

The mobility of e-shoppers

Lessons from the Lyon DPR survey

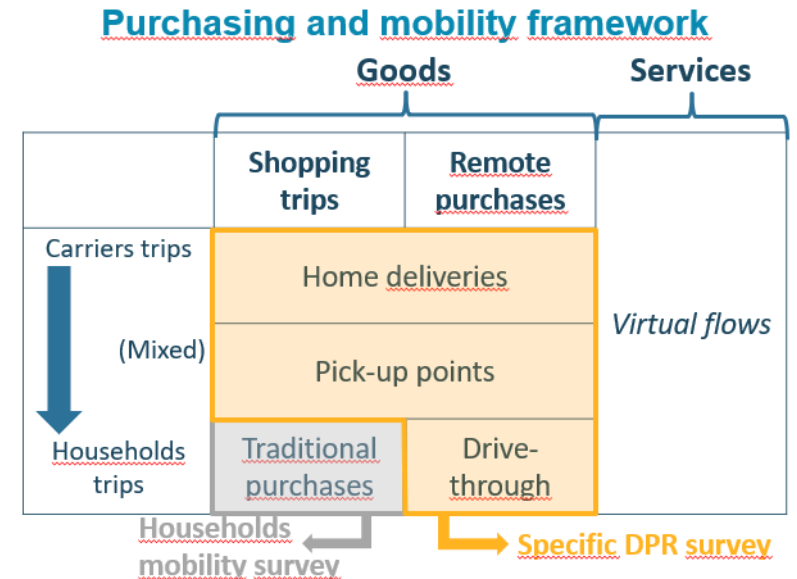
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UGI Paris 2022
19/07/22

A need for data on e-commerce deliveries and associated mobility practices

- Public authorities are faced with the strong increase in household deliveries ⇒ congestion, troubles
- Household deliveries are more and more diversified: home, click&collect, pick-up point, locker, etc.
- Problem for public policies :
 - Regulation
 - Planning
 - Logistics facilities
- Data are necessary to choose between these options and to size the offer, but no appropriate data is available

⇒ A new survey method is needed

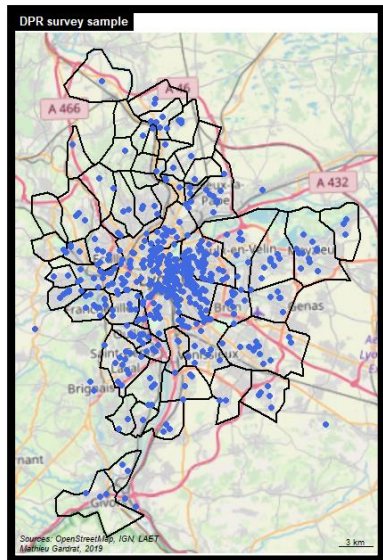


	Household mobility surveys	Goods movements surveys	Purchasing practices surveys
Home delivery (remote purchase)	No	Yes (low representativity)	Yes
Out of home delivery (OHD)	Not identifiable	No	Yes
Home delivery (in-shop purchase)	No	Yes (low representativity)	No

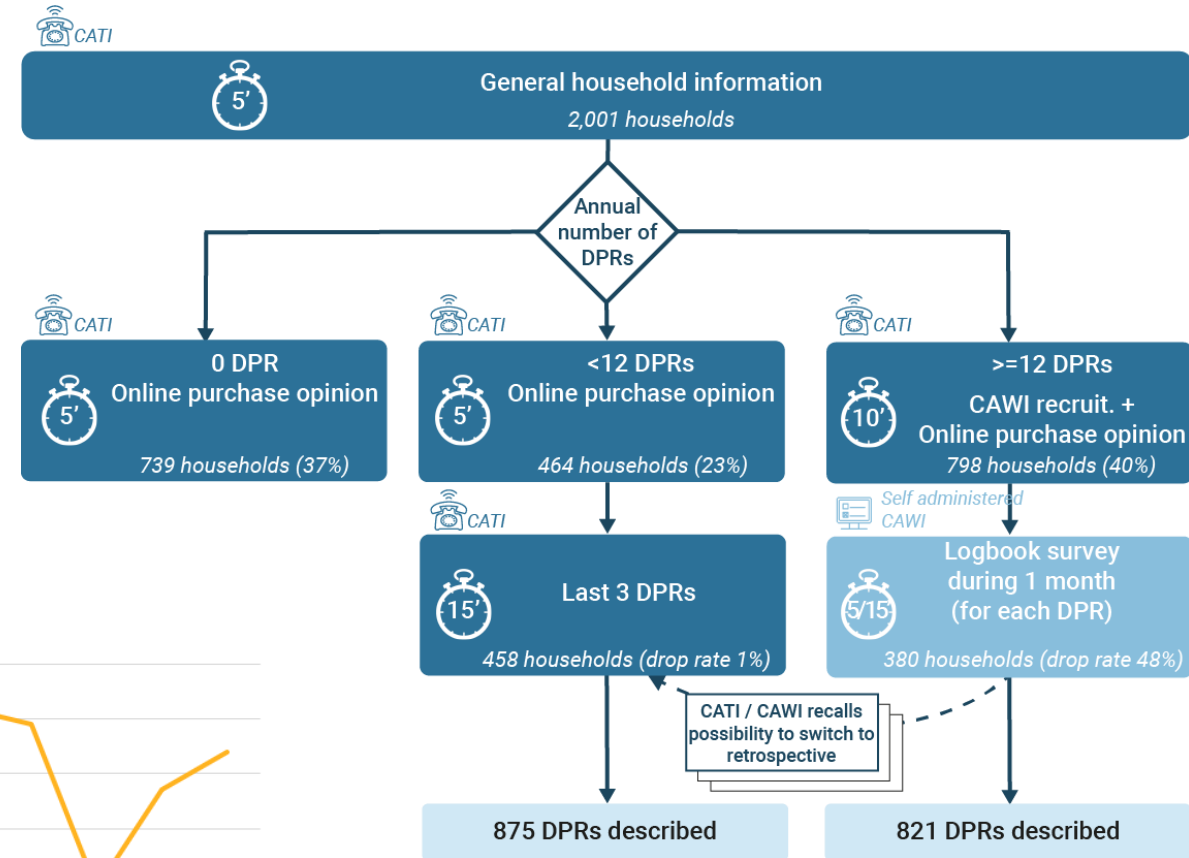
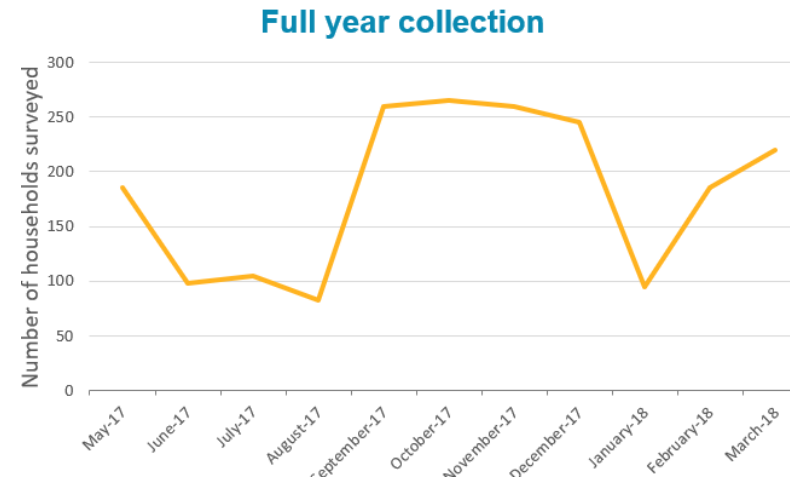
A 12-month survey carried out in Lyon (2017-2018)

