

Neues aus der Forschung zu Lastenrad- Sharing



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Dr. Sophia Becker

sophia.becker@iass-potsdam.de

Forum Freie Lastenräder

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 FORUM FREIE LASTENRÄDER

[@sophia_becker](https://www.instagram.com/sophia_becker)



Was bisher geschah....

- Das Netzwerk aus Lastenrad-Verleihstationen des FFL ist weltweit einzigartig.
- Weltweit ca. 700-1000 konventionelle Bikesharing-Systeme installiert, davon nur ca. 8-10 mit Lastenrädern PLUS die ca. 65 FFL-Anbieter.
- Viele Studien zu den Effekten von konventionellem Bikesharing: direkter Reduktionseffekt von Pkw-Fahrten liegt bei ca. 7-19% (Fishman et al., 2013); trotzdem ist in Städten wie Berlin auch eine Verlagerung von ÖV zu Rad gut.
- Was ist der Verlagerungseffekt von Lastenrad-Sharing?
- Gemeinsam entwickelte Studie FFL und IASS Potsdam & Uni Stuttgart Reallabor
- = die erste wissenschaftliche Studie mit repräsentativer Stichprobengröße (N=931) zu den Verhaltens- und Umwelteffekten von Lastenrad-Sharing



ARTS-BASED RESEARCH FOR SUSTAINABLE MOBILITY
SHARED CARGO BIKES FOR SUSTAINABLE MOBILITY
RESEARCHERS' ROLES IN REAL-WORLD SUSTAINABLE MOBILITY



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Exploring the Potential of Free Cargo-Bikesharing for Sustainable Mobility

Sophie Becker, Clemens Radtzig

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Abstract
Shifting user behavior from private car use to low carbon mobility modes is a crucial factor in the transition to sustainable cities. A cooperative network of 46 Free Cargo-Bikesharing operators (Free Lastenräder) with 9,750 registered users has grown rapidly within the last four years in Germany and Austria. However, little is known about the characteristics and usage behavior of these early adopters. Moreover, we still lack even a rough estimate of the ecological impact of cargo-bikesharing. In order to address these questions, we conducted an empirical survey among users (n = 101) in a cross-disciplinary cooperation with 10 Free Cargo-Bikesharing operators. Results show that 46 percent of respondents maintain that they would have made the trip by car in the absence of a cargo-bikesharing operator, indicating the high potential of cargo-bikesharing to reduce car usage. We recommend that municipal policymakers support cargo-bikesharing in two ways: 1. by complementing existing bikesharing systems with cargo bikes, and 2. by supporting local initiatives for citizens' engagement in cargo-bikesharing.

Keywords
cargo bikes, cargo-bikesharing, mobility behavior, shared mobility, sustainable urban mobility

Contact: Dr. Sophie Becker | Institute for Advanced Sustainability Studies e.V. (IAOSS) | European Project Navigator | Eye on (for the Energy Transition) | Berlin, DE 130 | 5462 | Potsdam | Germany | Tel.: +49 331 2822414 | E-Mail: sophie.becker@eppn.eu
Clemens Radtzig | University of Stuttgart | Social Research at the Institute for Technology Management | Stuttgart | Germany | E-Mail: clemens.radtzig@posteo.de
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has not been conducted to date. Consequently, local governments lack guidance on whether they should support these initiatives – or whether they should even consider setting up cargo-bikesharing schemes themselves.

Our aim is to provide fundamental knowledge about the bottom-up mobility innovation of Free Cargo-Bikesharing and to explore its potential for sustainable urban mobility. To this end, we first describe the concept of Free Cargo-Bikesharing. We then present current developments and report on the findings of a quantitative survey (n = 931) of Free Cargo-Bikesharing users. Finally, we draw conclusions from our data and make policy recommendations.

Evolution and Concept of Cargo-Bikesharing Systems

The current systems of Free Cargo-Bikesharing emerged around 50 years after the first classic-bikesharing system (Shahreen et al. 2010). However, the history of cargo bikes as a means of transport actually dates back to the beginning of the 20th century (Ghebresegaheber and Poetha-Milka 2018). They were especially popular from

the 1920s through to the 1950s (for postal delivery and among small businesses (Bauerfeld 2011)).

