Exchangeability of Freight Transport and Individual Mobility in the Context of Sustain Urban Flows on the Example of Pickup Points in Gdansk

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7th METRANS 2017 International Urban Freight Conference
17-20 October 2017
Hyatt Regency, Long Beach CA
In the face of sustain urban development problem, two ways of solutions are undertaken:

1. Solutions leading to change the way of mobility together with the same number of journeys (public transport, cycling and walking)

2. Solutions leading to reducing in number of journeys (like IoT, e-documents and other virtual products and services or INTEGRATING TWO OR MORE JOURNEYS INTO ONE)
The urban flows needs are mutually exchangeable

• Limiting the city's availability for freight, we increase needs for individual journeys

• A single mall affects the reduction of number of freight journeys, but it generates demand for many individual journeys (mostly by cars)

• E-commerce reduces needs for individual journeys towards increasing needs of freight transport to the geographically dispersed consumer
The idea of exchangeability
About the research

• In October 2016, in Poland a new delivery method was introduced for the e-commerce customers, the picking points solution (PointPack) based on the network of local convenience stores

• The purpose of the research was to study on mobility behavior of customers using PointPack delivery system in the city of Gdansk

• The study was primarily intended to demonstrate how this solution affects the reduction in the overall number of journeys, that is whether consumers combine picking up parcels with shopping and how they commute to the collecting points

• The main thesis was that picking up points can influence on walking or cycling instead of going by car to receive the parcel and this way can reduce the number of cars on the cities streets
The first result in June

• E-commerce customers in Gdansk don’t use PointPack services

That is why...

• The on-line survey was conducted from the middle of September till the middle of October

• The on-line survey was directed to everyone above 18 who lives or work/study in Gdansk city, and does online purchase at least once a year
The purpose of the research

- To explore how the alternative to the home delivery solutions affect the reduction in the overall number of journeys, that is whether consumers combine picking up parcels with shopping and other travel aims and how they commute to the collecting points
Why do people buy online?

- No need to go to the store (84%)
- Easy offers' comparison (79%)
- Ease of finding rare/ specialized products (75%)
- Wider assortment (68%)
- Many available delivering/collecting methods (67%)
- Various forms of payment (66%)
- Purchase time/speed (55%)
- More information about the products (55%)

Choice of delivery method and frequency of on-line purchase

- **Home delivery**: 40%
- **Parcel lockers**: 38%
- **Pick up at the post office**: 7%
- **Newsstand**: 15%
- **Convenience store**: 0%

**Frequency of online purchases:**
- Shop online at least once a week: 4%
- Shop online several times a month: 32%
- Shop online once a month: 33%
- Shop online less than once a month: 31%
Main choice factors of delivery method

- Location of the pick up point: 88%
- Possibility of combining parcel pick up with other purposes (e.g. when shopping): 31%
- 24 hour accessibility: 69%
- Working hours of courier / postman: 57%
- Opening hours: 55%
- Home delivery: 56%
- Payment method: 79%
- Price: 93%
The way of commuting to the pick up points

- I go out only for parcel: 66%
- I pick up parcel together with other going outs: 46%
- I pick up a package on the way or from work / school: 68%
- When I receive a package I also make purchases at: 36%

Commuting modes:

- Car to the parcel locker: 51%
- Walking to the parcel locker: 48%
- Car to the newstand: 20%
- Bicycle to newsstand/parcel locker: 21%
- Walking to newsstand: 25%
How far are people willing to walk to pick up parcel

- Up to 5 minutes: 24%
- Up to 10 minutes: 55%
- Up to 20 minutes: 12%
- More than 20 minutes: 9%
Accessibility of pick up points within up to 10 minutes walking (800m ≈ 0.5 mile)
The density of pick up points in most inhabited districts in Gdansk
Conclusions

- Pick up points reduce the number of customers' journeys because most clients receive parcels on their way to/from work/school
- The promising phenomenon is the fact that most dedicated to pick up journeys are done walking
- Pick up points reduce the need of delivering parcels to each customer individually
- According to the location on pick up points in Gdansk, there is possibility to reduce their number
- All above should lead to reduction of delivery costs and price of the service for the customer and made customers more willing to choose such solutions during on-line purchasing
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