

Impacts of fare-free public transport: Lessons learned from Luxembourg

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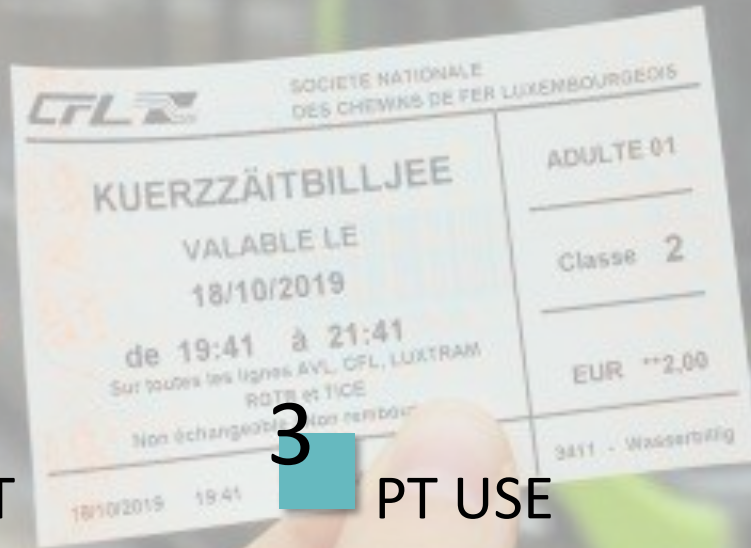
1 ■ CONTEXT

2 ■ DATA

3 ■ PT USE

4 ■ PT SATISFACTION

5 ■ CONCLUSIONS

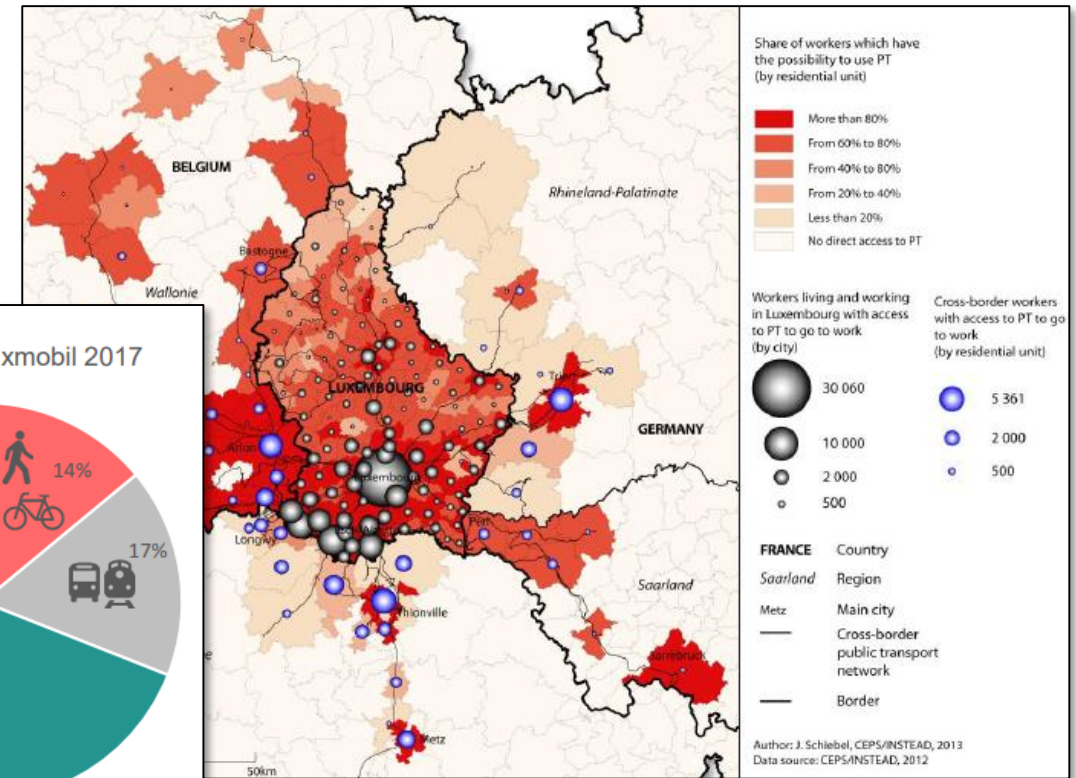
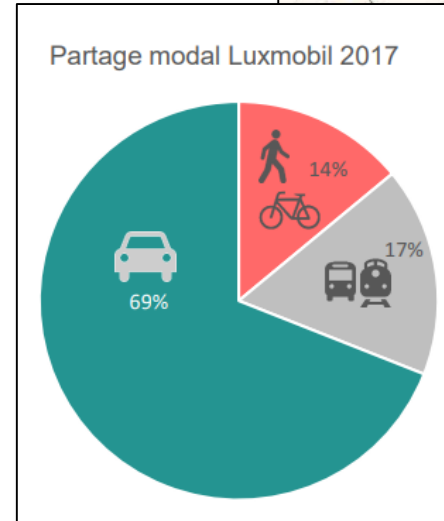


