

Are you interested in economic inequality? Depends on where you live

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Although several scholars and international institutions have considered high levels of economic inequality an issue for society, the populations who live in more unequal countries tend to be less concerned about it. Given the ideological connotations in the construct of people's concerns about economic inequality, whether those who live in more unequal countries are more interested in economic inequality remains unclear. In this research, we aimed to examine whether objective economic inequality is related to individuals' interest in the topic of economic inequality. First, we used data from the United States Census Bureau and Google Trends to examine whether the objective level of economic inequality predicted the interest of the population in searching Google for terms such as “economic inequality” and “income inequality.” Our results showed that individuals who live in more economically unequal U.S. states more often search these terms. Second, we analysed the tweets that contained the terms “economic inequality” and “income inequality” (10,118 tweets) published over 9 days and localised by U.S. state. We found that individuals who live in more economically unequal U.S. states more often post tweets about economic and income inequality. To take a closer look at the narrative around economic/income inequality, we conducted a network analysis using tweets as nodes and retweets as edges. Our results suggest that the public narrative about economic inequality via Twitter was built on three large communities. Finally, we discuss the implications of our results in relation to economic inequality consequences.

Keywords: economic inequality, Google, income inequality, network analysis, Twitter.

In recent decades, economic inequality has risen in many countries around the world (Alvaredo, Chancel, Piketty, Saez, & Zucman, 2017; Piketty, 2014). Several scholars and international institutions have considered these high levels of economic inequality an issue for society (Rodríguez-Bailón, Sánchez-Rodríguez, García-Sánchez, Petkanopoulou, & Willis, 2020; United Nations, 2015; Wilkinson & Pickett, 2009, 2018; World Economic Forum, 2020). However, research that has explored the relationship between economic inequality and people's concerns about it usually has shown that populations who live in more unequal countries—or who perceive more inequality—tend to be less concerned about it (García-Sánchez, Van der Toorn, Rodríguez-Bailón, & Willis, 2018; Mijs, 2019; Schröder, 2017; Trump, 2017; Willis, Rodríguez-Bailón, López-Rodríguez, & García-Sánchez, 2015). Given the ideological connotations in

the construct of people's concerns about economic inequality, whether individuals are interested in economic inequality regardless of their ideological implications remains unclear.

Therefore, in this research, we aimed to explore the relationship between economic inequality and people's interest in economic inequality. Nowadays, increased economic inequality has been shown to go hand in hand with increased interest in economic inequality as a topic of media and research (Arends, 2020; Wiwad et al., 2019). Hence, we suggest that to the extent that economic inequality is high, the population's interest in it will be high as well. Mainly, we explored whether the objective level of economic inequality was related to both individuals' private and public interests in economic inequality. First, we used data from Google Trends to explore to what extent the terms “economic inequality” and “income inequality” were searched through Google. Second, we analysed the tweets that contained the terms “economic inequality” and “income inequality” published over 9 days and localised by U.S. state.

Economic Inequality and Concerns About It

Given that greater economic inequality is associated with several social problems (Wilkinson & Pickett, 2009,

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2018), one might expect that a higher level of economic inequality accompanies a greater concern about it. However, paradoxically, several researchers have found that economic inequality usually was negatively associated with concerns about it. Focusing on actual economic inequality, Schröder (2017) found that people who live in more unequal countries also tolerate more economic inequality. Moreover, Mijs (2019) showed that higher economic inequality is associated with less concern about it. However, other research in the context of China found that economic inequality increases class immobility concerns, which might be a form of economic inequality concerns (Li, Chen, & He, 2019). Whether the focus is on perceived—instead of actual—economic inequality, when individuals perceive more economic inequality, they also tend to desire more inequality (García-Sánchez et al., 2018; Willis et al., 2015).

This negative relationship between economic inequality and concerns about it might be explainable because individuals tend to legitimise actual—or perceived—economic inequality (Trump, 2017). Therefore, a higher level of economic inequality was accompanied by firmer beliefs that justify it (Mijs, 2019; Trump, 2017). Indeed, concerns about economic inequality have a robust ideological connotation given that it implies taking a stance about whether economic inequality is too high and if it should change. This effect has direct implications in, for instance, the support for measures of redistribution (Kuziemko, Norton, Saez, & Stantcheva, 2015; McCall, 2013). Alternatively, current research has found that when economic inequality is perceived in daily life, higher economic inequality leads to increased intolerance for inequality, which in turn improves attitudes toward redistribution (García-Castro, Rodríguez-Bailón, & Willis, 2020). Although the relationship between economic inequality and concerns about it is important, the ideological implication of concerns about economic inequality might hide how the level of economic inequality becomes salient for individuals. Therefore, in this research, we aimed to focus on how economic inequality might affect concerns about economic inequality, but without taking into account their ideological connotation; namely, interest in economic inequality. Interest in economic inequality reflects the importance one gives this topic, whatever its ideological connotations. In other words, interest in economic inequality is a broader concept that combines the stances on economic inequality that assume it should be reduced and those that assume it should not.

Economic Inequality and Interest in It

Increasing economic inequality has occurred alongside a growing interest in research on this topic and politicians'

debates. Indeed, research from different disciplines such as social psychology (Sánchez-Rodríguez, Jetten, Willis, & Rodríguez-Bailón, 2019; Sprong et al., 2019), sociology (Mijs, 2019; Schneider, 2019), economics (Piketty, 2014; Stiglitz, 2012), epidemiology (Wilkinson & Pickett, 2009, 2018), and criminology (Rufancos, Power, Pickett, & Wilkinson, 2013) has increased notably in the last three decades. Indeed, from 1993 to 2016—within the social psychology field—there was an almost 1,300% increase in published articles that mention income inequality or economic inequality (Wiwad et al., 2019). Likewise, international institutions have pointed out that reducing economic inequality is one of the main aims for society to achieve (United Nations, 2015; World Economic Forum, 2020). Moreover, politicians and newspapers often talk about this issue (Arends, 2020). This suggests that as economic inequality has been growing, economic inequality as a topic has become more popular as it has increased media attention on it. What remains unclear is whether populations also have increased their interest in economic inequality.

