
Miscellaneous

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Social Media, Affective Polarization, and Collective Action in Peru

Abstract

Affective polarization has become a worldwide phenomenon that impacts the ability to engage in meaningful dialogue and reflective consideration of different available courses of action. Social media use has been linked to phenomena such as homophily and echo chambers, which contribute to the polarization of attitudes and beliefs. At the same time, social media use has been tied to collective action. This study seeks to analyze the relationship between the political use of social media, affective polarization, and collective action. It proposes two models: the first evaluates the mediating effect of the SIMCA variables in the relationship between the political use of social media and collective action; the second proposes a pathway whereby the political use of social media and its impact on collective action is mediated first by affective polarization and subsequently by the SIMCA model variables. Using a sample of 659 Peruvian social media users ranging from 18 to 39 years old, the authors found that participative efficacy alone mediates the relationship between the political use of social media and collective action. Affective polarization by itself did not mediate this relationship. However, when considering participative efficacy, the findings indicate a pathway from political use of social media to collective action mediated by both affective polarization and participative efficacy. This article reflects on how the production of affective polarization in virtual spaces among like-minded individuals can impact participative efficacy, and subsequently collective action.

Keywords

Social media, affective polarization, collective action, SIMCA model variables, Peru.

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1. Introduction

The relationship between the political use of social media and collective action is a topic, which has had widespread scholarly attention (Chan, 2016; Odağ, Uluğ & Solak, 2016; Halpern, Valenzuela & Katz, 2017). Social media is frequently used politically (Bavel *et al.*, 2021): users express their political positions, share information, and call for participation (Alberici & Milesi, 2018). Among those variables, which explain the shift from passively using social media to participating in collective in-person action, are factors that can be grouped within the Social Identity Theory for Collective Action (SIMCA) model. The SIMCA model states that moral conviction, social identity, emotions, and the perception of efficacy lead individuals to participate in collective action, such as protests, signing petitions, etc. (Agostini & van Zomeren, 2021).

Extreme polarization can deteriorate democratic processes, particularly meaningful deliberation, as polarization simplifies argumentation and works against interpersonal trust and cooperation based on democratic coexistence (Hawdon *et al.*, 2020). This is even more relevant when we consider the development of online social media and their relationship to polarization and collective action (Alberici & Milesi, 2018; Gerbaudo, 2016). It is necessary to acknowledge that social media is increasingly used as a primary source of news, especially among younger generations (Instituto de Estudios Peruanos, 2020; Shearer, 2018).

Polarization in Peru has increased (McCoy, 2022) and there have been a series of crises and social mobilizations that have impacted politics over the past several years (Sulmont, 2021). Furthermore, there are studies regarding social media and collective action related to women's rights movements in Peru (Caballero, 2019), and youth leadership in politics (Villanueva, 2015, 2021), as well as studies examining the relationship between psychological variables such as self-efficacy, cyber-activism, and collective action (Ruiz-Dodobara, Escurra & Angeletti, 2021). Therefore, studying affective polarization in a country such as Peru can be useful for our understanding of the relationship between political use of social media, affective polarization, and collective action; mainly, in a country where the party system has collapsed, as well as the identification with it (Levitsky & Zavaleta, 2019; Meléndez, 2019; Sulmont, 2018) promoting high levels of populism among citizens (Chaparro, Gómez & Pino, 2024).

If, as has been theorized, social media use is related to normative in-person collective action and also associated with affective polarization, it is important to study the relationship between these two processes; however, the interaction between social media use, polarization, and collective action is understudied (Roblain & Green, 2021). This interaction could be fostering processes of radicalization that impede dialogue, tolerance, and democratic understanding. Therefore, a better understanding of the relationship between social media, affective polarization, and their link to normative in-person collective action could enable us to propose enhanced public policies and provide more accurate information for developing programs designed to combat affective polarization and reduce manipulation and disinformation. Furthermore, given that including affective polarization in a model such as the one presented is relatively novel, we decided to compare the results with a model that does not include affective polarization. This was done to better understand the contribution of affective polarization to the initial model.

Therefore, this study will examine the following three hypotheses:

- H1. Social Media Use, Affective Polarization, and the SIMCA variables are significant predictors of collective action.
- H2. The SIMCA variables mediate the relationship between Social Media Use and Collective Action.
- H3. There is a path from Social Media Use to Collective Action that goes through Affective Polarization and the SIMCA variables.