OUTLINE



1. CONTEXT

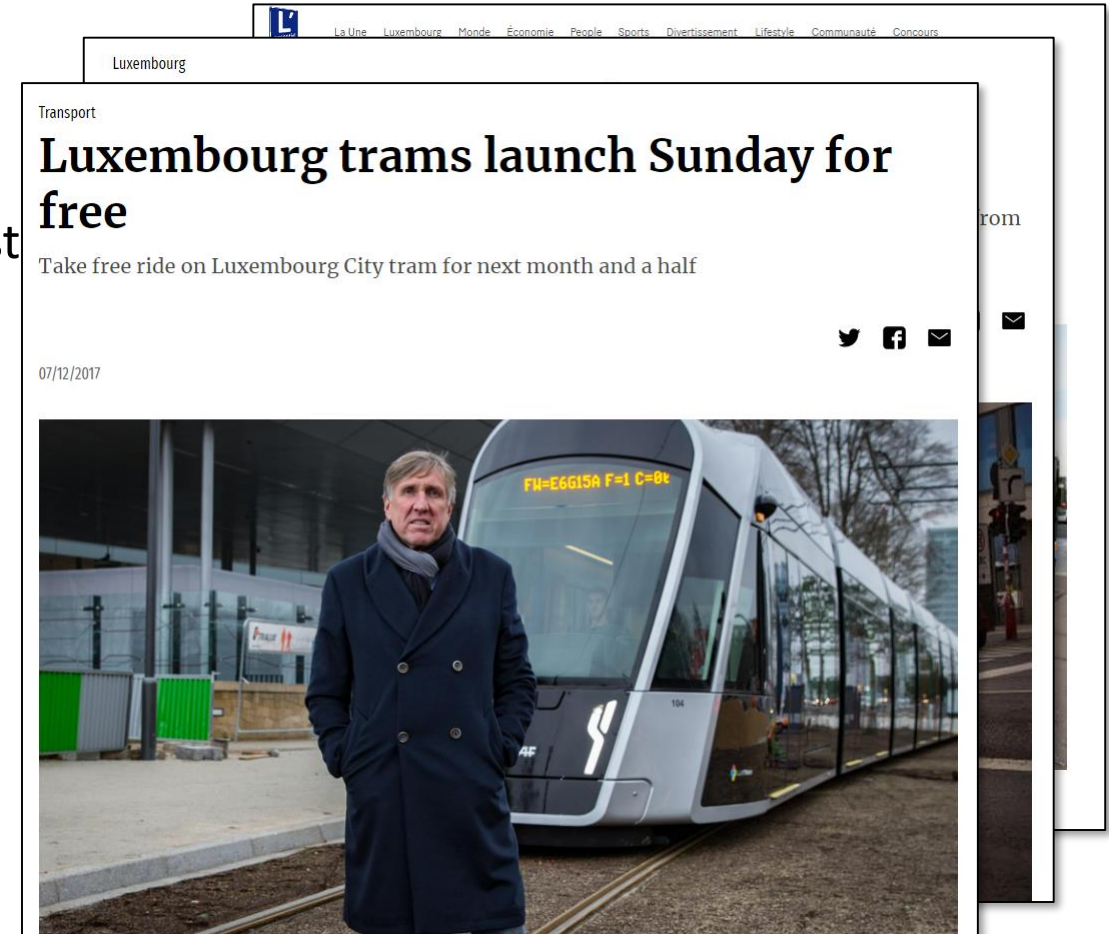
- Luxembourg
 - 635 k inhabitants (47% foreigners)
 - 200 k cross-border workers
 - 86% of households have min. 1 car



- Fare-free public transport (FFPT) in Luxembourg
 - Since 1 March 2020
 - Financed by taxes
 - “Full” FFPT (Kębłowski, 2020)
 - All the time, everywhere, for everyone
 - Except 1st class train and cross-border transport



- Implementing FFPT in Luxembourg
 - **Partial** FFPT experiences in the past
 - 1973: school pupils (later revoked and reinstated)
 - 2000s: minimum income beneficiaries
 - 2015: Lux city on Saturdays
 - 2017: students in higher education
 - 2017: tram launch
 - 1990s: **integrated fares** on all 4 PT networks
 - 2€ for 2 hours ticket; 4€ day ticket
 - Low fares and low farebox revenue
 - ~40 mio € revenue, covering 8% of operating costs
 - A straight forward decision to take, although it was an issue no one was raising (Carr & Hesse, 2020)





2. DATA

Survey – Collecting the data...