Main information collected:

- Household characteristics
- Number and frequency of DPR
- Type of goods purchased
- Purchase mode: online, phone, mail, in-store
- Delivery mode: home / out of home
- Recovery travel characteristics: transport mode, time, distance, dedicated trip/travel chain
- Trips generated before/after the purchase (test or information/returns)



Greater Lyon
(pop. 1.5
million)



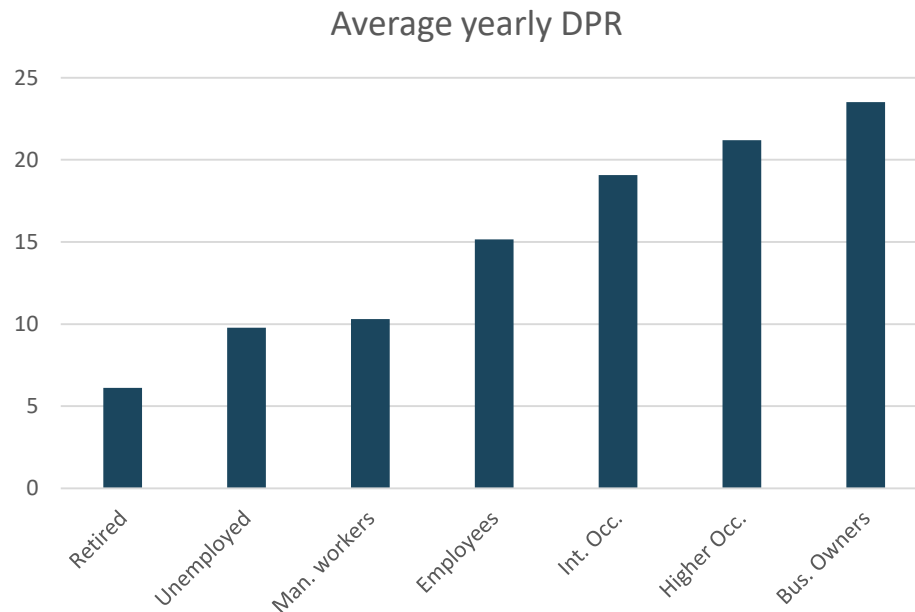
Survey funded by the Great Lyon
GRANDLYON
la métropole

Gardrat, M. (2019). *Méthodologie d'enquête: le découplage de l'achat et de la récupération des marchandises par les ménages* (Research report, LAET (Lyon, France); Métropole de Lyon).

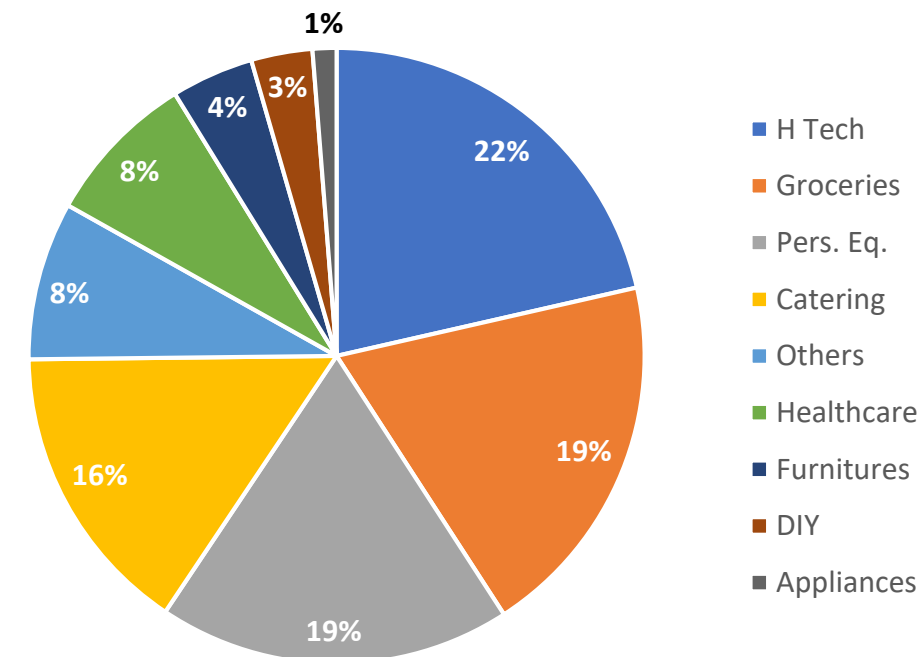
Main results of the Lyon DPR survey

- ≈ 30,000 DPR/day in the Greater Lyon area ➞ 5% of the total number of purchase trips
- 63% of the households make DPR purchases
- 14 purchases/year (general average) – 21 p/year (DPR subset)

