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## Social Identification and Collective Action Participation in the Internet Age: A Meta-Analysis

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### Abstract

*Since the digitally-mediated large-scale protests took place all over the world, the role of social identities in collective actions has become the center of academic attention. Some scholars have claimed that interpersonal or individual reasons have become more important than collective identifications in participating digitally-mediated collective actions. To answer the question that whether social identification has lost its centrality in collective actions in the Internet age, we conducted a meta-analysis of 46 studies (N = 18,242) which examined digitally-mediated collective actions across the world reported between January 2011 and January 2020. We focused on the relationship between social identification and collective action, and the possible moderator effects of group type to be identified (emergent vs. pre-existing group), participation type (actual behavior vs. intention), and WEIRDness of the sample. The analyses showed a moderate to strong relationship between social identification and participation in digitally-mediated collective actions, while group type was the only significant moderator. Accordingly, the relationship between identification with emergent groups and collective action participation was much stronger compared to the relationship between identification with pre-existing groups and collective action participation. We discussed the theoretical implications of the results emphasized the basic dynamics of collective actions.*

**Keywords:** Social identification; collective action; connective action; social media; digital platforms

### Introduction

The role of digital technologies in collective actions has been drawing attention from a wide range of disciplines such as sociology, political science, communication, and psychology (e.g., Carlisle & Patton, 2013; Castells, 2015; Harlow & Guo, 2014; Postmes et al., 2002; Smith et al., 2018). Especially with the emergence of the digitally-mediated large-scale protests across the world (e.g., Arab Spring in Tunisia and Egypt, Occupy Movements in the US, Gezi Park Protests in Turkey, and Yellow Vest in France), studies on the relationship between digital communication and collective action have increased. Some scholars suggested that collective actions have been changed since organizing social movements have become easier, faster, and cheaper in the Internet age than in the previous times (e.g., Bennett et al., 2008; Garrett, 2006). From this perspective, collective actions organized through social media or other digital platforms are qualitatively different from the traditional ones, because their logic is different and they have become individualized. Therefore, collective actions in the Internet age do not work

based on shared social identities, they do not need organizing institutions or leaders any longer (Bennett et al., 2008; Bennett & Segerberg, 2012; Earl & Kimport, 2011). On the other hand, scholars mostly from the social identity approach view collective actions that whether or not organized through social media, all share the basic social psychological processes whereby such factors as social identity, collective efficacy, and perceived injustices interplay (e.g., Postmes et al., 2002; Smith, Gavin, et al., 2015; Thomas et al., 2015; Thomas et al., 2019). Collective action requires the social categorization process and there should be an “us” and the “them” (Drury & Reicher, 1999; Reicher, 1996). Thus, according to the social identity approach, social identification is considered as lying at the heart of all kinds of collective actions.

In the current research, we provide the results of a meta-analysis of the studies on the relationship between social identification and collective action participation in the Internet age, which were published between January 2011 and January 2020. We aim to contribute to the debate of whether collective actions in the Internet age differ qualitatively from the conventional ones. We focus on clarifying the role of social identification in the participation of digitally mediated collective actions. By digitally-mediated collective actions, we refer to the collective actions that mainly utilize cyberspace opportunities such as social media, blogs, and secured chatting systems or applications, which provide easy and fast communication, organization, and mobilization, and thus differ from conventional (pre-digital) actions organized by formal groups or institutions. We also examined the possible moderator effects of group type (emergent vs. pre-existing group), participation type (behavior vs. intention), and *WEIRDness* (Western, Educated, Industrialized, Rich, Democratic; see Henrich et al., 2010a) of sample (WEIRD vs. non-WEIRD) on the relationship between social identification and collective action participation.

## **Social Psychological Accounts of Collective Actions**

In social psychology, collective action is defined as the joint conduct of group members who aimed to improve the position of their own group or to reach a common group goal (Wright et al., 1990). The well-known approaches of collective action are based on the findings that social identification is either the strongest predictor of collective action participation or play an essential role in mobilization and participation (e.g., Drury & Reicher, 2009; Jost et al., 2012; Klandermans, 1997; Priante et al., 2018; Stürmer & Simon, 2004; van Zomeren et al., 2008). For instance, The Elaborated Social Identity Model of Crowd Behavior (ESIM; Drury & Reicher, 1999, 2000; Reicher, 1996) posits that collective actions are fundamentally group phenomenon and characteristically intergroup encounters because only shared self-categorization provides definitions of appropriate and possible conduct, and in turn, enable people to act collectively.

