The Impact of the Rise of Takeaway Industry on the Income of Shanghai’s Catering Industry

Alex Shuming Xu, Jerry Hongrui Wu, Amelia Jiayi Lai
Shanghai High School International Division, Shanghai, China

Abstract. This paper takes the city of Shanghai as the object, and examines the impact of the takeaway industry on the operating income of the catering industry in Shanghai. A linear regression model is used to establish a prediction model for the operating income of the catering industry and the takeaway industry. Considering the time node of the rise of the takeaway industry, the development trend of the catering industry's business income before the rise of takeaway is fitted, and the significance of the impact of the rise of takeaway on the catering industry's income is quantified based on the prediction error by comparing the prediction results with the actual data. Six key indicators of the national economy were selected to establish a multiple regression forecasting model for the catering industry's business income, and a factor analysis model based on the weighting of variables was proposed to analyse the impact of national economic growth and the rise of the takeaway industry on the catering industry's business income.

Keywords: Takeaway industry; Catering industry; Multiple regression analysis; Factor analysis.

1. Introduction

The main business components of the takeaway industry are food and beverage production and its related delivery services. Since 2013, the takeaway industry has grown rapidly and has become an important way for working people to address their dietary needs. According to public data from the National Bureau of Statistics, the income of the food and beverage industry reached 4,692.1 billion yuan by the end of 2019, an increase of 9.4% compared to the previous year. By the first half of 2020, the scale of takeaway users in China reached 409.03 million, with a usage rate of 43.5%. It is important to study the impact of the rise of the takeaway industry on the development of the catering industry.

This paper examines the impact of the rise of takeaway on the future development trend of the catering industry. The rapid development of takeaway has on the one hand promoted the development of the catering industry, and at the same time brought some impact on traditional catering. Taking Shanghai as an example, we studied the development trends and influencing factors of the takeaway industry and catering business income, and analyzed the magnitude of the impact of the takeaway industry on the catering industry through regression forecasting and factor analysis. To address the issue, we proposed a factor analysis model with indicator weighting based on regression coefficient correlation indicators.

2. The Status Quo of Takeaway Industry and the Income Catering Industry in Shanghai

According to the report "Study on the role of takeaway business in the quality development of the catering industry", 54.95% of the users said that their eating habits have been significantly influenced by takeaway services, and their expense on catering has increased significantly. So far, the cumulative number of registered takeaway users on major platforms has reached 500 million, with orders reaching 17.1 billion.

In Shanghai, the rise of the takeaway industry began in 2012, and by 2019, the takeaway industry's income had grown rapidly from an initial $488 million to $3.904 billion. However, earlier profits in the takeaway industry were mainly negative and in the red.
In China, takeaway has formed a basic market prototype and has given rise to a separate delivery industry. The relationship between takeaway industry and catering industry is complex. On the one hand, the takeaway industry is an integral part of the catering industry, and the income from the takeaway industry has injected new vitality into the changes in the operating income of the catering industry. On the other hand, the rise of takeaway industry has changed people's food and beverage consumption habits and has had a certain impact on the traditional food and beverage industry, attracting some consumers to shift their traditional food and beverage consumption behaviour to food-delivery-one. In addition, the rise of takeaway has changed people's eating habits and made them accustomed to ordering food online, which has contributed to the growth of income from the catering industry.

3. The Income Forecast of Takeaway Industry and Catering Industry in Shanghai

3.1 Analysis of the Development Trend of Catering Industry income

Firstly, a regression model is used to study the trend of the catering business income and takeaway industry over periods of time. Then, the impact of the rise of takeaway on the operating income of catering industry is studied based on the forecast results, and this is used to build a linear regression model to study the pattern of changes in operating income over time. Figure 2 illustrates the trend of operating income of the catering industry in Shanghai from 2002 to 2019.

Prior to 2013, there was a steady growth in catering income. After that, the trend of income growth in catering accelerated significantly. Based on the timing of the rise of takeaway industry, the data was divided into two parts, i.e. before 2013 and after 2013 (including 2013). Separate linear regression models of turnover over time were developed as follows:

\[ CateringI = f(t) = at + b + \epsilon \]  \hspace{1cm} (1)

where \( CateringI \) denotes catering income, \( t \) denotes time, \( a \) and \( b \) are the regression model coefficients respectively, and \( \epsilon \) denotes the random error term.
where CateringI denotes catering income from 2002 to 2012 and CateringI denotes that from 2013 to 2019. Similarly, a regression model for the time-varying operating income of takeaway and delivery services is developed as follows.

\[ \text{TakeoutI} = f(t) = at + b + \varepsilon \]  

\( \text{TakeoutI} \) denotes income of takeaway industry.