- Collaboration between LISER, uni.lu and VUB
- Online survey for residents and cross-border commuters, aged 16 years or above
- Survey open from 12 February until 29 February 2020
- Survey dissemination:



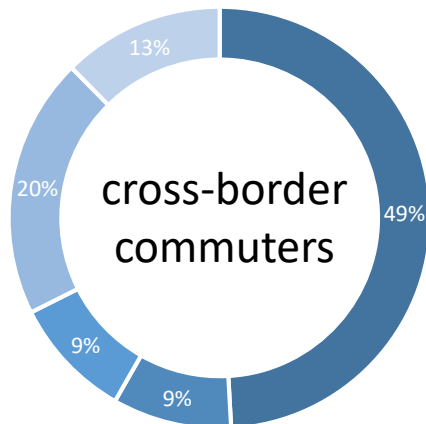
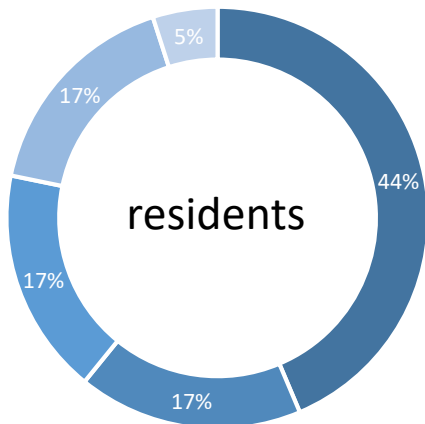
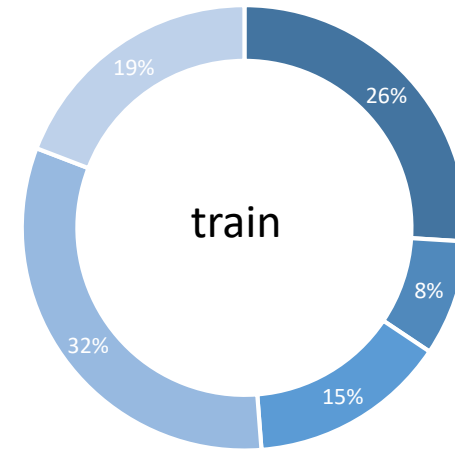
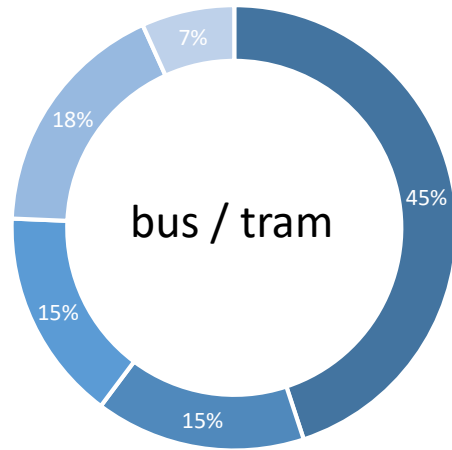


3. PT USE

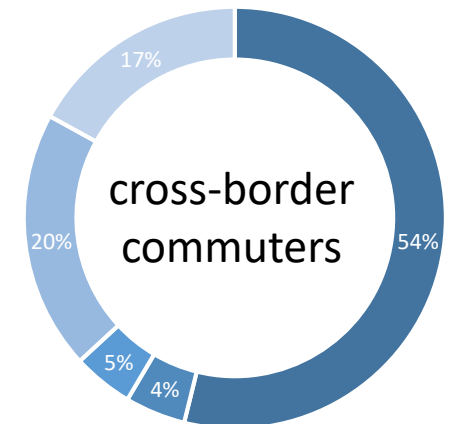
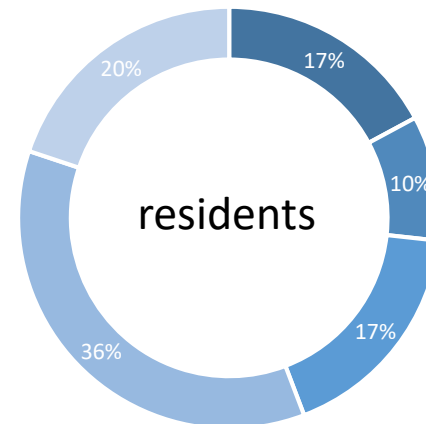
PT habits

Q : In general, how often do you use the following transport modes ?

- (Almost) daily
- 1 to 3 times per week
- 1 to 3 times per month
- Very rarely
- Never



Chi² = 62.471 (df = 4) with p < 0.001
 (N = 1,451 residents; 460 cross-border commuters)