Studies, mostly from the social identity approach, showed that to act collectively group members should develop a shared understanding on that their group is illegitimately or unfairly treated (i.e., oppressed, disadvantaged, or deprived) (Ellemers, 1993; Mummendey et al., 1999; Tajfel & Turner, 1986; van Zomeren et al., 2008) which give rise group-based anger, moral outrage, or resentment (Thomas et al., 2009; van Zomeren et al., 2004). Besides, group members should also perceive that they can *do something* as a group to change the situation, which is mostly conceptualized as collective efficacy (Thomas et al., 2012; van Zomeren, 2013). Developing such a common understanding on these two factors that make collective actions possible would be the result of the interaction between intergroup context (e.g., unfair treatment of outgroup) and intragroup processes (e.g., consensualization process) (Drury & Reicher, 2000; Haslam et al., 1998; Reicher et al., 2005; Vestergren et al., 2018, 2019). Therefore, according to this theoretical perspective, collective actions are characteristically group-level phenomena that encompass both intra- and intergroup processes (Drury & Reicher, 2000; Reicher, 2001; Stott & Reicher, 1998).

Furthermore, research reveals that the most influential individuals that shape common understandings are the most prototypical group members or group representatives (Hogg & van Knippenberg, 2003; Platow & van Knippenberg, 2001; Turner & Haslam, 2001), which indicates that the shared understandings on the intergroup context (e.g., “we are illegitimately treated”) and intragroup factors (e.g., “we should do something”) might be reached through a leadership process. In the collective actions previous to the widespread use of digital technologies, this leading charge was usually, but not necessarily, on to the shoulders of the leaders of formal organizations such as political parties or labor unions (Klandermans, 1984, 1997). In other words, in the process of collective mobilization, the role of framing or shaping the understandings of ingroup members was played by the conventional organizations and their leaders (Bimber et al., 2005).

## The Transformed Version of Collective Actions: Connective Actions

Digital technologies, as a new tool of communication, organization, and mobilization have transformed collective actions (Bennett & Segerberg, 2012; Postmes et al., 2002; Thomas et al., 2015). Some scholars proposed that collective actions have undergone a qualitative transformation especially due to the widespread use of digital technologies (e.g., social media) that allow for user-generated content, and make possible for individuals to comment, share, and circulate the contents (e.g., Bennett et al., 2008; Leong et al., 2019; Vaast et al., 2017). Accordingly, digital technologies have a huge impact on collective actions via making mass communication possible and the basic characteristic of collective actions, being a group-level phenomenon, has transformed into a new form (Bennett & Segerberg, 2012). This new form, connective action, has a distinct logic because it presumably operates at interpersonal or even at an individual level rather than working based on shared social identities (Bennett et al., 2008; Bennett & Segerberg, 2012; Earl & Kimport, 2011).

Bennett and colleagues (2008) asserted that compared to conventional social movements, connective action is far more personalized, and its underlying psychological mechanism does not require the symbolic construction of a united *us*. From this point of view, the connective action participants do not need to develop common understandings or to have a shared ideological frame to make connections (Bennett & Segerberg, 2012). These digital connections are made based on interpersonal relations such as friendship or family. Each participator in digitally-mediated collective actions has its own reasons or concerns for attending, simply because each has a unique combination of individual goals, motives, and interpersonal style. Bennett and Segerberg (2012) claimed that these individualized orientations result in engagement with politics as an expression of personal hopes, lifestyles, and grievances. Individuals reinterpret grievances and re-create their personal meanings in their social media networks. In line with the conceptualization of digitally-mediated collective actions as a personalized mode of actions, Bennett et al. (2014) suggested that social media serve as stitching mechanisms that connect different networks into the coherent organization in the absence of recognized leaders, common goals, or conventional organization.

