

Bridging the map? Exploring interactions between academic and mapping communities in OSM

An introduction to the Academic Track of State of the Map 2019
The Scientific Committee

Yair Grinberger, Marco Minghini, Peter Mooney, Levente Juhász, Godwin Yeboah

The Academic Track

- **2nd edition** of the track: 20 contributions accepted (18 talks & 6 posters)
- Ranging across **disciplines & topics**:
 - civil engineering, computer science, earth sciences, geography, GIScience, industry, etc.
 - contribution patterns, OSM effects, applications, the OSM community, data quality, etc.

09:00	<u>Bridging the Map? Exploring Interactions between the Academic and Mapping Communities in OpenStreetMap</u> A. Yair Grinberger, Marco Minghini, Levente Juhász, Peter Mooney, Godwin Yeboah
09:30	<u>Lightning Poster Talks</u> Various authors
10:00	<u>Analysis of OSM data through OSM-Notes user posting</u> Toshikazu Seto, Hiroshi Kanasugi, Yuichiro Nishimura
10:30	<u>A novel application of models of species abundance to better understand OpenStreetMap Community structure and interactions</u> Peter Mooney
11:00	Coffee break
11:30	 <u>Towards Scalable Geospatial Remote Sensing for Efficient OSM Labeling</u> Rui Zhang, Marcus Freitag, Conrad Albrecht, Siyuan Lu, Wei Zhang
12:00	<u>Estimating latent energy demand of buildings</u> Nikola Mijovic-Dupont, Peter-Paul Pichler, Lynn H. Kaack, Steffen Lohrey, Felix Creutzig
12:30	<u>Client-side route planning: preprocessing the OpenStreetMap road network for Routable Tiles</u> Harm Delva, Julián Andrés Rojas Meléndez, Ben Abelshausen, Pieter Colpaert, Ruben Verborgh

14:00	<u>Intrinsic assessment of OpenStreetMap contribution patterns through Exploratory Spatial Data Analysis</u> Marco Minghini, Daniele Oxoli, Francesco Frassinelli, Maria Antonia Brovelli
14:30	<u>Corporate Editors in the Evolving Landscape of OpenStreetMap: A Close Investigation of the Impact to the Map & Community</u> Jennings Anderson, Dipto Sarkar, Leysia Palen
15:00	<u>Exploring the Effects of Pokémon Go Vandalism on OpenStreetMap</u> Levente Juhász, Hartwig Hochmaier, Sen Qiao, Tessio Novack
15:30	<u>Analyzing the spatio-temporal patterns and impacts of large-scale data production events in OpenStreetMap</u> A. Yair Grinberger, Moritz Schott, Martin Raifer, Rafael Troilo, Alexander Zipf
16:00	Coffee break
16:30	<u>Development after Displacement: Using OSM data to measure SDG indicators at informal settlements</u> Jamon Van Den Hoek, Hannah Friedrich, Anna Ballasiotes, David Wrathall
17:00	<u>Analysis of OpenStreetMap data quality at different stages of a participatory mapping process: Evidence from informal urban settings</u> Godwin Yeboah, Rafael Troilo, Vangelis Pitidis, João Porto de Albuquerque
17:30	<u>Assessing the Completeness of Urban Green Spaces in OpenStreetMap</u> Christina Ludwig, Robert Hecht, Sven Lautenbach

Bridging the Map

- **OSM research community:**
 - Has a stable base
 - Very diverse
 - Still developing
- **Integration into the OSM community:**
 - OSM-Science list since January 2017
 - The Academic Track
- Integration also happens in other manners
- This talk studies the extent of this and its effects

	2018	2019
Submissions	36	41
Accepted abstracts	12 talks + 10 posters	18 talks + 6 posters
Total number of authors	62	70
Abstracts with co-authors from more than one country	5 (22%)	9 (45%)
Total number of countries	15	12
Authors contributing both in 2018 and 2019	12	