Interest in economic inequality reflects the importance one gives this topic, whatever their attitude toward it or their ideology. Being interested in a topic can be reflected through searching for information, sharing ideas, and debating about it. For instance, one who is interested in economic inequality might search for information about how their government is addressing this issue, regardless of whether this person wants the government to take measures to reduce it. The main point is that increased searches and online activity (e.g., using Google and Twitter) about a given topic reflect increased interest in it (Signorini, Segre, & Polgreen, 2011). As noted earlier, as economic inequality has increased, politicians, institutions, research, and certain kinds of social media (e.g., online news articles) have focused more attention on this issue. We wanted to focus on whether the general public echoes this interest. We expected that if so, in those places where economic inequality is higher, the salience of this topic would also be more significant, which would be reflected in the interest of the general population in this topic through the activity of two of the most common information sources available for everyday people, Google and Twitter.

The Present Research

In this research, we aimed to explore the relationship between actual economic inequality and interest in economic inequality as a topic. Existing literature has addressed several correlates of current economic inequality (Walasek & Brown, 2015). Following a similar approach, in this research, we aimed to provide evidence

of the relationship between current economic inequality and the extent of its presence as a topic in popular speech, regardless of its justification. Notably, we suggested that in a more unequal environment, the economic inequality issue will be more salient, which will be reflected in individuals' interest in it. To test this prediction, we focused on the United States because the population shares a common language and culture. Our main aim was to explore whether a high level of real economic inequality—measured with the Gini index—is associated with a high level of interest in economic inequality.

To do so, we first focused on private interest in economic inequality, examining the relationship between the Gini index and Google searches. We considered that a higher proportion of Google searches indicates a higher interest in economic inequality, given that it reflects the desire to be informed about economic inequality and topics surrounding it (e.g., definition, causes, consequences, and worldwide data). More searches in Google show that this topic is important to people regardless of individuals' attitudes toward economic inequality. Second, we explored the same relationship concerning the public interest in economic inequality by analysing tweets that address the economic inequality topic. We considered a higher number of posted tweets as indicating a higher interest in expressing personal ideas publicly as well as a predisposition to debate them. We suggested that when economic inequality is high, the population's interest in it will be high because interest in economic inequality does not take into account the ideological connotation. Therefore, we expected that interest in economic inequality happens because of negative as well as positive attitudes toward economic inequality. Given that tweets are public, we conducted further analyses to explore the different narratives around economic inequality on Twitter and the different attitudes toward it.

STUDY 1

Method

First, we obtained data about U.S. states from the U.S. Census Bureau (2018a, 2018b, 2019). We collected data about the latest Gini index available at the time of data collection—that is, the Gini index of the year 2018. The Gini index is a coefficient that measures economic inequality from 0 (*everyone has the same amount of income*) to 1 (*a single person hogs the whole income*) (U.S. Census Bureau, 2018a, see Figure 1, Panel a). Moreover, we collected median household income data by state from 2018 as a control variable (U.S. Census Bureau, 2018b) because the use of technology might be

conditioned by the level of the family's wealth. Indeed, the states with lower resources by household might search less on Google just because they have less access to technology or the Internet. Finally, we collected data about the size of each state's population in 2019 (U.S. Census Bureau, 2019) to control for the fact that more searches in Google were not just because a state had more people. We log-transformed household income and state population to fit with the assumption of regression (Li et al., 2019; Lu, Lee, Gino, & Galinsky, 2018; Yang & Xin, 2019).

Afterward, we used Google Trends (<https://trends.google.es/trends/>) to obtain the search frequencies in Google for “economic inequality” and “income inequality” in the different U.S. states. To do that, we first searched the term “economic inequality” as a search term on Google Trends, selecting “United States” in the country section, and “last 12 months” in the time interval section. We followed the same procedure to search “income inequality.” We collected these data in December 2019. Search frequencies obtained with Google Trend are not a count of queries in absolute terms; otherwise, they are obtained in relative terms. High values indicated a higher proportion of search queries over the total, with 100 indicating the most frequently searched. Values of 50 indicated half of the maximum value, and 0 indicated that there was insufficient data for the term searched. We created a single indicator, averaging the search frequencies of “economic inequality” and “income inequality,” $r = .909$, $p < .001$ (see Figure 1, Panel b). We will refer to this indicator as “economic inequality” throughout the results and in Tables 1 and 2 and in Figure 1 (Panel b).

Results

As we expected, the Gini index was positively correlated with searches for economic inequality, $r = .32$, $p = .030$ (see Table 1). Moreover, we conducted hierarchical multiple regression analyses to check the robustness of these correlations. In the first step, we included median household income and state population as control predictors. In the second step, we included the Gini index as a predictor as well.

The results (see Table 2) showed that Model 1 was significant, $F(2, 43) = 13.26$, $p < .001$, with the household income predicting economic inequality search positively, $\beta = .53$, $p < .001$, and the population predicting it negatively, $\beta = -.29$, $p = .021$. More importantly for our prediction, Model 2 was also significant, $F(3, 42) = 30.40$, $p < .001$, with the Gini index explaining an additional 30.37% of the variance of the search for economic inequality, $F(1, 42) = 40.39$, $p < .001$. As expected, the Gini index predicted searches of economic inequality positively, $\beta = .59$, $p < .001$.