In a study on Umbrella Movement, the Hong Kong democracy protests, Lee et al. (2017) stated that people engaged in both the collective action of public space occupation and a diverse range of personalized or small-group based actions (e.g., public art creation, attending “civic seminars”, and participating in frontline actions such as setting up road blockades). Nekmat et al. (2019) also showed that receiving messages from personal networks (e.g., friends) are stronger predictors of willingness to participate in collective activities on social media than receiving messages from impersonal ones (e.g., organizational sources). Bennett and colleagues (2014) approach the findings of research on the Arab Spring (e.g., Tufekci, 2013) and Umbrella movements (e.g., Tang & Lee, 2013) as evidence for their arguments. Accordingly, these findings indicate that individuals participated in collective actions through social media, because social media had given people the opportunity to directly connect with political actors or opinion leaders or “networked microcelebrities” (for discussion see Uysal & Akfirat, 2021a). Anduiza et al. (2014) also showed that the main mobilization channels were personal contacts and online social networks rather than the members of formal organizations or broadcast media in the *15-M movements* in Spain. Therefore, they concluded that the 15-M movement significantly differed from the traditional collective actions in terms of the characteristics of staging organizations (recently created, without formal membership and scarce resources).

To summarize, the logic of connective action differs significantly from the logic of traditional collective action which requires shared understandings and common group goals. Now, digitally-mediated collective action operates at the interpersonal level rather than group-level. The individual participators mostly have their unique combination of individual motives for participation. Following the logic of connective actions, one can infer that the relationship between social identification and collective action participation has weakened in the Internet age; and social identification might even have lost its predictive power of collective action participation, especially if those actions are mediated by digital platforms.

## The Current Study

In the present study, we addressed the role of social identification in collective action participation in the Internet age. We conducted a meta-analysis of the recent studies from 2011 to 2020 on digitally-mediated collective actions (e.g., Arab Spring, Occupy Wall Street, Hong Kong, Yellow Vest, and Gezi Park protests). In the previous studies,

group identification appeared as the strongest predictor of collective actions (for a meta-analytic review see van Zomeren et al., 2008), including those which were organized through digital platforms (for a systematic review see Priante et al., 2018). If the assumption that social identification has lost its crucial role in collective action is valid, we should expect that social identification would have a small effect size in predicting participation in collective actions organized through digital technologies (e.g., Facebook and Twitter).

While group identification was found as the strongest antecedent of collective actions in previous studies (Priante et al., 2018; van Zomeren et al., 2008), the increased use of digital platforms that gave rise to questions concerning the mechanisms of collective actions led to a need for the current study. Besides, studies on this topic are diverse with contributions from multiple disciplines that use various theoretical and methodological approaches. Such heterogeneity requires to be addressed by a meta-analytic study which enables us to determine a) the degree of variability of the effects of different studies and b) if there would be considerable variations, how much of these variations could be credited to which factors, i.e., moderators (see Cooper et al., 2009). Therefore, we also aimed to test the effects of possible moderators: group type, participation type, and *WEIRDness* of the sample.

### ***Group Type***

The concept of social identification and the modes of identity are central to the discussions on the similarities and the differences between conventional ways of participating in collective actions and mobilization through digital tools (Alberici & Milesi, 2016, 2018; M. Chan, 2014, 2017). It has been suggested for a long time that the different modes of social identities might affect participation in collective action (Kelly & Breinlinger, 1995; Klein et al., 2007; Simon & Klandermans, 2001; Stürmer & Simon, 2004). Social identification may emerge from the appraisal of injustice and group efficacy beliefs specific to the collective action context (Thomas et al., 2015). Participants' shared desire for social change provides the base for forming a new ingroup and developing a corresponding social identity different from the previous identifications (Smith, Gavin, et al., 2015; Smith, Thomas, et al., 2015). In a recent systematic review, Vestergren et al. (2017) also identified different forms of psychological change that occur during or after the protests. Accordingly, identities become more politicized and radicalized, and commitment to the action increases (see Drury & Reicher, 2000; Stott & Drury, 2000). Indeed, van Zomeren and colleagues (2008) showed that identification with politicized identity such as action groups had a stronger effect size than identification with the pre-existing groups ( $r = .43$  vs.  $r = .34$ ). In addition, there are also a number of studies showing identification with emergent groups are strong predictor of participation to digitally mediated collective action (e.g., Chayinska et al., 2019; Odağ et al., 2016; Smith, Gavin et al., 2015; Uysal & Akfirat, 2021b). It seems important to take the aforementioned findings of van Zomeren and colleagues (2008) one step further, and to examine whether identification with an emergent group (e.g., protestor groups, opinion-based groups) better predicts participation to collective action comparing to the identification with pre-existing social groups (e.g., nations, religious groups, ideological groups, etc.). In the present study, we define pre-existing identities as the social identities that come from belongingness to various social groups including political parties, ethnic groups, trade unions, particular ideological groups, etc. that individuals have long before that specific collective action takes place (e.g., W. Chan et al., 2017; Cheng et al., 2019; Mahfud & Adam-Troian, 2021; Sabucedo et al., 2017). On the other hand, we describe emergent identities as action-specific identities, which, either transformed from the preexisting identities into contextual ones or do not exist before the process of that specific collective action starts (e.g., Besta et al., 2019; Bilali et al., 2020; Morgan & Chan, 2016; Uysal & Akfirat, 2021b; Włodarczyk et al., 2017). Therefore, the distinction between emergent identities versus pre-existing identities is based on the two dimensions: 1) contextual specificity of the group, emergent groups are those that arose to address a specific problem/issue; and 2) the temporal dimension, the emerging groups do not exist before the collective action process begins. Consequently, a key defining criterion of the emergent identities is that they are contextually specific identities that 'come to be', and that could not have been said to exist beforehand. Based on previous findings, we expect that identification with emergent groups would have a higher effect size in predicting collective action participation comparing to the identification with pre-existing groups.

