Taxonomy of Digital Indicators & Metrics of Social Cohesion

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Not for Citation, Comments Welcome

Identifying indicators and metrics for measuring social cohesion on and offline is an ongoing challenge. To date, there are only a few widely used or standardized indicators and metrics for digital measurement of social cohesion.

The Council of Europe, along with several other international organizations like the OECD, began making public commitments to social cohesion in the 1990s. The European Committee for Social Cohesion in 2000 began the early work of measuring social cohesion with a list of factors in social cohesion.[1]

Today, there are multiple research frameworks for measuring offline social cohesion.[2] The UN Development Program uses the SCORE (Social Cohesion and Reconciliation Index)[3] and PSCAR, a tool for measuring social cohesion in the Arab region.[4] These tools measure individual identities, emotions, and attitudes, as well as perceptions of threat, contact and justice with other groups. OECD's indicators for social cohesion measure using surveys on life satisfaction, trust between groups, prosocial behavior, and voting.[5]

The Ipsos Social Cohesion Index (ISCI) measures public attitudes along three dimensions: social relations, defined as trust in other people, shared priorities and diversity; connectedness, referring to holding a shared national identity and a sense of fairness and trust in political institutions; and common good, defined as helping others and engaging in civic life.[6] A 2020 study on measuring social cohesion by the World Bank and Mercy Corps identifies indicators for measuring civic engagement, trust between and within groups, shared purpose, collective action norms.[7]

Drawing on these various indexes and approaches, this report offers a rudimentary framework on *what* to measure (indicators) and *how* to interpret the data gathered on those indicators (metrics).

Research on user experiences online indicates that survey respondents will say one thing but do something else, indicating a gap between perceptions and behaviors. As such, this framework focuses on user behaviors, not assertions or perceptions of their behavior.

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[1] Council of Europe. Revised Strategy for Social Cohesion. European Committee for Social Cohesion, Strasbourg, 2004.
[2] See for example, the UN Development Program uses **SCORE** Methodology (Social Cohesion and Reconciliation Index) including 70 indicators to measure horizontal and vertical cohesion as it relates to polarization and conflict.
[3] SCORE (Social Cohesion and Reconciliation Index) at https://www.scoreforpeace.org/
[4] Charles Harb, "Developing a Social Cohesion Index for the Arab Region." Amman, Jordan: UN Development Program, 2017.
[5] OECD, "Social Cohesion Indicators" in *Society at a Glance: Asia/Pacific 2011*, Paris: OECD Publishing, 2012. https://doi.org/10.1787/9789264106154-en
[6] IPSOS. Social Cohesion in a Pandemic Age: A Global Perspective. October 2020.
[7] Jeeyon Kim, Ryan Sheely, Carly Schmidt. Social Capital and Social Cohesion Measurement Toolkit for Community-Driven Development Operations. Washington, DC: Mercy Corps and The World Bank Group, 2020.

Metrics for Individual Agency

Individual Agency exists when individuals feel a sense of safety, dignity, and capacity (skill) to *influence* and *participate* in decisions that affect their lives within society and with governing institutions. One indicator of individual agency is their willingness to participate in creating or commenting on digital discussions.

What is the ratio of engaged vs observing individuals engaged in digital communication? On most digital platforms, there is "participation inequality" meaning many people choose not to participate. Some may feel anxiety or intimidation. An early study in 2006 suggested that on social media only 1% are the content creators, 9% are the engagers, and 90% are the consumers.[8] "Lurkers" are people who consume social media but do not engage or create.[9] Research on political participation on the internet finds that people who use the internet are more politically active on the internet. But the internet is not bringing new people into the political process.[10] More research on digital lurkers, participation inequality, and the link between digital use and political participation may refine how best to quantify individual agency. Individual agency may be measured by levels of participation overall (in the population) and on a specific platform.

