Title

Innovative Mobility: Carsharing Outlook

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INNOVATIVE MOBILITY: CARSHARING OUTLOOK

CARSHARING MARKET OVERVIEW, ANALYSIS, AND TRENDS ▪ Spring 2018

TRANSPORTATION SUSTAINABILITY RESEARCH CENTER - UNIVERSITY OF CALIFORNIA, BERKELEY

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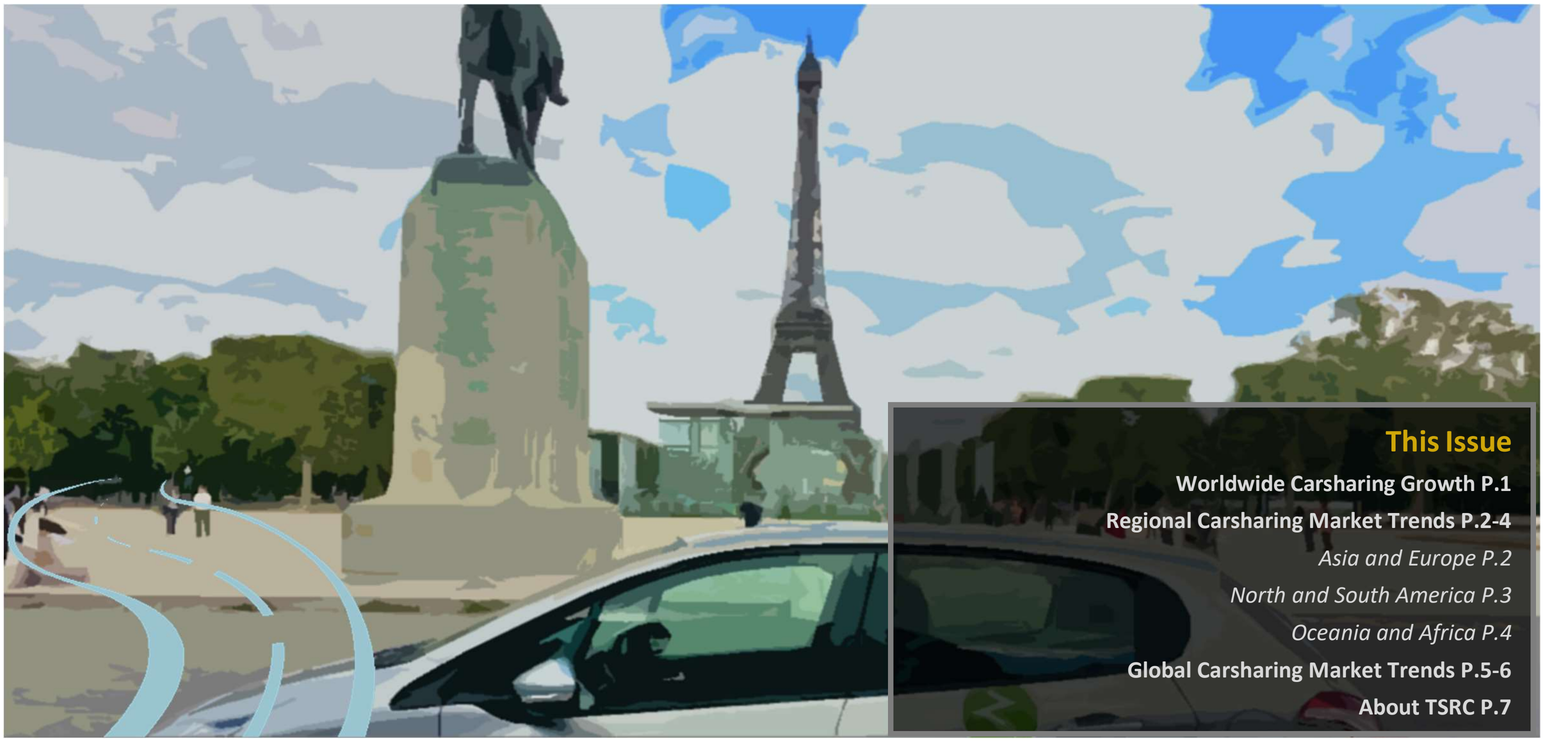