In general, a cargo bike (also known as a trampoline bike, bucket, carrier cycle, box bike) is a bicycle designed and constructed specifically for transporting loads and children. Cargo bikes are available in different shapes (e.g., three-wheeled, two-wheeled), sizes, and fit-outs such as electric, pedal-assist systems (Figure 1). In this study we also focus large bicycle trailers² as cargo bikes because they serve the same purpose of transporting loads and they are offered by some of the Free Cargo-Bikesharing operators.

Several developments have fostered the recent resurgence of the cargo bike as an emission-free³ means of transport: the envi-

1 In addition, the recent decision of the Federal Administrative Court to allow bans to be imposed on older diesel cars in cities will increase the pressure to find acceptable alternatives to car transportation.
2 These trailers are big "cargo" trailers such as the model Cargo Cargo, two conventional trailers with seats for transport children.
3 In this study, electric cargo bikes are considered "emission-free" vehicles, because the vast majority of the Free Cargo-Bikesharing operators use renewable energy to charge the electric cargo bikes. For a more detailed discussion of electric bikes and their environmental impacts see Wachowicz et al. (2014).

FIGURE 1 Free cargo bikes in Stuttgart, Germany. In the center, one of the most common models of cargo bikes – a two-wheeled cargo bike (in combination with an additional trailer); to the left, a three-wheeled cargo bike with an orange box.

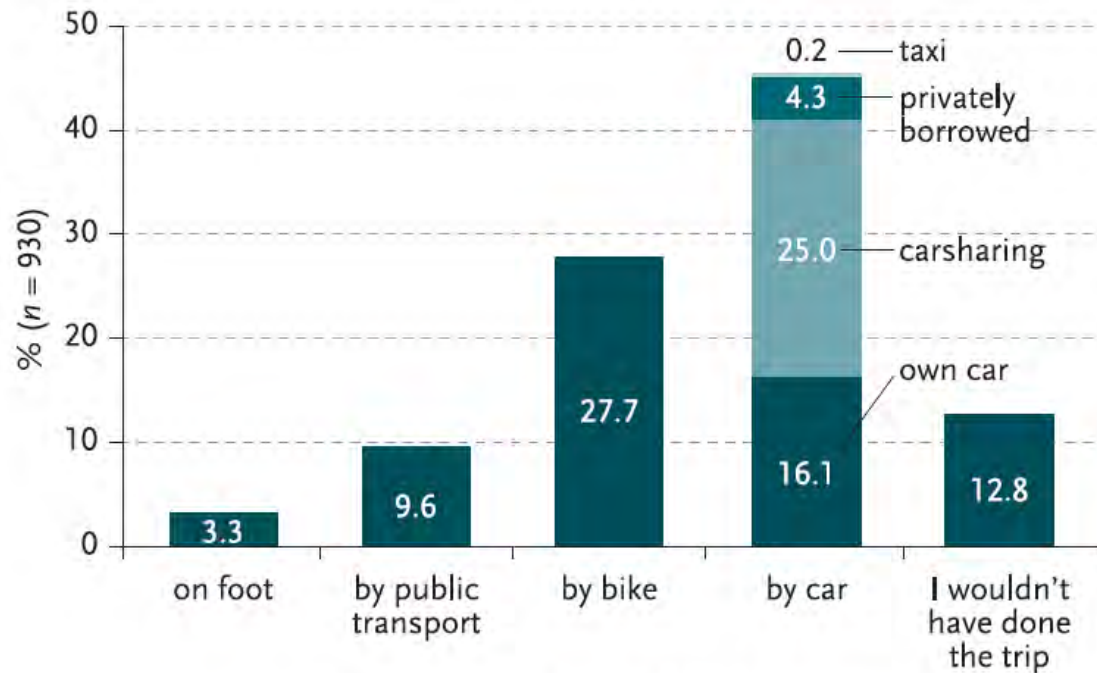


TABLE 1: Quantitative overview of the participating *Free Cargo-Bikesharing* operators and number of survey respondents as of 31 December 2016. Source: own data collection via direct contact with the respective operators.

