



MEASURING HOUSEHOLD SECTOR INNOVATION IN ONLINE COMMUNITIES


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Obvious mismatch

Actual relevance



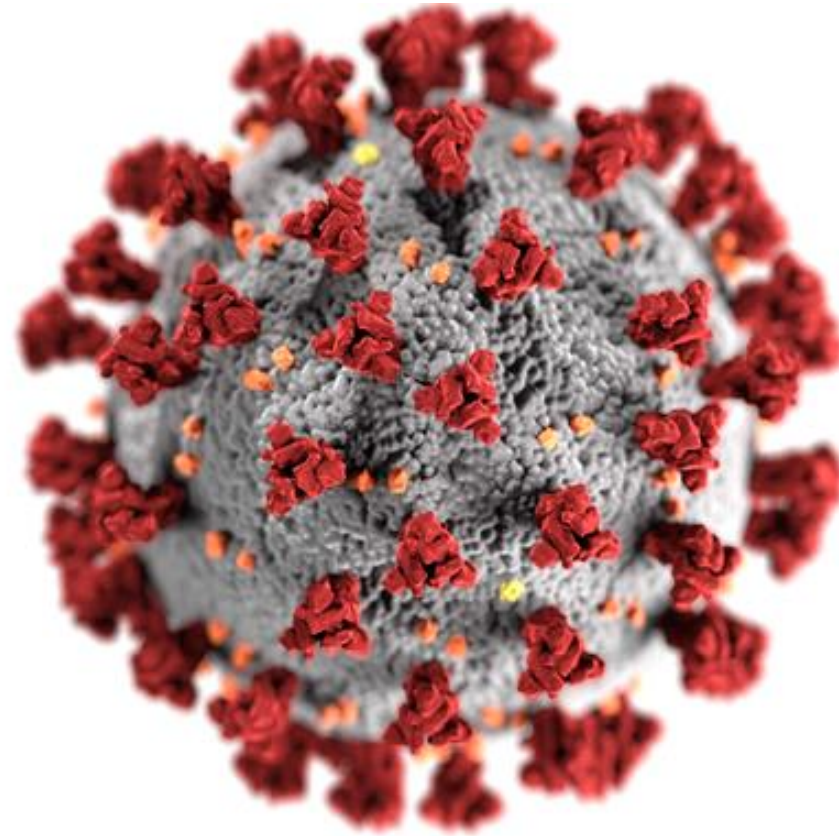
Perceived relevance



Relevance HHS innovation

- Innovation is often not developed by firms (von Hippel 1976, 1988, 2005, 2016; Chen et al, 2020; de Jong et al. 2021)
- Up to 16 % of people are user innovators (Franke et al., 2016)
- 50% of commercial products are developed by user innovators (Hienert et al., 2014)

Peer Innovation & Covid-19



Patient Innovation

SOLUTIONS FOR COVID-19

Find innovative solutions developed by citizens to help us all cope with COVID-19