2. Literature review

2.1. Social media, collective action, and mediating variables

Regarding the relationship between social media use and collective action, research shows divergent results. On one hand, some studies indicate that, under certain circumstances, social media use can hinder the intention to participate in collective actions. On the other hand, other research points to a positive relationship between these two factors. Concerning the first posture, some authors argue that while these platforms may help users feel good about themselves; they do not lead to significant real-world impact (Han, 2022; Morozov, 2008). In addition, high levels of polarization lead to less willingness to participate in collective action (El Kurd, 2019), as well as aggressive behaviors that threaten democratic confrontation (Philipps, 2022). Furthermore, Alberici and Milesi (2018) found that when social media debates are perceived as unconstructive, individuals' willingness to participate in collective action decreases. This perception also negatively impacts their identification with and moral conviction related to the topic under debate. Regarding the positive relationship between social media use and collective action, authors have found that social media are used to inform and coordinate actions among groups with the goal of achieving mass mobilizations (Cabalin, 2014). Several studies indicate the presence of a relationship between social media use and collective action when mediated by the different variables in the Social Identity Model for Collective Action (SIMCA) (Chan, 2016; Odağ, Uluğ and Solak, 2016).

This study focuses on the normative in-person collective action, which is characterized by being within the social norms and the status quo (ex., signing petitions and pacific protest) (Thomas *et al.*, 2012; Sabucedo & Arce, 1991). Regarding this kind of collective action, using a sample of activists from the Italian Movement for Water, Alberici and Milesi (2018) found that when users participated in reflective discourse online, political identity mediated the relationship between moral obligations, measured as support for initiatives that guaranteed access to water, and participation in collective action. On the other hand, Chan (2016) identified that social media consumption had an indirect effect on the intent to participate in collective action (protest) among a group of 818 residents of Hong Kong, which was mediated by anger and identification with other activists. Halpern, Valenzuela, and Katz (2017) in their sample of Chilean citizens discovered that Facebook and Twitter users had different ways of connecting with political participation. In the case of Facebook users, they found that collective political efficacy mediated the relationship between sharing information online and political participation; regarding Twitter, they discovered that the relationship between sharing information online and political participation was mediated by internal efficacy. Ruiz-Dodobara, Villanueva, and Escurra (2023) found that anger towards political inefficacy, moral convictions related to climate issues, collective efficacy and identification with environmental activists mediated the relationship between social media use and collective action to avoid climate change. Odağ, Uluğ, and Solak (2016) researched protests in Turkey and discovered that social media use was a good predictor of perceptions of social movement efficacy, identity, and perception of injustice. Their findings also revealed that these three variables positively influenced the intention to participate in protests. Moreover, they discovered that the perception of injustice, identity, and efficacy mediated the relationship between social media use and the intention to engage in protest activities.

2.1. Social Media Use and Affective Polarization

Various studies have found that social media promotes political polarization, partly due to the way groups engage in the process of sharing information (Bail *et al.*, 2018; Medaglia & Zhu, 2017). However, other studies argue that political polarization in social media is also produced when individuals are exposed to political information from people with different views; in this case, a process of "discursive argumentation" occurs, which uses reason to advance group or individual

perspectives as a way to rhetorically defeat one's opponents (Mercier & Sperber, 2011). In this instance, affective polarization is produced through exposure to diversity. For one reason or another, social media activity that is linked to politics generates affective polarization, which is aggressivity in political discourse targeting political groups that are associated with opposite positions (Bail *et al.*, 2018; Iyengar, 2019; Yarchi, Baden & Kligler-Vilenchik, 2020).

The influence of online group relationships on affective polarization is tied to homophily and the construction of echo chambers, which bring about fragmentation. Homophily is defined as when "contact between similar people occurs at a higher rate than among dissimilar people" (McPherson, Smith-Lovin & Cook, 2001, p. 416) which can deepen given the structure of social media, leading to the so-called "filter bubble" (Pariser, 2011). In a similar vein, social pressure, facilitated by social media use, reinforces pre-existing ideas and contributes to affective polarization (Everton, 2016; Wells *et al.*, 2017; Medaglia & Zhu, 2017).

According to Tajfel's Social Identity Theory (Tajfel & Turner, 1979), social identity is comprised of negative feelings towards one's outgroup and positive feelings towards one's ingroup. Affective polarization is developed in these terms and implies a questioning of the "other" –not just because of what they think, but because the other becomes a threat due to their very existence (McCoy, Rahman & Somer, 2018). Social media impacts affective polarization more so than ideological polarization. It affects, not ideology, as Iyengar, Sood, and Lelkes (2012) article title mentions, distances individuals from one another and brings about a process of categorization that goes beyond ideas and extends to other social aspects or even to their very existence (McCoy & Diez, 2011). Affective polarization is intensified through social media, as it facilitates the use of emotional rhetoric among both those who identify with one another and those who perceive themselves as different (Stevens, Arts & Dewulf, 2021). These emotions of rejection and mistrust towards political parties, leaders, and social groups, as well as the affirmation of ingroup identity, make affective polarization dangerous for democratic coexistence (Whitt *et al.*, 2021).

