

Allocating Costs Fairly

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Abstract

Using three hypothetical scenarios, we assessed how people collaboratively allocated costs among themselves.

For instance, in splitting the cost of a taxi ride to different places (see example), how much should the various riders pay?

Previous studies had shown that cohorts are generally concerned with splitting costs equally among members, rather than in trying to minimize their own costs.

Hence, various issues of fairness are paramount in their considerations. We gathered cohorts of three over a video conference platform and provided them with three scenarios to see how they would allocate their costs and the rationale they would use in their allocations.

We then developed a way to analyze their deliberations to quantify how individuals in cohorts discussed how to allocate costs amongst themselves. We found that subjects came up with multiple different allocation strategies and rationales for the distribution of costs. However, a number of trends in what people considered fair emerged.

Taxi Problem

Imagine that you are sharing a taxi with two other people. You are all going in the same direction, but not to the same place. One rider is going to Point A, one to Point B, and one to Point C.

On a map, Point A, Point B, and Point C are arranged like this:



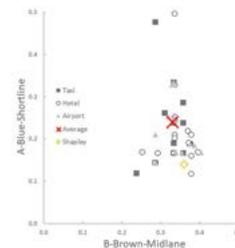
If each of you were riding alone:
The person going to **Point A** would pay...\$18
The person going to **Point B** would pay...\$36
The person going to **Point C** would pay...\$42

But because you have decided to share the taxi the total cost, split between the three of you, is only **\$42**.

Now assume that you are each person going to the different points.
How much do you think you should pay? (in US dollars)

Results

- The data analysis showed as follows:



- Participants in Pilot 1 treated the scenarios given to them as mathematical problems and used a calculated strategy to allocate costs similarly in each scenario.
- Participants in Pilot 2 were not allowed a calculator. They also treated the scenarios given to them as mathematical problems: however, one participant suggested another strategy for the runway, which was turned down.
- Participants in Pilot 3 were not allowed a calculator. They treated each scenario with a different strategy and used negotiation skills to debate between strategies.

Method

- Pilot participants: Six students in cohorts of three.
- Recruitment: Participants were personally emailed and asked to participate.
- Procedure:
 - Three participants were called into a Zoom meeting with facilitator.
 - The facilitator shared a screen displaying each scenario in a counterbalanced order.
 - The facilitator read out each scenario and gave the participants five minutes per scenario to discuss among themselves how they wanted to allocate the costs.
 - The Zoom meeting was recorded for data analysis.
 - The data were analyzed based on a specific coding strategy that was personally created.

Discussion

Limitations:

- The Participants were recruited based on personal contacts. Therefore, their relationships could have affected the structure of their discussions.
- The pilots were run on Zoom, and having it in person instead could have affected the structure of the participants' discussions.

Future Research:

- This research could potentially be conducted in person and compared to the results of the Zoom data.