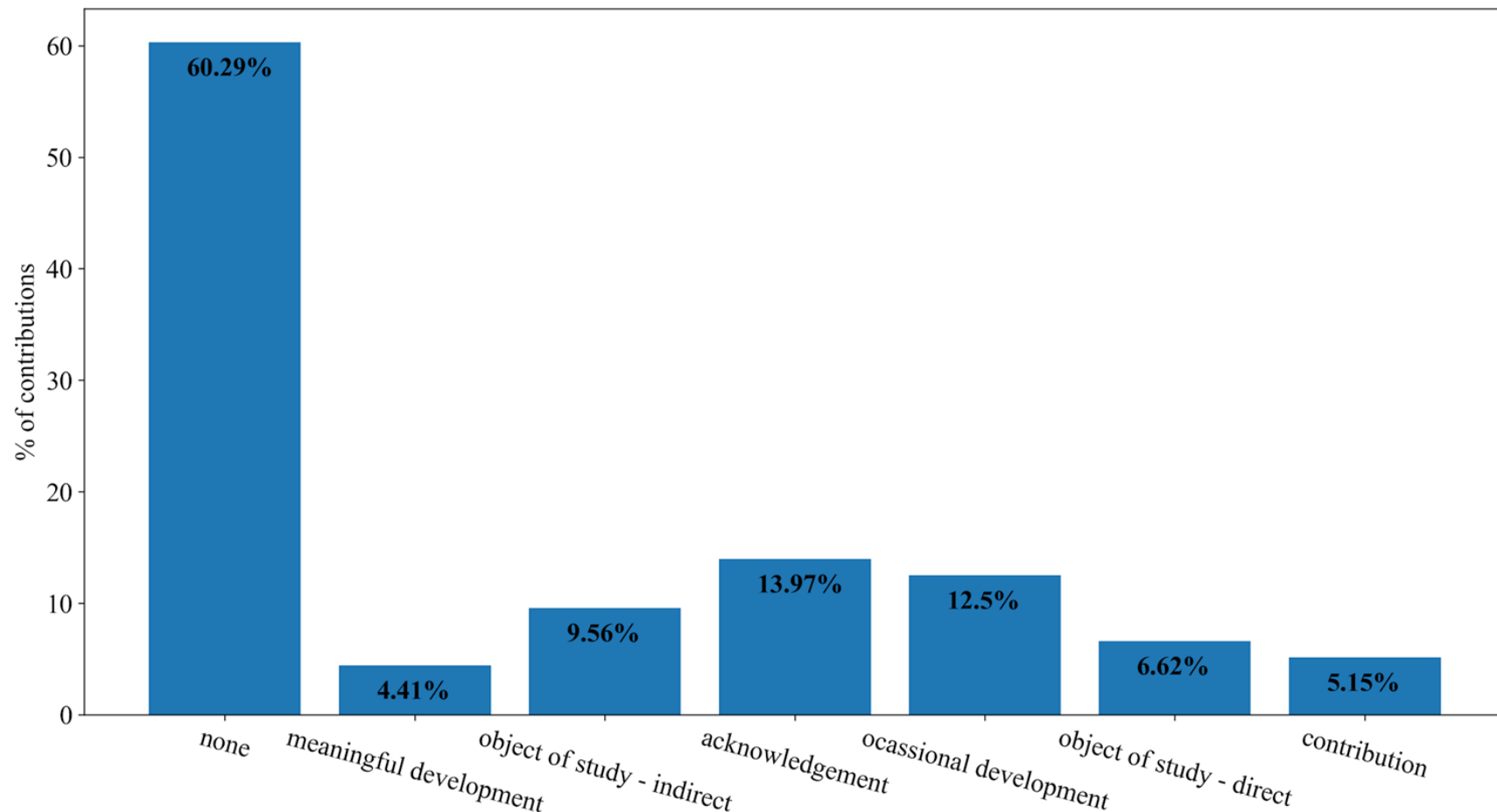
Community engagement and OSM research

- The positivist notion of the researcher's objectivity is contested today
- **Scientific knowledge** is seen to be:
 - Value-laden (Khun, 1962)
 - Constructed through interactions (Latour & Woolgar, 1979)
- OSM is open to different levels of interaction
- This makes OSM to susceptible to various **scientific interpretations**
- **Research questions:**
 - In which manners does OSM research engages with OSM?
 - What are the relations between engagement and conceptualizations of OSM?
 - How do engagement and perspective affect OSM research?
 - Where, when, and how should OSM research seek engagement with the mapping community?