CITY	NAME OF THE FREE CARGO-BIKESHARING OPERATOR	REGISTERED USERS	SURVEY PARTICIPANTS	CARGO BIKES (TOTAL)	ELECTRIC CARGO BIKES	2-WHEELED CARGO BIKES	3-WHEELED CARGO BIKES	TRAILERS
Hannover	Hannah	1,360	214	13	6	12	1	0
Cologne	Kasimir	1,062	94	5	0	3	2	0
Munich	Freie Lastenradler	718	106	9	2	5	4	0
Hamburg	Klara	675	48	1	0	1	0	0
Vienna	Lastenrad-Kollektiv	500 ^a	34	16	0	9	2	5
Stuttgart	Freies Lastenrad	462	91	6	5	4	1	1
Berlin	Freie Lastenradler	354	39	3	0	1	2	0
Freiburg	LastenVel	347	43	5	0	3	2	0
Dresden	Freie und Freie	192	45	4	1	3	1	0
Düsseldorf	Schulz Müllers	121	28	2	0	1	1	0
Bonn	Bolle	120 ^a	27	1	0	0	0	1
Ruhr Area	Rudolf	119	29	3	0	2	1	0
Münster	Lasse	106	39	1	1	1	0	0
16 other cities	17 other operators^b	1,664^a	94	30	15	14	12	4
29	30	7,600^a	n = 931	99	29	59	29	11
	16 non-participating operators	2,150 ^a		35	11	unknown	unknown	unknown
		total: 9,750		134	40			

a. partially estimated numbers (source: the respective operators) | b. n < 27 survey participants each

Hoher Autoreduktionseffekt



“In the absence of a cargo-bikesharing service, how would you have made your trip?”

46% der NutzerInnen hätten ein Auto genutzt, wenn es keinen Lastenrad-Verleih gegeben hätte!

Hoher Bedarf an Sharing (Nutzen statt Besitzen)