However, there are other studies that demonstrate results that bring nuance to the relationship between the use of social media and homophily. Dubois and Blank (2018) argue that the content consumed in social media is varied, political and non-political issues are discussed; other studies demonstrate that while the process of searching for political information on the internet is mediated by echo chambers, there is still exposure to diverse non-political content (Flaxman, Goel & Rao, 2016; Semaan *et al.*, 2014). Studies have found that political discussions tend to polarize, either by the exposure to echo chambers and information contrary to one's own views (Mercier & Sperber, 2011), while non-political topics allow for greater exchange between people who perceive themselves as different (Barberá *et al.*, 2015; Tucker *et al.*, 2018).

2.3. The effects of Affective polarization motivated by the use of social media

Iandoli, Primario and Zollo (2021) argue that the effects of polarization linked to social media use result in three types of outcomes: disinformation, fragmentation, and radicalization. As regards disinformation, studies of Facebook users in Europe (Del Vicario *et al.*, 2017) or using experimental simulations (Törnberg, 2018) find that polarization leads to selective exposure processes mediated by groups of belonging (echo chambers) that have acritical attitudes regarding the content they read, resulting in deepening disinformation and polarization.

Fragmentation refers to the division into various subgroups based on interests. This phenomenon, a consequence of affective polarization, results from exposure to disliked outgroups and the consumption of biased information on social media (Settle, 2018). While there are longitudinal studies, such as the one carried out by Chan and Fun (2017) which find that ideological and affective polarization occur after fragmentation in Facebook users in Hong Kong, there are other studies that find that polarization on Twitter (Bright, 2018) and Facebook (Zhu, Skoric & Shen, 2017) leads to fragmentation. These opposing findings demonstrate what Yarchi, Baden and Kligler-Vilenchik (2020) argue, that online debates have a different impact on

fragmentation and polarization depending on the type of social media use (in their study, Twitter, Facebook, and WhatsApp).

The impact of radicalization is one of the most prominent repercussions associated with affective polarization (Iyengar, 2019). Radicalization consists of changing one's opinions, in this case, those which are expressed online, towards more extreme positions after participating in discussions with groups of people who think similarly, but who are more radical or violent, or through exposure to politicians or media outlets with extreme viewpoints (Chan, Cassius & Fu, 2019; Levendusky & Malhotra, 2016; Levendusky, 2013; Lynch, Freelon & Aday, 2017). It is not surprising that radicalization is associated with seeing others who think differently in a negative light, and those who think similarly in a positive light, which is affective polarization (Iyengar & Westwood, 2015).

2.4. Affective Polarization, collective action, and mediating variables

Does affective polarization impact collective action? If so, how? We know very little about the subject. The literature on the relationship between polarization and collective action shows that high levels of polarization lead to less willingness to participate in collective action (Alberici & Milesi 2018; El Kurd, 2019) and to aggressive behaviors that threaten democratic confrontation (Philipps, 2022). Alberici and Milesi (2018) found that when debates on social media are perceived as not constructive, one's willingness to participate in collective action decreases and negatively impacts the identification and moral conviction related to the area of debate.

Nevertheless, several studies indicate a positive association, both direct and mediated by variables related to collective action (Das & Whitman, 2021; Roblain & Green, 2021).

Das and Whitman (2021) conducted a content analysis of the official website of the Hindutva movement in India. This movement unites numerous political organizations and orchestrates large-scale mobilizations with significant social impact. They found that the movement employed two strategies –homogenization and polarization– which were relevant to promote collective action. One strategy described the existence of an external antagonistic group that needed to be counteracted by a united ingroup; insinuating an intense contrast between an outgroup characterized as an evil adversary and a moral and protective ingroup. While the authors do not suggest so, there is an implicit, untested notion that the motive for the group's activism could be linked to this strategy in the group's virtual space.

On the other hand, Roblain and Green (2021), in their three studies using Swiss and Belgian students, analyze the relationship between the perception of societal polarization regarding migration and political collective action (e.g., signing petitions, participating in a protest, etc.). In their first study, they discovered that perceptions of polarization were related to political collective action; in the second study and third studies, it was found a path from perceived polarization to collective action through the personal importance of migration first and perceived efficacy to mobilize people with the same opinions about immigration second.