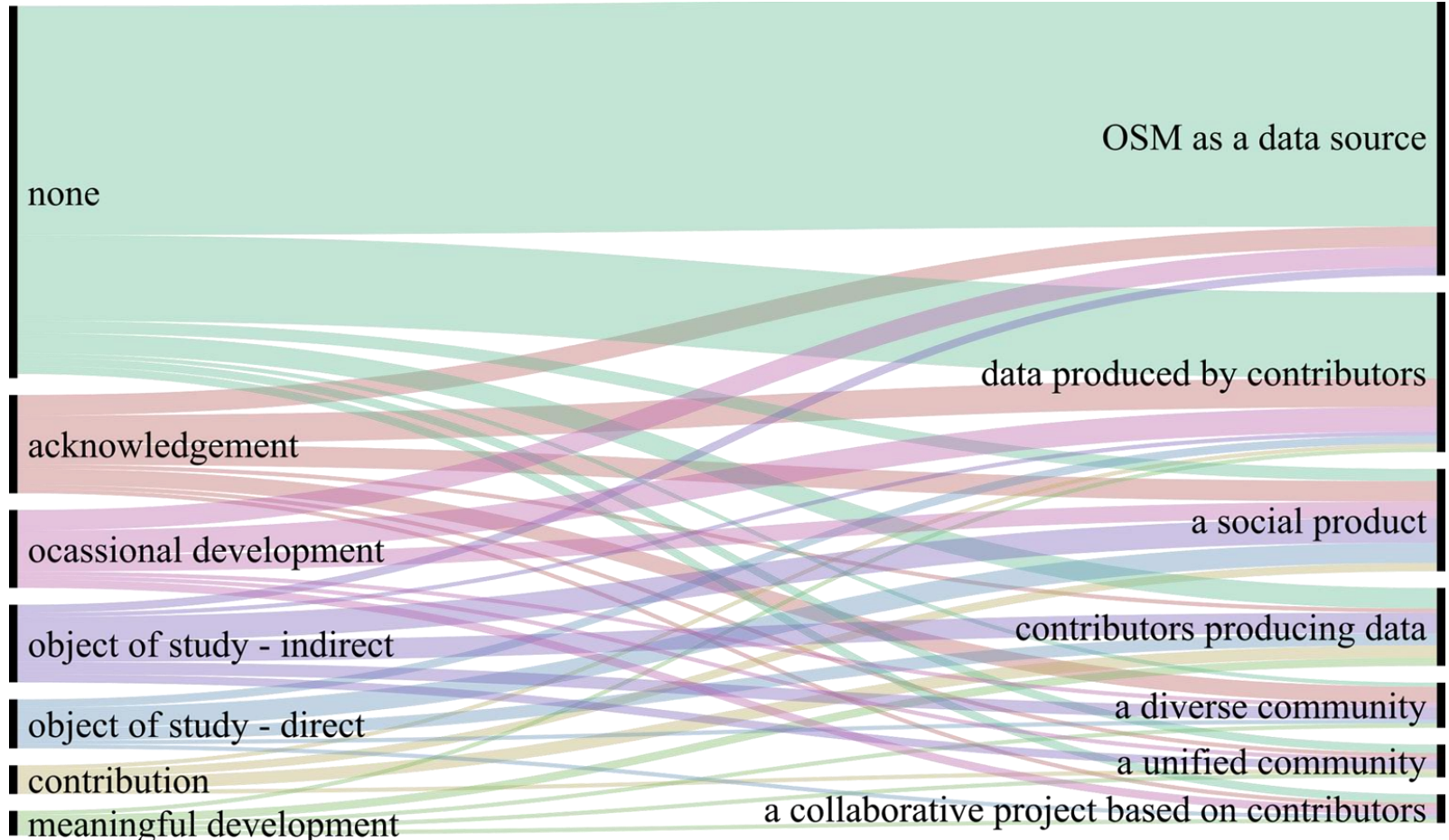
Method and Data

- **Paper review:**
 - Collection of 181 publications from 2016-2019 containing the words *OpenStreetMap* or *OSM* in the title
 - Manual classification of 136 items across multiple categories
- **Authors' self-reflections** on their personal experiences
- **10 interviews** of researchers using/relating to OSM in their studies:
 - Conceptualization of OSM
 - OSM research and interaction history
 - Views towards the future

How does research engage with OSM?