(a) CateringI\textsubscript{1} Regression Model Results

The results of the regression model are given in Table 4 at CateringI\textsubscript{1}.

| R       | R-squared | Adjusted R-Square | Standard Error of Estimate |
|---------|-----------|-------------------|---------------------------|
| 0.985a  | 0.970     | 0.967             | 19.90124                  |

| Explained | Sum Of Squares | df | Mean Square | F | Sig. |
|-----------|----------------|----|-------------|---|------|
| 115093.537 | 1              | 115093.537 | 29.0597 | 0.000a
| 3564.533   | 9              | 396.059   |
| Total      | 118658.070     | 10     |

| Unstandardized Coefficients | Standardized Coefficients |
|-----------------------------|---------------------------|
| B Standard Error            | Trial Version t Sig.      |
| (Constant) -64697.041       | 3803.304 -16.988 0.000    |
| t 32.347                    | 1.898 .985 17.047 0.000   |

The CateringI\textsubscript{1} regression model achieved a goodness of fit of 0.967 and the fit met the criteria. The result of the CateringI\textsubscript{1} regression model F-test was p=0.000<0.01 and the regression model was significant. The regression model form of CateringI\textsubscript{1} was obtained as follows:

\[ \text{CateringI}_1 = 32.347 \cdot t - 64697.041 \]

According to Table 4-3, the result of the t-test was p=0.000<0.01 and the regression coefficient was significant.

(b) CateringI\textsubscript{2} Regression Model Results

The results of the regression model are given in Table 5 at CateringI\textsubscript{2}.

| R       | R-squared | Adjusted R-squared | Standard Error of Estimate |
|---------|-----------|-------------------|---------------------------|
| 0.934a  | 0.872     | 0.846935          | 53.47776                  |

| Explained | Sum Of Squares | df | Mean Square | F | Sig. |
|-----------|----------------|----|-------------|---|------|
| 97804.59  | 1              | 97804.59 | 34.19896 | 0.002a
| 14299.35  | 5              | 2859.871 |
| Total     | 112103.9      | 6    |

| Unstandardized Coefficients | Standardized Coefficients |
|-----------------------------|---------------------------|
| B Standard Error            | Trial Version t Sig.      |
| (Constant) -118496          | 20374.4 -5.81594 0.002    |
| t 59.10179                  | 10.10635 5.847987 0.002   |
The Catering$_2$ regression model achieved a goodness of fit of 0.87, meeting the expected fit. The result of the Catering$_2$ regression model F-test was $p=0.002<0.01$, indicating that the regression model was highly significant. Based on the results in Table 5, the regression model form of the Catering$_2$ was obtained as follows:

$$\text{Catering}_2 = 59.10* t - 118496$$

According to Table 5, the result of the t-test is $p=0.002<0.01$, indicating that the regression coefficient is highly significant.

(c) Takeout Regression Model Results
The results of the regression model are given in Table 6 at TakeoutI.

| Table 6. TakeoutI Regression Model Summary |
|--------------------------------------------|
| R  | R-squared | Adjusted R-squared | Standard Error of Estimate |
|----|-----------|---------------------|---------------------------|
| 0.969a | 0.938    | 0.927954            | 3.051552                  |

| Sum of Squares | df | Mean Square | F     | Sig.  |
|----------------|----|-------------|-------|-------|
| Explained      | 848.8808 | 1 | 848.8808 | 91.16016 | .000a |
| Residual       | 55.87183 | 6 | 9.311971 |
| Total          | 904.7526 | 7 |       |

| Unstandardized Coefficients | Standardized Coefficients |
|-----------------------------|---------------------------|
| (Constant)                 | 4.95714                   |
| t                           | -9.52835                  |
| Standard Error             | 9.547783                  |
| Trial Version              | 7.54E-05                  |
| Sig.                        | 7.62E-05                  |

The goodness of fit of the TakeoutI regression model was 0.87, which is a very good fit. The result of the TakeoutI regression model F-test was $p=0.000<0.01$, indicating that the regression model was very significant. Based on the results in Table 6-3, the TakeoutI regression model was obtained in the following form:

$$\text{TakeoutI} = 4.50* t - 9042.7$$

According to Table 6-3, the result of the t-test was $p=0.000<0.01$, indicating that the regression coefficient was highly significant.