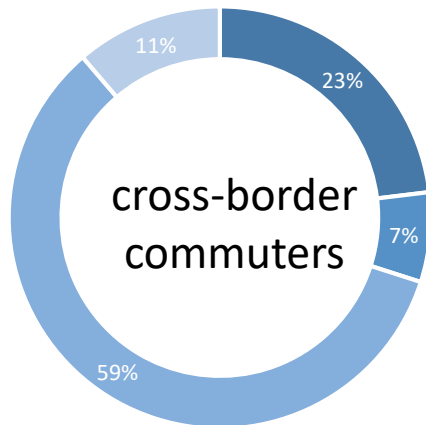
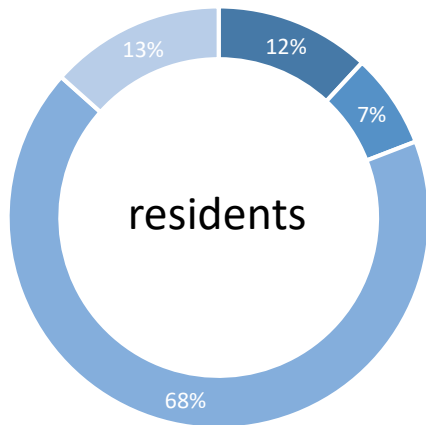
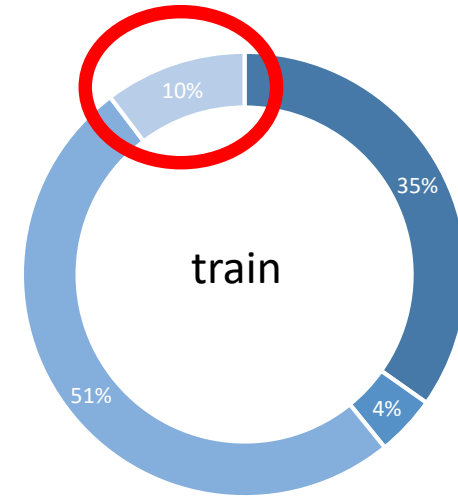
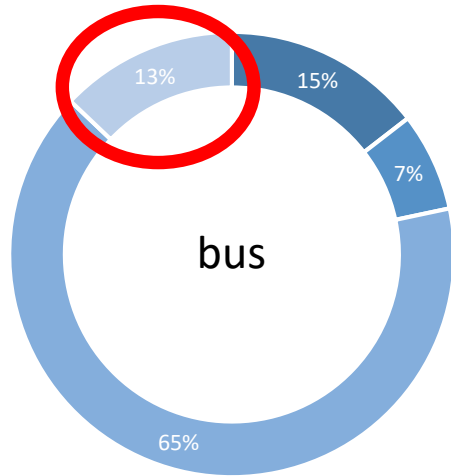


Chi² = 257.096 (df = 4) with p < 0.001
 (N = 1,429 residents; 453 cross-border commuters)

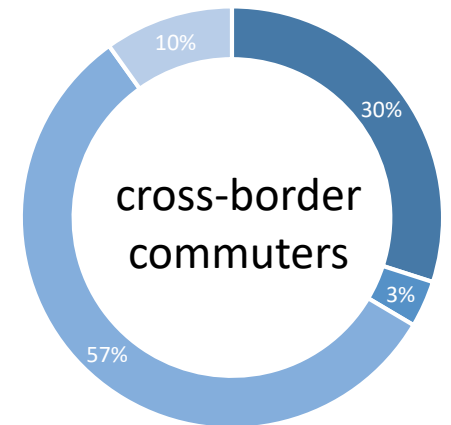
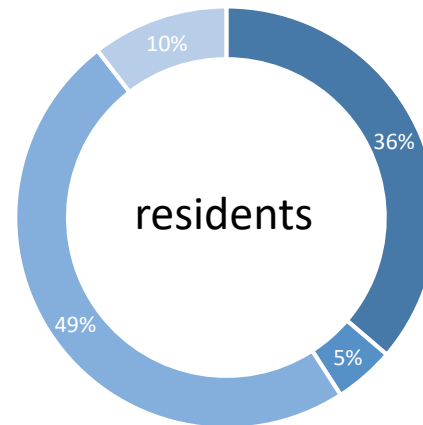
Intention to use PT in the near future

Q : Do you plan to use the bus (resp. train) in Luxembourg in the coming months ?

- No
- Yes, but less often than I do currently
- Yes, more or less the same as I do currently
- Yes, and more often than I do currently



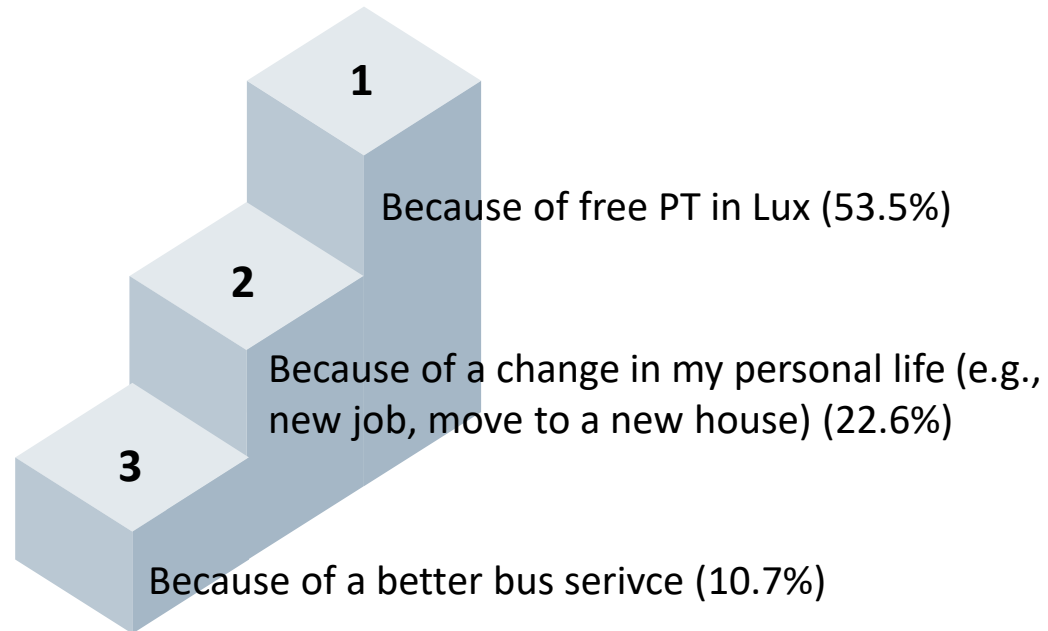
Chi² = 28.260 (df = 3) with p < 0.001
(N = 1,186; 364 cross-border commuters)