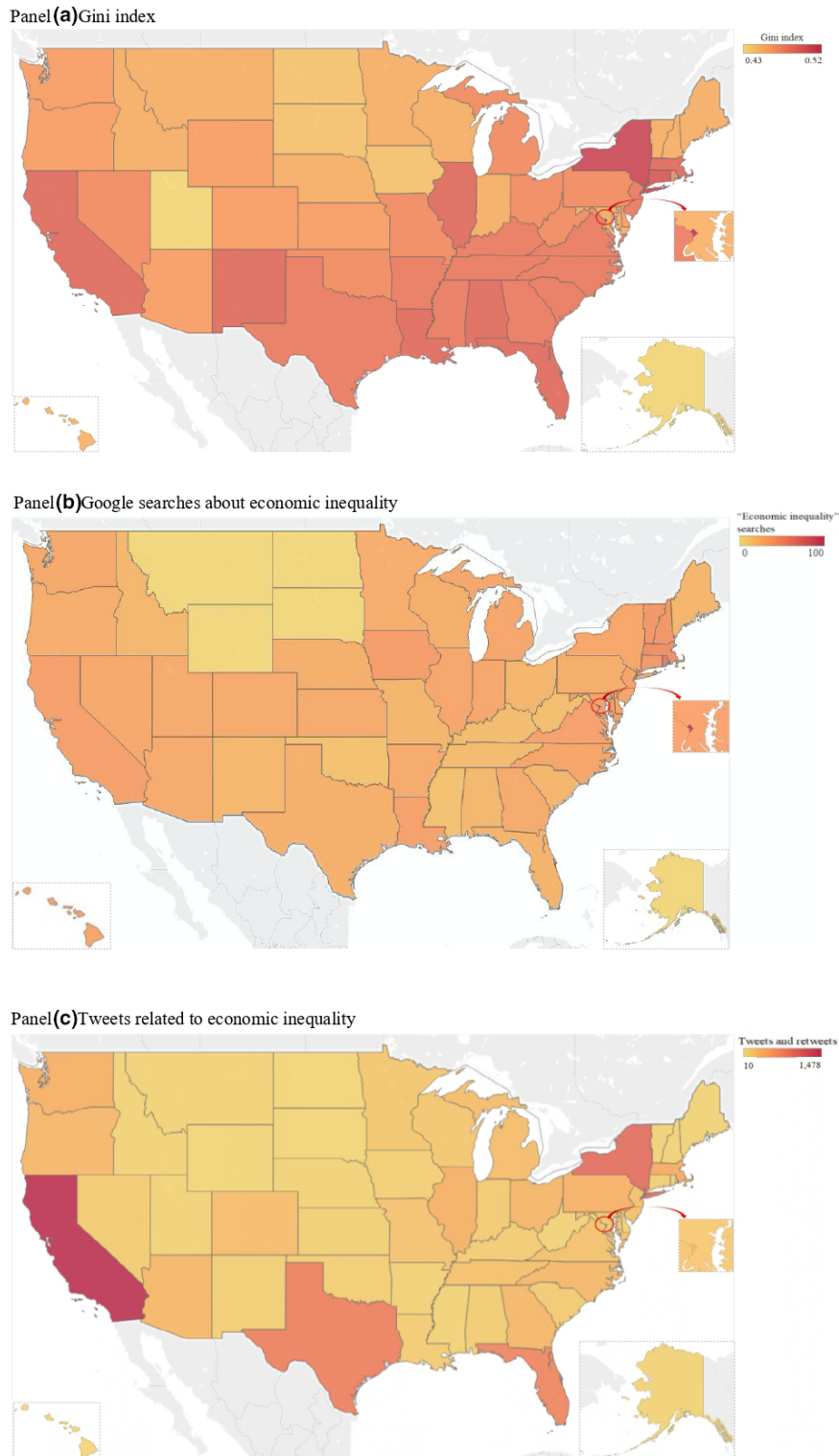


Figure 1 Panel a shows the Gini index for each U.S. state. Panel b shows the proportion of Google searches about economic inequality. Panel c shows the number of tweets related to economic inequality. Redder states reflect greater GINI index (Panel a), Google searches (Panel b), and numbers of Tweets (Panel c). [Colour figure can be viewed at wileyonlinelibrary.com]

Table 1
Pearson's Correlations

	1	2	3	4
1. Gini index	–	–	–	–
2. Economic inequality search	.32*	–	–	–
3. Tweets	.49***	.09	–	–
4. Household income	–.19	.55***	.14	–
5. Population	.43**	–.31*	.72***	–.04

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Discussion

Our results provide initial evidence that individuals who live in more unequal environments are more interested in economic inequality. Indeed, we showed that in more economically unequal U.S. states, individuals did more Google searches about both economic and income inequality. Importantly, these results keep over and above household income and state population. Given that searches in Google do not take into account attitudes toward economic inequality, our results suggest that those who live in more economically unequal states are more interested in economic inequality, regardless of its ideological implications.

Google searches usually are conducted privately without sharing this behaviour with others. Whether the relationship between current economic inequality and interest in this topic keeps when the interest in economic inequality is public remains unclear. Consequently, we explored whether individuals who live in more unequal

states address the issue of economic inequality publicly on social networks. Mainly, we focused on Twitter, analysing the number of tweets that deal with economic inequality topic. Moreover, tweet analyses allow us to analyse the narrative of the economic inequality topic. Therefore, we aimed to explore the communities built around the economic inequality topic on Twitter.

STUDY 2

Method

We collected tweets using the T-Hoarder-Kit (Congosto, Basanta-Val, & Sanchez-Fernandez, 2017). The T-Hoarder-Kit is a “framework that enables tweet crawling, data filtering, and which is also able to display summarized and analytical information about the Twitter activity concerning a certain topic or event in a webpage” (Congosto et al., 2017, p. 28). Given that we were interested in tweets related to the topics of economic inequality and income inequality, we collected—separately—tweets in which the terms “economic” and “inequality” appeared together, or “income” and “inequality” appeared together. We will refer to both economic- and income-inequality-related tweets with the label “economic inequality” to improve the ease of reading the results. We collected an initial sample of 30,600 tweets between December 13 and 18, 2019. This sample included tweets and retweets.

In the preprocessing of the sample, we determined the location of each tweet according to the information provided in the localization section. To maximise the number of tweets geolocalised in the United States, we used all the useful information provided, such as the state, city, street, coordinates, and geographic

Table 2
Hierarchical Regression Analysis to Predict Search of Economic Inequality

Predictor	Model 1			Model 2		
	<i>B</i>	β	95% CI	<i>B</i>	β	95% CI
Step 1						
Household income	99.16***	.53***	[54.0, 144.3]	119.75***	.64***	[86.5, 153.0]
Population	–9.52*	–.29*	[–17.5, –1.48]	–15.2***	–.46***	[–21.3, –9.1]
Step 2						
Gini index	–	–	–	411.8***	.59***	[281.0, 542.5]
R^2	–	.38	–	–	.68	–
F	–	13.26***	–	–	30.40***	–
ΔR^2	–	–	–	–	.30	–
ΔF	–	–	–	–	40.39***	–

* $p < .05$.

*** $p < .001$.

features—for example, lakes and mountains—to determine the U.S. state in which each tweet was published. We excluded those tweets that did not provide any information about the localisation, that provided information from two different states, and that provided information situating their localisation outside the United States. The final sample was 10,118 tweets. We used the same U.S. Census Bureau data from Study 1 regarding the Gini index, median household incomes, and state populations (U.S. Census Bureau, 2018a, 2018b, 2019).

Results

Main analyses

As we expected, the Gini index was positively correlated with the number of (re)tweets about economic inequality, $r = .49$, $p < .001$ (see Table 1). We conducted hierarchical multiple regression analyses to check the robustness of this correlation. Similar to Study 1, in the first step, we included median household income and state population as predictors to control by them. In the second step, we included the Gini index as a predictor as well (see Table 3) and the number of (re)tweets as the criterion variable.

