

Commercial cyclists as gig economy workers: Time traps, time trade-offs and business models

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Anything new?



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Photographie : *Facteur télégraphiste à bicyclette, square Dominion, Montréal, QC, vers 1935*

Don de la succession de M. Omer Lavallée (MP-1992.22.36)

Outline

- A research project on commercial cyclists
 - Main safety objectives
- Recurring time use components
 - 5 time use issues informed by
 - three methods and by the recruitment process
- Presentation of supporting data
- Implications

Background

- The recent growth of gig economy work is changing labor relations across the world.
- Commercial cyclists working in the prepared food delivery industry are a highly visible group of gig economy workers seen in the streets of most metropolitan areas.

Food delivery platforms

Sharing economy or Gig economy?

US, 2015



Germany, 2014



France, 2011

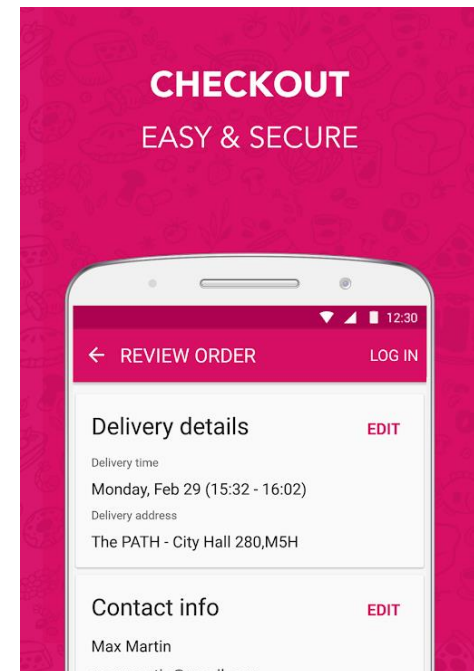
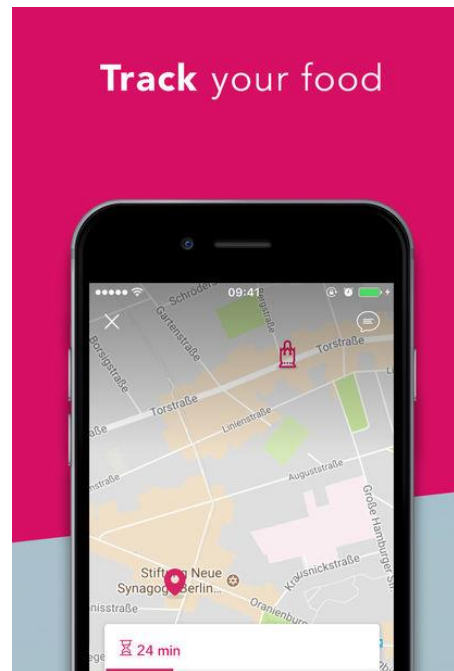
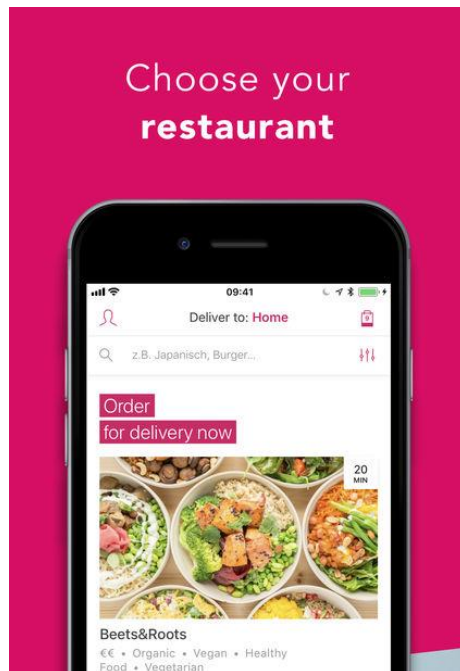
UK, 2013



Food delivery

Highest growth is in on-bicycle food delivery

- B2C platforms are transforming consumer behavior and local restaurants
 - Relationships with time/space/food



Commercial Cyclists : diversity of jobs



Project objectives



“The health, safety and work organization of cyclist workers”

- Portrait of the variety of work using bicycles
- Assess collision and injury history risk factors

Three methods:

