The Role of the Crowd in Countering Misinformation: A Case Study of the COVID-19 Infodemic

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Abstract—Fact checking by professionals is viewed as a vital defense in the fight against misinformation. While fact checking is important and its impact has been significant, fact checks could have limited visibility and may not reach the intended audience, such as those deeply embedded in polarized communities. Concerned citizens (i.e., the crowd), who are users of the platforms where misinformation appears, can play a crucial role in disseminating fact-checking information and in countering the spread of misinformation. To explore if this is the case, we conduct a data-driven study of misinformation on the Twitter platform, focusing on tweets related to the COVID-19 pandemic, analyzing the spread of misinformation, professional fact checks, and the crowds response to popular misleading claims about COVID-19.

In this work, we curate a dataset of false claims and statements that seek to challenge or refute them. We train a classifier to create a novel dataset of 155,468 COVID-19-related tweets, containing 33,237 false claims and 33,413 refuting arguments. Our findings show that professional fact-checking tweets have limited volume and reach. In contrast, we observe that the surge in misinformation tweets results in a quick response and a corresponding increase in tweets that refute such misinformation. More importantly, we find contrasting differences in the way the crowd refutes tweets, some tweets appear to be opinions, while others contain concrete evidence, such as a link to a reputed source. Our work provides insights into how misinformation is organically countered in social platforms by some of their users and the role they play in amplifying professional fact checks. These insights could lead to development of tools and mechanisms that can empower concerned citizens in combating misinformation. The code and data can be found in this link.[1]

Index Terms—Misinformation, Counter-misinformation, Social Media, Dataset

I. INTRODUCTION

The world-wide spread of COVID-19 has led to considerable amount of related misinformation on the web and the social media ecosystem. WHO has termed the situation as a global infodemic [1]. As social media platforms become a primary means to acquire and exchange news and information during crisis times such as COVID-19 [2]–[8], the lack of clear distinction between true and false information can be dangerous. Some of the false claims related to COVID-19 have already had severe harmful consequences, including violence [9] and over 800 deaths [10]. Thus, combating the spread of false information is of critical importance.

Professional fact checkers can play an important role in controlling the spread of misinformation on online platforms [11]. During the COVID-19 infodemic, the International Fact Checking Network (IFCN) verified over 6,800 false claims related to the pandemic until May 20, 2020. Social media platforms use these fact checks to flag and sometimes remove misinformation content. However, false information still prevails on social platforms because the ability of fact checking organizations to use social media to disseminate their work can be limited [12]. For example, on Facebook, content from the top 10 websites spreading health misinformation had almost four times as many estimated views as equivalent content from reputable organizations (e.g., CDC, WHO).[2]

In addition to professional fact checkers, ordinary citizens, who are concerned about misinformation, can play a crucial role in organically curbing its spread and impact. Compared to professional fact checkers, concerned citizens, who are users of the platform where misinformation appears, have the ability to directly engage with people who propagate false claims either because of ignorance or for a malicious purpose. They can back up their arguments using professional fact checks and trusted sources, whenever available. The cohort of ordinary citizens is also commonly referred to as *crowd*. Thus, the role of crowd or citizens who are concerned about misinformation can be critically important. The goal of this work is to study the nature and extent of the role that concerned citizens play in responding to misinformation.

We use a broad definition of *misinformation* which includes falsehoods, inaccuracies, rumors, decontextualized truths, or misleading leaps of logic, all regardless of the intention of the spreader [13], [14]. In this work, we focus on COVID-19 related misinformation on Twitter and utilize a data-driven approach to investigate how fact checks and other organic user responses attempt to refute and counter it. We explore two popular misinformation topics: *fake cures* and *5G conspiracy*

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[1]http://claws.cc.gatech.edu/covid_counter_misinformation.html

[2]https://secure.avaaz.org/campaign/en/facebook_threat_health/