Based on the regression coefficients and predictions from the regression models of Catering$_1$, Catering$_2$ and TakeoutI, the impact of the rise of the takeaway industry on catering income was analyzed. Comparing the regression coefficients of Catering$_1$ and Catering$_2$, we can learn that $32.347< 59.10$. After the rise of takeaway industry in 2013, the growth rate of catering business income has increased significantly, and the rise of the takeaway industry has obviously promoted the growth of catering business income. Comparing the predicted and true values for 2013-2019 on the basis of the model fit, the results are shown in Table 7.

| Table 7. Analysis of Operating Income in Catering Industry from 2013 to 2019 |
|--------------------------------|-----------------|-----------------|-----------------|-----------------|
| Time | Predicted Values Based on Catering$_1$ | True Value Residuals | Operating Income of Takeaway Industry |
|------|---------------------------------------|------------------|-----------------|-----------------|
| 2013 | 417.51 | 466.10 | 48.59 | 7.33 |
| 2014 | 449.86 | 578.30 | 128.44 | 13.29 |
| 2015 | 482.21 | 612.10 | 129.89 | 14.48 |
| 2016 | 514.55 | 622.10 | 107.55 | 16.50 |
| 2017 | 546.90 | 669.85 | 122.95 | 23.39 |
| 2018 | 579.25 | 714.30 | 135.05 | 28.57 |
| 2019 | 611.59 | 907.80 | 296.21 | 39.04 |
| Mean Value | 514.55 | 652.94 | 138.38 | 20.37 |
As can be seen from the results in the table, the growth in catering business income was significantly higher after the rise of takeaway industry than before the rise of takeaway industry. As a result of the rise of takeaway, the actual growth in the catering sector was 26.89% higher than the original trend.

Comparing the mean value of takeaway operating income of 20.37 with the residual mean value of 138.38, it can be seen that the growth in the catering sector is not only due to the direct income generated by the takeaway sector, but also drives the increase in catering operating income.

3.2 Analysis of the Development Trend of Catering Industry Income Based on Multiple Regression Analysis

Next, we will establish a prediction model for the operating income of the catering industry through a multiple linear regression model. Firstly, the index system for predicting the business income of the catering industry is established. Then, a multiple regression model based on business income is given. Finally, based on the data collected, the prediction of catering business income will be made and the impact of takeaway on catering business income will be further verified and analysed by comparing it with the actual data.

3.2.1 Indicator System

For the factors affecting the operating income of the catering industry, indicators reflecting the level of the national economy are mainly considered. This paper also adds takeaway and delivery service income as a separate indicator based on the takeaway perspective. A system of indicators is established for analysing the income of the catering industry: the number of urban population (Pop), per capita GDP (CGDP), the number of inbound tourist receivers (Tour), the number of international tourists (InterTour), the disposable income of urban residents (CIncome), the EngelC coefficient of urban residents (EngelC), takeaway and delivery service income (takeawayI) etc.

In our study, the sample data used are relevant statistical indicators data for Shanghai from 2002-2019, which are sourced from Shanghai Statistical Yearbook.

3.2.2 Multiple Regression Modeling

Two separate multiple regression models are developed in this paper, one with and one without takeaway and delivery service incomes.

\[
\text{Catering}_1 = \alpha_0 + \alpha_{\text{Pop}} + \alpha_{\text{CGDP}} + \alpha_{\text{Tour}} + \alpha_{\text{InterTour}} + \alpha_{\text{CIncome}} + \alpha_{\text{EngelC}} + \alpha_{\text{TakeawayI}} + \epsilon
\]

\[
\text{Catering}_2 = \alpha_0 + \alpha_{\text{Pop}} + \alpha_{\text{CGDP}} + \alpha_{\text{Tour}} + \alpha_{\text{InterTour}} + \alpha_{\text{CIncome}} + \alpha_{\text{EngelC}} + \epsilon
\]

The model in equation (5) is a regression model to analyze the relationship between catering income and takeaway and delivery service income. Equation (6) is used to analyze the impact of the takeaway rise factor by predicting the analysis between the predicted and actual values of catering income after the rise of takeaway.

3.2.3 Multiple Regression Results and Analysis

First, the data are normalized as follows.

\[
x'_i = \frac{x_i - x_{\text{min}}}{x_{\text{max}} - x_{\text{min}}}
\]

where \(x_{\text{min}}\) indicates the minimum value of the corresponding indicator, and \(x_{\text{max}}\) indicates the maximum value of the corresponding indicator.