- Interviews with 27 workers + 6 managers
- Online survey on the health, safety and work organization of various types of cyclist workers (n≈250)
- Pilot GPS watch protocol and stop/delivery identification algorithm (n=19 participants x 2 days = 38 days)
- + recruitment via social media (online discussion also informs the results presented here)

Few studies

Mostly on messengers (couriers)

- Survey of 113 couriers in Boston, Dennerlein and Meeker (2002)
 - 70% had suffered from injury resulting in days lost from work
 - Mostly collisions and avoiding collisions with motor vehicles
 - Annual incidence rate for injuries resulting in days away from work was 47/100-bike couriers
- Secondary hospital admission analysis 2008-2014 cyclist struck by motor vehicle, New York CBD, Heyer *et al.* (2015)
 - 34% were working, **fewer** distracted or intoxicated
- Work related roadway accidents 2000-2008, Quebec
 - Matched SAAQ (license and insurance) and CNSST (workers compensation) records
 - 83 collisions, 1.6% (“Other: Moto, bikes, ATV”)
Pignatelli et al. (2013)

Presentation objectives

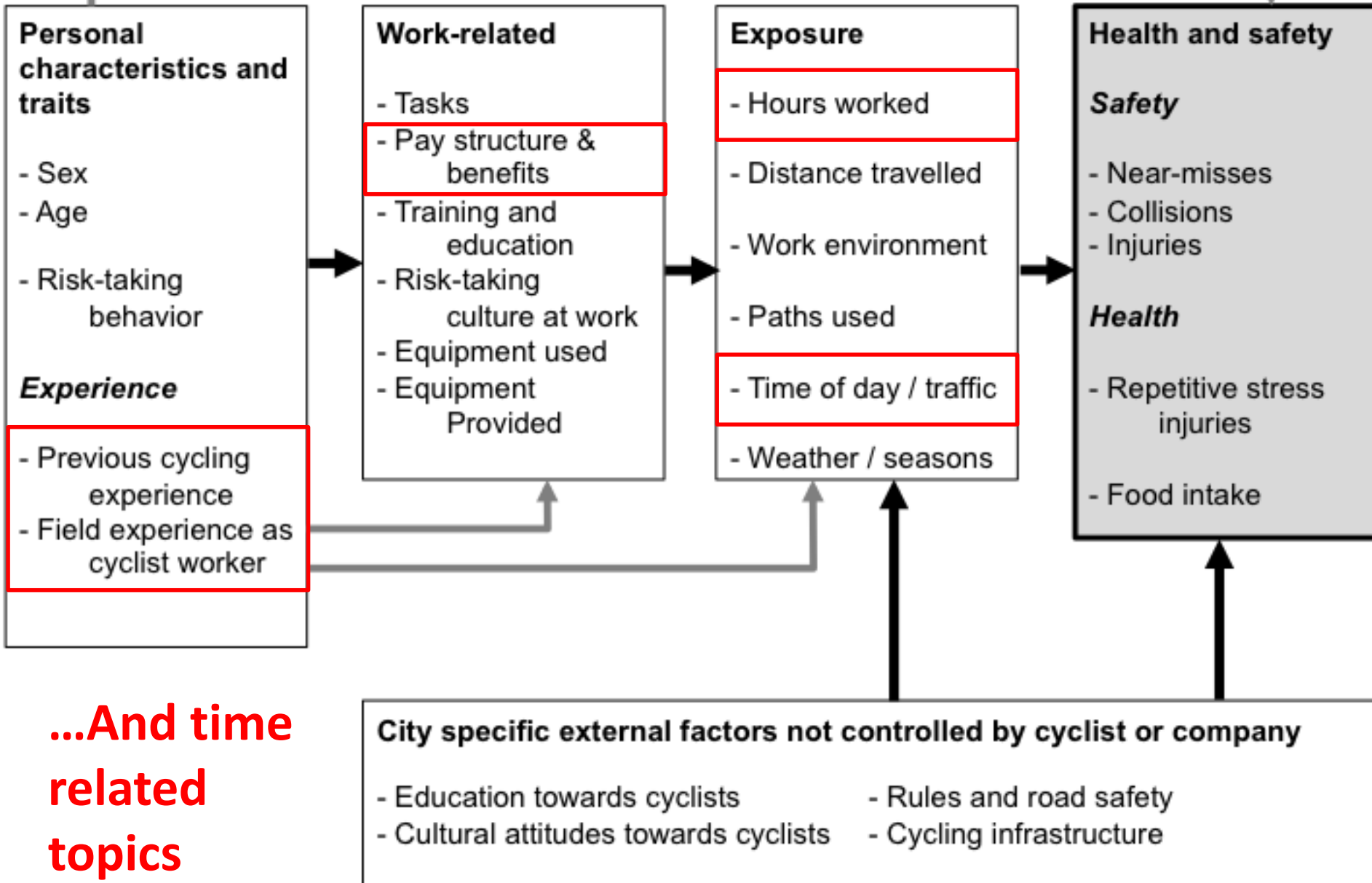
Five key time-use related issues associated with work from workers' and consumers' perspectives

