

WHY DOES FACEBOOK FAIL TO CATALYZE DIVERSE FRIENDSHIP FORMATIONS?

Firman M. Firmansyah

Stony Brook University
100 Nicolls Road
Stony Brook, NY 11794, USA

ABSTRACT

This study sought to understand why Facebook, the largest social networking site intended to “bring the world closer together”, fails to catalyze diverse friendship formations. In doing so, it employs agent-based modeling built on the Framework for Intergroup Relations and Multiple Affiliations Networks (FIRMAN). As demonstrated in 600 simulations, Facebook has primarily enhanced users' tie capacity (TC) to maintain a larger number of friendships while doing little to empower users' tie outreachability (TO) to tolerate group differences. These conditions inevitably hinder diverse friendship formations on Facebook.

1 INTRODUCTION

The invention of Facebook has overcome the structural barriers that historically constrained individuals from reaching out to different others. Through Facebook, users from all walks of life can develop diverse friendships online. However, friendships on Facebook have been as homogeneous as friendships in offline environments (Hofstra et al. 2017), which can amplify the drawbacks of homogeneity. This research sought to understand why the largest social networking site intended to “bring the world closer together”, fails to catalyze diverse friendship formations on its platform. In doing so, it employs a series of agent-based simulations built on the Framework for Intergroup Relations and Multiple Affiliations Networks (FIRMAN).

2 THEORETICAL FRAMEWOK

FIRMAN (Firmansyah and Pratama 2021) depicts individuals as nodes with specified coordinates and their friendships as ties with specified lengths in a social identity space. Social identity (SI) is a shared identity derived from group memberships (Stets and Burke 2000). As shown in Figure 1, similarities place nodes in the same coordinates, while differences place them in different coordinates. Color (SI_2) and shape (SI_1) are intentionally illustrated on a different scale to signify that the former has more weight than the latter.

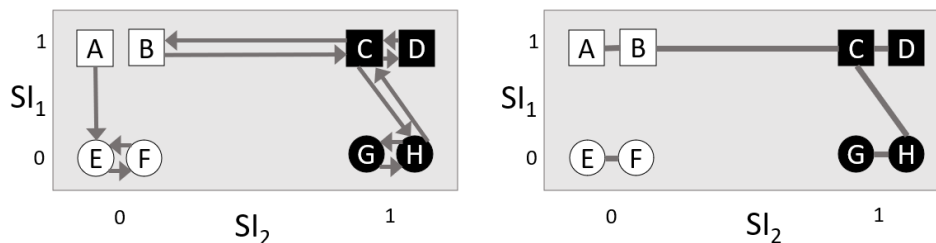


Figure 1: Two-dimensional social identity space.

FIRMAN further postulates that nodes have different latent abilities concerning the maximum lengths and numbers of ties that they can generate called tie outreachability (TO) and tie capacity (TC), respectively,

as illustrated in Figure 1 (left). In real life, TO represents the degree of tolerance for group differences, while TC represents the limit for friendships. Since friendships require reciprocity, thus, they only develop between nodes whose TO is greater or equal to their social identity distance (w_{dist}) and whose TC is less than their current numbers of friends (num_f), as depicted in Figure 1 (right).

In light of FIRMAN, Facebook has arguably increased users' TC but done little with their TO. While all users can keep in touch with a greater number of contacts on Facebook, those who are intolerant offline will remain intolerant online. Furthermore, Facebook has simultaneously enlarged the pool of potential friends from limited people nearby to virtually limitless users worldwide. These conditions make Facebook fail to catalyze diverse friendship formations on its platform.

3 METHODS

I ran agent-based simulations on populations of two SIs: shape $\in \{0, 1\}$ and color $\in \{0, 1\}$ with the minority proportion of 50% for SI_1 and 30% for SI_2 . The weight for $\text{SI}_1 = 1$, $\text{SI}_2 = 2$. I manipulated the numbers of agents $n \in \{50, 500\}$ and TC parameters derived from the Gaussian distribution with $\mu \in \{3, 50\}$ and $\sigma^2 \in \{1, 5\}$ representing offline and Facebook scenarios. I also manipulated TO parameters derived from the binomial distribution with $m = 3$, $q \in \{.3, .5, .7\}$, representing populations with low, moderate, and high degrees of tolerance for differences. For each cell, I ran 100 simulation trials in R.

4 RESULTS AND DISCUSSION

Figure 2 presents the number of dyadic friendships developed throughout the simulations. As can be seen, despite the number of friendships increasing in the Facebook scenario (vertical comparison), the proportions of homogeneous and diverse friendships remain the same, confirming the findings of past empirical research (Hofstra et al. 2017). It would be a different story, however, should Facebook also increase users' TO (horizontal comparison). Indeed, the rates of homogenous friendships on the platform still outweigh the rates of diverse friendships. However, it is better than the status quo.

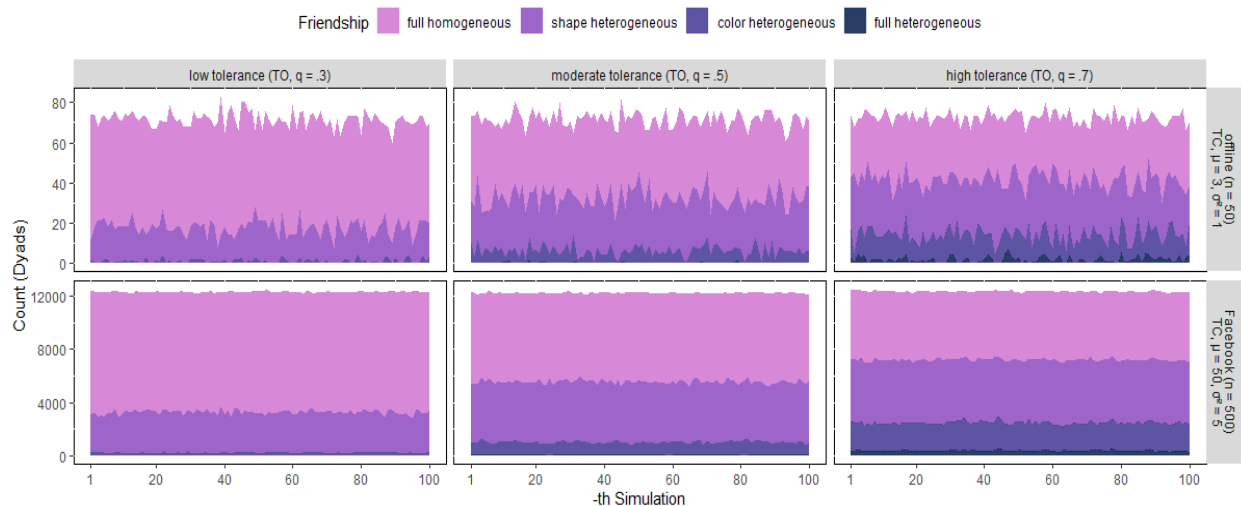


Figure 2: Developed friendship dyads in all simulations.

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