Socio-professional profile



Goods purchased



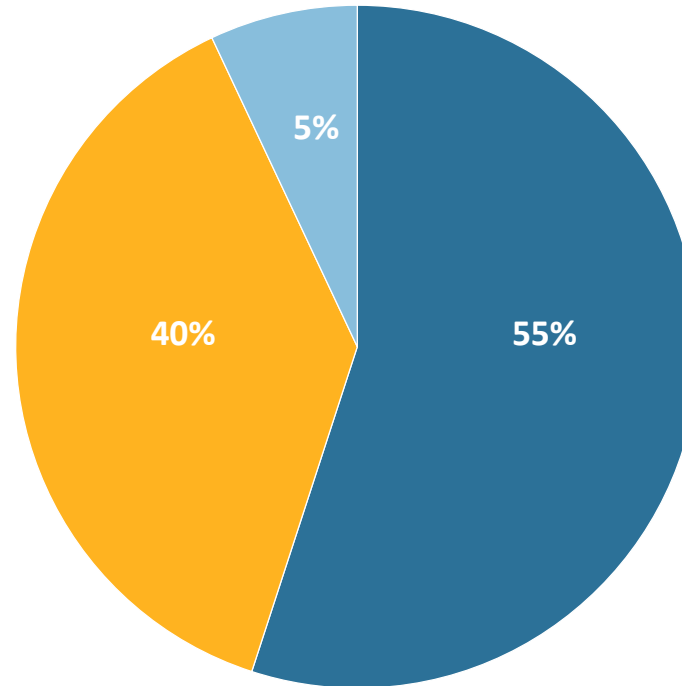
Households trips generated according to the recovery mode

Out of Home Deliveries (OHD)

Information/test trip: 6.5%
Purchasing trips: 0%
Recovering trips: 100%
Return rate: 6.6%

Uninformed and free delivery
⇒ *significant return rate*

Recovery mode



Source : DPR Survey, LAET-Grand Lyon, 2022

Home Deliveries purchased in Store (HDS)

Information/test trip: 34%
Purchasing trips: 100%
Recovering trips: 0%
Return rate: 0.9%

Highly informed and motivated
⇒ *low return rate*

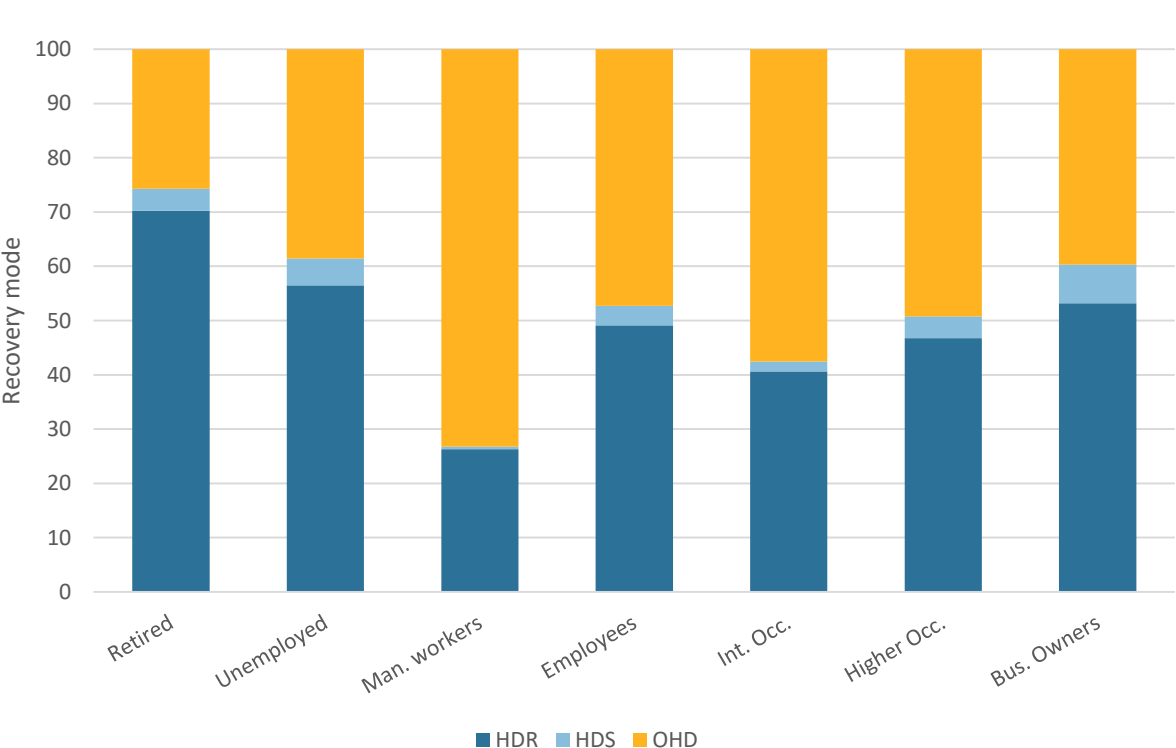
Home Deliveries purchased Remotely (HDR)

Information/test trip: 10.3%
Purchasing trips: 0%
Recovering trips: 0%
Return rate: 4%