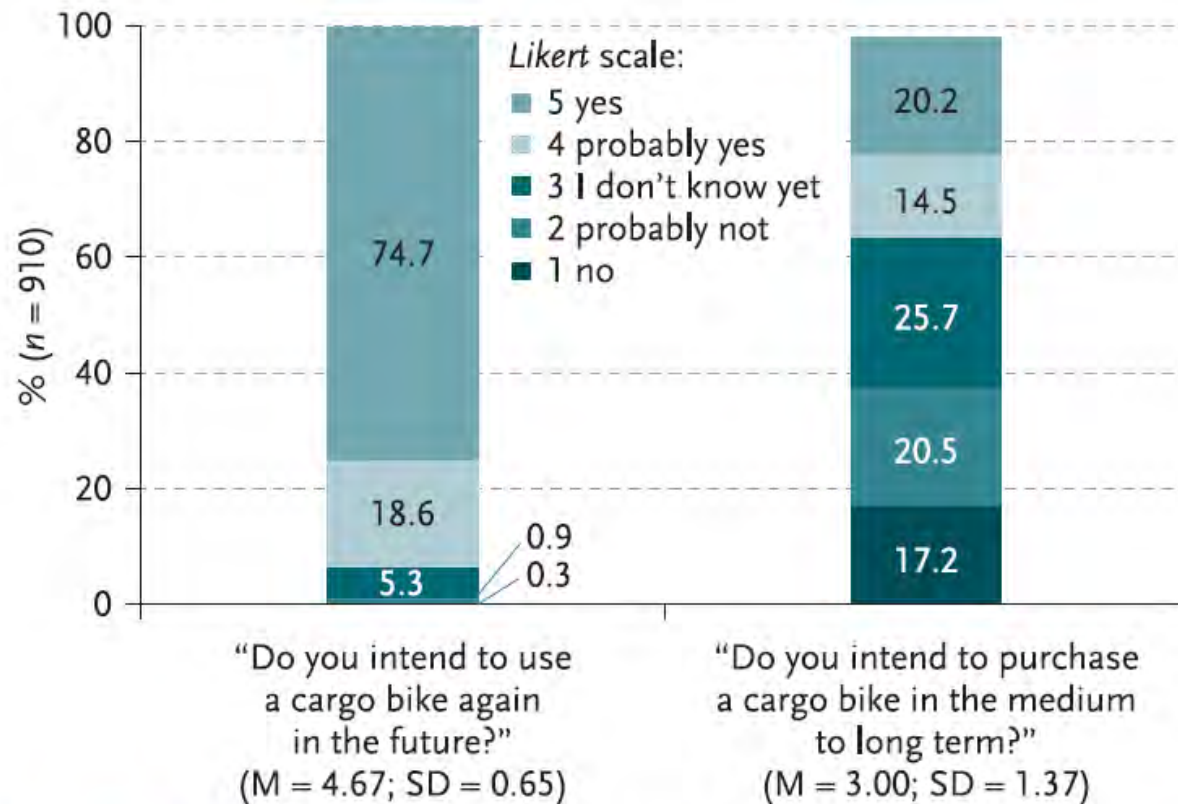
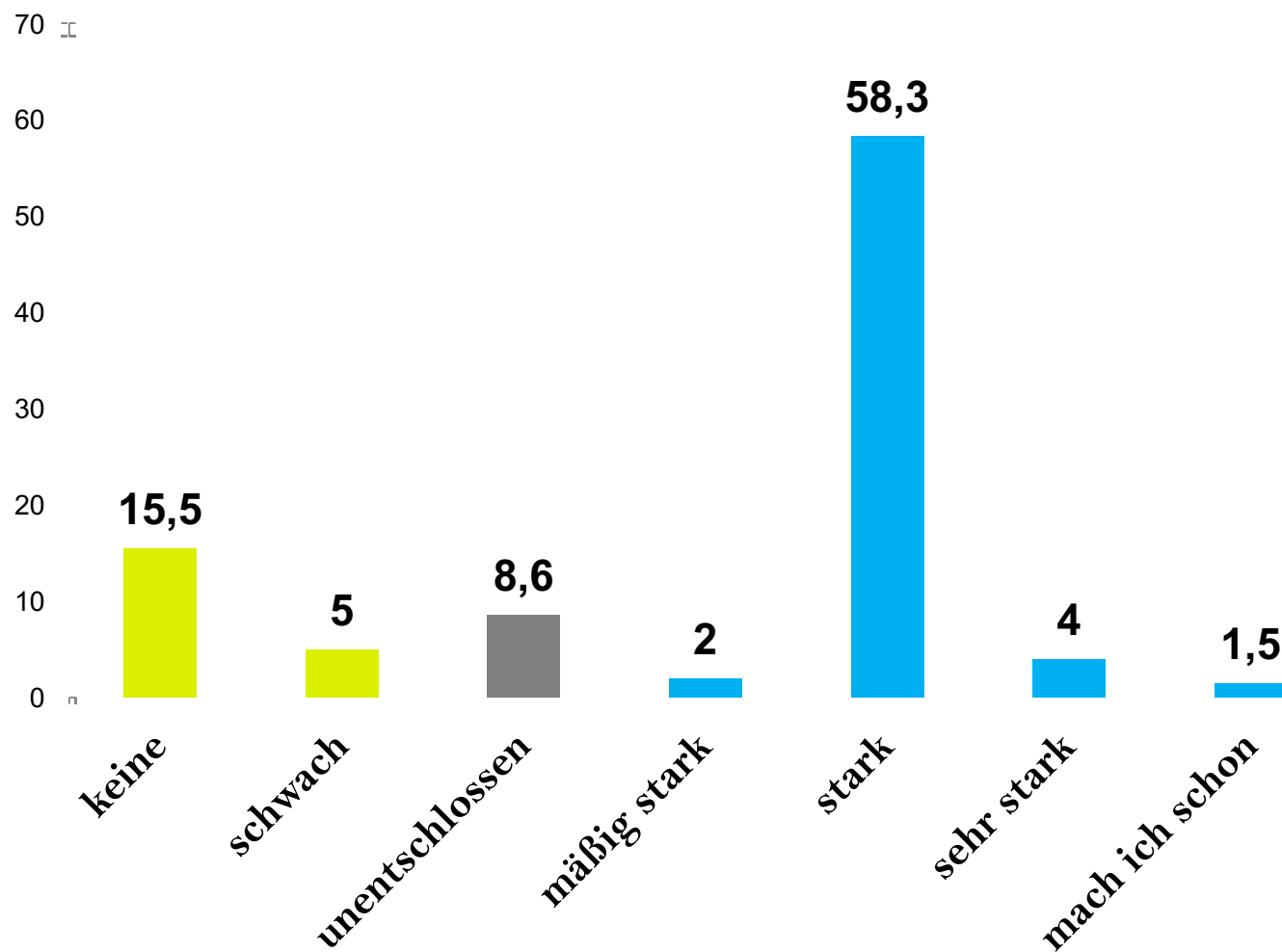