The results showed that Model 1 was significant, $F(2, 48) = 28.42$, $p < .001$. More importantly for our prediction, Model 2 was also significant, $F(3, 47) = 23.42$, $p < .001$, with the Gini index explaining an additional 5.7% of the variance of the number of tweets published, $F(1, 47) = 6.69$, $p = .013$. As expected, the Gini index predicted tweets published about economic inequality positively, $\beta = .27$, $p = .013$.

Network analysis

To take a closer look at the narrative around the tweets about economic inequality, we conducted a network analysis. A network is built with nodes and edges. Nodes represent entities whereas edges represent the relationships between the nodes. In this network analysis, we used tweets as nodes and retweets as directed edges. First, we built the network structure with more representative tweets—that is, 10% of tweets with a greater number of retweets—using the T-Hoarder Kit (Congosto et al., 2017). We obtained 3,000 nodes and 3,547 edges. Next, we conducted a network analysis with Gephi (Bastian, Heymann, & Jacomy, 2009). First, we applied a giant component filter to clarify the network structure, obtaining 2,348 nodes (78.27%) and 3,304 edges (93.15%). Then, we calculated the features of the whole network structure. The network had a diameter of 4—that is, the two farthest tweets had three tweets between them—with an average path length of 1.24. Moreover, the network had a low density (density = 0.001), and on average, each tweet was retweeted 1.41 times. Afterward, we analysed the communities that formed the network.

We calculated random modularity with a high resolution (25) to identify the most considerable commonalities. The results showed acceptable modularity, $Q = .35$, suggesting the presence of community structures (Blondel, Guillaume, Lambiotte, & Lefebvre, 2008; Clauset, Newman, & Moore, 2004). Indeed, we found three communities. We used ForceAtlas2 to visualise the network structure and communities (see Figure 2). ForceAtlas2 is an algorithm use for network spatialization which makes nodes repulse each other and edges

Table 3
Hierarchical Regression Analysis to Predict the Number of Tweets About Economic Inequality

Predictor	Model 1			Model 2		
	<i>B</i>	β	95% CI	<i>B</i>	β	95% CI
Step 1						
Household income	632.73	.17	[−113.9, 1,379.4]	809.31*	.213*	[89.7, 1,528.9]
Population	424.15***	.72***	[308.9, 539.4]	358.06***	.611***	[237.6, 478.6]
Step 2						
Gini index	–	–	–	3,556.76*	.269*	[791.1, 6,322.5]
R^2	–	.54	–	–	.60	–
F	–	28.42***	–	–	23.42***	–
ΔR^2	–	–	–	–	.06	–
ΔF	–	–	–	–	6.69*	–

* $p < .05$.

** $p < .01$.

*** $p < .001$.

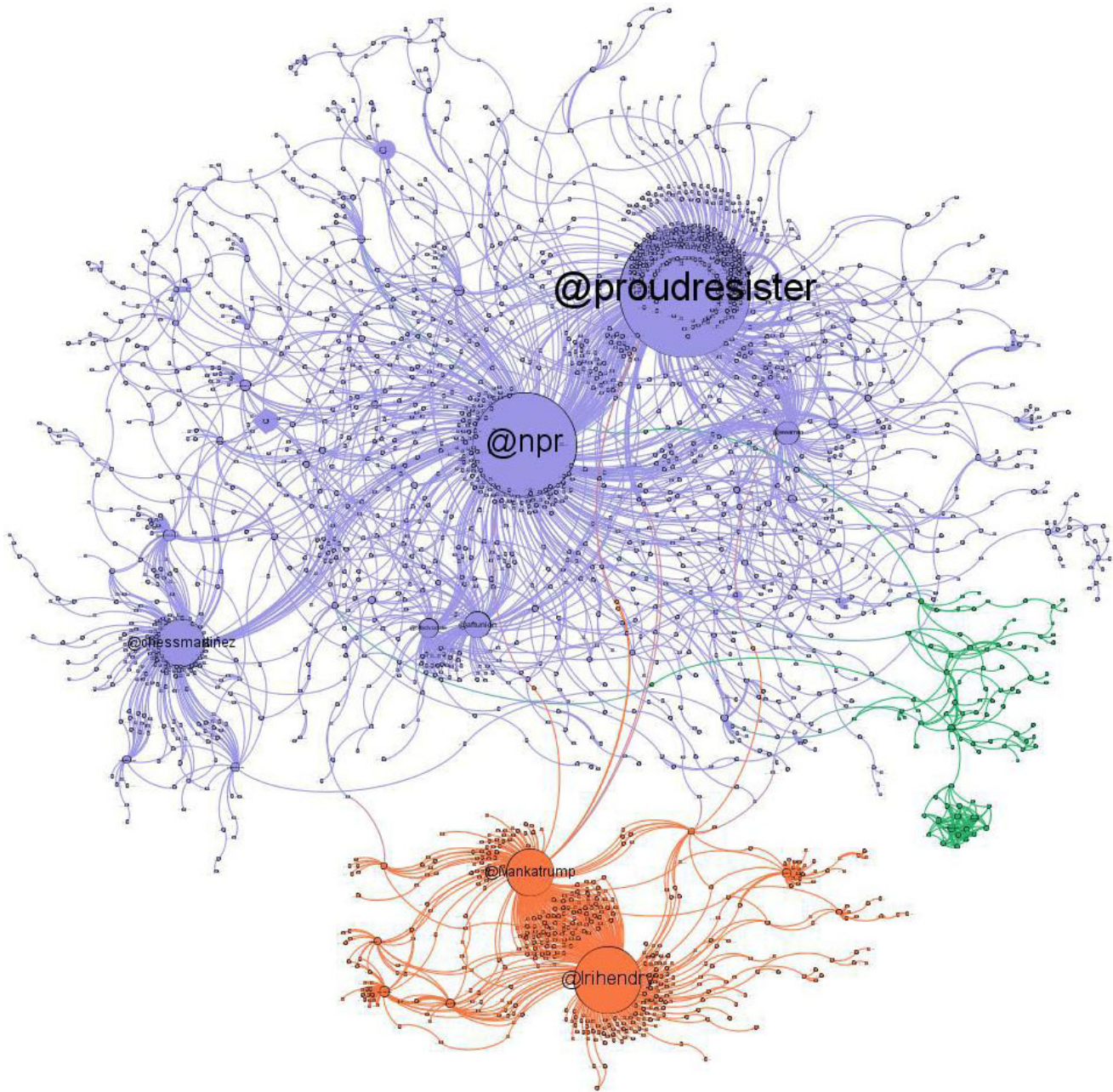


Figure 2 The network of tweets about economic inequality. Nodes represent (re)tweets, and are linked to their retweets by edges. Size of nodes represent tweets' degree (i.e., the largest nodes are the tweets more retweeted.) [Colour figure can be viewed at wileyonlinelibrary.com]

attract their nodes (Jacomy, Venturini, Heymann, & Bastian, 2014). We aimed to look closer to determine what the narrative was around economic inequality in each community. To do so, we analysed the tweets that might be considered the builders of the narrative around economic inequality in our sample. Therefore, to give meaning to these communities, we analysed the three most representative tweets in each community (see Figure 3).