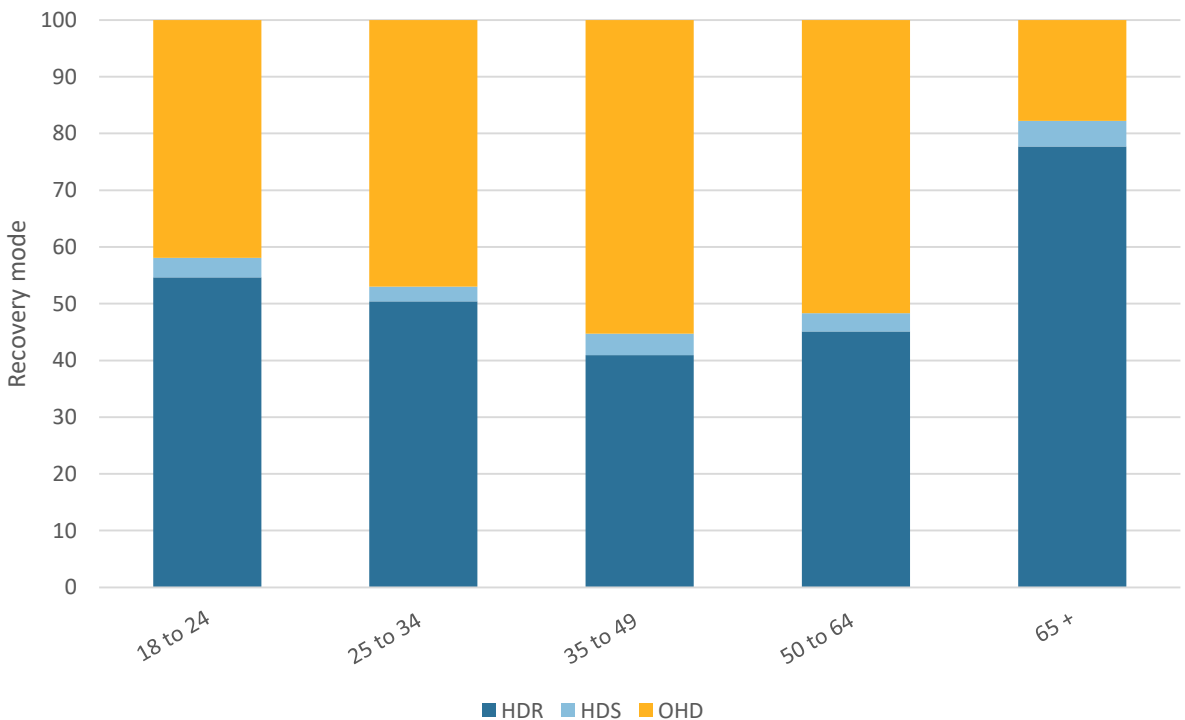
86.5% of HDR
do not generate any trip

The recovery mode depends on the household characteristics

Socio-professional profile



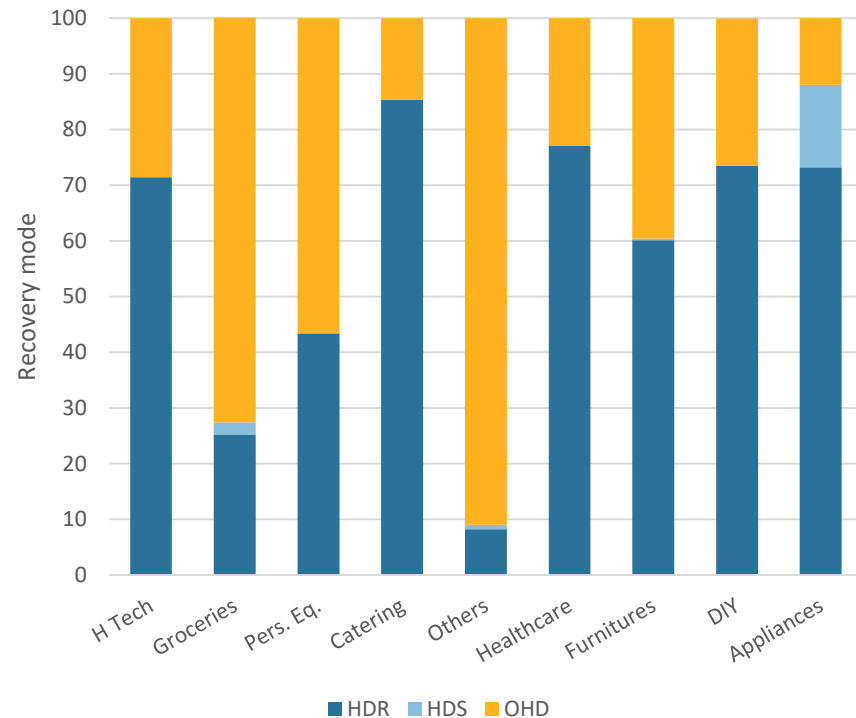
Age profile



Source : DPR Survey, LAET-Grand Lyon, 2022

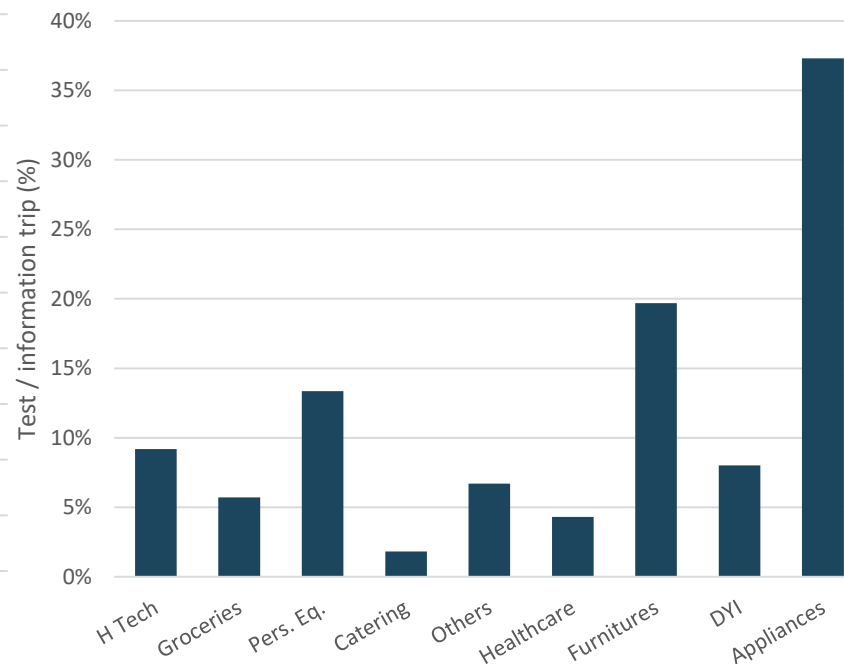
E-shoppers mobility is mostly linked to the type of purchased goods