After reviewing the relevant literature, we find that the political use of social media impacts collective action via mediated relationships with variables from the SIMCA model, specifically moral conviction, anger, social identity, and participative efficacy. We also found that social media generates affective polarization, as the literature demonstrates that polarization fragments and radicalizes, discouraging collective action. Yet at the same time, other studies find that polarization is linked to collective action. How can we relate these conflicting findings regarding the polarization processes to the SIMCA variables as well as collective action? If social media use leads to polarization, does this pathway in turn impact variables such as social identity, moral conviction, emotionality, and efficacy? Few studies establish a relationship with some of these variables but not with others (Roblain & Green, 2021). This study aims to examine the relationship between political social media use and collective action, as mediated by SIMCA variables and affective polarization.

3. Methodology

3.1. Design

This is a multivariate, non-experimental cross-sectional study, as it examines the mediated relationship between variables at one specific moment in time. The use of social media for political purposes was set as the predictor variable, polarization and SIMCA variables were set as mediating variables; and the outcome variable was collective action.

3.2. Participants and Procedures

The non-randomized sample was obtained using the panel service Offerwise. Offerwise's panel has approximately 400,000 people (both women and men) in Peru, of which 90% of participants are between the ages of 18 and 54, residing in multiple regions of the country.

An online survey of approximately 15 minutes was used for this study. Before taking the survey and after reading about the research objectives, participants were asked to give their informed consent, which was required to participate in the study. The survey was administered in October 2022. The final sample comprised 659 Peruvians (men = 329) between 18 and 39 ($M = 27.56$, $SD = 6.37$) years old. Participants used social media at least twice a week. 50% of the sample resided in the capital (Lima), and 50% were from Peru's other regions. This study was approved by the Ethics Committee of the Instituto de Investigación Científica of Universidad de Lima.

3.3. Instruments

The research instrument was based on findings from the relevant literature. The survey was evaluated by judges in Psychology and Political Science, whose suggestions were incorporated into the instrument. A pilot survey was carried out with a sample of 50 individuals, which demonstrated an adequate level of comprehension, with an average duration of 10 to 15 minutes. Pilot survey participants were not included in the final sample. Reliability and factor loadings of the latent variables are presented in the following paragraphs.

The variables tested in this study were:

Social Media Use ($\omega = .93$; Range of factorial loadings [.56, .85]): to evaluate the frequency of the political use of social media, an 8-item scale was designed and adapted from Alberici and Milesi (2018), Vaccari *et al.* (2012) and García-Galera, Del Hoyo-Hurtado and Fernández-Muñoz (2014), whose studies evaluated the use of online platforms for getting information (e.g.: "I use social media, such as Twitter, WhatsApp, TikTok, and/or Instagram to find information about political issues"), express political stances (e.g.: "I use social media, such as Twitter, WhatsApp, TikTok, and/or Instagram to share news and opinions regarding political issues") and collaborate in the online organization of mass actions (e.g.: "I use social media, such as Twitter, WhatsApp, TikTok, and/or Instagram to help organize actions related to politics").

Moral Conviction ($\omega = .75$; Range of factorial loadings [.35, .87]): This construct describes absolute moral positions. A 4-item scale adapted from van Zomeren, Postmes and Spears (2012) was developed regarding this construct in the political arena (e.g.: "My opinion on political issues is an important part of my norms and moral values").

Anger ($\omega = .72$; Range of factorial loadings [.56, .84]): A 3-item scale, derived from the work of Zhang, Kong and Chan (2015) and Melki *et al.* (2022), was used to examine anger towards groups who have political postures that are different from those of the individual (e.g.: "I get mad when I think about what people who have different political positions than I do can do to this country").

Social Identity ($\omega = .75$; Range of factorial loadings [.60, .82]). Based on the work of Drury *et al.* (2016), a 3-item scale was used to measure individual identification with those who might be impacted by holding a specific political stance (e.g.: "I identify with those who are attacked for having similar political positions as my own").

Participative Efficacy ($\omega = .78$; Range of factorial loadings [.70, .76]): to measure the belief that individuals can indeed make a significant contribution to a group's chosen action to ensure the correct political action is taken, a 3-item scale was constructed based on the work of van Zomeren, Postmes, and Spears (2012) (e.g.: "I believe that my participation in the causes that I support can make a difference").

Affective Polarization ($\omega = .84$; Range of factorial loadings [.51, .82]): to measure polarization, a 6-item scale based on the work of Druckman and Levendusky (2019) was used. Polarization was operationalized as the difference between one's attitude towards those on the (political) left and those on the right (e.g.: "How often do you trust that a left-wing person will do the right thing for the country?" and "How often do you trust that a right-wing person will do the right thing for the country?").

