

Sustainable Urban Goods Delivery in Rio De Janeiro: Cycle Logistics In Nine Commercial Centers

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O triciclo, sem respeitar sinais nem mãos de direção, é ameaça permanente nas ruas do Rio



Category	%	Type	Count	%	Daily Tours	Tours/ type	Major Tour Generator*	Workers	Major Employer**	Tours/ worker	High tours/ worker***
Food and beverage	48.1	Restaurants	51	15.8	1098	21.5	Yes	101	Yes	10.9	Yes
		Supermarkets	39	12.1	1401	35.9	Yes	102	Yes	13.7	Yes
		Beverage distributers	22	6.8	759	34.5	Yes	66	Yes	11.5	Yes
		Juice stores	15	4.7	530	35.3	Yes	23	Yes	23.0	Yes
		Bakeries	13	4.0	312	24.0	Yes	22	Yes	14.2	Yes
		Butchers	9	2.8	157	17.4	Yes	12	No	13.1	Yes
		Others	13	4.0	65	16.3	No	6	No	10.8	Yes
Services	19.8	Pet shops	24	7.5	530	22.1	Yes	35	Yes	15.1	Yes
		Clothing cleaners	21	6.5	283	13.5	No	29	Yes	9.8	No
		Keysmiths	6	1.9	25	4.2	No	9	No	2.8	No
		Florists	4	1.2	50	12.5	No	10	No	5.0	No
		Postal services	3	0.9	64	21.3	Yes	21	No	3.0	No
		Others	5	1.6	57	11.4	No	14	No	4.1	No
Manu- factured goods	18.2	Hardware & construction supplies	27	8.4	342	12.7	No	40	Yes	8.6	No
		Lighting store	4	1.2	77	5.9	No	13	No	5.9	No
		Mattress stores	13	4.0	29	7.3	No	5	No	5.8	No
		Others	9	2.8	156	11.1	No	18	No	8.7	No
Health	13.8	Pharmacies	44	13.7	1589	36.1	Yes	132	Yes	12.0	Yes
Total			318		7524			658			

* Above median of tours/type (16.8) =Yes

**Above median of cycle logistics employees (21.5) =Yes

***Above median of tours/worker (10.3) =Yes



All photos unless otherwise noted: Zé Lobo















Regular bicycle

271 (43%)



Cargo bicycle

216 (34.5%)

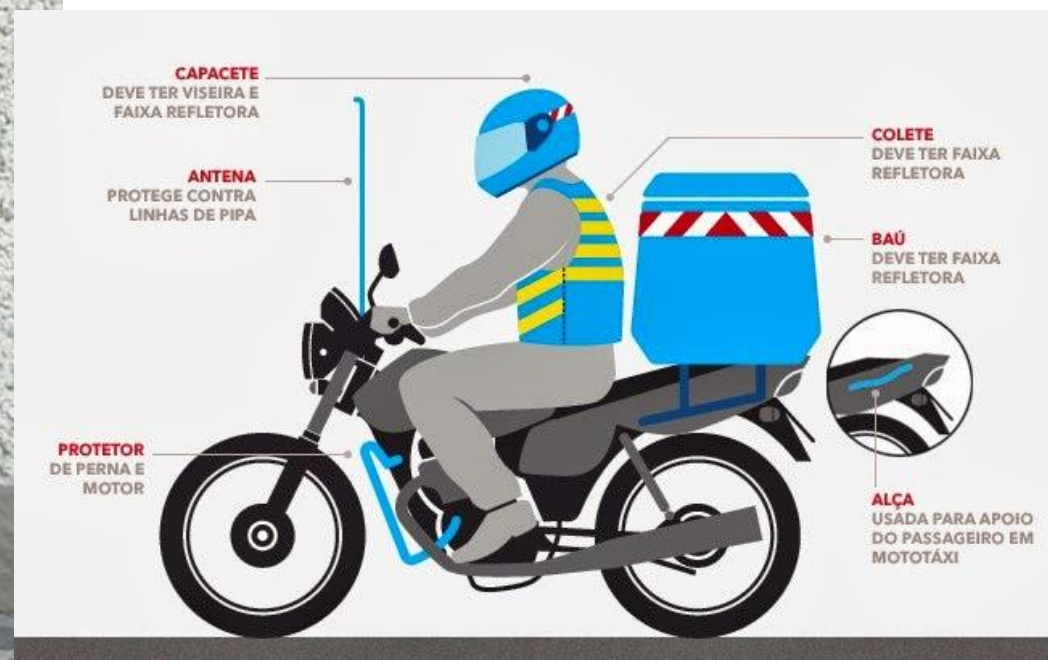


Cargo tricycle

141 (23.5%)

Commercial Center	Businesses using cycle logistics	Percentage of total businesses using cycle logistics
Copacabana	187	58%
Tijuca	68	21%
Centro	32	10%
Ilha do Governador	12	4%
Bangu	9	3%
Madureira	7	2%
Taquara	5	1.5%
Santa Cruz	2	0.5%
Campo Grande	0	0%





Source: <http://4.bp.blogspot.com/-9dfj1YqBfxM/Uapd2bvAoFI/AAAAAAAAADBA/2nDWIPH7vio/s1600/1y6449fskh7tec3yrwd3t11b.jpg>



<http://itapetininga.zeebukbrasil.com/vendo-fiat-fiorino-furgao-05-1-3-viii-135359-veiculos>

- 105.2 tons of carbon dioxide (CO₂)
- 2.06 tons of carbon monoxide (CO)
- 0.34 tons of hydrocarbons (HC)
- 0.17 tons of nitrogen oxides (NO_x)

1,200 square meters



<https://www.pinterest.com/pin/425379127275523461/>

Danke / Obrigado / Thank you!!!



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