A classification schema could provide coding data for AI to identify positive vs negative speech acts, as illustrated in the chart below. The Reddit "ChangeMyView" and the new "ChangeAView" sites provide narratives that researchers are already classifying to show the speech acts people use when sharing their point of view in a way aimed at convincing, not humiliating others.[11]

Does the technology shift the ratio of positive vs negative speech acts? (*What is the level of individual agency*?)	
Positive Speech Acts	**Negative Speech Acts**
Recognizing human dignity with speech acts such as "Good to have you in this discussion, Ben." or "I appreciate learning about your perspective on this issue, Lisa."	Dehumanizing other people with speech acts that compare people to animals, or indicate contempt
Active listening with speech acts including checking for understanding, paraphrasing, summarizing with speech acts like "It sounds like…" or "Am I understanding you…"	Making accusations based on assumptions not included in original post with speech acts that start with "You are" or "You did…"

[8] Jakob Nielson. "The 90-9-1 Rule for Participation Inequality in Social Media and Online Communities." Nielson Norman Group. 8 October 2006.
[9] Joanne McNeil. *Lurkers: How a Person Became a User.* New York: Farrar, Straus, and Giroux. 2020.
[10] Jennifer Oser, Shelley Boulianne, Reinforcement Effects between Digital Media Use and Political Participation: A Meta-Analysis of Repeated-Wave Panel Data, *Public Opinion Quarterly*, Volume 84, Issue S1, 2020, Pages 355–365.
[11] See for example, Christopher Hidey, et al. "Analyzing the Semantic Types of Claims and Premises in an Online Persuasive Forum." *Association for Computational Linguistics*. Proceedings of the 4th Workshop on Argument Mining. September 2017; Zhongyu Wei12, Yang Liu2 and Yi Li. Is This Post Persuasive? Ranking Argumentative Comments in the Online Forum *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics*, August 2016. Pp. 195–200.

Finding common ground to highlight areas of shared values, experiences, or beliefs with speech acts like "I agree…" or "We share…"	Assuming that all people with a shared identity are the same, or exaggerating differences with speech acts such as the inclusion of words like "completely" or "absolutely"
Creative problem solving with speech acts that reference "options" or "solutions"	Threats of violence with speech acts that reference threat-related words

Does the technology shift who is participating? (*Who has agency?)*
What percentage of individuals *in the population* and *on a specific platform* are participating in posting or commenting on a digital platform about their experiences or political opinions on an issue?

Metrics for Horizontal Cohesion

Horizontal Cohesion exists when individuals feel a sense of *positive relationships, belonging, and trust* within and among identity groups based on politics, religion, ethnicity, class, education, region, or other shared identities. One indicator of horizontal cohesion is whether they are connecting to people within groups they belong to themselves, and whether they connect to other social networks.

Metrics might measure, for example:

Does the technology shift who is connecting? (*Who has horizontal cohesion?)*
What percentage of people in the population (using disaggregated data for politics, religion, ethnicity, class, education, region, or other shared identities) and on a specific platform are connecting to people within their own groups and with people in other groups and social networks? How often do they connect online? Metrics on network structures and community interactions can provide tangible evidence of intra-community relationships and inter-community relationships.
What is the percentage of digital conversations between people with cross-cutting identities? How many cross-cutting comments, likes, shares are there between people across divides?

Metrics for Vertical Cohesion

Vertical cohesion exists when individuals and groups in society feel a sense of *trust, transparency, accountability, and collaboration* with public institutions including government, as well as news media, academic institutions, and corporations. Digital metrics of vertical cohesion relate to how the public participates with the government in the collection and sharing of data, information, and services. Public

institutions are increasingly both gathering and distributing data related to public services.[12] Because of the digital divide, it is important also to measure who is not connecting online with public institutions

Metrics might measure, for example:

Does the technology shift how people connect with public institutions? *(Who has vertical cohesion?)*
What ratio of the population that participates or does not participate directly via civic tech or govtech platforms with government and other public institutions? ● For receiving information by visiting websites of public institutions (government, academia, science, and news media)? What is the click rate on these sites? ● By submitting private information to these sites as an indicator of trust ● By submitting comments or engaging in up or down voting, liking, or sharing of discussions relevant to public interest on digital platforms?

[12] CDEI. "Addressing trust in public sector data use. UK government. 20 July 2020.