# A review from the paper "Tweeting Alone? An analysis of bridging and bonding social capital in online networks"

BITTENCOURT Gabriela

March 23, 2021

**Abstract**

The paper "Tweeting Alone? An analysis of bridging and bonding social capital in online networks", written in 2015 by Sajuria J., VanHeerde-Hudson J. and Hudson D., tries to quantify the social capital provided by online connections. Using Twitter data from three events, the researchers examine the closure and brokerage indicators of the data set. To fully understand the relevance of this paper it's essential to consider the work of Putnam from 1994 and 2001 that defends the idea that we have a decline of social capital with the advent of internet and online social connections. Putnam also defends that the stability and sustainability of a democratic society depend on the social capital.

## 1 Introduction

This paper emerges at a time that there were a thesis defending that online social networks didn't provide social capital (Putnam, 1994 and 2001) and many other researchers defending it does provide social capital. This thesis is an attempt to quantify the social capital generating for online connections.

The aim of this article was to test the formation of social capital online by analysing online social networks and to consider the relative importance of bridging and bonding capital. To quantify the social capital was used the Burt's (2005) concepts of closure and brokerage as indicators of bonding and bridging social capital.

The data set used to evaluate the bonding and bridging capital online was the tweets database from three different group events, with different organizational characteristics:

- OWS: 2011 U.S. Occupy Movement - no role of formal organization, it values the individual empowerment.
- IF Campaing: UK-based IF Campaign organised by a coalition of UK NGOs around hunger and 2013 G8 meeting - more centralized movement, it fulfills all the requirements for an organization-enabled connective action network.
- Chilean election: 2013 Chilean Presidential Election - as most traditional political campaigns it depends on individual spreed, but it also has some organizations spreading and directing central arguments.

The choice of the three events of different degrees of organizational involvement allows the analysis if the involvement of formal organisation influences the level of brokerage and closure within networks of collective action.

For the analysis 4 hypotheses were considered:

**Hypothesis 1** *The level of bridging and bonding social capital formed through online iteractions are significantly different than random.*

**Hypothesis 2** *The network formed through online interactions are, on average, less dense and weaker than those generated by theoretical models.*

**Hypothesis 3** *In online networks, bonding and bridging social capital operate in coordination, stregthening each other.*

**Hypothesis 4** *In cases where organizations play a relevant role, we should expect higher levels of bridging social capital in relation to the different theoretical models.*

To analysis the first and second hypothesis, the three social networks events were compared with three artificial networks graphs: one random connected graph and two graphs forming from social models: the first Barabasi-Albert model that produces a more realistic degree distributions and a Watts-Strogatz model that has a higher level of clustering coefficient.

The third hypothesis aims to find a positive relation between bonding and bridging social capital and the fourth hypotheses inteds to observe the influence of organizations in the development of social capital in online networks.

A disclaim to be done about this research is that in this analysis it was evatuated only the number of ties and not the nature of them, therefore none conclusion can be made concerning weak or strong ties, because this was not evaluated during the research.

## 2 Development

For each of the three analysed events were used different clusterization of hashtags to properly separate the tweets of interest.

The graph from the three events were analysing, calculating how close a node and its neighbours were to becoming a clique - measure used for quantifying the level of closure for each network, accordingly Watts & Strogatz (1998).

It was calculated also how much the connections of node $i$ are connected in a single group of interconnected nodes, resulting in the ability of this node $i$ to bridge across groups. The sum of all dependencies of a node $i$ to all its connections provides a mesure of constraint of $i$ in its own network. And the sum of all contraits across different clusters can be interpreted as the invertion of brokerage (Burt's Network Constraint, 2005).

Comparing the data from the three events with the artificially generated graphs (the random one and the two generated from the theoretical models), it was observed that the levels of **closure** were higher for the data set than for any of the models, for all three events. What allows the conclusion that online networs seems to be more efficient in forming small, denser communities than what theory would expect.

While for the **brokerage** analysis, the results were more plurals: for the first dataset (OWS: not organizational) the level of brokerage was less that all the models and was less even than the randomly generated graph; for the IF Campaing (more centralized, with big influence of an organization) and the Chilean election (more diverse, but yet with some centralized organizations) brokerage was consistently above the random models, but it was under the models. What calls the attention to the importance of active organizations to the increase of the level of brokerage in online communities.

## 3 Conclusion

This article provides an initial evidence of the formation of social capital in online networks - contradicting Putnam's thesis (1994). It reveals the potential of information and communication technologies (ICTs) to create bonding social capital, being better than of theoretical models. And it explores the potential of ICTs in terms of bridging social capital, extremely

conditional to the presence and importance of organizations and professional brokers in the networks.

The results present in this article offers a preliminary quantification on the social capital in online context. It contributes with a necessary first step in understanding whether social capital exists in online networks.

### 3.1 Being popular online

Accordingly the article analysed and the others discuted in the group, an efficient way to be popular online is to be actively a bridge between different groups of people. As seen in class, weak ties are more efficient to expand its network than strong ties, once the first gives access to different clusters of people, while the second will probably have access to the same their clusters. So the investment in connect with weak ties may be more enrishing in social capital to the person that will act as a bridge in many boundings communities.

## Bibliography


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