Collective Action ($\omega = .78$, Range of factorial loadings [.51, .82]): A 5-item scale was created based on the work of Sabucedo and Arce (1991), and Ruiz-Dodobara, Escurra and Angeletti (2021). This scale evaluates one's intention to participate in normative in-person group initiatives related to politics (e.g. "I would participate in marches, demonstrations, or protests related to political issues").

The responses to the questions regarding moral conviction, anger, social identity, participative efficacy, and collective action were given on a 5-point Likert scale, whose response options ranged from 1 (Totally disagree) to 5 (Totally agree).

The political use of social media and affective polarization were measured using a different 5-point Likert scale, whose response options ranged from 1 (Never) to 5 (Always).

3.4. Analytical Plan

First, we carried out a Pearson correlation matrix using all variables for analysis. Afterward, to verify the role of polarization and the SIMCA variables, we utilized linear regression; the predictor variables were social media use, affective polarization, and the SIMCA model variables. The dependent variable was collective action.

Next, to study multiple mediations, we employed a model that established the political use of social media as the independent variable, polarization and the SIMCA model variables as mediating variables, and collective action as the dependent variable. Each of the hypotheses established in this study was tested using Structural Equation Modeling (SEM) on Amos software. This analysis technique allows researchers to establish complex relationships between observed variables and latent constructs effectively (Hayes, 2022; Lei & Wu, 2007; Luque, 2000). Since sufficient alternative response numbers were obtained, the ordinal variables were treated as intervals by using the Maximum Likelihood (ML) approach (Suh, 2015). This approach was further combined with the 500-sample nonparametric bootstrapping approach since it is not sensitive to sample size or normality distribution (Preacher & Hayes, 2004). The adjustment indexes Comparative Fit Index (CFI) $\geq .90$, Root Mean Squared Error of Approximation (RMSEA) $\leq .08$, and Standardized Root Mean Square Residual (SRMR) $\leq .08$ were established as indicators of adequate fit (Keith, 2019)

4. Results

The correlations found that all variables were significantly related to one another (see Table 1).

Table 1. Correlation Matrix.

Variable	Social Media Use	Moral Conviction	Anger	Social Identity	Participative Efficacy	Affective Polarization	Collective Action
1. Social Media Use	—						
2. Moral Convictions	.485***	—					
3. Anger	.261***	.321***	—				
4. Social Identity	.378***	.354***	.491***	—			
5. Participative Efficacy	.461***	.532***	.367***	.428***	—		
6. Affective Polarization	.158***	.100**	.108**	.128**	.163***	—	
7. Collective Action	.549***	.456***	.272***	.410***	.508***	.191***	—

N = 659; ** *p* < .05, ****p* < .001

Source: Own elaboration.

As regards the first hypothesis, in the linear regression model, we found that the political use of social media and polarization were significant predictors of collective action. However, affective polarization was responsible for a reduced percentage of the explanation for the variance in the dependent variable ($\beta = .074$, $SE = .027$, $p = .015$). As regards the SIMCA model variables, we identified that all variables except anger ($\beta = -.015$, $SE = .032$, $p = .679$) significantly predicted collective action. This model explained (R^2) 41.8% of the variance in collective action. The control variables of sex and age were also included in this model (see Table 2).

Table 2. Multiple Linear Regression Model of Collective Action.

DV: In Collective Action		
Independent variables	Model	
	B	β
Social Media Use	.262***	.321***
Moral Convictions	.121**	.128**
Anger	-.013	-.015
Social Identity	.135***	.145***
Participative Efficacy	.259***	.223***
Affective Polarization	.066**	.074**
R^2	.418	