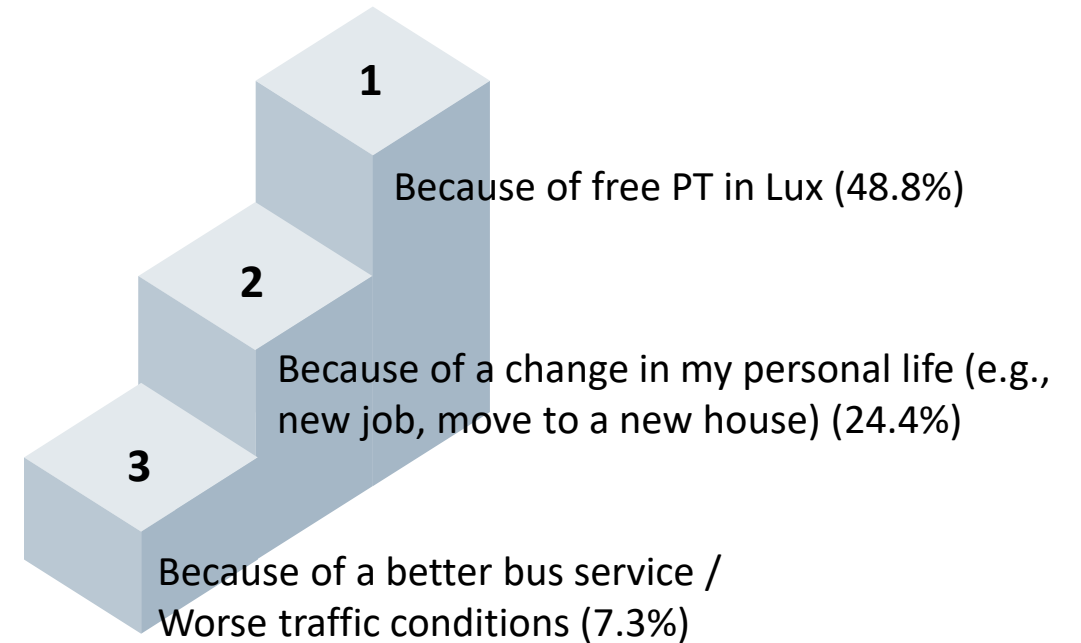
Chi² = 7.476 (df = 3) with p = 0.058
(N = 1,186 residents; 364 cross-border commuters)

Top-3 reasons to increase bus use in the near future

Q : You plan to use the bus more often in Luxembourg in the coming months. Why ?



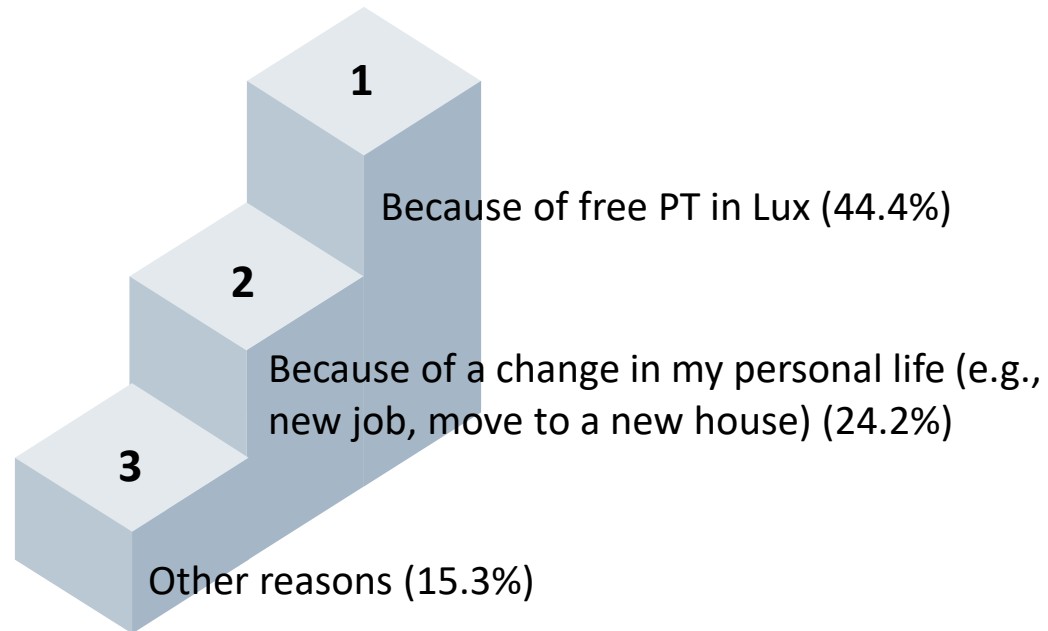
residents (N = 159)