This Issue

WORLDWIDE CARSHARING GROWTH

As of October 2016, carsharing was operating in 46 countries and six continents, with an estimated 2,095 cities and approximately 15 million members sharing over 157,000 vehicles. Asia, the largest carsharing region measured by membership, accounts for 58% of worldwide membership and 43% of global fleets deployed. The world's second largest carsharing market, Europe, accounts for 29% of worldwide members and 37% of vehicle fleets.

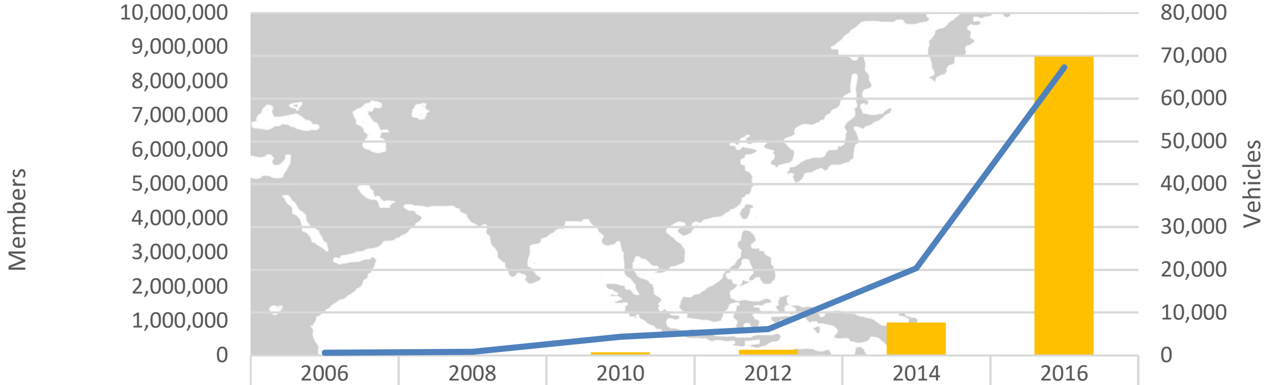
As of October 2016, one-way carsharing accounted for 30.98% of global membership and 26.0% of global fleets deployed (based on data provided through expert interviews). The 2016 global one-way market share represents a 76% increase in membership and a 23% increase in fleets since 2014. As of October 2016, roundtrip carsharing accounted for 69% and 73.9% of global membership and fleets deployed, respectively. Regionally, Europe had the largest percentage of one-way membership, representing 66.1% of the region's carsharing membership. Oceania had the greatest percentage of one-way fleets regionally, representing 79.4% of the continent's carsharing fleets.

The number of carsharing countries increased from 35 in 2014 to 46 as of October 2016. Notably, carsharing expanded to Africa (Morocco in 2015 (pilot) and South Africa in June 2015). Roundtrip and one-way carsharing also ceased operations in Greece around late-2015, where carpooling is a popular option.

Note: Numbers reflect business-to-consumer (B2C) roundtrip and one-way carsharing only.