### ***Participation Type***

While some of the collective action studies measured actual participation behavior (e.g., W. Chan et al., 2017; Thomas et al., 2015), the others just focused on the intention of participation (e.g., Alberici & Milesi, 2013; Morgan & Chan, 2016). The theory of planned behavior (Ajzen, 1985) asserts that intention is a robust predictor of human

behavior, which has been evidenced by numerous studies regarding a wide range of conducts including collective action (Kelly & Breinlinger, 1995; Park & Yang, 2012). Despite some findings supporting the notion that intentions and behaviors are closely linked, the results of a meta-analysis (Webb & Sheeran, 2006) showed that a large change in intention resulted in a small change in actual behavior. Likewise, another meta-analysis by Rhodes and Dickau (2012) demonstrated that changes in intention did not result in a significant change in behavior. Therefore, we thought that the strength of the relationship between social identification and collective action might vary depending on participation type (i.e., behavior vs. intention).

## ***WEIRDness***

The vast majority of research in psychology has been carried out with *WEIRD* (western, educated, industrialized, rich, and democratic) samples (Henrich et al., 2010a). In these studies, it is assumed that human populations have a very small variation and these samples represent the universe (Henrich et al., 2010b). However, the *WEIRD* samples represent only a small part of the real world (Arnett, 2016), and findings on topics such as self-concepts (e.g., Morling & Lamoreaux, 2008), reasoning styles (e.g., Norenzayan et al., 2002; Uskul et al., 2008), categorization (e.g., Vapnarsky et al., 2001; Waxman & Medin, 2007), cooperation, and fairness (e.g., Henrich et al., 2005, 2006) might not be valid in different macro-contexts (Henrich et al., 2010b). Collective actions have a substantial variety that they occurred in different contexts in many different regions and cultures of the world (see van Zomeren et al., 2008). Whereas numerous studies focused on the relationship between social identification and collective action in underrepresented and *non-WEIRD* societies, to the knowledge of authors there is no study that examines whether the macro-context in which the collective actions take place moderates this relationship. In this vein, we argue that the *WEIRDness* of samples should be taken into account to better understand the relationship between social identification and collective action.

To summarize, in the present meta-analysis, we aimed to examine the relationship between social identification and collective action participation in the Internet age. Given the fact that the studies included in the meta-analysis are broad and diverse in terms of context, methodology, and sample, we also expect a considerable amount of heterogeneity. Therefore, we also attempt to specify how much of the assumed heterogeneity could be attributed to the group type, participation type, and *WEIRDness* of the sample.