Recovery mode



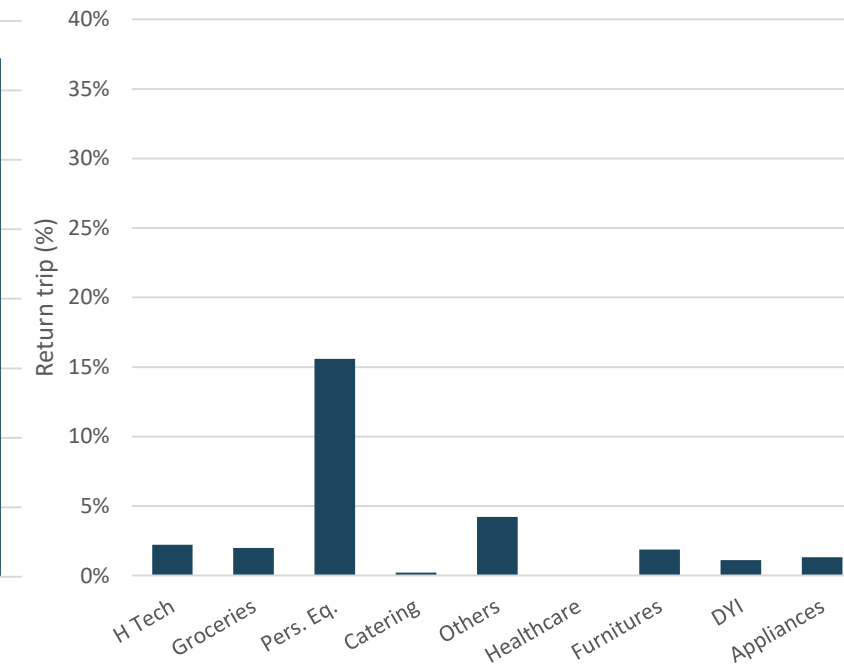
Source : DPR Survey, LAET-Grand Lyon, 2022

Information/test trip



Source : DPR Survey, LAET-Grand Lyon, 2022

Return trip

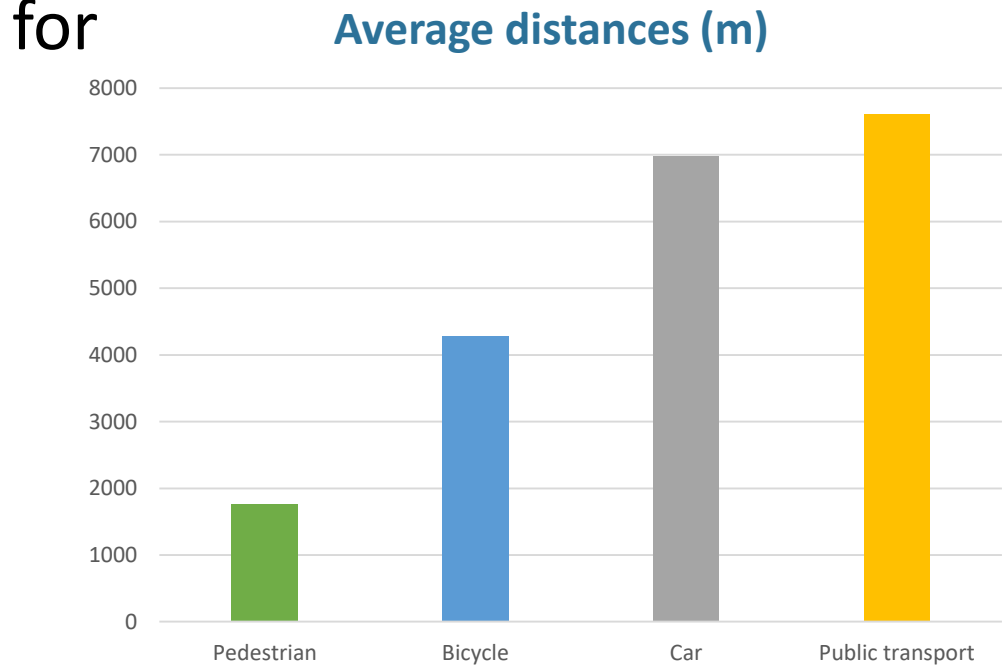
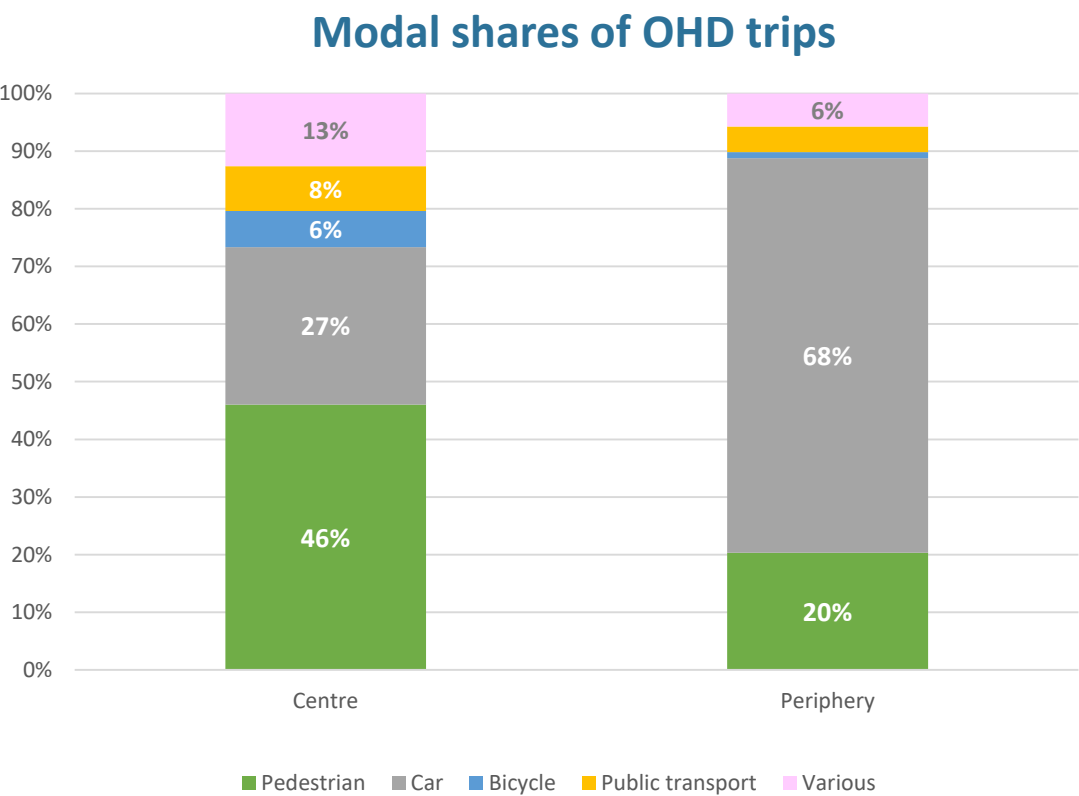