- Wages
- Flexible work shifts?
- Trade-off between earnings and safety
- Consumers' time and money trade-offs
- Economic model of passing on costs of delivery labor

+ 1

Problem: Finding an appropriate denominator for injury incidence rate

What interviews tell us: a framework on safety



GPS trace for delivery day of two separate participants (green, blue) + coded delivery stops



Wages



1. The evolution of wages over time and across platforms and countries and the legal debate over the legitimacy of company practices

- Operator discourse
 - Making a bit of money while doing what they enjoy
- Deliveroo changed pay structure 3 times in the past two years. Generates much discussion online. How can workers plan budgets?
 - Commission only, hourly and commission, minimum hourly

Work shifts

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2. The proposed freedom associated with flexible work shifts and the diminishing availability and flexibility of these shifts over time

- *“If I stop working for a couple of days, I loose my priority on the list”*
- *“Too many people want to do it now. We get fewer and fewer shifts”*
- *“Business is better in the winter; fewer people want to do it”*
- *“You get warnings if you refuse longer trips. They can cease the agreement”*

Work shifts

- Survey item: average weekly hours
- Full time work, but not much shifts available

	Mean	Standard Error	Confidence Interval (95%)	
			Low	high
<u>Self-reported</u> average weekly hours (n=184)				
Food delivery	24.98	1.55	21.92	28.03
Messenger	36.14	1.77	32.65	39.64
Others	35.88	2.49	30.97	40.78

Work shifts

- GPS : Avg. 5 hour shifts, as low as 2 hours
- Low proportion of shift actually on the road

	Mean	St.Dev.	Min	Max
Worktime				
Total time (minutes)	315.7	84.4	116.2	537.4
Trip time (minutes)	114.6	48.4	41.4	266.4
Stop/delivery time (minutes)	201.1	66.7	57.2	416.2
Proportion on the road	0.36	0.11	0.16	0.56

Safety trade-off

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3. The implicit trade-off between earnings and safety of riders associated with carrying out commission work in dangerous traffic conditions

When you are biking on the job, are you generally willing to make a **DETOUR** in order to use a bike path?

	Food delivery	Document delivery (messenger)	Other	Total
Yes (%)	26.09	16.13	40.0	24.84

Safety trade-off

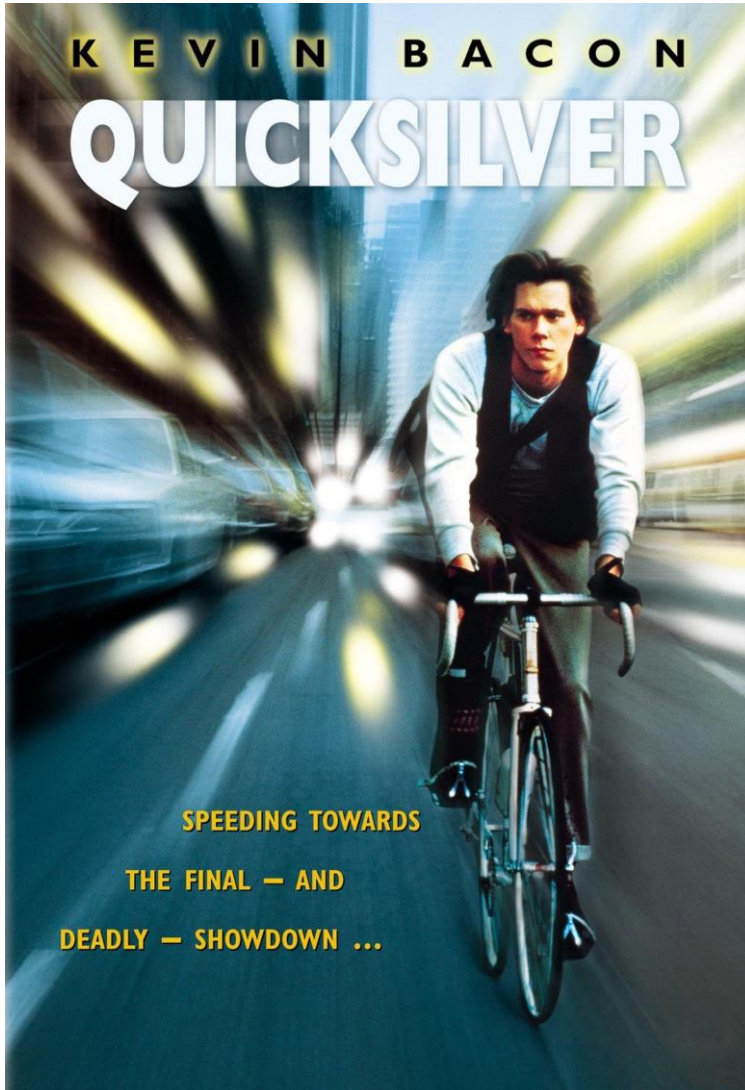
- “Its go, go, go. It’s the only way to make money when you are working on commission”
- “I burn stops all the time”

