Optimal Pricing of Online Group-buying: An Empirical Analysis of Food-Away-From-Home in China

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**Optimal Pricing of Online Group-buying: An Empirical Analysis of Food-Away-From-Home in China**

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**Background**

Online Group-buying is a new and quite popular buying model since Groupon was established. Not just in America, China, it received hot trends all over the world.

**Problem**

- Fierce competition within merchants
- Low survival rate of online group buying websites
- The overall market shows oligarch
- About 2.5 millions of items posted on the website
- Approximately 456 millions of customers involve in the deal
- Deal revenue is 21.4 billions
- Optimal pricing set by merchants, not only gain great profit, but also very attractive to customers.

**Research question**

Every though it seems that China is experiencing an increasing development of online group buying websites, behind this prosperous, there are still serious issues:

- For merchants, similar items between each other, difficult to compete
- For websites, low agency rate, difficult to survive
- For customers, how to pick up the best from huge volumes of items?

To solve this problem, from customer preference, we want to find out an optimal price not only brings optimal profit to merchants, but also very attractive to customers. And also from the demand model, we want to find out the factors that how to influence the demand.

**Methodology**

According to the previous literature review, we have apply two methods. Firstly, we use UPE to calculate optimal price of each item; secondly, by linear regression model, we can estimate each parameter; and then, take the optimal price of each item.

Later, we will concentrate on the UPE model, find out the differences between each item, we prefer hotpot items as our data source.

From the results table above, coefficient of coupon price is negative and significant, with the higher price, less %off; however, it is not significant, which means customers don’t pay much attention to the discount. Coefficients of featured and date are positive and significant, indeed they have positive effects on deal size.

**Discussion & Following Study**

Later, we will concentrate on the UPE model, find out the optimal price under different numbers of merchants. Also continue to deep research on the demand model.

**Preliminary RESULTS**

**Double hurdle Panel Probit Regression**

- Firstly, we use double hurdle regression to 3D double panel probit regression, to see when does \(p_{d1}=0 \) or \(h=0\), how the factors influence deal size.
- Secondly, when \(p_{d1}=1\), we apply panel model to do fixed-effect regression, random-effect regression and between-effect regression.
- Thirdly, by Hausman Test, we reject null hypothesis of no correlation, then apply between effect regression.

**Results**

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