(a) \(\text{Catering}_1\) Multiple Regression Model

The results of the multiple regression model calculations are shown in the results shown in Table 8.

The goodness of fit of the multiple regression model was 0.990, which was a good fit. \(p=0.000<0.01\) for the F-test and the regression model was significant. Based on the results in Table 8-3, the multiple regression model was derived as follows.
The t-test results of the multiple regression model showed very insignificant coefficients for the variables InterTour, Tour, CIncome and CGDP, so the best regression model was found by removing each of these variables one by one, and the following results were obtained.

\[ Catering_{I_1} = 0.584 \times Takeout - 0.063 \times EngleC + 0.325 \times Pop \]

The results of the model evaluation and testing are shown in Table 9.

### Table 8. Summary of Multiple Regression Models

| R | R-squared | Adjusted R-squared | Standard Error of Estimate |
|---|-----------|-------------------|---------------------------|
| 0.995a | 0.990 | 0.983 | 0.03694 |

**Table 9. Summary of Multiple Regression Models**

| R | R-squared | Adjusted R-squared | Standard Error of Estimate |
|---|-----------|-------------------|---------------------------|
| 0.995a | 0.989 | 0.987 | 0.03312 |

The multiple regression model achieved a goodness of fit of 0.989, an increase in the fit over the previous model. The multiple regression model F-test resulted in a significant regression model with \( p=0.000<0.01 \).

(b) *Catering\_{I_2}*: Multiple Regression Model

Removing the takeaway income variable from the variables and performing calculations on *Catering\_{I_2} gives the results of the regression model as shown in Table 10.
### Table 10. Summary of Multiple Regression Models

|                        | R         | R-squared | Adjusted R-squared | Standard Error of Estimate |
|------------------------|-----------|-----------|--------------------|----------------------------|
|                        | .991a     | .981      | .979               | .04182                     |

|                        | Sum of Squares | df | Mean Square | F          | Sig.  |
|------------------------|-----------------|----|-------------|------------|-------|
| Explained              | 1.377           | 2  | .689        | 393.677    | .000a |
| Residual               | .026            | 15 | .002        |            |       |
| Total                  | 1.403           | 17 |             |            |       |

|                        | Unstandardized Coefficients | Standardized Coefficient | t     | Sig.  |
|------------------------|-----------------------------|--------------------------|-------|-------|
| (Constant)             | .091                        | .036                     | 2.502 | .024  |
| EngleC                 | -.068                       | .037                     | -.091 | -1.841| .085  |
| Cincome                | .845                        | .045                     | .925  | 18.719| .000  |

The goodness of fit of the multiple regression model was 0.981, which was a very good fit. The result of the F-test of the multiple regression model was \( p=0.000<0.01 \) and the regression model was significant. The regression model was obtained from Table 10 as follows.

\[
\text{CateringI} = 0.845 \times \text{Income} - 0.068 \times \text{EngleC} + 0.091
\]

Based on the results of the t-test in Table 10-3, it can be seen that the model coefficients have good significance.

(c) Prediction and Analysis of Catering incomes Based on Multiple Regression Models

Using the indicator data (excluding takeaway income) from 2002-2012, a catering income forecasting model was developed and the following results were obtained.

\[
\text{CateringI}' = 0.122 \times \text{InterTour} + 0.274 \times \text{Pop} + 0.001
\]

The model had a goodness of fit of 0.986 and an F-test of \( p=0.000<0.01 \), indicating that the model was highly significant. t-test results showed that the model parameters were also highly significant. The predicted results of the model using the model were as follow:

### Table 11. Multiple Regression Model Comparison Results

| Time | Regression Model Prediction Results With Takeaway Income | Regression Model Prediction Results Without Takeaway Income | True Value |
|------|---------------------------------------------------------|------------------------------------------------------------|-------------|
| 2013 | 369.78                                                  | 399.84                                                     | 466.1       |
| 2014 | 375.43                                                  | 478.57                                                     | 578.3       |
| 2015 | 376.91                                                  | 495.77                                                     | 612.1       |
| 2016 | 385.95                                                  | 525.50                                                     | 622.1       |
| 2017 | 389.05                                                  | 615.11                                                     | 669.85      |
| 2018 | 392.50                                                  | 685.49                                                     | 714.3       |
| 2019 | 393.09                                                  | 822.94                                                     | 907.8       |

Table 11 gives the results of the predictions of catering income for 2013-2019 based on the multiple regression models for the takeaway income variable and the no takeaway income variable, along with the true values of catering income. Based on the results of the models, it can be seen that the results obtained based on the takeaway income predictions are more accurate and that there is an important correlation between the rise of takeaway and the change in catering income.