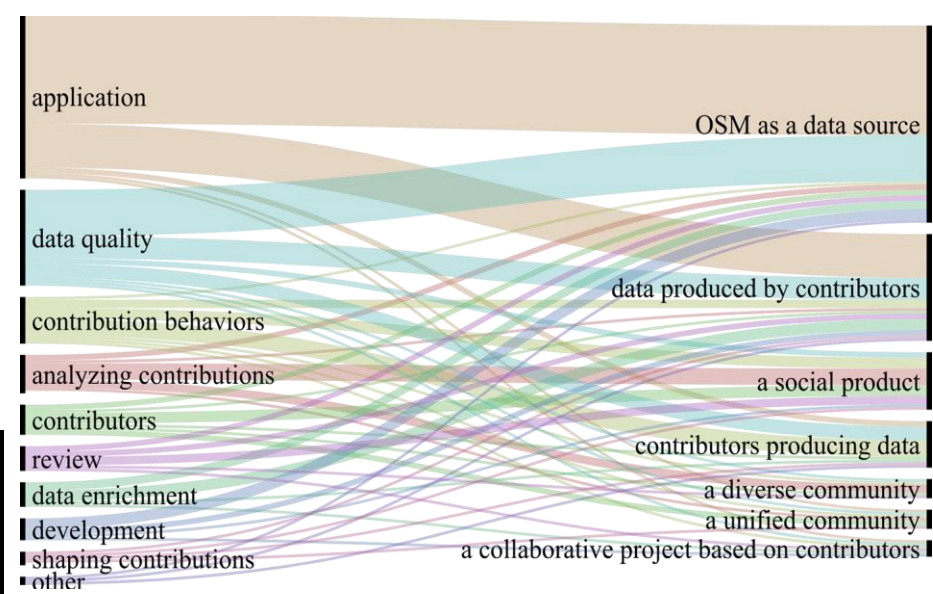
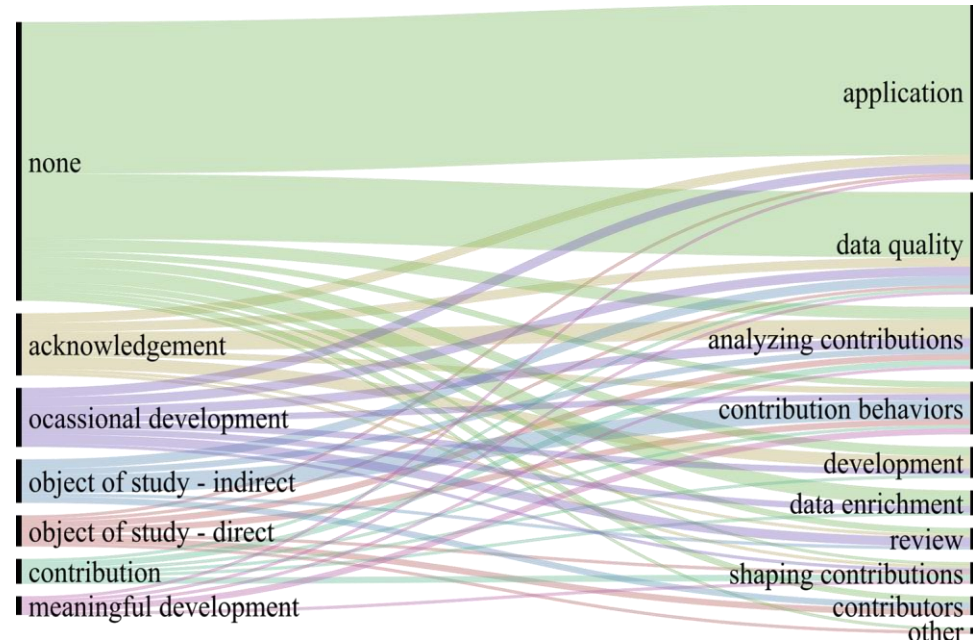