The first community represented 77.73% of the network. The tweet with the highest degree (515) was posted by a “Progressive activist” complaining about the luxury when economic inequality is at a 50-year high. Moreover, he claimed that the former President Donald Trump is the symptom of a disease, namely greed. The tweet with the second highest degree (407) was posted by an account that published “News. Arts & Life. Music & more.” This tweet shared the news that claimed that

Tweets with highest degree in community 1



Tweets with the highest degree in community 2



Tweets with the highest degree in community 3

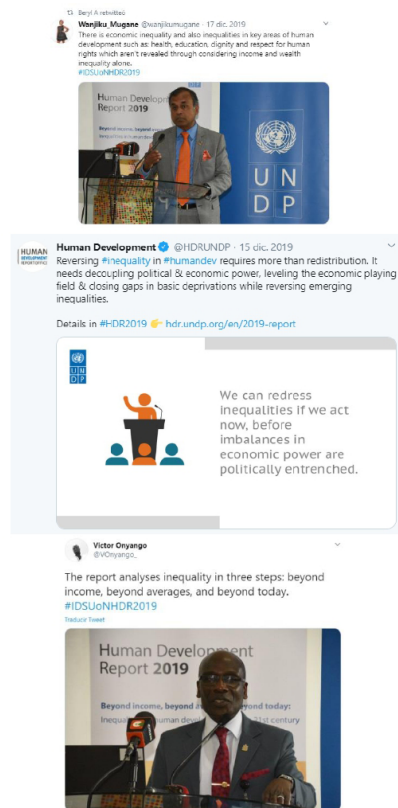


Figure 3 FTweets with the highest degree in Communities 1, 2, and 3. [Colour figure can be viewed at wileyonlinelibrary.com]

“Street protests popping up around the globe are driven by a growing sense that societies are rigged to favor the powerful — and trap the masses in low-wage, dead-end lives.” Finally, the tweet with the third highest degree (178) was posted by a writer and campaigner who claimed that it is terrible news that the working class rejected the Labour Party’s manifesto given that it addresses causes of economic inequality.

The second community represented 18.23% of the network. The tweet with the highest degree (257) was posted by a radio speaker who claimed that candidate for the presidency, as well as the former Democratic senator and the former Democratic president, live in mansions while they lecture about economic inequality. The tweet with the second highest degree (178) was posted by the daughter of the former President Trump. She shared the news that claimed that economic inequality is plummeting thanks to Trump’s policies. Finally, the tweet with the third highest degree (29) was posted by a member of the Republican party who claimed that thanks to Trump’s policies, average middle-class income had increased, which is an excellent strategy for reducing economic inequality.

The third community represented 4.05% of the network. The tweet with the highest degree (19) was posted by an unspecific profile who echoed a United Nations conference on economic inequality. Her post shared that economic inequality has important implications for health, education, dignity, and respect for human rights. The tweet with the second highest degree (17) was posted by an account linked to the United Nations complaining about the far-reaching measures being taken to reduce economic inequality. Finally, the tweet with the third highest degree (16) was also posted by an unspecific profile who echoed the United Nations conference by showing how the issue of economic inequality was analysed.

Discussion

In line with Study 1, the results from Study 2 provide evidence that individuals who live in a more economically unequal environment are more interested in economic inequality. Indeed, we showed that in more economically unequal U.S. states, individuals posted more tweets related to economic inequality. Moreover, these results keep over and above median household

income and state population. In Study 1, we showed that objective economic inequality was related to private interest in this topic; that is, Google searches. In this study, we extended this result, showing that objective economic inequality also positively predicts public interest in economic inequality; that is, the number of tweets posted.

Similar to Study 1, the number of tweets posted about economic inequality analysed in Study 2 does not take into account the ideological implications around this topic—just how often people post tweets about it. However, given that tweets are public, we could look at them closer to analyse the ideological narrative around economic inequality. To do so, we conducted a network analysis. Our analysis allowed us to put tweets together according to individuals who retweeted them. With this procedure, we could draw the communities built around economic inequality issues on Twitter. Moreover, we focused on the most representative tweets in each community to analyse the narrative around the topic of economic inequality.

We found three large communities. The first community was the largest, occupying more than three fourths of the network. The size of this community suggests that in our sample, most people who talked about economic inequality on Twitter are clustered in this community. A summary of the most representative tweets suggests that this community thinks that economic inequality is high, is caused by greed, and has negative consequences such as street protests. Moreover, it regrets that the “working class” does not support measures to reduce economic inequality. The profiles of the individuals who posted the tweets and the few references to the positioning of political ideology—references to the former President Trump and the Labour Party—suggest that this community is in the left wing.

The second community was quite smaller than the first one, occupying less than one fifth of the network. Analysing the content of the most representative tweets as well as the profiles of the individuals who posted them, we can appreciate key differences from the first community. First, there is a more robust positioning of political ideology. Indeed, the most representative tweet in this community reported the hypocrisy of the Democratic Party members when they lecture about economic inequality. Moreover, the other two tweets were posted by profiles linked directly to the Republican Party: Trump’s daughter and a Republican candidate. These features suggest that this community is positioned in the right wing of the political ideology spectrum in the United States. Additionally, this community seems to maintain that economic inequality has plummeted, improving the living conditions and middle-class income, thanks to Trump’s policies.

Finally, the third community, occupying the smaller proportion of the network, seems to reflect tweets about

an economic inequality conference conducted by the United Nations. The most representative tweets reflect some of the key results of this conference, such as relations between economic inequality and health, education, dignity, and respect for human rights and the need for far-reaching measures to reduce economic inequality.

General Discussion

Our results showed that actual economic inequality positively predicts interest in it. Indeed, individuals who live in more unequal U.S. states do more Google searches about economic inequality and post more tweets related to this topic. Importantly, this relationship kept even after controlling by median household income and state population. These results suggest that in a more unequal environment, individuals are more interested in economic inequality, searching for information about it and talking more often about this issue in social media. It is noteworthy that these behaviors reflect the interest in economic inequality in daily life, so they have a high ecological validity.