## **Method**

### **Inclusion Criteria and Literature Search**

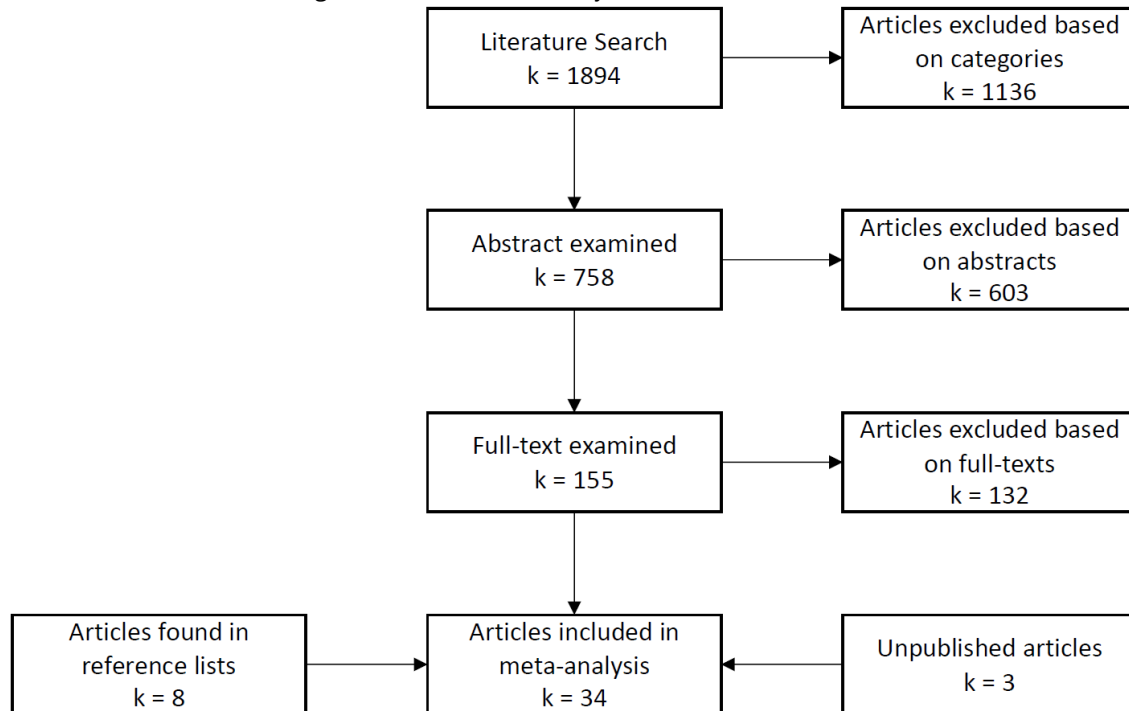
To choose the studies that should be included in the meta-analysis, we used the three following criteria. Our first criterion was that the studies should have included the measures of both social identification and participation in collective action variables. Some studies focusing on the relationship between shared social identity and collective action that took place between 2011 and 2020, were not included in this study, since they were either qualitative (e.g., Khazraee & Novak, 2018), or not digitally mediated (see Selvanathan & Lickel, 2019; Shadiqi et al., 2018).

Second, to make sure the collective action examined in the study was digitally mediated, we chose the studies (1) that were on the large scale collective actions which are known to be overwhelmingly mobilized through digital platforms (e.g., Occupy Movements, Gezi Park Protests, Arab Spring, and Yellow Vest) or (2) that the authors stated the examined collective action was digitally mediated. For example, we included three Yellow Vest studies (i.e., Girerd et al., 2020; Mahfud & Adam-Troian, 2021; Wollast et al., 2021) overwhelmingly known to be organized through digital platforms. The Yellow Vest protests, which were held by thousands of people, were noted as one of the biggest mass mobilizations in Europe, in which digital communication on cyberspace played a central role. In 2018, people, who did not have a common ingroup identity, took to the streets against President Macron in response to the rising inflation and the government's unequal tax policies in France (Jetten et al., 2020). The initiation and coordination of the protests were carried out through social media networks such as Facebook, instead of traditional formal organizations such as trade unions (Adam-Troian et al., 2021). We also included the studies that the authors stated the examined collective action was digitally mediated even if it has not received worldwide attention (e.g., Besta et al., 2019; Nekmat & Ismail, 2019; Schumann & Klein, 2015). For example, Nekmat and Ismail (2019) focused on ideologically opposing groups on social media and examined expressive support for and against the LGBTQ issue on Facebook as collective action participation. Since participants involved

in a collective action that organized entirely through social media, and the authors defined it as a collective action based on micro-mobilization on social media, we included this study in the meta-analysis.