FIGURE 4: Usage intentions compared to purchase intentions for cargo bikes

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Stärke der
Intention sich
selbst im
Lastenrad-Sharing
zu engagieren

(n=884)

In Prozent

Unter welchen Bedingungen würdest du mitmachen?

Ich würde mitmachen, wenn sich der Aufwand in Grenzen hält	16
Ich hab keine Zeit dafür	12
Ich nutze das Lastenrad nur gelegentlich, und deswegen lohnt es sich für mich nicht, mich stärker zu engagieren	10
Ich würde mitmachen, wenn es mehr Abstellflächen gäbe (Platzmangel im Innenhof, Frage wo Lastenrad im öff. Raum sicher abgestellt werden kann)	9
Würde nur teilweise helfen wollen (z.B. nur Wartung, oder nur Organisation)	9
Macht nicht mit, weil er/sie sich nicht vorstellen kann, dass das in der eigenen Gegend funktionieren würde	7
Macht nicht mit, weil er/sie schon ein eigenes besitzt	7
Ich habe Angst, dass ich bei unzuverlässigen Mitnutzern zu viel Risiko tragen muss	8
Ich würde mitmachen, wenn das Lastenrad nur in der eigenen Nachbarschaft ausleihbar wäre	6

Wie geht's weiter?

1. Englischsprachige Fachbroschüre für das Umweltbundesamt (open access, online), als Folge der „International Cycling Conference“, Sept. 2017 Mannheim:

„Status Quo of Cargo-Bikesharing in Germany, Austria and Switzerland“

- Zahlen zum Bestand an Lastenrad-Verleihsystemen
- Typen von Ausleihsystemen
- Technologie: 2-Rad vs. 3-Rad vs. Anhänger; mit Motor vs. ohne Motor
- Nutzerkreis
- Soziale Effekte
- Herausforderungen und Schwierigkeiten des Lastenrad-Sharings

2. Forschungsprojektantrag EXPERI: Die Verkehrswende als sozial-ökologisches Realexperiment - Kooperationsmöglichkeiten

3. Eine zweite gemeinsame Studie? Wenn ja, wer macht mit und was wären für euch interessante Fragestellungen?

Literatur

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Kodierung der Intensionsstärke

Intensionsstärke	Wortwahl	Code
Sehr stark	Auf jeden Fall; Sehr gern; Ja !!!; Oh ja!; Definitiv; Absolut; Unbedingt; Super gern	6
Stark	Ja; Logo; Klar!	5
Mäßig stark	Wahrscheinlich; Das wäre eine gute Idee Grundsätzlich ja; Eher ja; Warum nicht; Joa	4
Mittel / unentschlossen	Vielleicht; Eventuell; Ich weiß nicht; Kommt drauf an; Jein	3
Schwach	Eher nicht; Nicht unbedingt; Schwierig; Weniger; Zur Zeit leider nein; Im Moment nicht;	2
keine	Nein; Auf keinen Fall; Nö	1