GPS: 38 worker-days

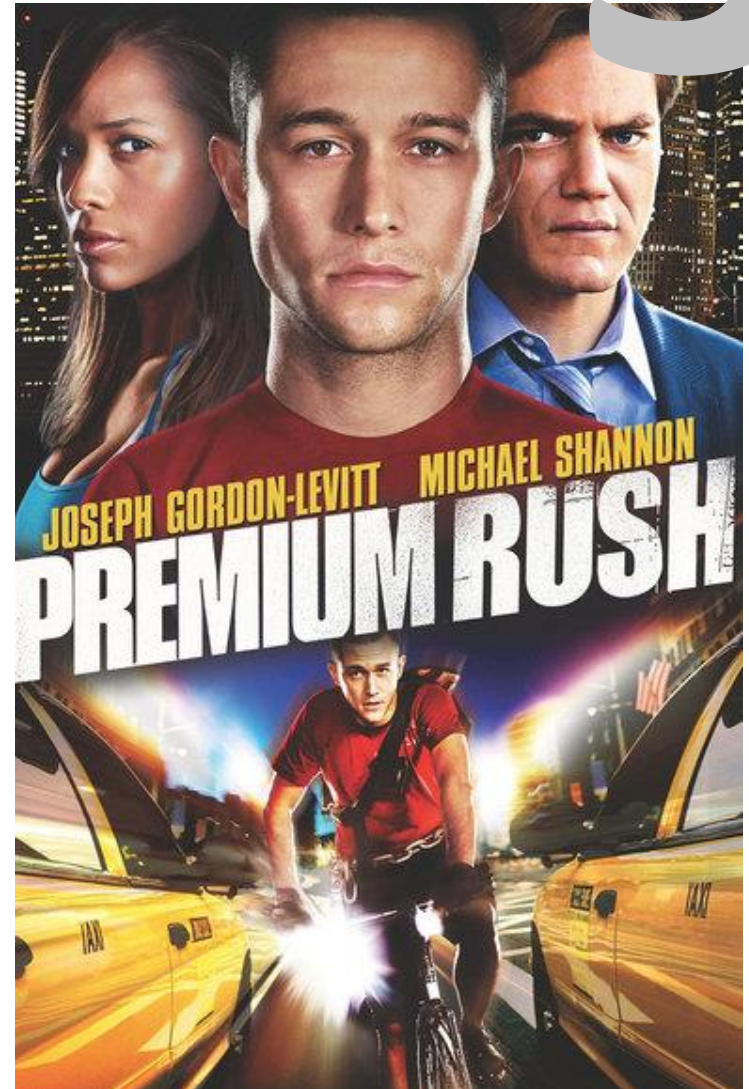
	Mean	St.Dev.	Min	Max
Data on individual trips (GPS)				
Average trip time (minutes)	6.8	1.9	3.2	12.2
Average stop/delivery time (minutes)	10.1	2.8	6.6	18
Average speed (km/h)	16.6	1.8	12.2	19.9
Average trip distance (meters)	1833.8	560.6	853.8	3915.7

Bike messengers in popular culture

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Quicksilver 1986



Premium Rush 2012

Consumer's' time and money trade-offs



4. Consumers' trade-off between time and money

- “Purchasing someone else’s time”
- Some GPS-measured deliveries as short as 500 meters, confirmed by debrief as not unusual
- Changing social habits
- “We’re creating a society where people no longer go out to eat. It saves time, but it doesn’t feel sound”

Who pays the price?

