

Ask NUS Economists

Same meal, different fees: Delivery charges vary in unexpected ways

An iPhone user is likely to be charged more than an Android phone user, test results show

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For The Straits Times

Q: Do digital platforms use personal data to charge more?

A: Consumers are making ever greater use of digital platforms for online shopping, ride hailing and food delivery. At the same time, these platforms – including Lazada, Grab and Foodpanda – collect data about us: Where we live, what devices we are using, how much we have purchased before and what other apps we are using.

Do they make use of all this data to charge us more if they think we are less likely to shop around?

Just because firms can set personalised prices, doesn't mean they will. An important reason they may not is the fear of a consumer backlash if caught.

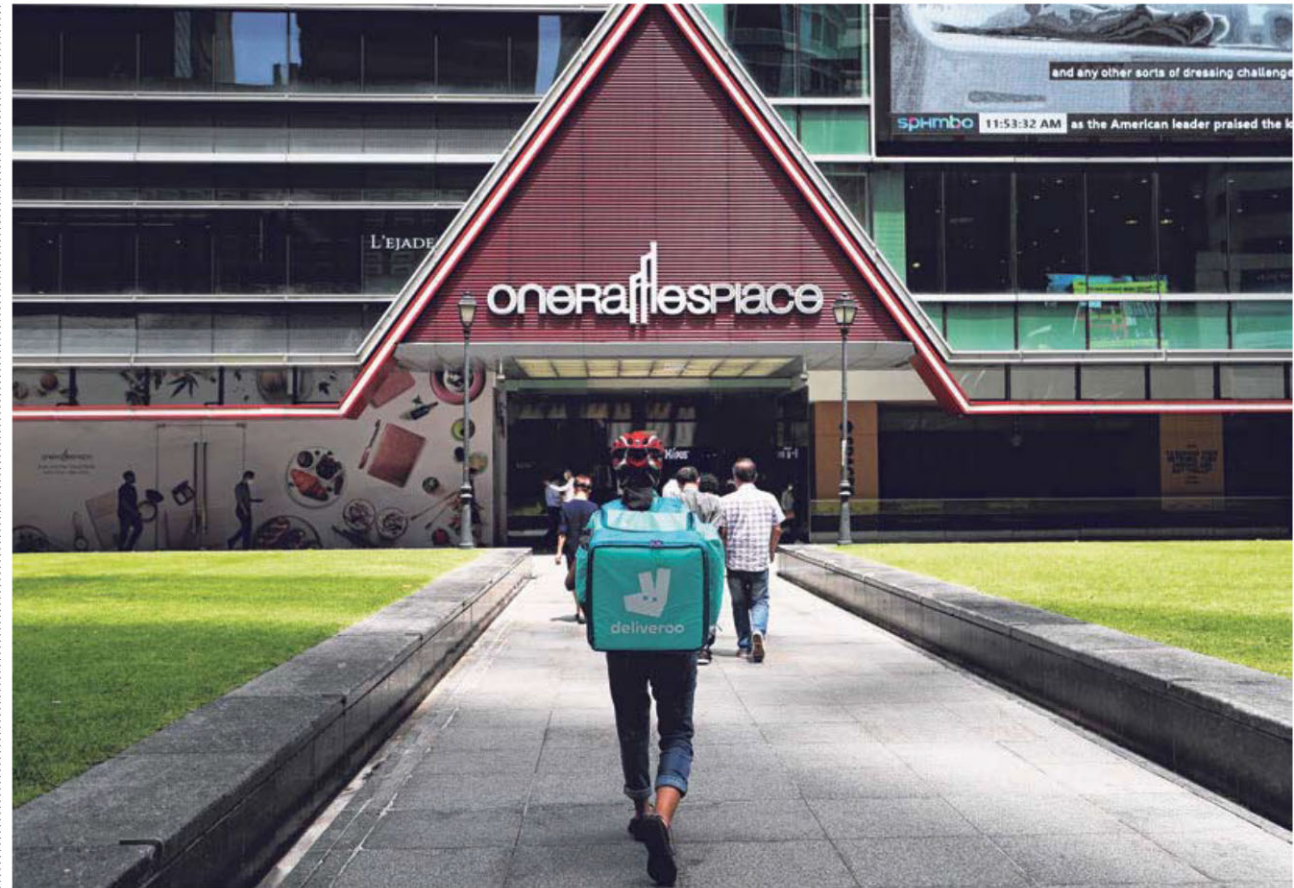
Famously, in its early days, Amazon experimented by charging different customers different prices for the same DVDs. Between Aug 31 and Sept 5, 2000, Amazon varied the prices on 68 DVDs to test how price changes would affect their sales.