Our results suggest that individuals who live in a more unequal environment are more interested in the economic inequality issue, both privately and publicly. This comparison is remarkable because previous research has found that private and public contexts can promote different motivations, which may lead to different psychosocial consequences (Kraus & Callaghan, 2016). Our results did not show evidence that private and public interest in economic inequality are correlated (see Table 1). This result might suggest that, indeed, private interest in economic inequality may result from different motivations than public interest in this topic. The motivation to search the terms “economic inequality” and “income inequality” in Google might stem from an interest in looking for information about the current level of economic inequality, its causes, or its consequences. However, the motivation to post tweets or retweets about economic inequality might come from a desire to publicly express an attitude toward economic inequality. Accordingly, we analysed the different communities in Twitter built on the economic inequality issue to explore the different narratives around it.

The results of our network analysis suggest that tweets about economic inequality are organised in three communities. The largest of these communities seems to reflect a narrative about high levels of economic inequality, the causes, and the negative consequences. Moreover, this narrative seems to have connotations of a left wing political ideology. In contrast, the second community, quite smaller than the first one, suggests that economic inequality has been reduced, with connotations of right wing political ideology. Finally, the third community echoes a

conference about the economic inequality topic. These results suggest that interest in economic inequality has different ideological connotations.

Implications

As economic inequality has risen, interest in this topic has risen among scholars, politicians, and institutions (Piketty, 2014; United Nations, 2015; Wilkinson & Pickett, 2009, 2018; Wiwad et al., 2019). However, whether the general population increases their interest in economic inequality hand in hand with the current level of economic inequality remained unclear. Our results showed that individuals who live in a more unequal environment are more interested in the economic inequality issue. This result might suggest that the general population echoes the increased interest in this topic of other sectors of society.

Although we must be cautious because of the correlational nature of our results, these might be explained as the real economic inequality leads to means of communication, politicians, and institutions to talk more about the topic of economic inequality, which in turn echoed in the interest of the inhabitants. In this sense, the frequency of exposure to several sources of information, such as news, images, conferences, and talks about economic inequality, might underlie the relationship between real economic inequality and the interest in economic inequality. Further research should test this underlying path.

Our results might imply that people are dimly aware of the level of economic inequality. Although previous studies have shown that individuals usually underestimate the current level of economic inequality (Gimpelson & Treisman, 2018; Norton & Ariely, 2011), others have found a positive correlation between objective and perceived economic inequality (Castillo, 2012; Sommet, Elliot, Jamieson, & Butera, 2019). Therefore, we might expect that individuals should be aware of economic inequality, in broad terms, if they live in a more equal or unequal environment, even if they do not perceive the level of economic inequality accurately. Our results are in line with this idea. The fact that more objective economic inequality equals more interest in it might reflect that individuals have a diffuse idea about the current level of economic inequality in their communities. In other words, individuals might think diffusely that they live in an unequal environment because means of communication generate much talk about this issue. This path might provide individuals with indirect information about the level of economic inequality in their societies. This is important because information about the level of economic inequality is an important clue that individuals use to guide themselves in life. Indeed, when people have information about the level of economic inequality, they use it to

decide whether to cooperate or compete with others depending on whether economic inequality is low or high, respectively (Nishi, Shirado, Rand, & Christakis, 2015). Moreover, information about economic inequality works as a clue that people use to infer features of others in society (Heiserman & Simpson, 2017; Moreno-Bella, Willis, & Moya, 2019; Sánchez-Rodríguez, Rodríguez-Bailón, & Willis, 2020; Sánchez-Rodríguez, Willis, Jetten, & Rodríguez-Bailón, 2019). Further research is needed to explore this possible path in the perception of economic inequality and its consequences.

Our results contradict previous research showing that economic inequality is negatively related to concern about it (Mijs, 2019; Schröder, 2017). However, as noted earlier, concern about and interest in economic inequality are two different constructs. Concern about economic inequality implies a specific attitude toward economic inequality with particular ideological connotations (García-Sánchez et al., 2018; Trump, 2017; Willis et al., 2015). Indeed, concerns about economic inequality imply taking a stance that economic inequality is too high and should be reduced. However, interest in economic inequality reflects the importance that one gives this topic, whatever his or her opinion about it. Therefore, individuals who live in a more unequal environment might be less concerned about economic inequality because they think that it is justified, but also might give importance to this topic, search for information in Google, and post tweets about it. Our further network analysis suggested that the narratives underlying the tweets and retweets about economic inequality have different attitudes toward economic inequality and different political ideologies. Indeed, our results suggest that there are different *echo chambers* around the topic of economic inequality on Twitter. An echo chamber is a cluster of like-minded users that are separated from the rest of the network and have a lower threshold for being convinced by a given narrative (Törnberg, 2018). Indeed, while one community underlines the high level of economic inequality, another community claims that it has been reduced. Moreover, both communities have political ideology positions: The first one is left wing whereas the second one is right wing. These results suggest that narratives around economic inequality have important ideological implications, although with different connotations. It should be highlighted that the community with a left wing position occupies the larger part of the network, suggesting, in line with previous research (Bobbio, 1996), that the economic inequality issue is usually a left wing topic.

Limitation and Future Directions

Although this research has several strengths, it also has some limitations that should be addressed in future

research. We should take into account at least three limitations. First, as noted earlier, we should be cautious with the causal interpretation of our results. Given the correlational nature of our data, we cannot infer a causal relationship between our variables. We consider our procedure to be highly ecological, but it has the limitation of lacking internal validity. Although our results might be explained assuming that objective economic inequality is the cause and interest in economic inequality the effect, this statement is not supported by our results. Therefore, future research might use experimental procedures to manipulate economic inequality (e.g., Sánchez-Rodríguez, Willis, & Rodríguez-Bailón, 2019) and test how interest in economic inequality is affected.

A second limitation is that we explored our hypotheses cross-sectionally. Indeed, we performed searches on Google and tweets at one point. This approach allowed us to determine the relationship between the current level of economic inequality and the interest in it at one given time, which is essential. However, this picture is static and prevents us from understanding the dynamic nature of this relationship. Exploring the relationship between our main variables with a longitudinal approach might shed light on the dynamic processes involved in how the current level of economic inequality change interest in it over time.