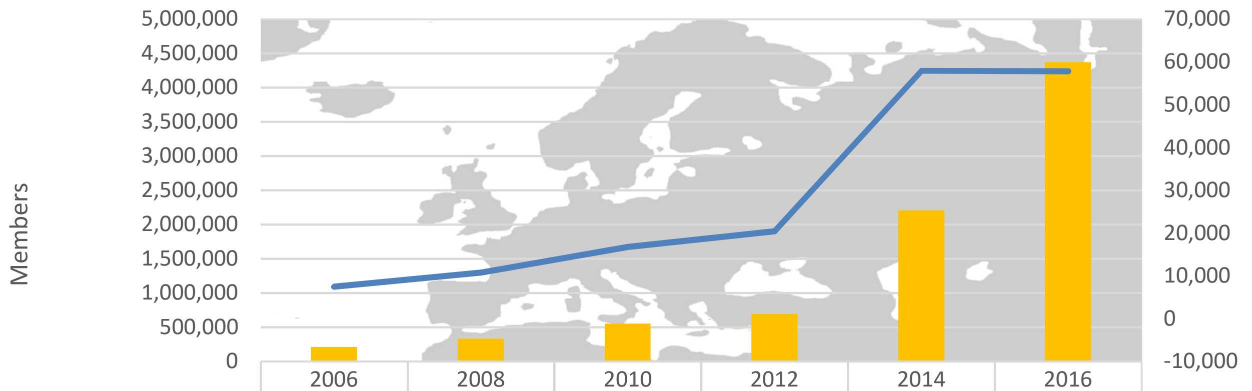
REGIONAL CARSHARING MARKET TRENDS

Asian Trends (n=10)



	2006	2008	2010	2012	2014	2016
Members	15,700	12,546	81,817	160,500	955,880	8,722,138
Compound Annual Member Growth Rate (2 yr)	0%	-11%	155%	40%	144%	202%
Vehicles	608	810	4,315	6,155	20,344	67,329
Compound Annual Fleet Growth Rate (2 yr)	0%	15%	131%	19%	82%	82%
Member-Vehicle Ratio	25.8	15.5	19.0	26.1	47.0	129.5

European Trends (n=27)



	2006	2008	2010	2012	2014	2016
Members	212,124	334,168	552,868	691,943	2,206,884	4,371,151
Compound Annual Member Growth Rate (2 yr)	0%	26%	29%	12%	79%	41%
Vehicles	7,491	10,833	16,779	20,464	57,947	57,857
Compound Annual Fleet Growth Rate (2 yr)	0%	20%	24%	10%	68%	0%
Member-Vehicle Ratio	28.3	30.8	32.9	33.8	38.1	75.6

*** Data depict October of each even numbered year. Numbers do not include P2P carsharing. Proxies from reports and media sources were used for four of 10 nations surveyed in Asia and 12 out of 27 nations in Europe. "n" denotes the number of countries in each respective region.**

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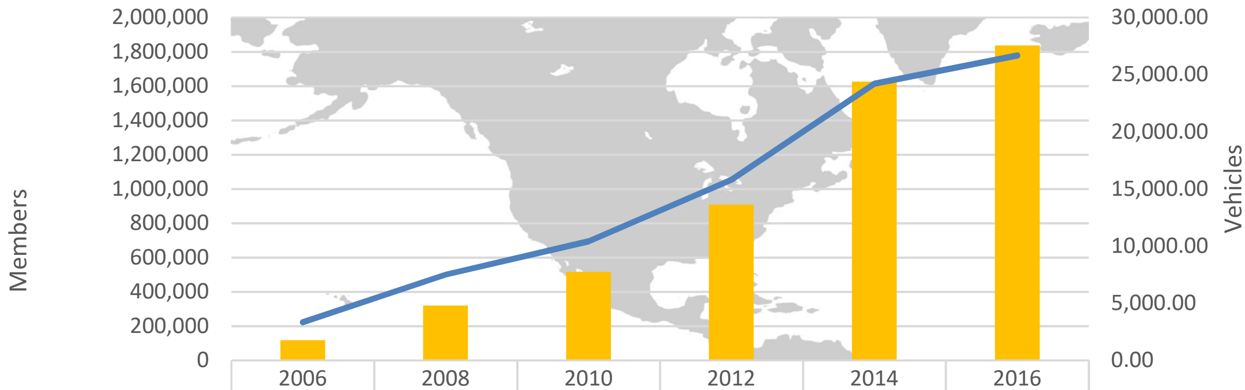
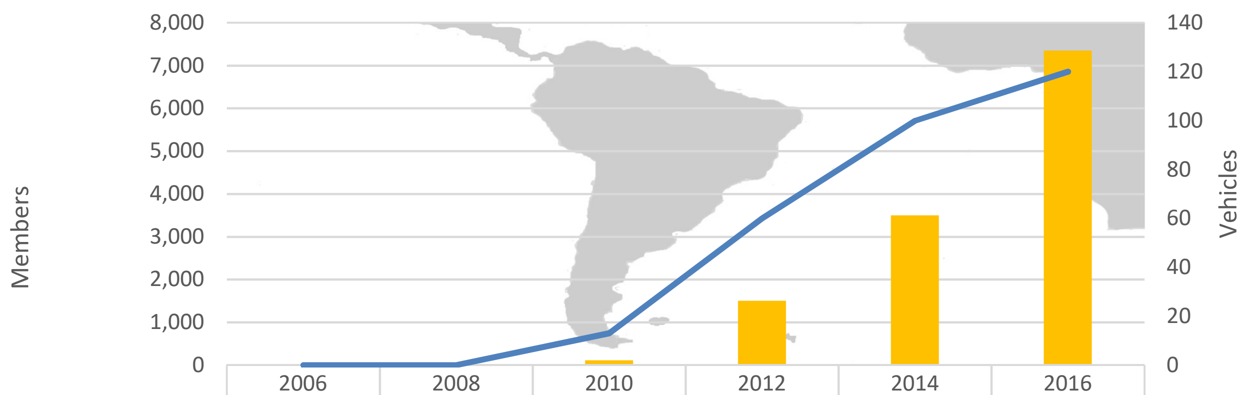
Regional Carsharing Market Trends