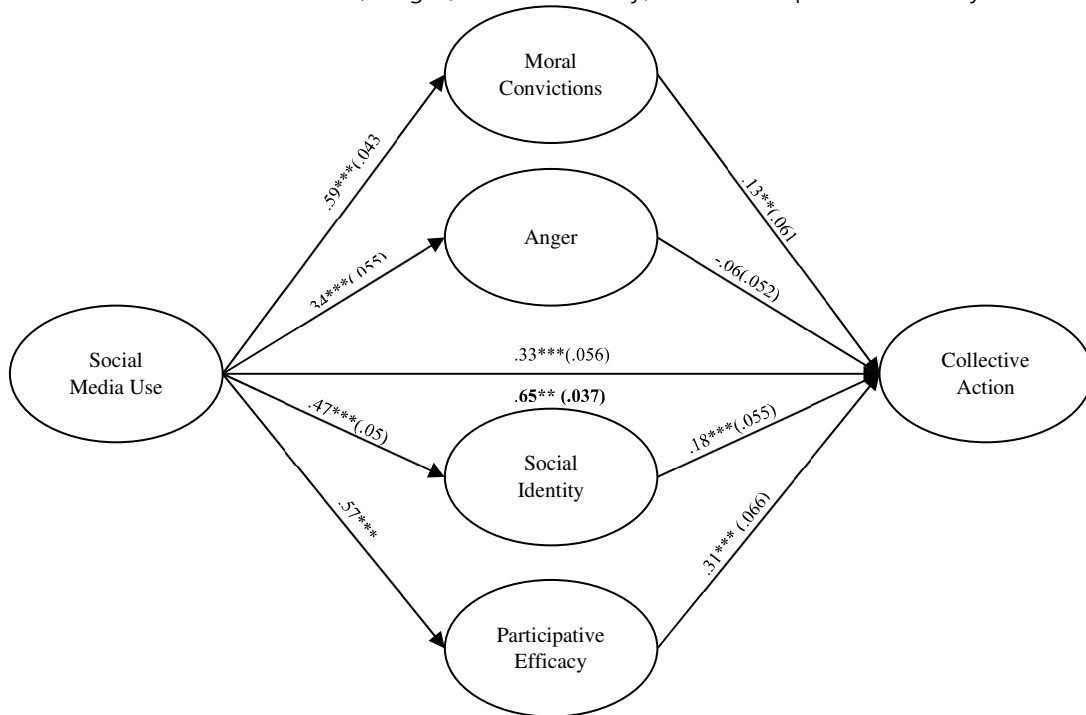
p* < .05 *p* < .001. Control variable: age and sex.

N = 659

Source: Own elaboration.

Regarding the second hypothesis (Figure 1), a SEM model was proposed to analyze the mediation of SIMCA variables in the relationship between political use of social media and collective action. Adequate fit indexes were obtained $\chi^2/df = 4.45$, CFI = .863, RMSEA = .072, SRMR = .084. The results indicate that political use of social media and collective action are statistically significantly mediated by SIMCA variables, except anger (see Table 3).

Figure 1. Model 1: Mediated relationship between Social Media Use and Collective Action via Moral Conviction, Anger, Social Identity, and Participative Efficacy.



The upper side of the direct line between Social Media Use and Collective Action indicates the direct effect and the lower side of the line shows the total effect. Control variables: sex and age. Standardized coefficients and standard error in parenthesis. $N = 659$; $**p < .05$, $*** p < .001$

Source: Own elaboration.

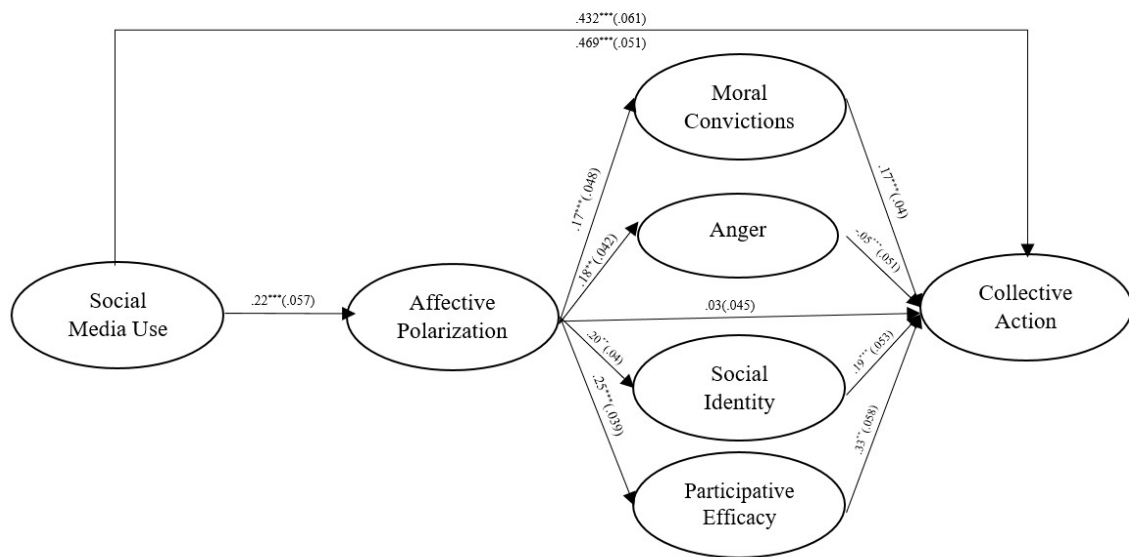
Table 3. Indirect effects.