Third, we included the studies that contain Pearson's  $r$  as an indicator of the relationship between social identification and collective action participation. When studies did not provide the correlations upon which analyses were based (i.e., because they only reported standardized or unstandardized coefficients), we contacted the author(s) and asked them to provide the necessary statistics.<sup>1</sup>

Figure 1. Selection Process of Included Publications.



For the relevant studies, we performed a comprehensive search in the database Web of Science (WoS). The starting-date and end-date we entered to the search engine were January 2011 and January 2020, respectively. In this search, we used the related search terms and their variations in the title, abstracts, and keywords of the articles.<sup>2</sup> We reached 1894 articles as a result of the WoS search. Then we refined the results by limiting the WoS categories. Because a huge range of categories are presented by the database from engineering to medicine, we made sure that only the directly relevant categories were included in our search such as communication, political science, political psychology, social psychology, and so on in this phase. After limiting the categories, we got 758 articles, and read the abstract of each. We removed 603 articles based on abstract reading and reached 155 relevant articles as a result. Then, we examined the full texts and decided to include 23 papers which met our including criteria. After that, we searched the reference lists of these 23 papers and found 8 more relevant papers. We also made a call for unpublished or nearly published studies via social media and mail groups, and the authors sent 3 unpublished papers to us.<sup>3</sup> Finally, we included 46 studies with different samples published in 34 papers between 2011 and 2020. The whole research plan and inclusion criteria are presented in the diagram (see Figure 1). All data are accessible at [https://osf.io/tf5zp/?view\\_only=e3c13743d63a4d5b889d369b3d5dc0dc](https://osf.io/tf5zp/?view_only=e3c13743d63a4d5b889d369b3d5dc0dc)

## Data Coding

The data from each study were extracted and each author coded the sample sizes and effect sizes. The discrepancies between the authors were checked and resolved through consensus. Basic sample descriptors included sample size ( $N$ ), mean age, the standard deviation of age, percentage male/female in the sample, and country of the sample (see Table 1).

Table 1. *Descriptive Information of All Samples.*

Label	<i>N</i>	Female (%)	Male (%)	Age ( <i>SD</i> )	Country
Alberici2013-1	71	25.35	74.65	38.2 (11.2)	Italy
Alberici2013-2	147	56.46	43.54	32.5 (13.4)	Italy
Alberici2016-2	192	100	0	47.11 (12.2)	Italy
Alberici2018	143	37.06	62.94	49.2 (12.5)	Italy
Ayanian2016-1,2	146	32.19	67.81	26.20 (-)	Egypt
Besta2019-1	181	59.67	40.33	25.1 (8.90)	Poland
Besta2019-2	262	55.73	44.27	25.6 (6.70)	Poland
Bilali2020	913	60.8	39.2	38.87 (12.12)	US
M. Chan2016	816	52	48	-	Hong Kong
M. Chan2017	818	51.7	48.3	-	Hong Kong
W. Chan2017	589	68.9	31.1	20.8 (3.03)	Hong Kong
Cheng2019	866	48	52	-	Hong Kong
Dalgar2021*	641	55.07	33.23	28.49 (0.74)	Turkey
Girerd2020-1	489	61.65	36.91	41.95 (16.24)	France
Girerd2020-2	201	54.2	45.8	37.61 (14.7)	France
Gotlieb2017	651	49.8	50.2	24.24 (3.27)	US
Hsiao2018	801	48.81	49.81	23.59 (3.91)	Taiwan
Ji2017	639	61.3	38.7	22 (0.69)	Hong Kong
Kende2016-1	148	52	48	29.3 (12.4)	Hungary
Kende2016-2	261	78.2	21.8	21.34 (3.14)	Hungary
Lu2020	189	70.37	29.63	21.26 (2.56)	Hong Kong
Mahfud2021-1	776	50.39	28.48	32.02 (15.19)	France
Mahfud2021-2	511	89.6	9.1	19.39 (3.04)	France
Morgan2016	193	53	47	32.41 (14.00)	US
Nekmatlsmail2019	684	54	46	27.1 (6.18)	Singapore
Odag2016	1127	45.87	44.81	30.11 (9.72)	Turkey
Park2012	211	49.8	47.9	25.37 (6.39)	China
Sabucedo2017	285	43.4	56.6	40 (14.49)	Spain
Schumann2015-1	76	80.3	19.7	20.96 (3.93)	Belgium
Schumann2015-2	59	84.5	15.5	19.48 (2.33)	Belgium
Stewart2019-2	327	48.32	38.84	32.38 (13.79)	Turkey
Thomas2015	299	51.37	48.63	20.73 (4.68)	Australia
Thomas2019-1	267	78.7	21.3	21.22 (2.48)	Hungary
Thomas2019-2	190	51.1	48.9	27.51 (9.55)	Germany
Thomas2019-3	159	82.4	17.6	18.5 (1.48)	UK
Thomas2019-4	244	69.7	30.3	40.08 (21.97)	US
Thomas2019-5	344	23.3	76.7	36.50 (15.07)	Australia
Thomas2019-6	163	76.7	23.3	37.40 (10.80)	Romania
Uysal2021	345	62.32	37.68	29.30 (8.72)	Turkey
Velasquez2019	503	50.1	49.9	38.61 (14.28)	US
Wlodarczyk2017	638	56.6	43.4	31.66 (11.39)	Spain
Wollast2021*	169	58.58	40.24	25.81 (9.03)	Hong Kong
Zhou2020	721	100	0	26.90 (-)	China
deZuniga2012	475	67	33	45.76 (12.45)	US
deZuniga2014	312	67	33	49.32 (12.25)	US