Engagement and Conceptualization





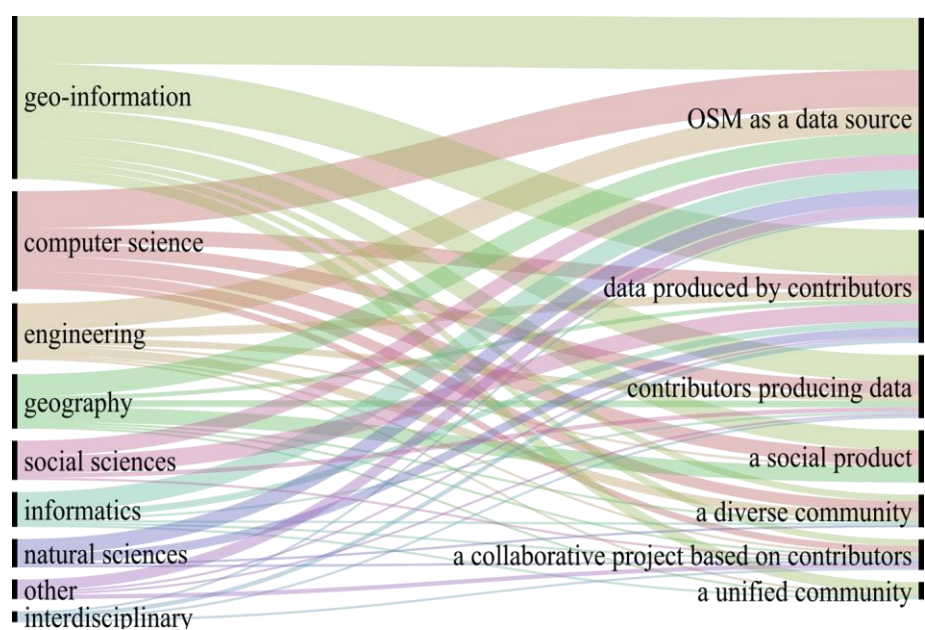
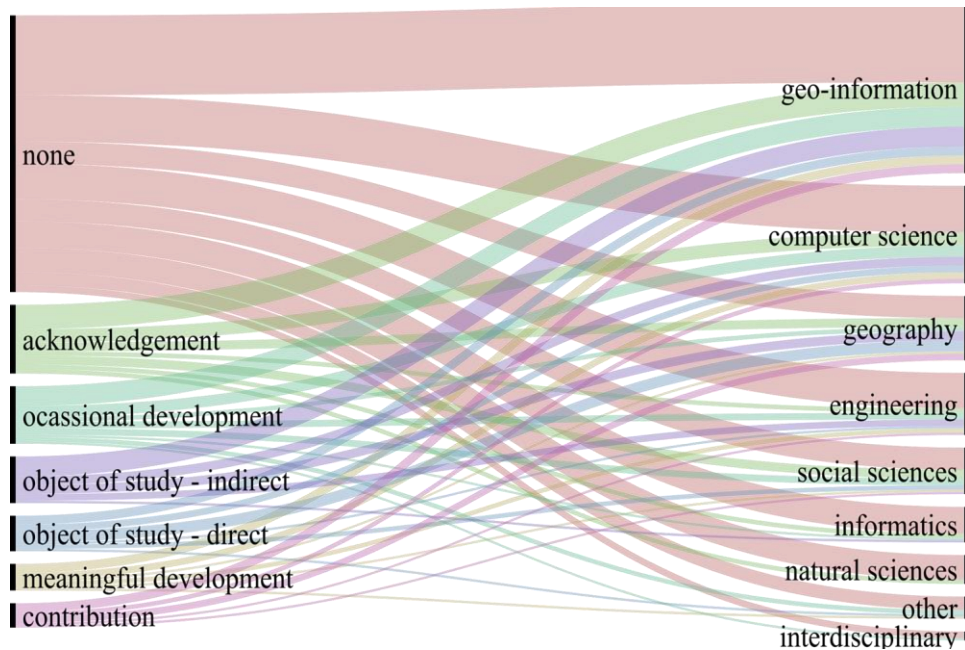
Engagement , perspectives, research



- Application and data quality \Leftrightarrow no engagement/data-centric view
- Behavior, contributions, contributors \Leftrightarrow engagement/contributors/community
- Data enrichment \Leftrightarrow no engagement