North American Trends (n=3)



	2006	2008	2010	2012	2014	2016
Members	117,656	318,898	516,100	908,584	1,625,652	1,837,854
Compound Annual Member Growth Rate (2 yr)	0%	65%	27%	33%	34%	6%
Vehicles	3,337	7,505	10,420	15,795	24,210	26,691
Compound Annual Fleet Growth Rate (2 yr)	0%	50%	18%	23%	24%	5%
Member-Vehicle Ratio	35.3	42.5	49.5	57.5	67.1	68.9

South American Trends (n=2)



	2006	2008	2010	2012	2014	2016
Members	0	0	110	1,500	3,500	7,350
Compound Annual Member Growth Rate (2 yr)	0%	0%	0%	269%	53%	45%
Vehicles	0	0	13	60	100	120
Compound Annual Fleet Growth Rate (2 yr)	0%	0%	0%	115%	29%	10%
Member-Vehicle Ratio	0.0	0.0	8.5	25.0	35.0	61.3

*** Data depict October of each even numbered year. Numbers do not include P2P carsharing. Proxies from reports and media sources were used for two out of three nations surveyed in North America and one out of two nations in South America. "n" denotes the number of countries in each respective region.**

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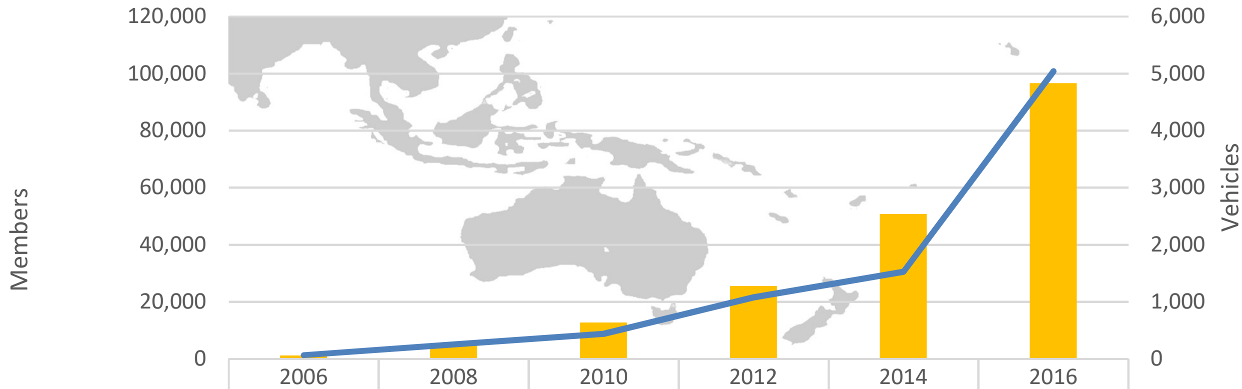
Regional Carsharing Market Trends