Source : DPR Survey, LAET-Grand Lyon, 2022

- High tech-cultural goods and personal equipment account for 56% of trips involving household (28% each)
- Although representing 41% of deliveries

Travelled distances and modal shares for OHD recovering trips

- 63,500 km/day due to OHD recovery trips

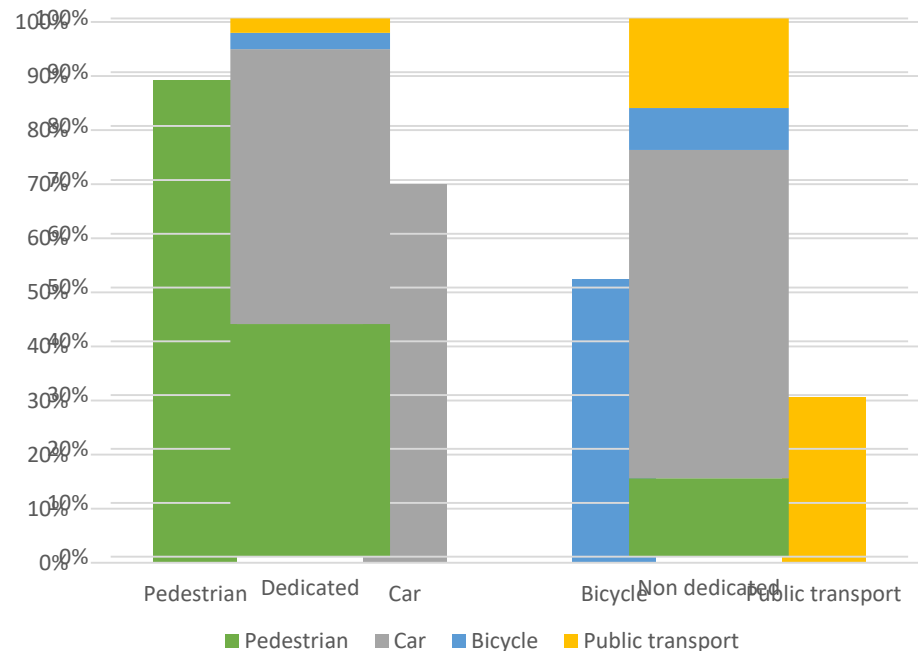


	Pedestrian	Public transport	Bicycle	Car
Centre	1 546	3 633	4 168	9 774
Periphery	2 251	10 862	955	5 298

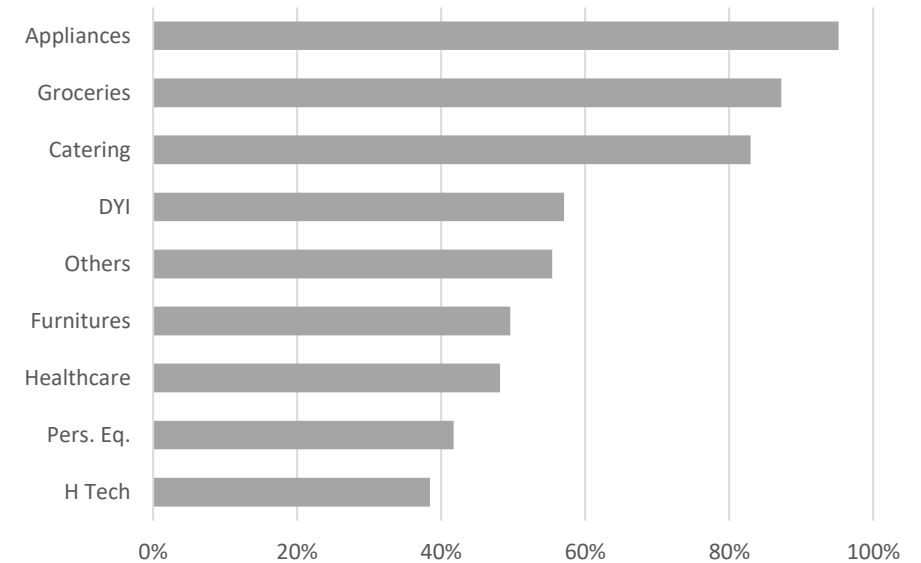
A significant share of dedicated trips

- 68% of trips dedicated for recovery purposes only, mainly done on foot or by car
- 36 600 km/day are due to dedicated trips representing 57% of distances generated by OHD
- Heavy purchases and food are mostly done by car