Unfortunately for Amazon, customers compared notes. They were outraged, assuming that Amazon was charging them more based on where they lived or how much they had purchased before. "We've never tested and we never will test prices based on customer demographics," founder Jeff Bezos said in a news release at the time.

Fast forward to this year, and some kinds of price discrimination do seem to have become accepted. One common practice is targeted promo codes. Their acceptance may reflect that they are framed as discounts, and that recipients are aware of the special deals being offered.

Another common practice is surge pricing. Ride-hailing operators increase the price on a route if demand exceeds supply. But because prices can vary for each different trip, it raises the prospect that these platforms could also charge riders more based on the particular address they are going to (such as a fine-dining restaurant) or the rider's history (if they always take a certain route using the same platform, for example) without riders realising.

To shed light on whether such price discrimination does arise, we gathered data on Deliveroo's



The writers carried out a study that found price differentiation in Singapore by delivery platform Deliveroo based on personal data over a period of July to September.
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delivery fee in Singapore. This is the fee that Deliveroo charges and collects from customers on top of the restaurant's price when having food delivered. We did this in two ways.

First, we ran seven randomised experiments, each varying a different characteristic of interest. For each experiment, we conducted the following exercise 120 times:

1 A clean-slate Deliveroo account was created based on predetermined specifications – simulating a new user with no past orders, using a phone with all prior content and settings erased via a factory reset;

2 A sample order was made from the same food stall based on the same specifications except for the characteristic of interest that was randomly chosen (such as whether the phone type was Android or iPhone);

3 The delivery fee shown was recorded.

Second, we surveyed more than 1,000 Deliveroo users, asked them to enter a sample order and collected the corresponding user

characteristics and delivery fees.

What we found was remarkably similar across the two approaches. The findings show price differentiation in Singapore by Deliveroo based on personal data over the period of our study (from July to September).

In our experiments, our baseline "user" has an Android phone, signed up to Deliveroo via e-mail, is 25 years old, with a delivery distance fixed at 0.7km to an HDB address, and requests a \$20.80 order. Given everything else is fixed, this phantom user receives a delivery fee of \$1.99.

When the same user instead starts with an iPhone, that customer would sometimes get the same \$1.99 delivery fee and sometimes a delivery fee of \$2.49. Averaging over all such users, they are charged 12 cents more per order for using an iPhone.

The results from our survey data found iPhone users are charged around 29 cents more per order than Android phone users, after controlling for everything else.

Similarly, we found signing up to Deliveroo by using Facebook or Google accounts rather than by e-mail increases the delivery fee by 44 cents and 38 cents respectively based on the experimental results,

and 54 cents and 39 cents respectively based on the analysis of the survey data.

Other interesting results are that users below 20 or above 60 face lower delivery fees, users who have other food delivery apps installed on their phone face lower delivery fees, those who subscribe to and frequently read Deliveroo's newsletter pay more, and those ordering from private condos or landed houses pay more.

While the dollar amounts involved are small, as a percentage of Deliveroo's fee charged they are significant. Taken together, they could be quite substantial. And yet, without the kind of careful study we have carried out, it would be hard for individual users to detect these small dollar differences, especially as the differences seem to be randomised (for example, in our experiments, the iPhone user only sometimes faces a higher price).

The bottom line is that for at least one digital platform in Singapore, the evidence points to price differentiation for customers based on their digital footprint.

This begs the question: How widespread is this practice in Singapore and elsewhere? While from an economic efficiency perspective, such practices are not

necessarily harmful, consumers may want to know how their data is being used (especially when in some cases, it is used against them).

Efforts were made to get Deliveroo's comment on the findings, but no response was available by press time.

A more thorough investigation by the authorities seems warranted. But a word of caution: once the authorities start looking, they might not find anything. The platforms are likely to tweak their algorithms if they are concerned about any investigation and the associated risk of a consumer backlash. So perhaps by the time you've finished reading this column, it will be too late to exploit our findings for your next food delivery order.

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