



# RIDESHARING: FAIR COST SHARING



## Inconvenience in ridesharing :

Inconvenience caused to passengers due to detours taken for pickup and drop-offs of other passengers are not considered for computing cost shares.

Longer detours → Greater inconvenience → Cost shares of the affected passengers should be less

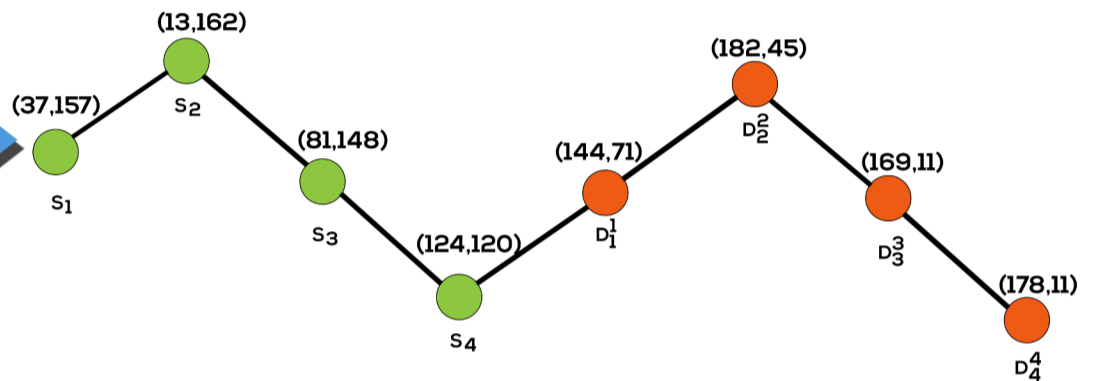
## Proposed Cost sharing scheme

Our framework takes the inconvenience of a passenger into account.

Inconvenience to a passenger is due to the detours for the pickup and drop of other passengers.

The person causing the detours compensates affected passenger. So, the company is not at loss.

## Example to demonstrate the difference



Solo operational costs:

1st Passenger Rs. 193	2nd Passenger Rs. 286	3rd Passenger Rs. 225	4th Passenger Rs. 163
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Cost with traditional scheme:

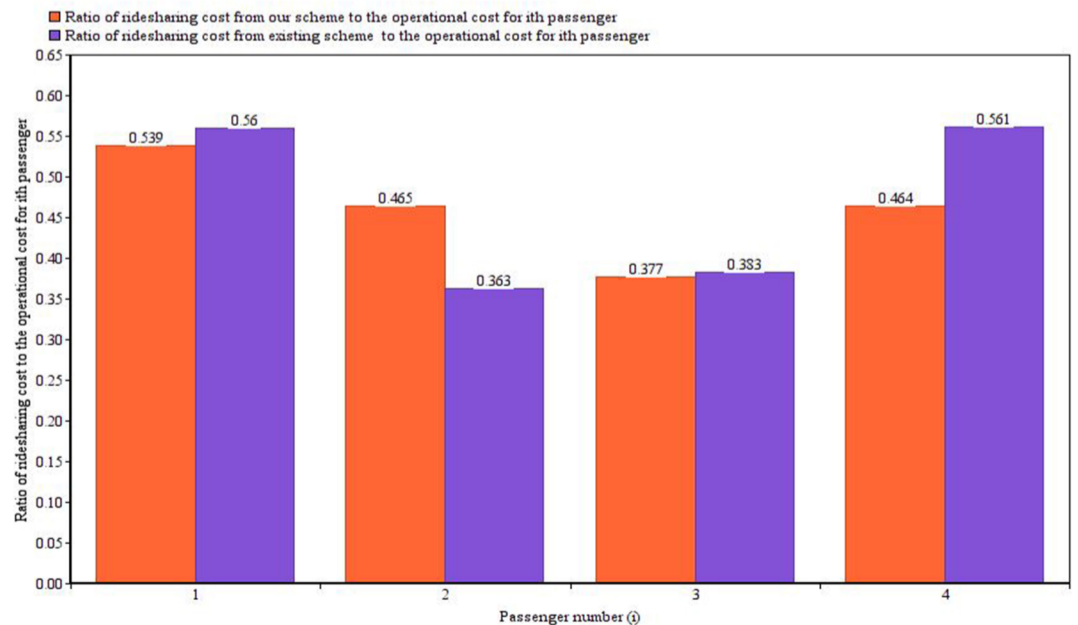
1st Passenger Rs. 110.92	2nd Passenger Rs. 103.25	3rd Passenger Rs. 85.75	4th Passenger Rs. 71.08
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Cost with proposed scheme:

1st Passenger Rs. 52.92	2nd Passenger Rs. 187.25	3rd Passenger Rs. 72.75	4th Passenger Rs. 58.08
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## Result

Cost comparison for MPMD scenario



## Conclusion

- Passengers are better off by participating in ridesharing than not.
- With the proposed scheme the passengers might pay a little less, or more compared to the traditional scheme.

## Future Work

The cost share scheme can be optimized to refine the monetary transfers that take place between passengers.

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