Place for engagement

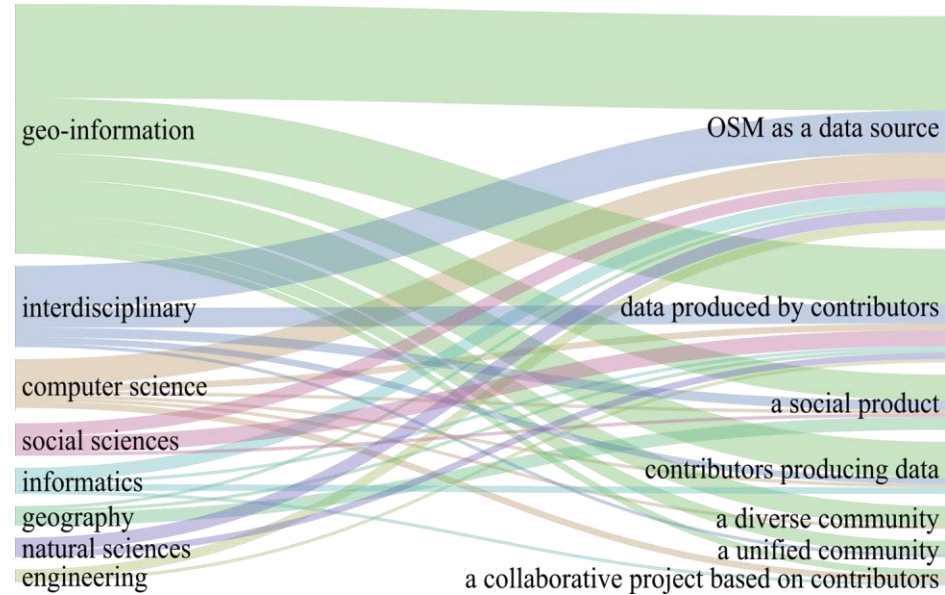
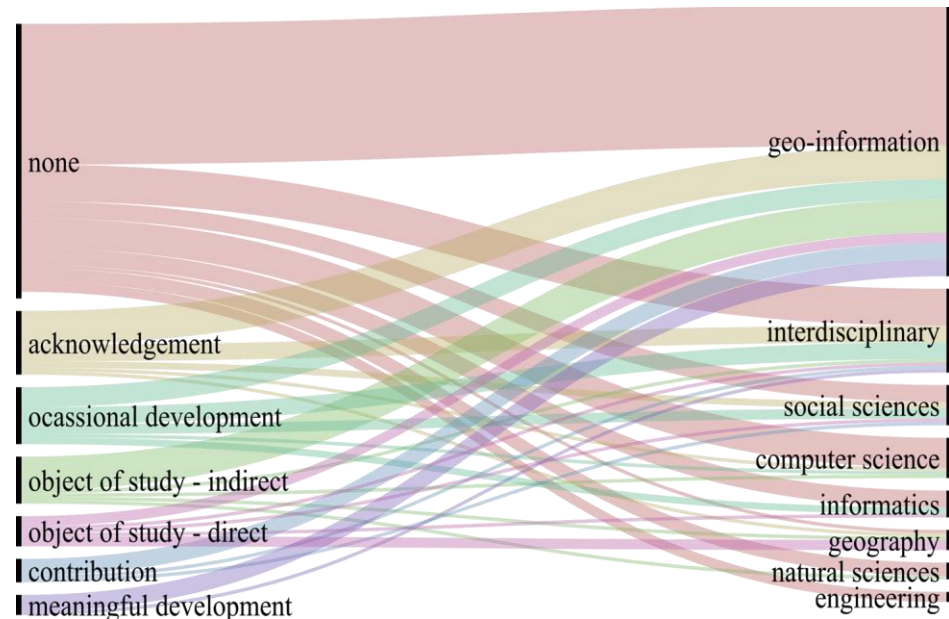
(Authors' disciplines)



- **Engagement:**
 - Evident in more “social” fields
 - **Exceptions** - geo-information, computer science
- **Perspective:** not conclusive