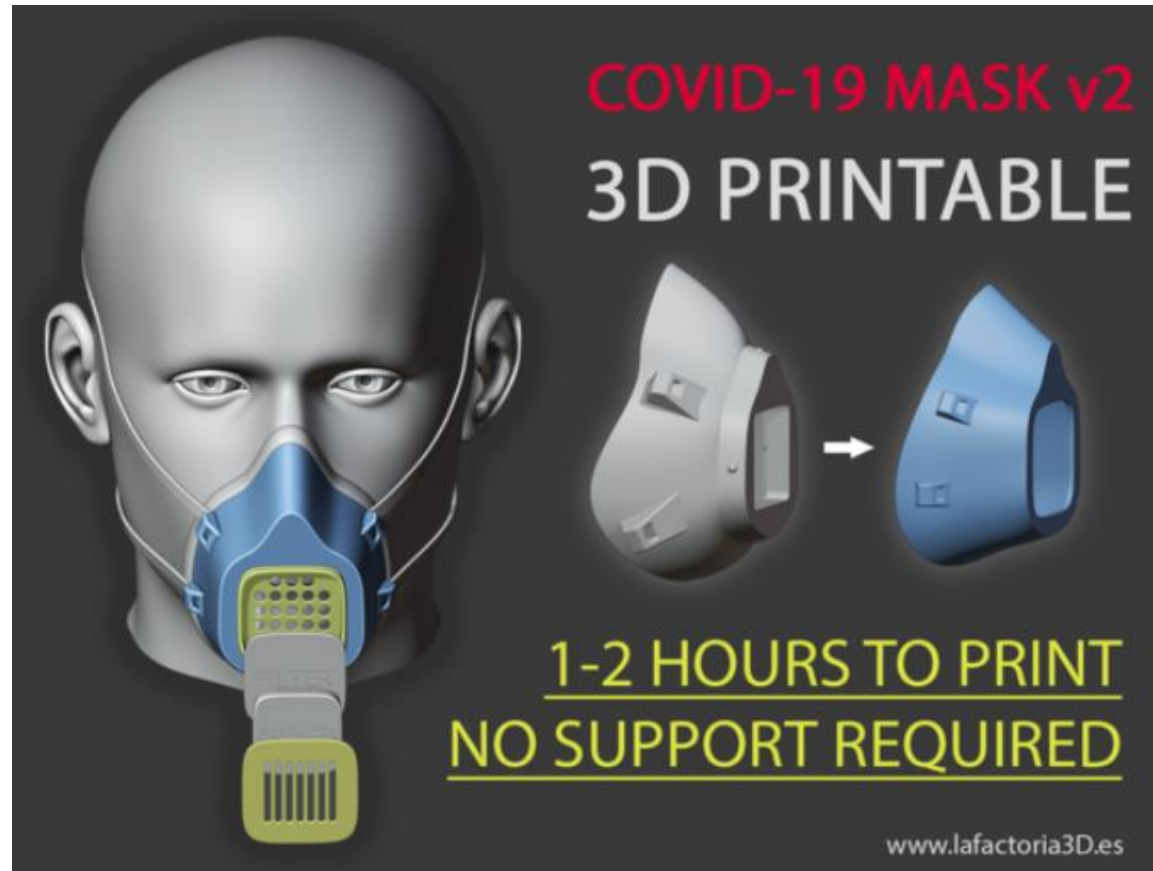
 **Patient Innovation**
SHARING SOLUTIONS, IMPROVING LIFE

INNOVATIVE SOLUTIONS (202) FORUM TOPICS (0)

OpenLung Emergency Medical Ventilator



COVID-19 Mask



15
Thing Files

1612
Comments

195
Makes

158
Remixes

3
Apps

COVID-19 Mask



Perceived relevance

- Underestimation of relevance by decision makers (Brandonjic et al., 2019; Gault, 2018; Nielsen, 2020)
 1. Firms
 2. Politicians
 3. Researchers
 4. HHS innovators

Obvious mismatch

Actual relevance



Perceived relevance

Origin of mismatch

- Understanding of innovation
 1. OECD definition and research understanding → invention must be commercialized (Roberts, 2007; OECD, 2005)
 2. Innovation inherently connected to market economy and commercial entities (Gault, 2013)
 3. Missing inclusion in official statistics (Franke et al., 2016)
 4. Relatively “new” and niche phenomenon in research landscape



The times they are a changing'

- Calls for measures and methods to capture new patterns of production and innovation (Bogers et al., 2010; de Jong, 2016; de Jong et al., 2021; Gault, 2018; Resch & Kock, 2020)
 1. Better understanding of non-market actors
 2. Identification of ideas, innovations, innovators, capabilities, networks, etc.
 3. Enable policy support

The times they are a changing'

- New definition of innovation that includes HHS (OECD/Eurostat, 2019, S. 20)

An innovation is a new or improved product or process (or combination thereof)

that differs significantly from the unit's previous products or processes and

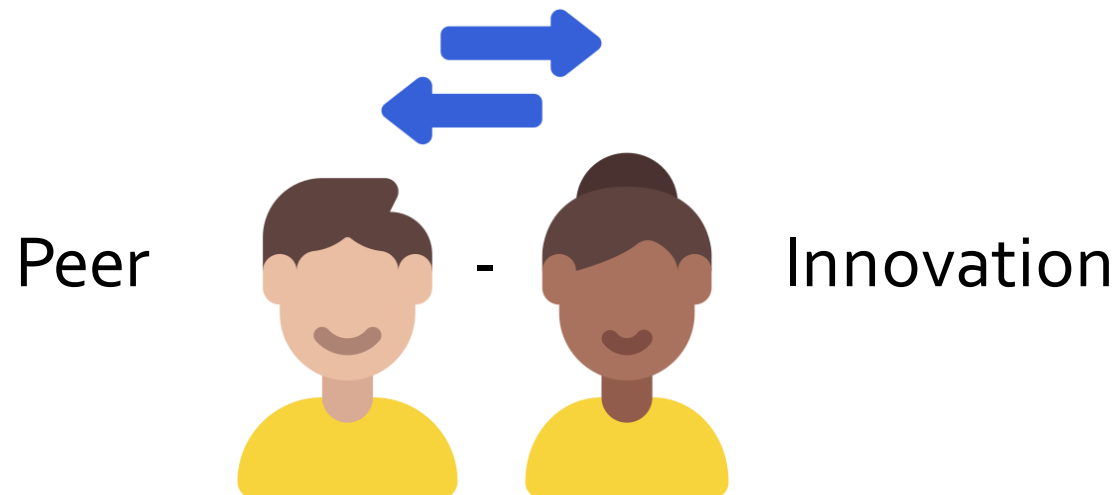
*that has been **made available** to potential **users** (product) or **brought into use** by the unit (process).*