Oceania Trends (n=2)



	2006	2008	2010	2012	2014	2016
Members	1,130	5,210	12,750	25,500	50,700	96,600
Compound Annual Member Growth Rate (2 yr)	0%	115%	56%	41%	41%	38%
Vehicles	65	255	440	1,080	1,524	5,040
Compound Annual Fleet Growth Rate (2 yr)	0%	98%	31%	57%	19%	82%
Member-Vehicle Ratio	17.4	20.4	29.0	23.6	33.3	19.2

African Trends (n=2)

	2016
Members	15,100
Compound Annual Fleet Growth Rate (2 yr)	n/a
Vehicles	379
Compound Annual Fleet Growth Rate (2 yr)	n/a
Member-Vehicle Ratio	39.8

*** Data depict October of each even numbered year. Numbers do not include P2P carsharing. Proxies from reports and media sources were used for one out of two nations in Africa. "n" denotes the number of countries in each respective region.**

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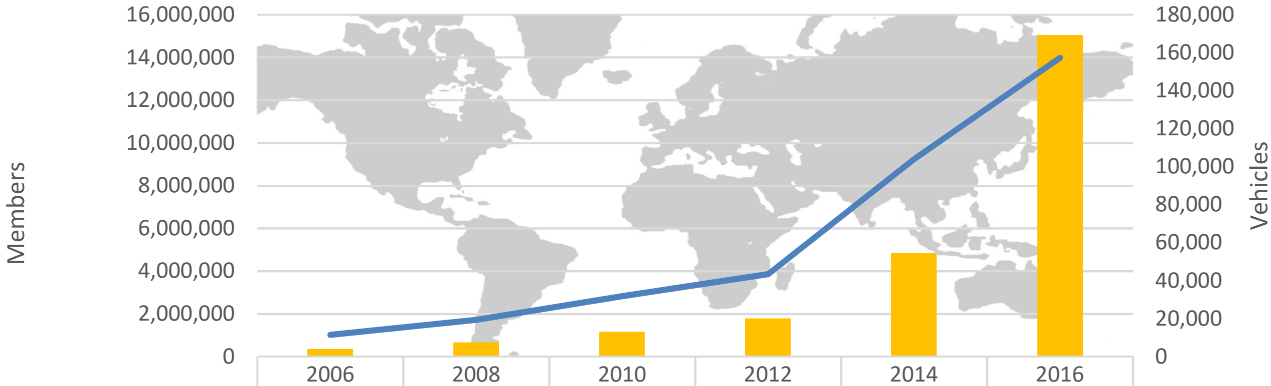
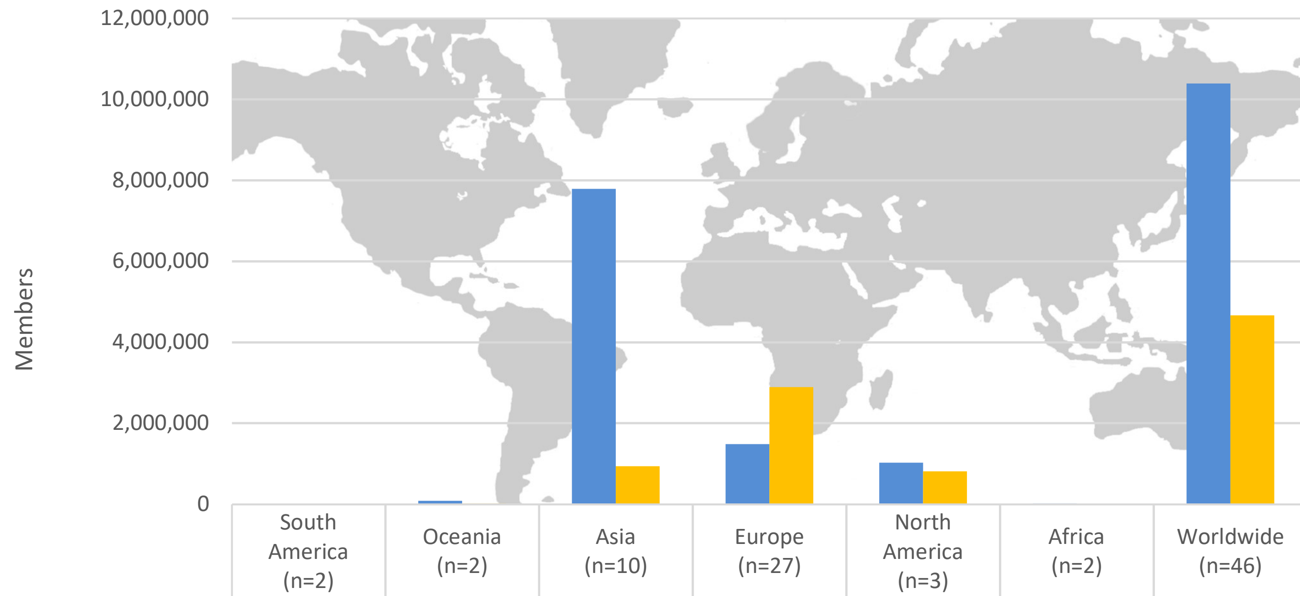
Global Carsharing Market Trends