Model 1					
Path	β	B	95%CI (B)	p	
SM \rightarrow MC \rightarrow CA	.078	.107	[.010,.209]	.032	
SM \rightarrow A \rightarrow CA	-.022	-.031	[-.088,.017]	.248	
SM \rightarrow SI \rightarrow CA	.083	.115	[.043,.204]	.004	
SM \rightarrow PE \rightarrow CA	.178	.246	[.131,.362]	.004	
Model 2					
Path	β	B	95%CI (B)	p	
SM \rightarrow AP \rightarrow CA	.006	.007	[-.020,.039]	.557	
SM \rightarrow AP \rightarrow MC \rightarrow CA	.006	.008	[.001,.025]	.017	
SM \rightarrow AP \rightarrow A \rightarrow CA	-.002	-.002	[-.012,.003]	.407	
SM \rightarrow AP \rightarrow SI \rightarrow CA	.008	.011	[.002,.031]	.008	
SM \rightarrow AP \rightarrow PE \rightarrow CA	.018	.023	[.007,.053]	.008	

$***p < .001$, $**p < .05$. SM = Social Media Use, POL = Affective Polarization, MC = Moral Convictions, A= Anger, SI = Social Identity, PE = Participative Efficacy, CA = Collective Action. $N = 659$

The second SEM analysis (see Figure 2) indicated that affective polarization only through all the SIMCA variables (except for anger) mediated the relationship between political use of social media and collective action. The sizes of the indirect effect (see Table 3) on such pathways were minimal (Acock, 2014). Despite that, it was decided to report the mediating effect of polarization through participative efficacy because it was the variable with the highest effect size ($\beta = .018$, 95%CI [.007, .053], $p = .008$). The theoretical model presented a marginal fit to the empirical data $\chi^2/df = 4.888$, CFI = .826, RMSEA = .077, SRMR = .166. In addition, affective polarization failed to play a significant role in mediating the relationship between political use of social media and collective action (see Figure 2).

Figure 2. Model 2: Mediated relationship between Social Media Use and Collective Action via Affective Polarization, Moral Conviction, Anger, Social Identity, and Participative Efficacy.



The upper side of the direct line between Social Media Use and Collective Action indicates the direct effect and the lower side of the line shows the total effect. Control variables: sex and age. Standardized coefficients and standard error in parenthesis. $N = 659$; ** $p < .05$, *** $p < .001$

Source: Own elaboration.

5. Discussion and conclusion

The purpose of this study was to analyze the interaction between a series of variables that have been shown to have a role in the relationship between the informative, expressive, and organizational use of social media for political purposes and collective action.

Regarding our first hypothesis, we found that political use of social media, affective polarization, and all the SIMCA model variables (except for anger, which we will discuss further), predicted collective action. The relationship between political use of social media and collective action could be explained by sharing of information and political expression (Cabalin, 2014), which could activate moral values related to specific topics (Alberici & Milesi, 2018), increases the perception of the efficacy of carrying out specific mass mobilizations (Ruiz-Dodobara, Ecurra & Angeletti, 2021) and makes injustices committed against an ingroup more obvious (Odağ, Uluğ & Solak, 2016). In relation to affective polarization, authors were able to address that this variable was a predictor of collective action. One possible explanation is that on certain social media such as Facebook, individuals interact with friends and family who share points of view and interests (Yarchi, Baden & Kligler-Vilenchik, 2020), which are audiences that also exert

pressure that can result in radicalization (Medaglia & Zhu, 2017; Wells *et al.*, 2017). Therefore, these political interactions could create echo chambers in which individuals only read and see information that coincides with their personal preferences, which also could increase the tendency to polarize (Pariser, 2011), and consequently, towards collective action (Roblain & Green, 2021).

Nevertheless, the relationship between political use of social media and collective action was not mediated by affective polarization ($\beta = .006$, $SE = .01$, 95%CI[-.020,.039]). One possible explanation for this is the fact that affective polarization is measured concerning the feelings that individuals on the political right or left produce among participants. However, in Peru, political identities are structured along a different axis than left- or right-wing political ideology; rather, political identity in the country focuses more on negative identity towards all political actors resulting in an opposition to the so-called political “establishment” (Meléndez, 2019, 2022). Concerning identity, it is important to highlight the weak relationship between polarization and social identity ($r = .128$, $p < .01$) (see Table 1), which suggests that maybe it is necessary to adapt affective polarization’s analysis from “left” to “right” categorization to a more complex one to analyze political attitudes, such as polarization in a low partisanship society (Levitsky & Cameron, 2003; Levitsky & Zavaleta, 2019; Segovia, 2022). Since these systems do not have only one party in power and one in opposition, polarization could become more complicated. In addition, in Latin America, affective polarization is best understood as the identification of the person with the shared belief system of their group, having a concept of the political world as an “us” vs “them.” Which could lead to collective action when group-based deprivation is seen (van Zomeren, Postmes & Spears, 2008). Thus, citizens with strong aversions to political entities tend to mobilize against them, even if they do not align themselves with the other opportunistic parties as alternatives (Meléndez, 2022). In that sense, we assume that affective polarization is more a function of identity-based ideologies than issue-based ideologies or group identities (Mason, 2018; Rojo-Martínez & Crespo-Martínez, 2023). As Rojo and Crespo (2023) observe, in a multipartisan society without widespread partisan identification, individualistic non-ideological groupings emerge and form communities with broader meanings (“antifujimorismo-fujimorismo,” “anti-communism-communist,”) (Melendez, 2019). Using that logic, we believe that further research is needed in which affective polarization is measured based on the different categories other than “left” or “right,” these tentative categories could be structured by labeling “people who support my interests” and “people who do not support my interests” pertaining public issues relevant to each individual (Krosnick, 1990).