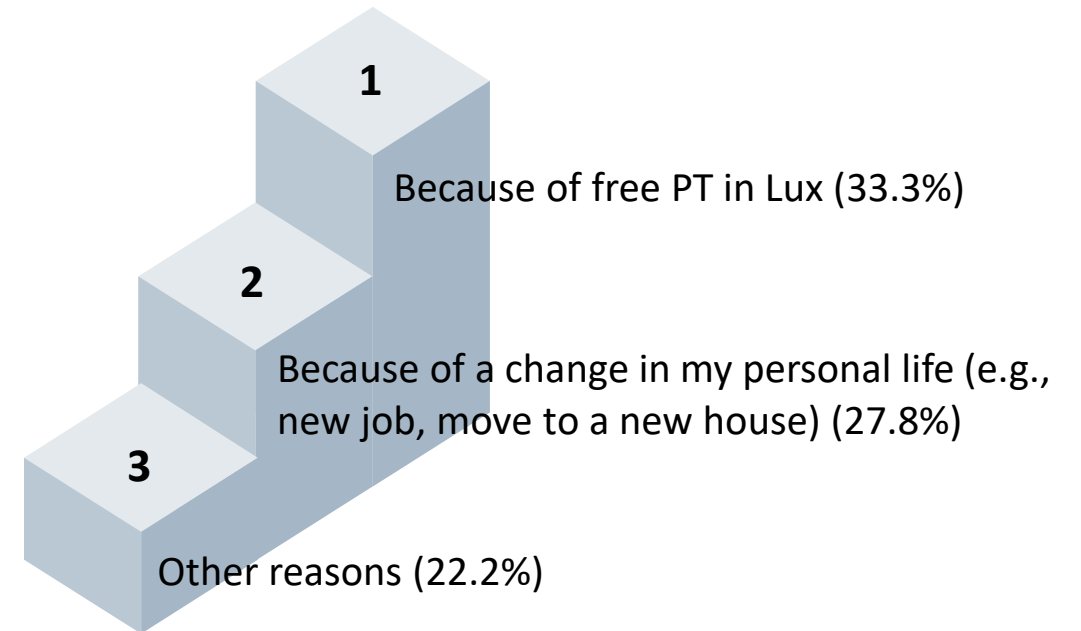
cross-border commuters (N = 41)

Top-3 reasons to increase train use in the near future

Q : You plan to use the train more often in Luxembourg in the coming months. Why ?



residents (N = 159)



cross-border commuters (N = 41)

Determinants of future intentions bus



- Overall liking of buses
- Infrequent use of buses (→ grow potential)
- Infrequent use of trains (→ complementarity)



- High income

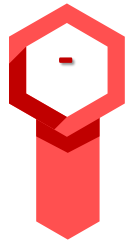
Note: no significant effect of travel habits as a car user !

	Total sample	
	N = 1027	
	Exp (B)	Sig.
Female	1,032	0,881
Below higher education	1,118	0,714
Not employed	1,395	0,264
Income, mean (=ref.)		0,039
Below mean income	1,249	0,560
Above mean income	0,617	0,090
Urban residence	1,289	0,251
Car access, I have my own car (=ref.)		0,867
I share the car(s) in my household	1,029	0,910
My household does not own a car	0,803	0,656
Travel habits, car as a driver (5 cat.)		0,653
Travel habits, car as a passenger (5 cat.)		0,772
Travel habits, bus - (almost) daily (=ref.)		0,002
1 to 3 days per week	2,683	0,003
1 to 3 days per month	3,235	0,001
very rarely	3,458	0,000
never	2,388	0,073
Travel habits, train - (almost) daily (=ref.)		0,011
1 to 3 days per week	2,276	0,116
1 to 3 days per month	3,629	0,003
very rarely	3,724	0,001
never	3,997	0,001
Travel habits, bike (5 cat.)		0,400
Travel habits, walk (5 cat.)		0,481
Overall liking - bus	1,336	0,000
Satisfaction with daily travel scale	0,631	0,967
Nagelkerke R ²		18,3

Determinants of future intentions train



- Overall liking of buses
- Infrequent use of trains (→ grow potential)
- Infrequent use of buses (→ complementarity... to some extent)



- High income
- Not owning a car

Note: no significant effect of travel habits as a car user !