Global Trends



	2006	2008	2010	2012	2014	2016
Members	346,610	670,822	1,163,645	1,788,027	4,842,616	15,050,192
Compound Annual Member Growth Rate (2 yr)	0%	39%	32%	24%	65%	76%
Vehicles	11,501	19,403	31,967	43,554	104,125	157,416
Compound Annual Fleet Growth Rate (2 yr)	0%	30%	28%	17%	55%	23%
Member-Vehicle Ratio	30.1	34.6	36.4	41.1	46.5	95.6

Global Round-Trip and One-Way Membership Trends



	South America (n=2)	Oceania (n=2)	Asia (n=10)	Europe (n=27)	North America (n=3)	Africa (n=2)	Worldwide (n=46)
Roundtrip Members	7,350	76,600	7,787,138	1,477,846	1,025,414	15,100	10,389,447
One-Way Members	0	20,000	935,000	2,893,305	812,440	0	4,660,745

*** Data depict October of each even numbered year. Numbers do not include P2P carsharing. "n" denotes the number of countries surveyed in each respective region. One-way includes both station-based and free floating models.**

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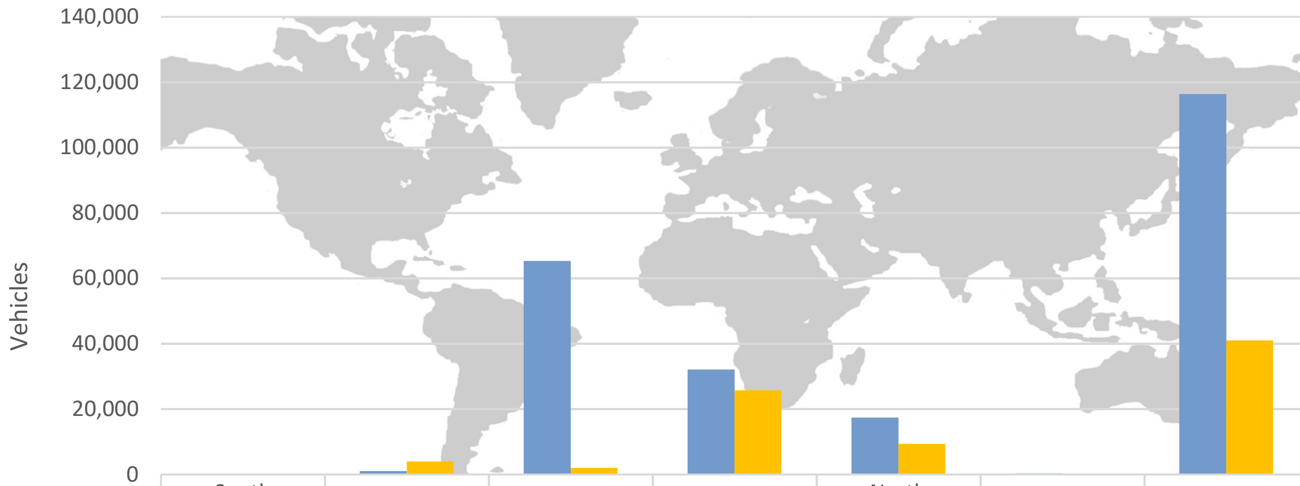
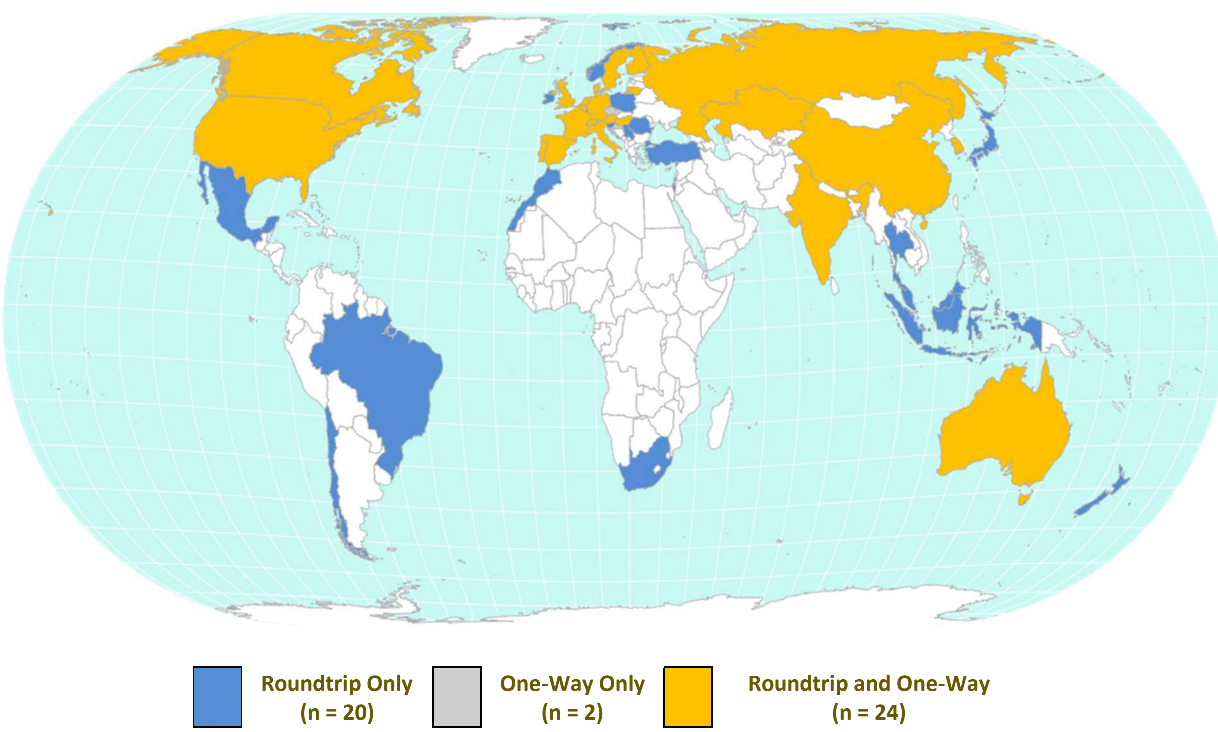
Global Roundtrip and One-Way Fleet Trends