Place for engagement

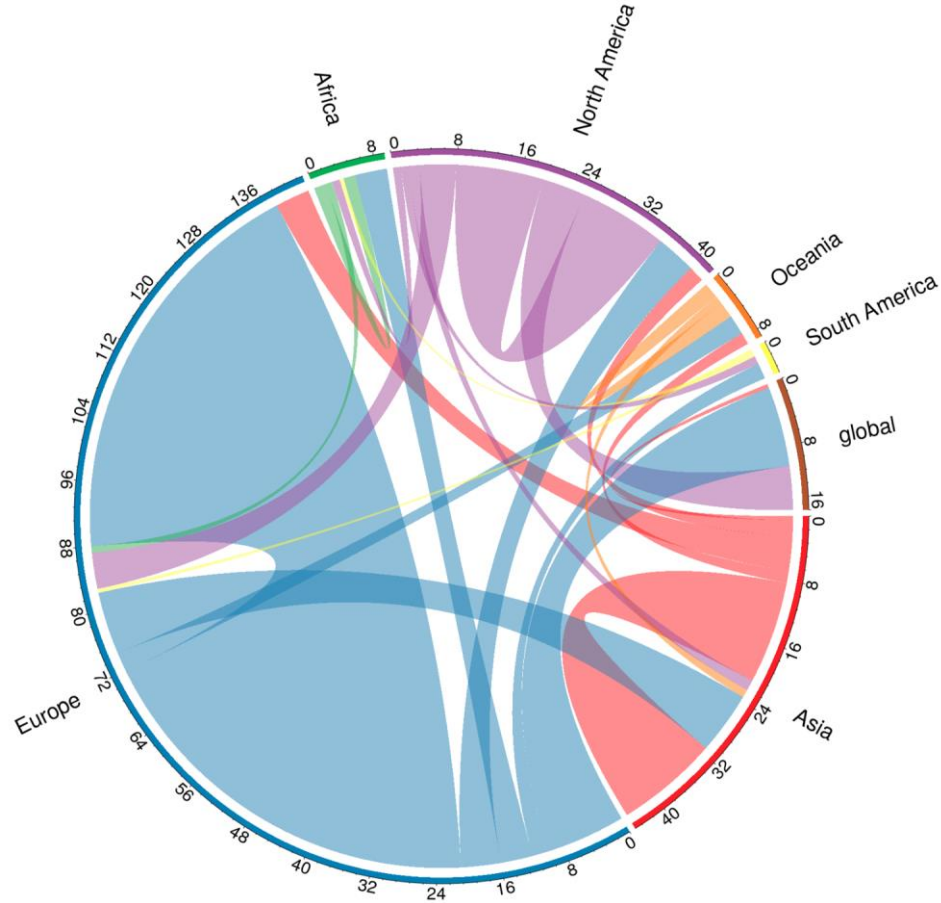
(Journals' disciplines)



- **Engagement:**
 - Similar to authors' disciplines
 - **Exception:** computer science
- **Perspective:**
 - Geography \leftrightarrow social product
 - Informatics/nat. sciences/eng. \leftrightarrow data centric perspectives

Place for engagement

(Authors' origins and study areas)



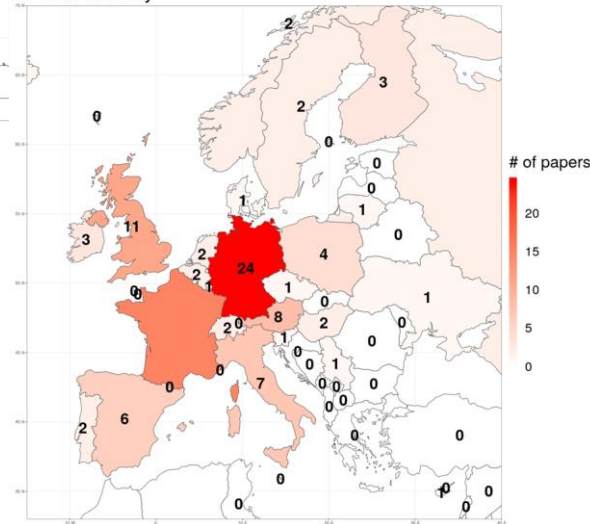
Place for engagement (Study areas)

	Study area	#of papers
1	Germany	24
2	global	16
3	France	15
4	not applicable	15
5	USA	13