Unlike previous studies (Chan, 2016; van Zomeren, Postmes & Spears, 2012; Włodarczyk *et al.*, 2017), anger did not have a statistically significant effect on collective action (see Table 2), nor did it mediate the relationship between the political use of social media and affective polarization with collective action (Figure 2). In other words, the consumption of biased information and exposure to disliked outgroups on social media (Settle, 2018) which could produce polarization, did not lead individuals to identify outgroups towards which they feel anger as belonging to the right or the left (at least, not strongly enough to affect collective action). This coincides with the explanation of a positive relationship between the variables of political use of social media and anger ($r = .261$, $p < .001$). In essence, political social media use, with its emotionally charged language, may foster feelings of rejection towards outgroups (Whitt *et al.*, 2021), regardless of whether these groups align with the political right or left.

The second hypothesis proposed the existence of a pathway from the political use of social media, via the SIMCA model variables, to collective action. Participative efficacy mediates the relationship between political social media use and collective action. This finding suggests that political social media use has a moderate effect on collective action when it enhances individuals’ belief that participation can significantly impact a specific protest action (participative efficacy).

Regarding the third hypothesis (see Figure 2), the results indicate that affective polarization in conjunction with participative efficacy had a small indirect effect on the relationship between political use of social media and collective action. The results showed that social media use with regard to political issues –whether to gather information or share one’s opinion– had a medium statistically significant effect on the tendency to see someone who thinks differently as an enemy, or in other words, affective polarization. These results go against Roblain and Green’s (2021) findings that there is a relationship between social media use, polarization, and identity, but not the perception of efficacy. Nonetheless, we found a minimal effect. This model highlights the importance of participative efficacy, given that the path including this variable was the only SIMCA model variable that contributed to this pathway in a small effect size, while the others were minimal (moral convictions and social identity) or not statistically significant (anger).

One possible explanation of the mediating effect of participative efficacy (see Figure 1 and 2) could be related to the fact that online platforms can radicalize existing positions (Everton, 2016; Wells *et al.*, 2017). Users may perceive their capacity to engage in collective action as enhanced when they observe similar individuals participating in and gaining recognition or success from such initiatives (Yarchi, Baden & Kligler-Vilenchik, 2020). It is also necessary to point out that this vicarious action could have an impact on participative efficacy, which, by its definition (the belief that my participation is relevant so that a group can achieve its goals) is more individualistic and is more strongly connected to collective action than group efficacy (van Zomeren, Postmes & Spears, 2012).

Besides, we believed it necessary to acknowledge that the pathway from social media use to collective action through affective polarization and moral convictions did not show relevant results, as its effect size was weak (Acock, 2014). A possible reason for these findings is that users could be perceiving social media discussions as aggressive and not constructive; when this is the case people do not connect discussions with moral obligation, and collective action is not promoted (Alberici & Milesi, 2018; El Kurd, 2019).

Finally, we conclude that there is evidence of the relevance of the political use of social media when talking about affective polarization and collective action. It is crucial to emphasize the significance of participative efficacy, both independently and through affective polarization, in elucidating the relationship between online platforms and collective action. We believe that the study of affective polarization should be broadened from that of focusing solely on left-right political ideologies, which could in turn shed more light on the relationship between polarization, the SIMCA model variables, and collective action. We, also, suggest that further research should be focused on the relationship between the studied variables in populations with high levels of ideological extremism, to explore if radicalization, as a moderating variable, increases the effect of affective polarization on collective action.

The present study relies on a cross-sectional and non-experimental design, and it used a sample of Peruvian frequent social media users, these features do not allow for the establishment of cause-and-effect relationships among these variables and limit our conclusions to this specific group.

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