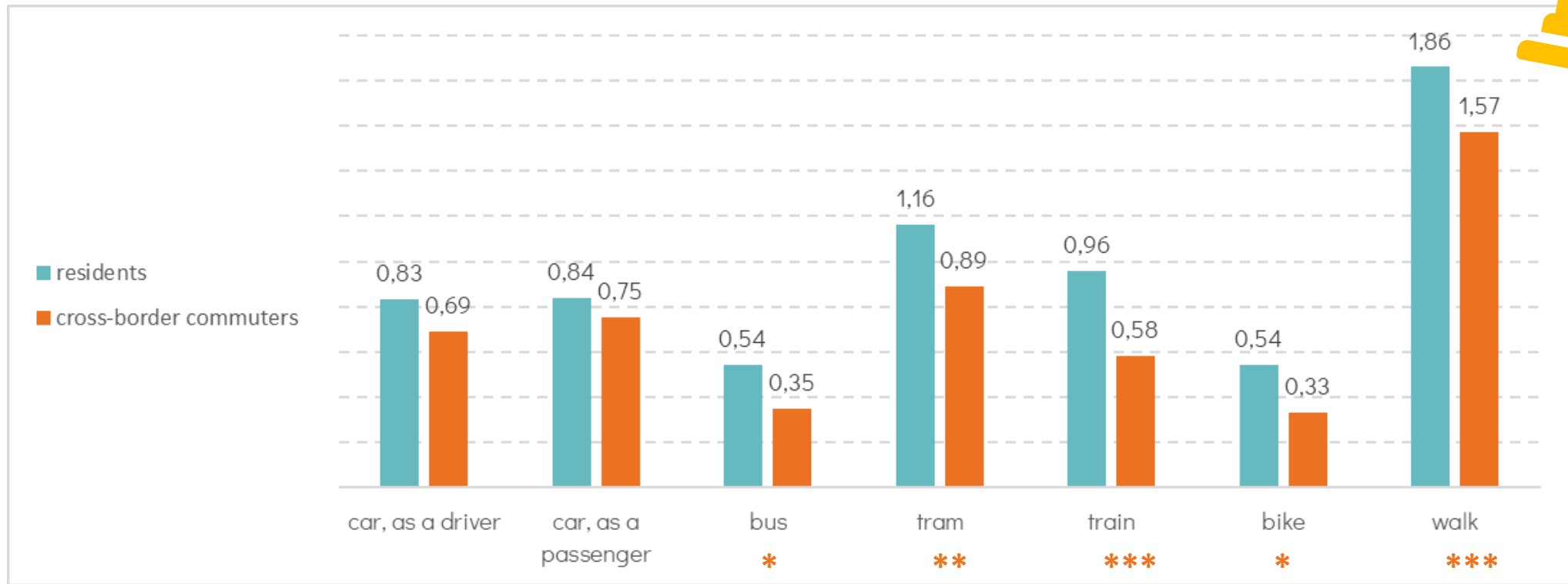
	Total sample	
	N = 1033	
	Exp (B)	Sig.
Female	1,128	0,590
Below higher education	0,664	0,270
Not employed	0,937	0,858
Income, mean (=ref.)		0,096
Below mean income	1,046	0,908
Above mean income	0,602	0,087
Urban residence	1,169	0,514
Car access, I have my own car (=ref.)		0,171
I share the car(s) in my household	0,880	0,646
My household does not own a car	0,388	0,062
Travel habits, car as a driver (5 cat.)		0,155
Travel habits, car as a passenger (5 cat.)		0,952
Travel habits, bus - (almost) daily (=ref.)		0,296
1 to 3 days per week	1,106	0,776
1 to 3 days per month	1,608	0,164
very rarely	2,042	0,040
never	1,728	0,244
Travel habits, train - (almost) daily (=ref.)		0,004
1 to 3 days per week	3,117	0,007
1 to 3 days per month	2,710	0,004
very rarely	1,298	0,429
never	0,875	0,741
Travel habits, bike (5 cat.)		0,098
Travel habits, walk (5 cat.)		0,737
Overall liking - train	1,253	0,002
Satisfaction with daily travel scale	0,914	0,207
Nagelkerke R ²		12,6



4. PT SATISFACTION

Overall liking

Q : “To what extent do you like the following transport modes ?”