Finally, our results are limited to a single country. We conducted our analyses with data from only the United States. Focusing on one country allowed us to simplify the procedure, given its shared language and culture. Although our results have a limited generalisation to other countries, they are in line with other research conducted in other contexts and cultures. For example, Li et al. (2019) found that individuals who live in more (vs. less) unequal regions of China tend to search for more information about social class and economic inequality. Moreover, economic inequality seems to have a similar effect on Western and Eastern countries (e.g., on trust; Oishi, Kesebir, & Diener, 2011; Yang & Xin, 2019). This evidence suggests that our results might be generalised to other countries, but more research is needed to shed light on this issue.

Conclusion

Our results show that individuals who live in more unequal U.S. states are more interested in economic inequality. Notably, the current level of economic inequality predicts positively both private—Google searches for economic inequality—and public interest—posting tweets about economic inequality. This result sheds light on the effects that objective levels of economic inequality have on the narratives around this issue.

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Conflict of interest

The authors declare that there are no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

Data availability statement

The data that support the findings of this study were derived from the following resources available in the public domain: Google Trends: <https://trends.google.es/trends/>; Twitter: <https://twitter.com/>; U.S. Census Bureau. (2018a). *GINI index: 2018 American Community Survey 1-year estimates*. Retrieved from <https://data.census.gov/cedsci/table?q=gini&g=0100000US.04000.001&hidePreview=true&table=B19083&tid=ACSDT1Y2018.B19083&vintage=2018&lastDisplayedRow=155&tp=true>; U.S. Census Bureau. (2018b). *Median Household Income by state – 2 Year average*. Retrieved from <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-households.html>; U.S. Census Bureau. (2019). *Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico*. Retrieved from <https://www.census.gov/data/tables/time-series/demo/pepstat/2010s-state-total.html>

References

- Alvaredo, F., Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2017). *World Inequality Report*. Retrieved from <https://wir2018.wid.world/files/download/wir2018-summary-english.pdf>
- Arends, B. (2020). Americans say income inequality is a bigger problem than illegal immigration. *MarketWatch*. Retrieved from <https://www.marketwatch.com/story/american-voters-income-inequality-a-bigger-political-problem-than-illegal-immigration-2020-01-09>
- Bastian, M., Heymann, S., & Jacomy, M. (2009). Gephi: An open source software for exploring and manipulating networks. In *International AAAI Conference on Weblogs and Social Media* (Vol. 3, 1st ed., pp. 361–362). Retrieved from <https://ojs.aaai.org/index.php/ICWSM/article/view/13937>
- Blondel, V. D., Guillaume, J.-L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, 2008. P1008. <https://doi.org/10.1088/1742-5468/2008/10>
- Bobbio, N. (1996). *Left and right: The significance of a political distinction*. Chicago, IL: The University of Chicago Press.
- Castillo, J. C. (2012). La legitimidad de las desigualdades salariales. Una aproximación multidimensional [The legitimacy of wage inequalities. A multidimensional approach]. *Revista Internacional De Sociología*, 70, 533–560. <https://doi.org/10.3989/ris.2010.11.22>

