The Role of Social Capital in Information Diffusion over Twitter

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ABSTRACT
Social Capital is the resulting advantage of the individual’s localization in a social structure. Our goal is to verify which users have high information capital, bridging and brokerage for providing and spreading information. To do so, we analyze their profiles on trending topics over Twitter. Our results show potential bots and fan accounts as the main information spreaders in Brazil, a very concerning result given the upcoming presidential election in October 2018.

1 - INTRODUCTION

CONTRIBUTIONS: Evaluate Social Capital metrics on a comparative analysis of the top 10 Twitter users and assess the potential relevance of such users according to their behavior.

2 - RELATED WORK
Information Diffusion Process → Social Capital Facets
» Information Capital: Decay Centrality (DC) and Eigen Centrality (EC)
» Brokerage Capital: Betweenness Centrality (BC)
» Hubs and Authorities: HITS Algorithm
» Bridging Capital: Neighborhood Overlap (NO)

3 - DATASET
After cleaning and data processing, the dataset contains 165,936 and 371,612 distinct users and messages, respectively.

4 - METHODOLOGY

LABELS
SC Social Category
 providers
spreaders
○ primary media (sports news)
o primary media (general)
★ independent expert
∞ potential bot
♥ fan account
○ typical user

5 - DATA ANALYSIS

Top 10 users – DC

Rank User SC
1 @Flamengo ▶
2 @FoxSportsBrasil ▶
3 @sbba ▷
4 @EspInterativo ▶
5 @Vascodagama ▶
6 @globoesporte ▶
7 @HugoGloss ★
8 @MomentsBrasil ★
9 @g1 ∡
10 @RedeGlobo ∡

Top 10 users – EC

Rank User SC
1 @ClaraGuimaraes ∞
2 @hey_dann ♥
3 @pastorasandra5 ▷
4 @JonahWhite30 ▷
5 @DiasFabio ▷
6 @AntroReality ♥
7 @PedroAlvesFer12 ▷
8 @jeanbuenodumke ∡
9 @arte_prima ▷
10 @limalblue_ofc ▷

Top 10 users – BC

Rank User SC
1 @RedeGlobo ◇
2 @g1 ◇
3 @EspInterativo ◇
4 @SBTonline ◇
5 @HugoGloss ★
6 @gshow ◇
7 @SporTV ◇
8 @GloboNews ◇
9 @MaisVoceGlobo ◇
10 @gustavovillani ★

Top 10 users – Authorities

Rank User SC
1 MarcosA22444338 ♥
2 @DiasFabio ◇
3 @jonatalima355 ◇
4 @PHRN1895 ◇
5 @arthurpassos ∞
6 @PedroAlvesFer12 ◇
7 @Rgo17 ◇
8 @FlavioM32255797 ♥
9 @RlPenha ◇
10 @AllanRN1981 ♥

Top 10 users – Hubs

Rank User SC
1 @Flamengo ◇
2 @FoxSportsBrasil ◇
3 @sbba ◇
4 @EspInterativo ◇
5 @Vascodagama ◇
6 @gshow ◇
7 @Venecasagrande ★
8 @SporTV ◇
9 @maurocezar ★
10 @lucaspedrosaEl ★

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