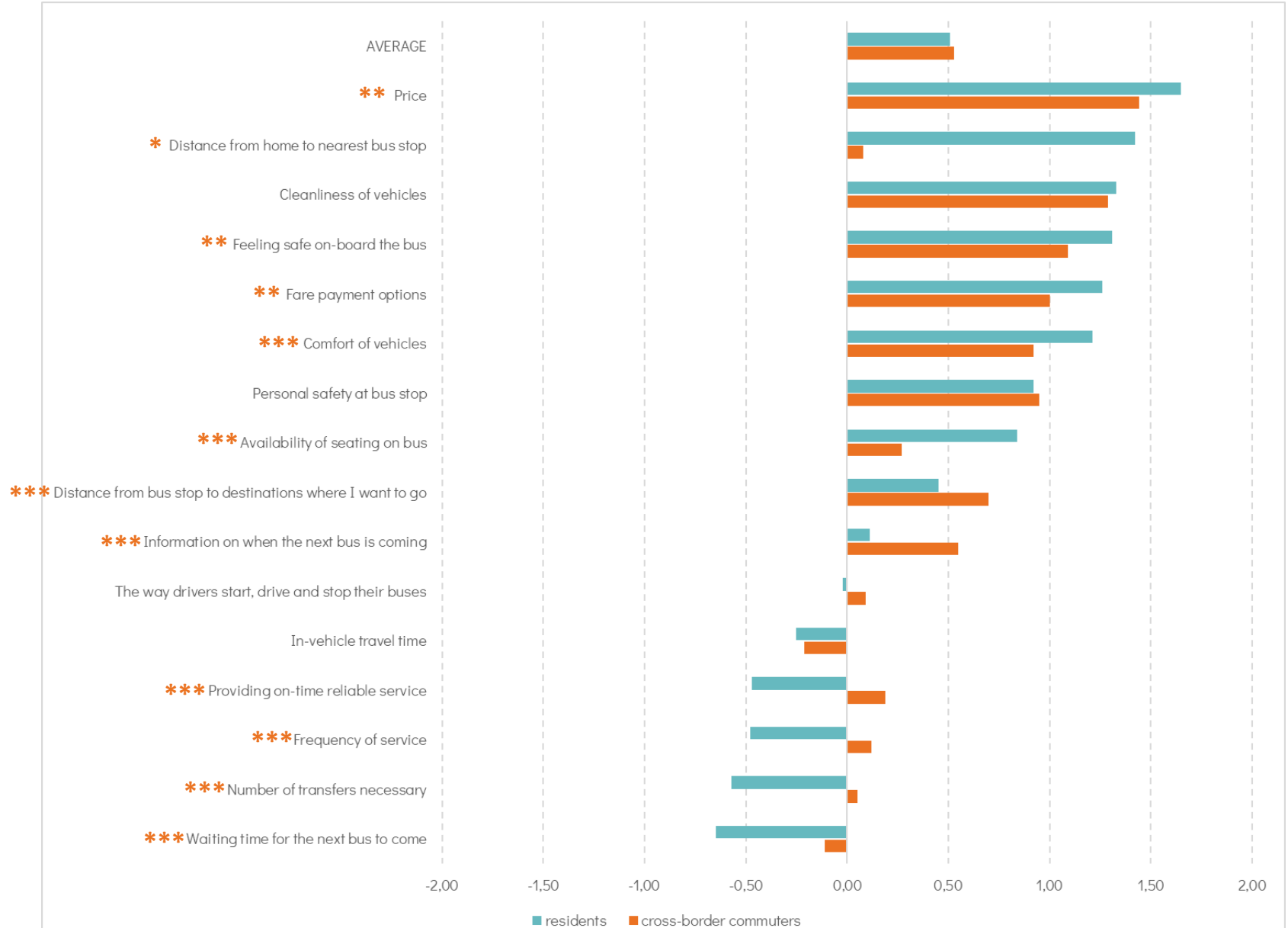
*** = significantly different at $p < 0.001$

** = significantly different at $p < 0.010$

* = significantly different at $p < 0.100$

Satisfaction with PT services attributes – bus

Q : What is your level of satisfaction with the current bus services in Luxembourg ?



*** = significantly different at $p < 0.001$
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Satisfaction with PT services attributes – train

Q : What is your level of satisfaction with the current train services in Luxembourg ?



*** = significantly different at $p < 0.001$
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5. CONCLUSIONS

Situation before the implementation of FFPT situation in Luxembourg

- Relatively strong bus use habits (45% daily use)
- Less strong train use habits, except among cross-border commuters (54% daily use)

Expected impact of FFPT ?

- Only 1 out of 10 intends to increase their PT use in the coming months
 - ... mainly because of free public transport policy (but remember the specificities of this sample!)
 - ~ overall PT liking, current PT habits (grow potential among infrequent PT users, complementarity)
 - **No** shift from car to PT to be expected

How to increase this PT liking ?

- Overall satisfaction: bus and train have low scores (for residents and cross-border commuters)
 - NOT because of a dissatisfaction with prices ...
 - ... but mainly because of dissatisfaction with many operational aspects

What has happened since 1 March 2020 ?

- **15 March 2020: COVID-19 lockdown in Luxembourg**
 - During the pandemic:
 - Decrease in PT use
 - Less transport demand
 - Shift towards telework
 - Shift towards car use to a certain extent
 - Those who still used PT were frequent PT users before the pandemic
 - Now:
 - Slow recovery from COVID-19
- **Other important changes:**
 - Fall 2020 – Summer 2022: Redesign of the RGTR bus network
 - Tramway extension in Luxembourg city
- **?? True impact of FFPT in Luxembourg ??**



Thank you !

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