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5. The larger companies' model of passing on costs of delivery labor to small restaurant owners and workers, not consumers

- Initial roll-out with **local restaurants**
- Restaurants may be viable with fewer tables, on less visible streets
 - Delivery riders and restaurants are sharing delivery and platform fees
- Larger markets for businesses but:
 - Development of “***Dark kitchens***”
 - Offering own line of food (informed by demand)

Finding an appropriate denominator for ***injury incidence rate***

- **Time? Distance?**
- **Self-reported? Objectively measured (GPS)?**

	Mean	St.Dev.	Min	Max
<hr/>				
Information on day				
Number of stop/deliveries	20.4	5.8	8	41
Travelled distance (meters)	30961.3	13352.5	11099.1	74398.2

- How do I take into account
 - proportion of shifts on road?
 - variable work shifts?

Results – Collision

		Food delivery	Document delivery (messenger)	Other	Total
OVER THE LAST MONTH, what was the MOST SERIOUS injury you suffered?					
% column	Total reported injuries	56.16	35.38	29.03	43.2
	Sprain	6.85	3.08	0	4.14
	Broken limb (arm, leg, etc.)	5.48	3.08	6.45	4.73
	Open wound (requiring stitches)	0	3.08	0	1.18
	Burn, significant scrape	6.85	7.69	0	5.92
	Concussion	2.74	1.54	0	1.78
	Bruises	20.55	7.69	16.13	14.79
	Frostbite	2.74	0	0	1.18
	Inflammation/tendonitis	10.96	9.23	6.45	9.47
	NO injuries	43.84	64.62	70.97	56.8
OVER THE LAST MONTH, what was THE CAUSE of the accident you were involved in that resulted in this injury?					
% column	Lack of attention	5.56	6.25	6.45	5.99
	Using phone or walkie-talkie	5.56	0	3.23	2.99
	Alcohol or drug use	1.39	0	3.23	1.2
	Cut off by a car, truck or bus	15.28	10.94	3.23	11.38
	Being too close when passing a car, truck or bus	1.39	1.56	0	1.2
	Door opening	6.94	4.69	3.23	5.39
	Pedestrian coming out of nowhere	2.78	1.56	0	1.8
	Other cyclist	1.39	3.12	3.23	2.4
	Condition of the road (potholes, etc.)	12.5	7.81	9.68	10.18
	Black ice/ice storm	4.17	0	0	1.8
	Construction-related activities	0	1.56	0	0.6
	NO collision	43.06	62.5	67.74	55.09

“Cooperatives that are ran locally, united internationally”

Retrieve the social benefits:
vacation, health insurance, retirement



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We socialize platforms

CoopCycle is a delivery platform for **worker-owned coops**
Organize, we provide the technology!

<https://coopcycle.org/en/>

[What is CoopCycle?](#)

[Test the demo](#)

Conclusions

- The development of gig economy platforms raises many questions with respect to **workers rights and safety**
- Company practices are **far from** the proposed image of **“sharing economy”**
- **Alternative cooperative models** are being developed but are facing difficult competitive issues with large-scale investor-based models of development
- **Labor and commercial laws not adapted** to this new reality; legal debates are undergoing

	Food delivery (n=73)	Document delivery (messenger) (n=65)	Other (n=31)	Total (n=169)
Age category				
Less than 20	6.45	1.75	0	3.4
20-24	35.48	26.32	25	29.93
25-29	24.19	43.86	28.57	32.65
30-34	16.13	7.02	10.71	11.56
35-40	12.9	8.77	7.14	10.2
40+	4.84	12.28	28.57	12.24
Gender				
Women	9.68	21.05	28.57	17.69
Men	83.87	73.68	67.86	76.87
Other	6.45	5.26	3.57	5.44
Highest educational attainment				
Other	1.61	1.75	7.14	2.72
High School	17.74	31.58	7.14	21.09
Technical	17.74	24.56	21.43	21.09
University undergraduate	38.71	29.82	42.86	36.05
University graduate	24.19	12.28	21.43	19.05