4. Improved Factor Analysis Based on Weighted Variables

The above content mainly focuses on quantifying the impact of the rise of the takeaway industry on the income of the catering industry through a regression model. The factor model determines the contribution of changes in the target variables by analyzing the magnitude of changes in each indicator variable, and ultimately identifies the main factors affecting changes in the target variables.
and quantifies the magnitude of the influence of each factor. In order to further analyze the impact of the rise of the takeaway industry on the income of the catering industry, we conducted a factor analysis on the income of the catering industry, and proposed a weighted factor analysis model, according to the regression coefficients between different variables and the income of the catering industry in the regression model, each variable was given different weights to increase the importance of the indicators with higher correlation, thus improving the accuracy of the factors' expression of the original variables.

4.1 Analysis of Factors Influencing the Operating Income of Shanghai’s Catering Industry Based on Weighted Factor Analysis

The factor analysis model is a linear transformation to find the main factors that cause the pattern of change in the data of the target variable. In this paper, the main factors that cause changes in the income of the catering industry are studied. The main factors that cause changes in the income of the catering industry are the growth of the national economy, the improvement of people’s living standards, etc. In this paper, the indicators in 3.1 are used as variables to establish a factor analysis model to calculate the main factors affecting the income of the catering industry. The factor analysis model is established as follows.

\[ a'_1 \text{Pop} = a_{11}F_1 + a_{12}F_2 + \cdots + a_{1m}F_m + \alpha_e \]
\[ a'_2 \text{CGDP} = a_{21}F_1 + a_{22}F_2 + \cdots + a_{2m}F_m + \alpha_e \]
\[ a'_3 \text{Tour} = a_{31}F_1 + a_{32}F_2 + \cdots + a_{3m}F_m + \alpha_e \]
\[ a'_4 \text{InterTour} = a_{41}F_1 + a_{42}F_2 + \cdots + a_{4m}F_m + \alpha_e \]
\[ a'_5 \text{Income} = a_{51}F_1 + a_{52}F_2 + \cdots + a_{5m}F_m + \alpha_e \]
\[ a'_6 \text{EngelC} = a_{61}F_1 + a_{62}F_2 + \cdots + a_{6m}F_m + \alpha_e \]
\[ a'_7 \text{Takeaway} = a_{71}F_1 + a_{72}F_2 + \cdots + a_{7m}F_m + \alpha_e \]

(8)

where \(F_1, F_2, \ldots, F_m\) denote the public factors for the catering income factor analysis and \(\varepsilon_1, \varepsilon_2, \ldots, \varepsilon_m\) denote the independent factors in each of the original variables in the original data. Based on the physical meaning of the expression of model (8) it can be seen that the factor analysis model expresses the original variables through a linear combination of the common factors in the original variables. The coefficient matrix of the factor model is also defined as the factor loading matrix and the expression is shown below:

\[
A = \begin{bmatrix}
a_{11} & a_{12} & \cdots & a_{1m} \\
a_{21} & a_{22} & \cdots & a_{2m} \\
\vdots & \vdots & \ddots & \vdots \\
a_{11} & a_{12} & \cdots & a_{1m}
\end{bmatrix}
\]

(9)

where \(a_{ij}\) denotes the weight of the ith original variable on the jth common factor, and this weight vector reflects the ith original variable on the jth common factor correlation.

4.2 Weighted Factor Model Results and Analysis

**Table 12. Explanation of Variance Matrix**

| Ingredients | Initial Eigenvalue | Extraction of Squares and Loading |
|-------------|-------------------|---------------------------------|
| Total       | % of Variance     | Cumulative %                   |
| Total       | % of Variance     | Cumulative %                   |
| 1           | 5.97              | 85.27                          | 85.27                          | 85.27                          |
| 2           | 0.66              | 9.42                           | 94.69                          | 94.69                          |
| 3           | 0.28              | 4.07                           | 98.76                          |                                |
| 4           | 0.04              | 0.64                           | 99.40                          |                                |
| 5           | 0.03              | 0.49                           | 99.89                          |                                |
| 6           | 0.01              | 0.09                           | 99.98                          |                                |
| 7           | 0.00              | 0.02                           | 100.00                         |                                |
Using the regression coefficients derived in 3.2 to weight the different variables, the normalised data were substituted into the factor analysis model and the results of the factor analysis model were obtained as follows. Table 12 shows the variance interpretation matrix and Table 13 shows the factor loading matrix.