- Clauset, A., Newman, M. E. J., & Moore, C. (2004). Finding community structure in very large networks. *Physical Review*, *70*, 66111. <https://doi.org/10.1103/PhysRevE.70.066111>
- Congosto, M., Basanta-Val, P., & Sanchez-Fernandez, L. (2017). T-Hoarder: A framework to process Twitter data streams. *Journal of Network and Computer Applications*, *83*, 28–39. <https://doi.org/10.1016/j.jnca.2017.01.029>
- García-Castro, J. D., Rodríguez-Bailón, R., & Willis, G. B. (2020). Perceiving economic inequality in everyday life decreases tolerance to inequality. *Journal of Experimental Social Psychology*, *90*, 104019. <https://doi.org/10.1016/j.jesp.2020.104019>
- García-Sánchez, E., Van der Toorn, J., Rodríguez-Bailón, R., & Willis, G. B. (2018). The vicious cycle of economic inequality: The role of ideology in shaping the relationship between “what is” and “what ought to be” in 41 countries. *Social Psychological and Personality Science*, *10*, 991–1001. <https://doi.org/10.1177/1948550618811500>
- Gimpelson, V., & Treisman, D. (2018). Misperceiving inequality. *Economics and Politics*, *30*(1), 27–54. <https://doi.org/10.1111/ecpo.12103>
- Heiserman, N., & Simpson, B. (2017). Higher inequality increases the gap in the perceived merit of the rich and poor. *Social Psychology Quarterly*, *80*(3), 243–253. <https://doi.org/10.1177/0190272517711919>
- Jacomy, M., Venturini, T., Heymann, S., & Bastian, M. (2014). ForceAtlas2, a continuous graph layout algorithm for handy network visualization designed for the Gephi software. *PLoS ONE*, *9*(6), e98679. <https://doi.org/10.1371/journal.pone.0098679>
- Kraus, M. W., & Callaghan, B. (2016). Social class and prosocial behavior: The moderating role of public versus private contexts. *Social Psychological and Personality Science*, *7*, 769–777. <https://doi.org/10.1177/1948550616659120>
- Kuziemko, B. I., Norton, M. I., Saez, E., & Stantcheva, S. (2015). How elastic are preferences for redistribution? Evidence from randomized survey experiments. *American Economic Review*, *105*, 1478–1508. <https://doi.org/10.1257/aer.20130360>
- Li, S. G., Chen, Y., & He, G. (2019). Mapping public concerns about class immobility in China. *Social Indicators Research*, *144*, 745–765. <https://doi.org/10.1007/s11205-019-02075-2>
- Lu, J. G., Lee, J. J., Gino, F., & Galinsky, A. D. (2018). Polluted morality: Air pollution predicts criminal activity and unethical behavior. *Psychological Science*, *29*, 340–355. <https://doi.org/10.1177/0956797617735807>
- McCall, L. (2013). *The underserving rich. American beliefs about inequality, opportunities, and redistribution*. Cambridge, IL: Cambridge University Press.
- Mijs, J. J. B. (2019). The paradox of inequality: Income inequality and belief in meritocracy go hand in hand. *Socio-Economic Review*, mwy051. <https://doi.org/10.1093/ser/mwy051>
- Moreno-Bella, E., Willis, G. B., & Moya, M. (2019). Economic inequality and masculinity–femininity: The prevailing perceived traits in higher unequal contexts are masculine. *Frontiers in Psychology*, *10*(1590), 1–9. <https://doi.org/10.3389/fpsyg.2019.01590>
- Nishi, A., Shirado, H., Rand, D., & Christakis, N. A. (2015). Inequality and visibility of wealth in experimental social networks. *Nature*, *526*, 426–429. <https://doi.org/10.1038/nature15392>
- Norton, M. I., & Ariely, D. (2011). Building a better America—One wealth quintile at a time. *Perspectives on Psychological Science*, *6*(1), 9–12. <https://doi.org/10.1177/1745691610393524>
- Oishi, S., Kesebir, S., & Diener, E. (2011). Income inequality and happiness. *Psychological Science*, *22*, 1095–1100. <https://doi.org/10.1177/0956797611417262>
- Piketty, T. (2014). *Capital in the twenty-first century*. Cambridge, MA: Harvard University.
- Rodríguez-Bailón, R., Sánchez-Rodríguez, Á., García-Sánchez, E., Petkanopoulou, K., & Willis, G. B. (2020). Inequality is in the air: Contextual psychosocial effects of power and social class. *Current Opinion in Psychology*, *33*, 120–125. <https://doi.org/10.1016/j.copsyc.2019.07.004>
- Rufrancos, H., Power, M., Pickett, K. E., & Wilkinson, R. (2013). Income inequality and crime: A review and explanation of the time-series evidence. *Social and Criminology*, *1*(1), 1–9. <https://doi.org/10.4172/2375-4435.1000103>
- Sánchez-Rodríguez, Á., Jetten, J., Willis, G., & Rodríguez-Bailón, R. (2019). High economic inequality makes us feel less wealthy. *International Review of Social Psychology*, *32*(1), 1–11. <https://doi.org/10.5334/irsp.333>
- Sánchez-Rodríguez, Á., Rodríguez-Bailón, R., & Willis, G. B. (2020). Economic inequality affects perceived normative values. *Group Processes & Intergroup Relations*. Advance online publication. <https://doi.org/10.1177/1368430220968141>
- Sánchez-Rodríguez, Á., Willis, G. B., Jetten, J., & Rodríguez-Bailón, R. (2019). Economic inequality enhances inferences that the normative climate is individualistic and competitive. *European Journal of Social Psychology*, *49*, 1114–1127. <https://doi.org/10.1002/ejsp.2557>
- Sánchez-Rodríguez, Á., Willis, G. B., & Rodríguez-Bailón, R. (2019). Economic and social distance: Perceived income inequality negatively predicts an interdependent self-construal. *International Journal of Psychology*, *54*(1), 117–125. <https://doi.org/10.1002/ijop.12437>
- Schneider, S. M. (2019). Why income inequality is dissatisfying—Perceptions of social status and the inequality-satisfaction link in Europe. *European Sociological Review*, *35*, 409–430. <https://doi.org/10.1093/esr/jcz003>
- Schröder, M. (2017). Is income inequality related to tolerance for inequality? *Social Justice Research*, *30*(1), 23–47. <https://doi.org/10.1007/s11211-016-0276-8>
- Signorini, A., Segre, A. M., & Polgreen, P. M. (2011). The use of Twitter to track levels of disease activity and public concern in the U.S. during the Influenza A H1N1 pandemic. *PLOS ONE*, *6*(5), e19467. <https://doi.org/10.1371/journal.pone.0019467>
- Sommet, N., Elliot, A. J., Jamieson, J. P., & Butera, F. (2019). Income inequality, perceived competitiveness, and approach-avoidance motivation. *Journal of Personality*, *87*, 767–784. <https://doi.org/10.1111/jopy.12432>
- Sprong, S., Jetten, J., Wang, Z., Peters, K., Mols, F., Verkuyten, M., . . . Wohl, M. J. A. (2019). “Our country needs a strong leader right now”: Economic inequality enhances the wish for a strong leader. *Psychological Science*, *30*, 1625–1637. <https://doi.org/10.1177/0956797619875472>
- Stiglitz, J. E. (2012). *The price of inequality: How today's divided society endangers our future*. New York, NY: Norton.
- Törnberg, P. (2018). Echo chambers and viral misinformation: Modeling fake news as complex contagion. *PLOS ONE*, *13*(9), 1–21. <https://doi.org/10.1371/journal.pone.0203958>
- Trump, K.-S. (2017). Income inequality influences perceptions of legitimate income differences. *British Journal of Political Science*, *48*, 929–952. <https://doi.org/10.1017/S0007123416000326>

- U.S. Census Bureau. (2018a). GINI index: 2018 American Community Survey 1-year estimates. Retrieved from <https://data.census.gov/cedsci/table?q=gini&g=0100000US.04000.001&hidePreview=true&table=B19083&tid=ACSDT1Y2018.B19083&vintage=2018&lastDisplayedRow=155&tp=true>
- U.S. Census Bureau. (2018b). Median household income by state—2-year average. Retrieved from <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-households.html>
- U.S. Census Bureau. (2019). Annual estimates of the resident population for the United States, Regions, States, and Puerto Rico. Retrieved from <https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-total.html>
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. Retrieved from <https://sustainabledevelopment.un.org/post2015/transformingourworld>
- Walasek, L., & Brown, G. D. A. (2015). Income inequality and status seeking: Searching for positional goods in unequal U.S. states. *Psychological Science*, 26, 527–533. <https://doi.org/10.1177/0956797614567511>
- Wilkinson, R., & Pickett, K. (2009). *The spirit level. Why greater equality makes societies stronger*. London, UK: Penguin Books.
- Wilkinson, R., & Pickett, K. (2018). *The inner level: How more equal societies reduce stress, restore sanity and improve everyone's well-being*. London, UK: Penguin Books.
- Willis, G. B., Rodríguez-Bailón, R., López-Rodríguez, L., & García-Sánchez, E. (2015). Legitimacy moderates the relation between perceived and ideal economic inequalities. *Social Justice Research*, 28, 493–508. <https://doi.org/10.1007/s11211-015-0253-7>
- Wiwad, D., Mercier, B., Maraun, M. D., Robinson, A. R., Piff, P. K., Aknin, L. B., & Shariff, A. F. (2019). The support for Economic Inequality Scale: Development and adjudication. *PLOS ONE*, 14(6), 1–29. <https://doi.org/10.1371/journal.pone.0218685>
- World Economic Forum. (2020). *The Global Risks Report 2020*. Retrieved from http://www3.weforum.org/docs/WEF_Global_Risk_Report_2020.pdf
- Yang, Z., & Xin, Z. (2019). Income inequality and interpersonal trust in China. *Asian Journal of Social Psychology*, 23(3), 253–263. <https://doi.org/10.1111/ajsp.12399>