quantitative approaches.

## 4. CONCLUSION

### 4.1. Theoretical Contributions

In the context of the gig economy, the increasing growth of online food delivery (OFD) has led to a change in the employment relationship, creating a platform-to-individual transaction model. This new economic model has brought

People's impressions of and willingness to help the food-delivery men group held a positive and significant relationship. The results showed that people in general exhibit a great level of kindness and impression to the food-delivery men group, especially among the domestic residents. We presume this is because the service of food-delivery men is becoming more and more important

in people's daily life: they save people's time and provide convenient services. In addition, with the gradual standardization of the work of food-delivery men, such as uniform clothing, as well as the regulations developed by the companies to be more responsive to customer needs, such as regulating the allowed time for a single delivery, people are more satisfied and impressed with the service of food-delivery men. The results also indicated that people are very willing to help food-delivery men (the average rating of willingness to help was 7.7 (out of 10)) when necessary.

Second, Perceptions of the difficulty of a food-delivery men's job were generally high, which coincided with the perceived working difficulties rated by the food-delivery men themselves. The basic work content of the takeaway rider could be considered as extremely difficult and intense - the average daily working time of 10-12 hours; they need to catch up with the very restricted delivery time to avoid potential penalties and fight against numerous safety hazards brought out by the bad weather conditions. However, people were not able to fully appreciate the work difficulties of food-delivery men - their extensive psychological stress requires appropriate understanding and attention.

Finally, people's perception of food-delivery men's salary and security was inadequate, ignoring the harsh reward, punishment system, and the potential safety hazards behind it. The results show that people's rating with respect to the salary of food-delivery men was around 3 to 6, reflecting that people considered the rider's salary protection laid in a reasonable range. But the actual conditions are very much different and quite the opposite. Such a gap between the perceived salary and security system and the actual one has two potential explanations. First of all, the media and companies might over-embellish and exaggerate the promotion of rider salary and benefits, causing misleading perceptions to the public. People might thereby ignore the inadequate punishment system behind the food-delivery men's salary as well as the lack of clear motivation for the reward rating. Secondly, people lacked understanding of and concern for the work of food-delivery men and ignore the social and safety issues behind.

#### **4.2. Managerial Implications**

For customers, through this study, they can better understand the working conditions of food-delivery men and the (physical and psychological) stress behind them, as well as potential safety hazards. As such, their attention to and support for the group of food-delivery men could be largely enhanced. Understanding, support, and even help, from customers can be an effective way to relieve some of the workload and pressure of food-delivery men.

For the company, important adjustments can and should be made through this study to protect the basic rights of food-delivery men. For example, the motivational system could be re-designed so that excellent food-delivery men can actually be rewarded for their work; adjust the (much

too) punishment rules and punishment intensity to relieve the work pressure of food-delivery men; increase safety and security measures, for example conducting regular inspection and the maintenance of equipment.

The study also provides valuable insights into the governmental regulators and decision-makers. To protect the rights of the group of food-delivery men, government departments should strengthen the supervision of the company and provide detailed, practical as well as important guidelines and regulations to further regulate the industry. Meanwhile, they could raise awareness of the issue among the general public by conducting timely and thorough examinations and reports.

#### **5. LIMITATION**

First, the five food-delivery men interviewed in this study are limited in number and concentrated in Beijing and Zhejiang, and do not fully represent the working conditions of food-delivery men in all regions of China. Another limitation of this study is that the age coverage of the questionnaire respondents was not comprehensive, concentrating mainly on the 20-25 age group, which does not reflect well the findings of the whole age group. Future research could expand to larger data samples covering more age groups to better analyze the impact of age factors.

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