Problems with existing approaches

- Focused on establishing relevance of the phenomenon (Alexy et al., 2020)
 1. Frequency of innovators
 2. Frequency of innovation
- Based on surveys & telephone interviews (de Jong, 2016b)
 1. Self-reporting
 2. Costly, time-intensive, inflexible
 3. Not full picture of innovation process
- No holistic depiction of innovation process
→ process, individuals, inputs, outcomes, etc.

Our proposition

- HHS innovation in online communities
 1. Large proportions of HHS takes place online (Baldwin & von Hippel, 2011; Dahlander & Frederiksen, 2012)
 2. Connects like-minded people
 3. Collaboration (sharing, feedback, assisting, diffusion) (Franke & Shah, 2003; Grosse et al., 2018; von Hippel & Kaulartz, 2021)
 4. Ubiquity and big data (von Hippel & Kaulartz, 2021)



Minimal human interference

- information overload problem and big data (Lee et al., 2018; Piezunka & Dahlander, 2015)
 - more information than can actively be filtered and absorbed
 - idea generation impedes idea selection
- Limit our typology to measures that can be created from community data **with minimal human interference**



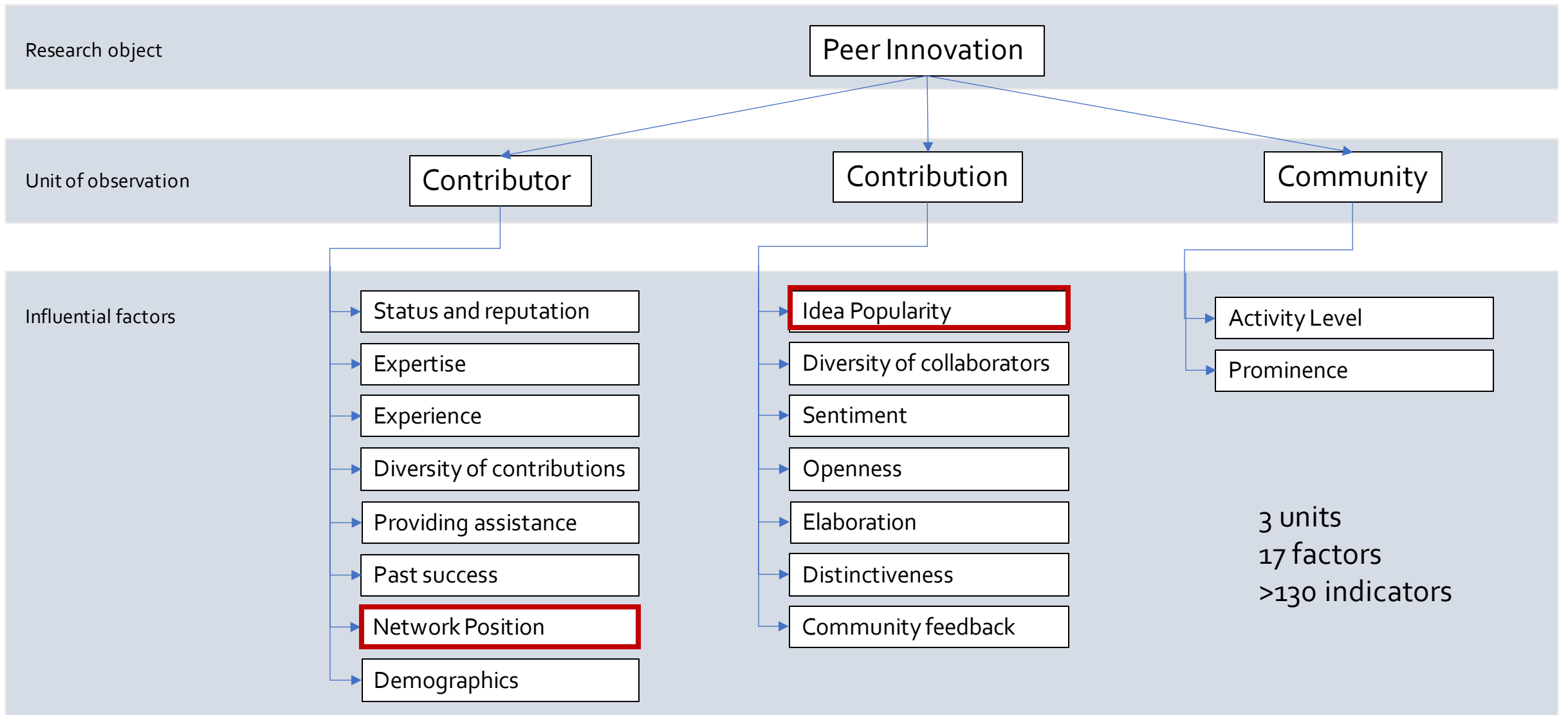
Our Contributions

- Review of indicator landscape for online communities
- Hierarchical typology of measures for Peer Innovation
- Discussion of underexplored dimensions, inconsistencies in concepts & measures, methodological advances
- Derive avenues for future research



Narrowing it down

- phenomenon investigated in almost every discipline
- Restricted to research that combines communities with innovation
- automatic or semi-automatic indicator generating processes
- causal mechanism must be explicit





Discussion

- Community-level indicators are rare
- Concepts and operationalization
- Transferability of measurements
- Methodological advances

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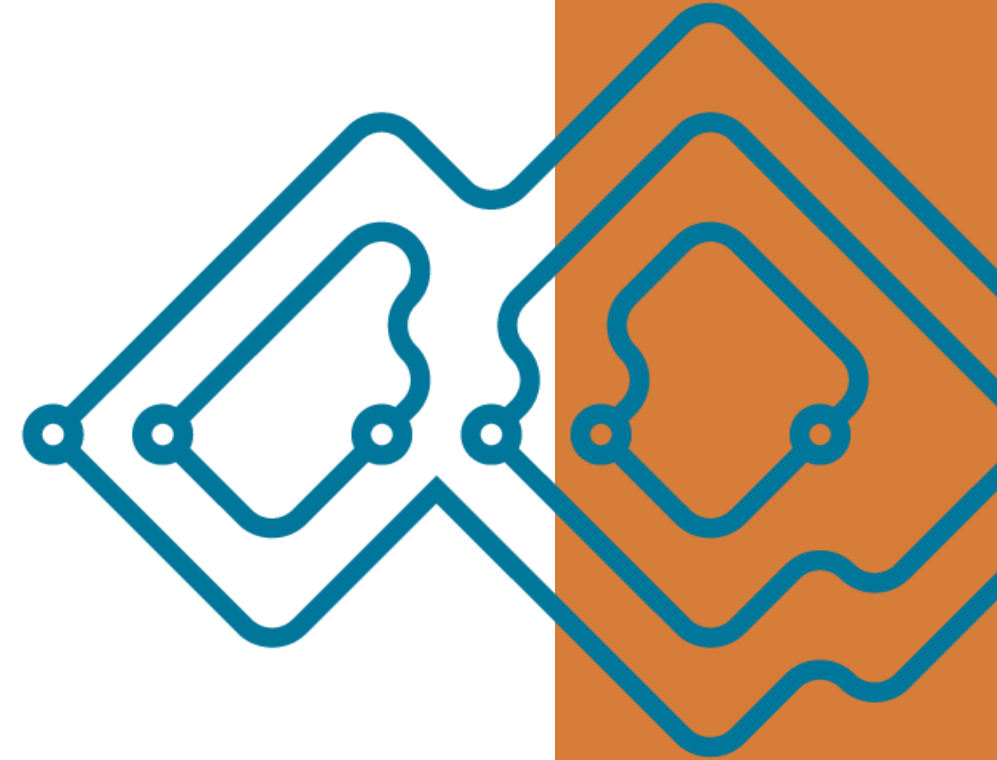
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