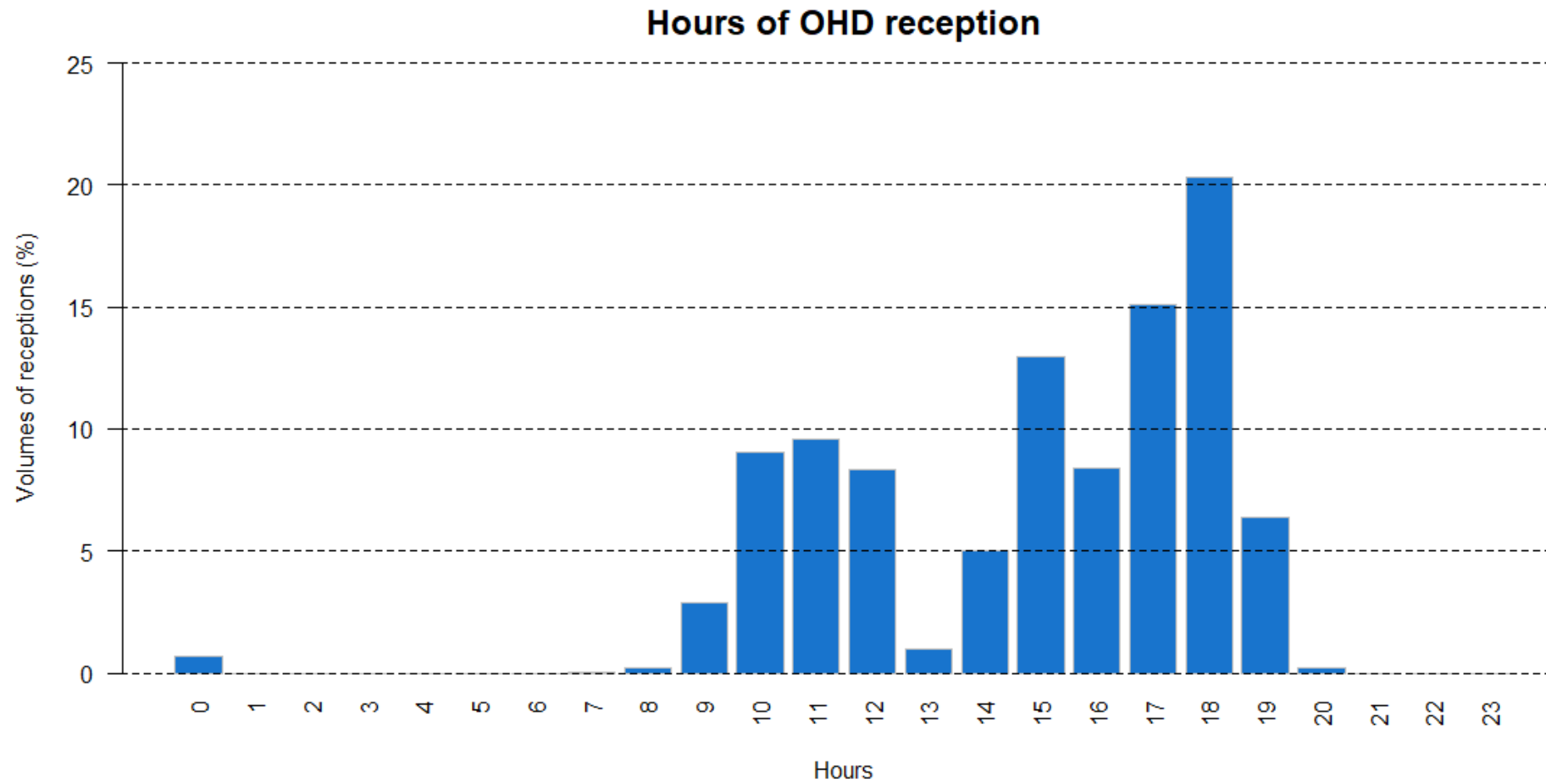
Modal shares and trip motives




Car share and types of goods

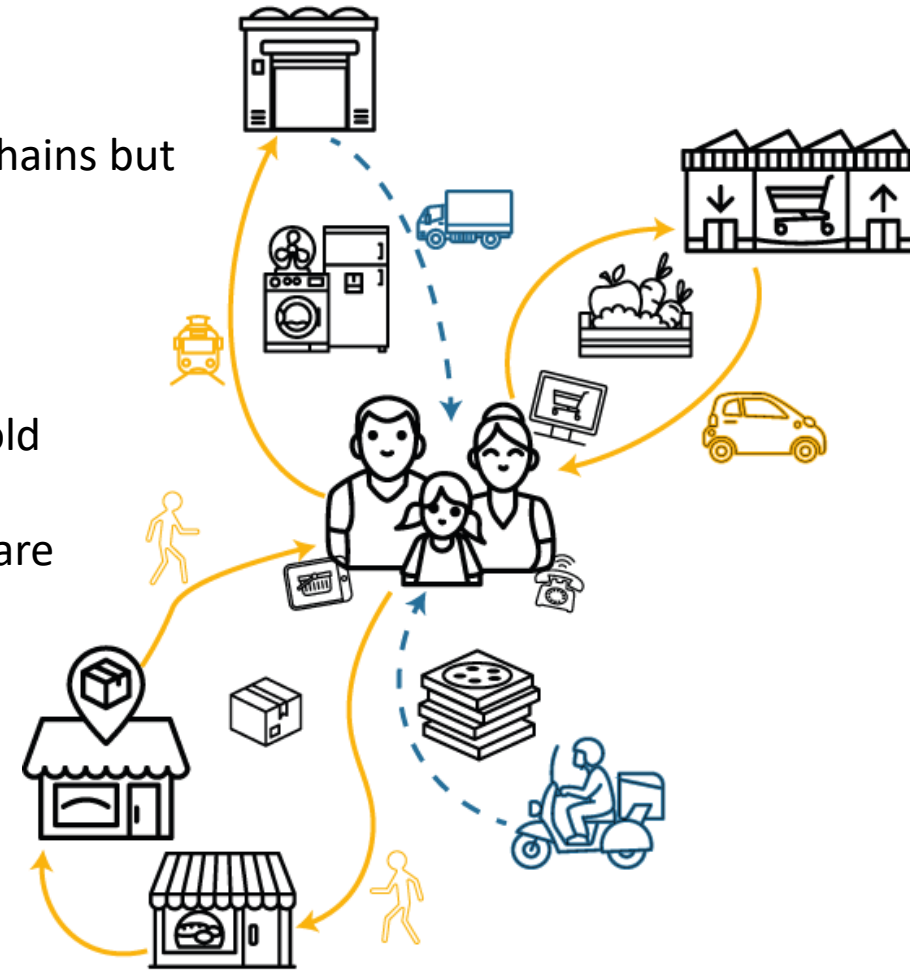


OHD rythms



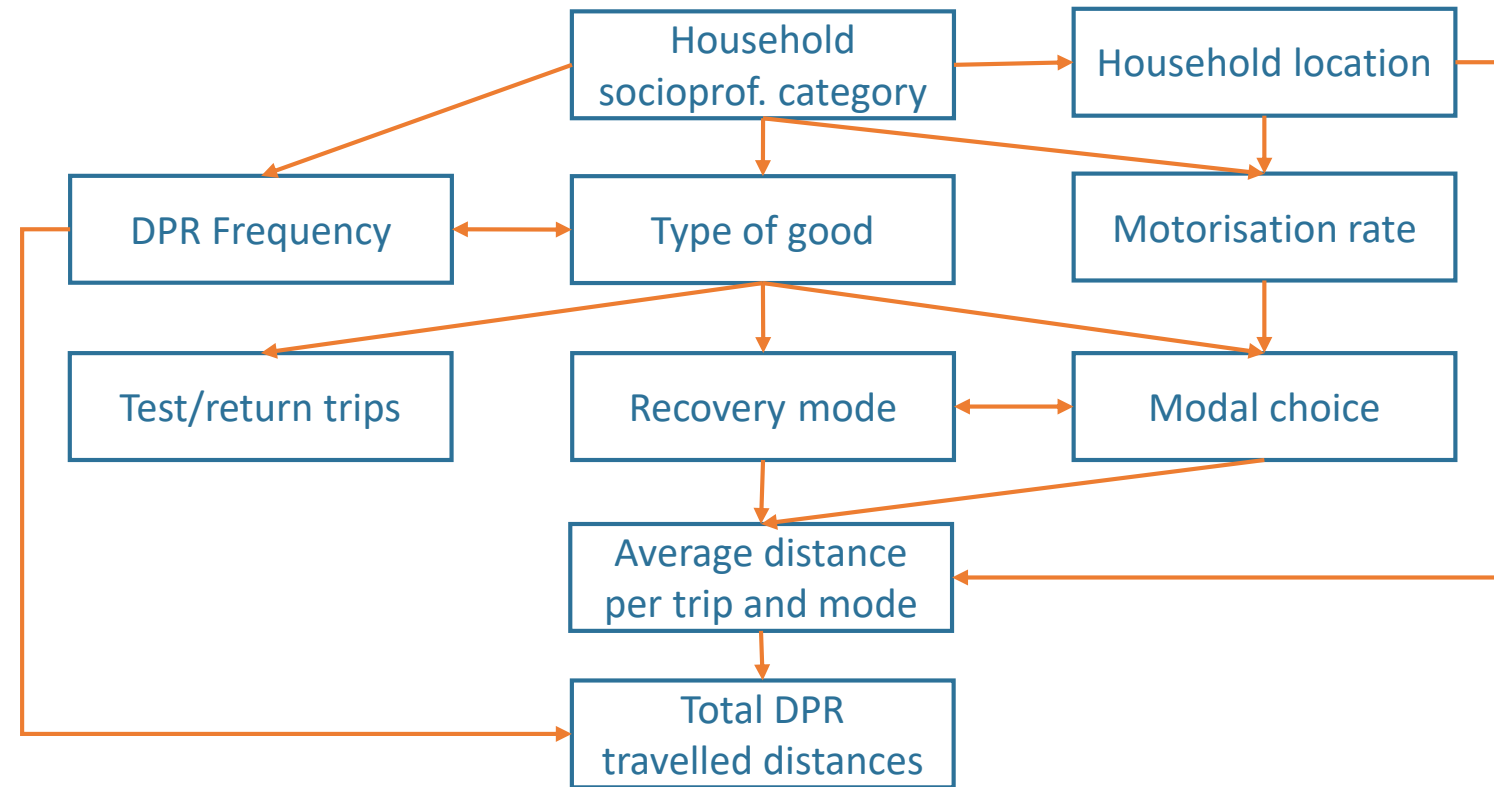
Conclusion

- Delivery services to households don't replace shopping trips.
 - Test or return of the purchased products involve travel, additionally to OHD
 - Most of the recovery trips don't take place inside the usual household trips chains but generate additional trips that mainly take place in the evening.
 - In the Greater Lyon, only **47% of DPR** are done without any travel.
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- Travel behaviour is linked to the type of goods purchased and to the household location:
 - The recovery mode and the trip rate for testing the product or return it are strongly dependent from the type of good.
 - The modal share is linked to both household profile and type of good
 - For household mobility : the socio professional category of the household is a second rank variable but still influences the penetration rate and the frequency of DPRs.
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- A diagram on the right side of the slide. It features a yellow stick figure walking towards a house icon. Above the house is a location pin with a cube inside, representing a delivery. Below the house is a car icon. A curved yellow arrow points from the car up towards the house.



Research perspectives

- Modeling trips generated by DPR practices
- The MOBS project (ANR):
 - Integration of professional trips generated by DPR in order to evaluate the global impacts of delivery services to households
 - Assess the share of DPR in the whole purchase behaviour
 - Integration of C2C purchases / sales trips



- Enrich the SILOGUES modeling tool in order to simulate new indicators and prospective scenarios:
 - In-store purchase / Home deliveries / Out of home deliveries
 - Number of delivery bays/lockers necessary to deliver households
 - Regulation measures to limit return trips and guide modal choice in favour of low emission trips
 - New services to reduce the impacts of DPR



Thank you for your attention

More information: <http://tmv.laet.science>

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