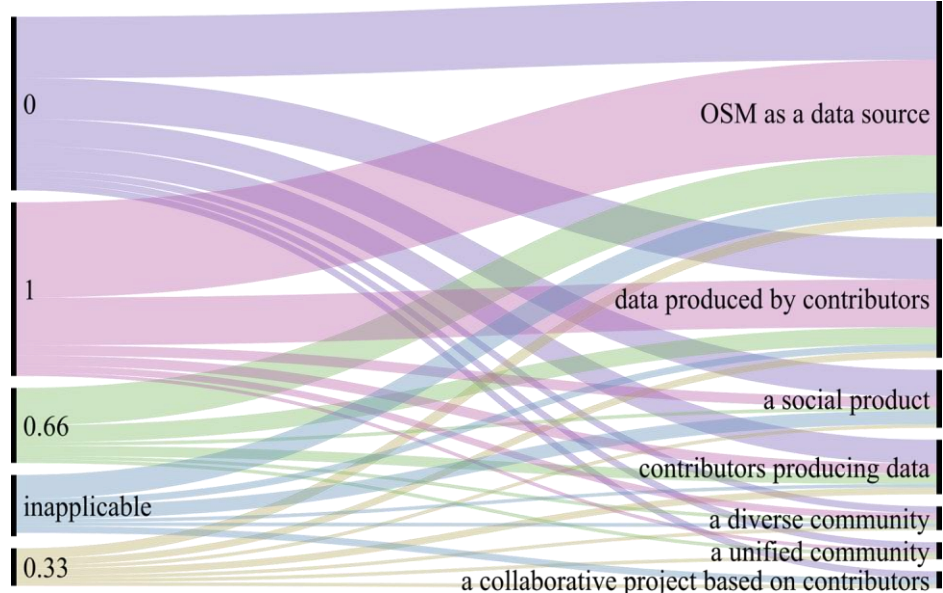
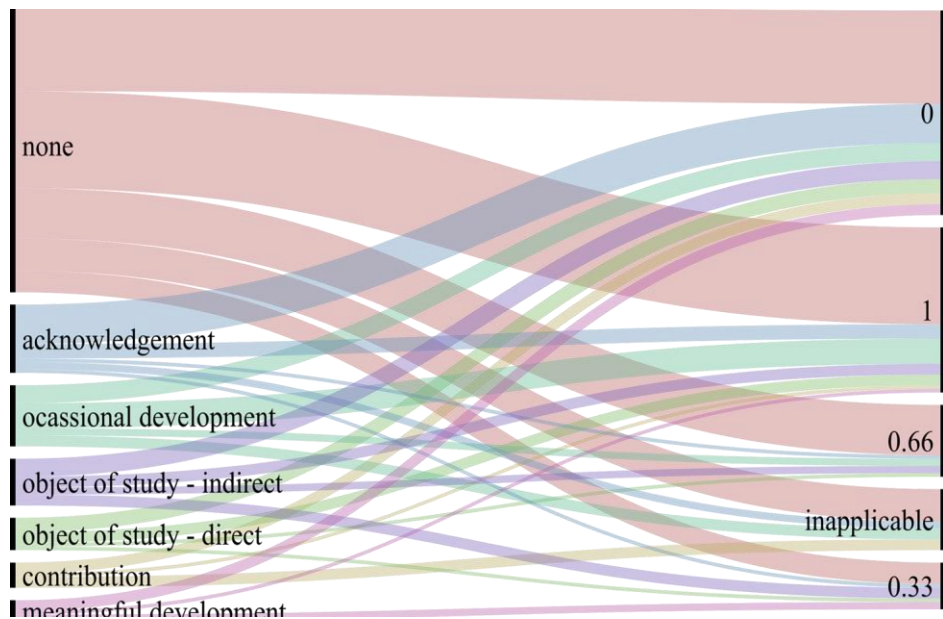
Focus of study



Focus of study



Place for engagement (Geographical relations)



- Most cases – **away (0) or at home (1)**
- Engagement - nothing conclusive
- Perspective:**
 - Data-centric perspective more dominant
“closer to home” (0.66+1)

Digging deeper into engagement

- **Personal reflections and interviews** as a means towards causality
- Initial insights:
 - More **engagement** => more complex **understanding**:
 - OSM Academic - potentially limited understanding
 - Academic to Mapper - developing understanding
 - Mapper to Academic - rich understanding
 - **First contact** is important in shaping view of the community
 - Contacts shape **engagement** and feedback loops
 - **Dual personalities** – how consciously does each 'role' affects the other? And to what extent?
 - Less engagement => greater openness for significant modifications of OSM

Conclusions - Paths for bridging the map?

- OSM is perceived and engaged in multiple ways, most cases - in the simplest manner.
- Evidence for **meaningful relations**:
 - Topics and engagement
 - Academic background and engagement/perspective
 - The orientation of publication outlets adversely affecting communication?
 - Geographical relations and engagement
 - First contact and engagement
- Engagement affects critical review of OSM assumptions?
- Where can OSM research **improve**:
 - Work **outside comfort zones** – geographically and discipline-wise
 - **Raising awareness** to the complexity of OSM in more technical fields
 - Increasing **communication with the mapping community**
 - Studying **mapping community views** on research

Communicating our results



- SotM 2019 **Academic Track Proceedings**:
 - Fitting with scientific standards
 - Openly accessible to everyone (CC BY (4.0
- **Special issue**:
 - *"OpenStreetMap as a multi-disciplinary nexus: Perspectives, Practices and Procedures"*
 - Meant to shed light on the relations between crowds, real-world applications, technological developments, and scientific research
 - Will offer Open Access fee waivers and/or discounts - accessible to the community
- Keeping the **OSM-science mailing list** active and vibrant, sharing in other lists?

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