**Table 13. Rotation Factor Loading Matrix**

| Ingredients  | 1     | 2     |
|--------------|-------|-------|
| TakeoutI     | 0.948 | 0.214 |
| Cincome      | 0.784 | 0.532 |
| EngleC       | -0.292| -0.358|
| CGDP         | 0.760 | 0.536 |
| Tour         | 0.684 | 0.655 |
| InterTour    | 0.356 | 0.729 |
| Pop          | 0.381 | 0.829 |

The results in the table show that factor F1 has a variance contribution of 85% and the variable takeaway business income (TakeoutI) has the largest loadings, as well as higher loadings on variables such as urban disposable income (Cincome), per capita GDP (CGDP) and the number of domestic tourists (Tour). This suggests that takeaway business income has had a significant impact on catering income, and that the acceleration in catering income growth after 2013 includes factors of national economic growth, as well as the rise of the takeaway industry.

5. Conclusion

This paper examines the impact of the rise of takeaway industry on the operating income of catering industry. The takeaway industry is a new catering business model based on "O2O". It is simple, fast and cost-effective, and has become an inaccessible part of people's lives. We analyse the impact of the rise of takeaway from three perspectives: firstly, the takeaway industry has become an important part of the catering industry, injecting new vitality into the growth of catering income. Secondly, the takeaway industry has obvious advantages over the traditional catering industry, with fast and convenient dining, time saving and low prices. The rise of takeaway will have a certain impact on the traditional catering industry and has a certain negative impact on the traditional catering industry. Thirdly, the takeaway industry has not only solved people's dietary problems, but also changed people's lifestyle, making consumption of food a habit and greatly contributing to the increase of urban residents' spending on food and drink.

For the three perspectives mentioned above, the analysis and validation using linear regression, redundant linear regression and an improved factor model have been carried out in this paper, leading to the following two conclusions:

1. The rise of takeaway industry has significantly contributed to the growth of income of catering industry, as evidenced by the calculated results in 3.1.3, which show a significant change in the growth rate of income in the catering industry before and after the rise of takeaway. The predicted and true results from the linear regression indicate that the rise of the takeaway industry did not only contribute directly to the income of the catering industry, but also contributed to the booming growth of the catering industry.

2. There are two potential factors for the development of the catering industry's business income, the development of the national economy on the one hand and the rise of the takeaway industry on the other. The results in 3.2.3 show that although the growth of catering business income is influenced by the development of the national economy, the rise of the takeaway industry is still a key factor affecting the growth of catering business income. Moreover, although the rise of the takeaway industry has a potential impact on the traditional catering industry, it has brought a larger market to...
the catering industry due to the change in the eating habits of the population brought about by the rise of takeaway. The results in 4.3 show that the rise of the takeaway industry is the most critical factor influencing the change in catering income during the period 2013-2019.

References

[1] Price L. 2010. "Poor Personnel Practice In the Hotel and Catering Industry: Does It Matter?" Human Resource Management Journal (4). p. 44-62.

[2] Ma, S.C. 2018. A Statistical Analysis of the Survey on the Impact of Takeaway Industry on Food and Beverage Industry[J]. Market Modernization (17). p20-21.

[3] Yan, X.X. 2016. An Analysis of the Application of Mobile Internet in the Catering Industry and its Impact [J]. E-Business Journal (07). p32-33.

[4] Cheng, J.J. Wang, W.C. 2018. An Introduction to the Impact of the Rapid Development of Takeaway Industry on the Traditional Catering Industry[J]. Shenzhen (18). p243-243.

[5] Xu, J.H. Wu, W.J. An Empirical Analysis of the Internet Economy on the Development of the Catering Industry[J]. Statistics and Management (5). p4-9.

[6] Li, H.L. Jiang, S. 2017. The impact of O2O model of "food and beverage takeaway" on the catering industry[J]. E-business Journal (7). p3+69.

[7] http://tjj.sh.gov.cn/tjnj/index.html.

[8] Zhou, R. 2015. Research on the Current Situation of China's Catering Industry Development and its Influencing Factors[J]. China Business Update (19). p44.