	South America (n=2)	Oceania (n=2)	Asia (n=10)	Europe (n=27)	North America (n=3)	Africa (n=2)	Worldwide (n=46)
Roundtrip Vehicles	120	1,040	65,329	32,124	17,378	379	116,370
One-Way Vehicles	0	4,000	2,000	25,733	9,313	0	41,046

One-Way and Roundtrip Global Carsharing Map



*** Data depict October of each even numbered year. Numbers do not include P2P carsharing. "n" denotes the number of countries surveyed in each respective region. One-way includes both station-based and free floating models.**

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Shaheen, Susan; Bell, Corwin; Cohen, Adam; and Yelchuru, Balaji. 2017. Travel Behavior: Shared Mobility and Transportation Equity. U.S. Department of Transportation. Report # PL-18-007. Available at:
https://www.fhwa.dot.gov/policy/otps/shared_use_mobility_equity_final.pdf

TSRC METHODOLOGY

Data include one-way carsharing unless otherwise stated. Carsharing data exclude personal vehicle sharing numbers except for hybrid peer-to-peer (P2P) carsharing. In hybrid P2P carsharing, individuals access vehicles by joining an organization that maintains its own fleet of vehicles, but it also includes private autos throughout a network of locations. Data include 46 countries: Australia, Austria, Belgium, Brazil, Canada, Chile, China, Croatia, Czech Republic, Denmark, Finland, France, Germany, Hungary, India, Indonesia, Ireland, Israel, Italy, Japan, Kazakhstan, Lithuania, Luxemburg, Malaysia, Mexico, Monaco, Morocco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Serbia, Singapore, Slovenia, South Africa, Spain, South Korea, Sweden, Switzerland, Thailand, Turkey, United Kingdom, and the United States.

Worldwide member-vehicle numbers are collected through expert estimates and industry benchmarking through national and regional carsharing associations. In select circumstances, the authors augment data provided by national associations with data from large, nonmember operators to obtain a more accurate estimate. In North America and in smaller markets with a limited number of operators, the authors collect member/vehicle data from each organization. Note, there may be inconsistencies with a few data points compared to prior publications due to updated numbers provided by experts after publication. In several cases, proxies were used employing publicly available data sources.

TSRC never releases disaggregated data without the express permission of the respective operator(s). The authors would like to thank all of the worldwide operators, experts, and associations who provide member-vehicle numbers, other data, and feedback. Data and insights from this outlook should be attributed to TSRC, UC Berkeley. For more detailed market analyses (e.g., longitudinal U.S. and Canadian growth numbers), please see www.imr.berkeley.edu.

TSRC Shared Mobility Research Team

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ABOUT TSRC

The Transportation Sustainability Research Center (TSRC) was formed in 2006. TSRC is managed by the Institute of Transportation Studies of the University of California, Berkeley. It is headquartered at Berkeley's Global Campus at Richmond Bay.

TSRC uses a wide range of analysis and evaluation tools including: questionnaires, interviews, focus groups, automated data collection systems, GIS, and simulation models to collect data, perform analyses, and interpret data. The center develops impartial findings and recommendations for key issues of interest to industry and policy makers to aid in decision making. TSRC has assisted in developing and implementing major California and federal regulations and initiatives regarding sustainable transportation including: zero emission vehicle credits for carsharing vehicles as part of the Zero Emission Vehicle (ZEV) Mandate in California, the California Global Warming Solutions Act (AB 32), the Low Emission Vehicle Program, the California Clean Cars Program (AB 1493), Low Carbon Fuel Standards policies, Sustainable Communities and Climate Protection Act (SB 375), and the federal Energy Independence and Security Act of 2007.

INNOVATIVE MOBILITY CARSHARING OUTLOOK

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