Note. \* = Unpublished paper.

Then, 3 pairs of authors coded each of the moderator variables (group type, participation type, and *WEIRDness*) independently. That is, each moderator variable was coded by 2 different coders. We calculated Cohen's (1960) kappa to measure the level of inter-rater agreement for each moderator. Firstly, the two authors coded the group type of each study (i.e., whether the social group was an emergent group specific to the action or pre-existing groups such as gender, race, or political party). The Cohen's *k* for group type was .88, which indicates a high percentage of agreement between coders. Disagreements on this moderator stemmed from the three papers that provided the Pearson *r*'s for both preexisting group identification and emergent group identification (i.e., Bilali et al., 2020; Kende et al., 2016, Study 2; Thomas et al., 2015). We consensually categorized studies into either pre-existing groups or emergent groups by re-examining the collective action context and the measurement tools of each study. Precisely, taking into account the theoretical and empirical considerations, we placed the study by Bilali et al. (2020) and the study by Thomas et al. (2015) into "emergent group" category, while we put the study by Kende et al. (2016) into "preexisting group" category (see supplementary file for detailed information regarding the decision making processes for these three cases). Secondly, the other two authors coded participation type (i.e., whether people participated in an actual collective action or reported their intention to participate) for each study. The Cohen's *k* for participation type was .89, which suggests a high inter-rater agreement. Thirdly, the other two authors coded the *WEIRDness* of the sample for each study (see Table 2), which resulted in a complete agreement.<sup>4</sup> Where disagreements regarding the moderators were there, all of the authors re-checked the studies individually, and consensus was reached through discussion.

Table 2. List of Non-WEIRD and WEIRD Countries.

Non-WEIRD Countries ( <i>N</i> of study)	WEIRD Countries ( <i>N</i> of study)
China (2), Egypt (2), Hong Kong (7), Romania (1), Taiwan (1), and Turkey (4).	Australia (2), Belgium (2), France (4), Germany (1), Hungary (3), Italy (4), Poland (2), Singapore (1), Spain (2), UK (1), and US (7).

## Analysis

We conducted all of the analyses with *jamovi* software (version 1.6.23, 2021) using the *MAJOR* package (version 1.2.0). We transformed correlation coefficients into *Fisher Z correlation coefficients* for analysis and back-transformed for results. This transformation allowed us to consider the sample size. We interpreted results by Cohen's (1992) guidelines which pointed small ( $r = .10$ ), medium ( $r = .30$ ) and large ( $r = .50$ ) effects. In accordance with the wide range of sample populations, we used the random-effects model which assumes that effects sizes can vary across studies. We analyzed effect sizes obtained through the reported correlation coefficients between social identification and collective action participation. For studies that reported multiple correlations, for example between two subscales of social identity and collective action participation, we took the average of all relevant correlations (Cooper et al., 2009).<sup>5</sup>

## Results

### Descriptive Characteristics

Across the 46 studies, the total number of participants was 18,242, of which 59.40% were female. The mean age of the participants was 30.50 ( $SD = 8.72$ ) years.

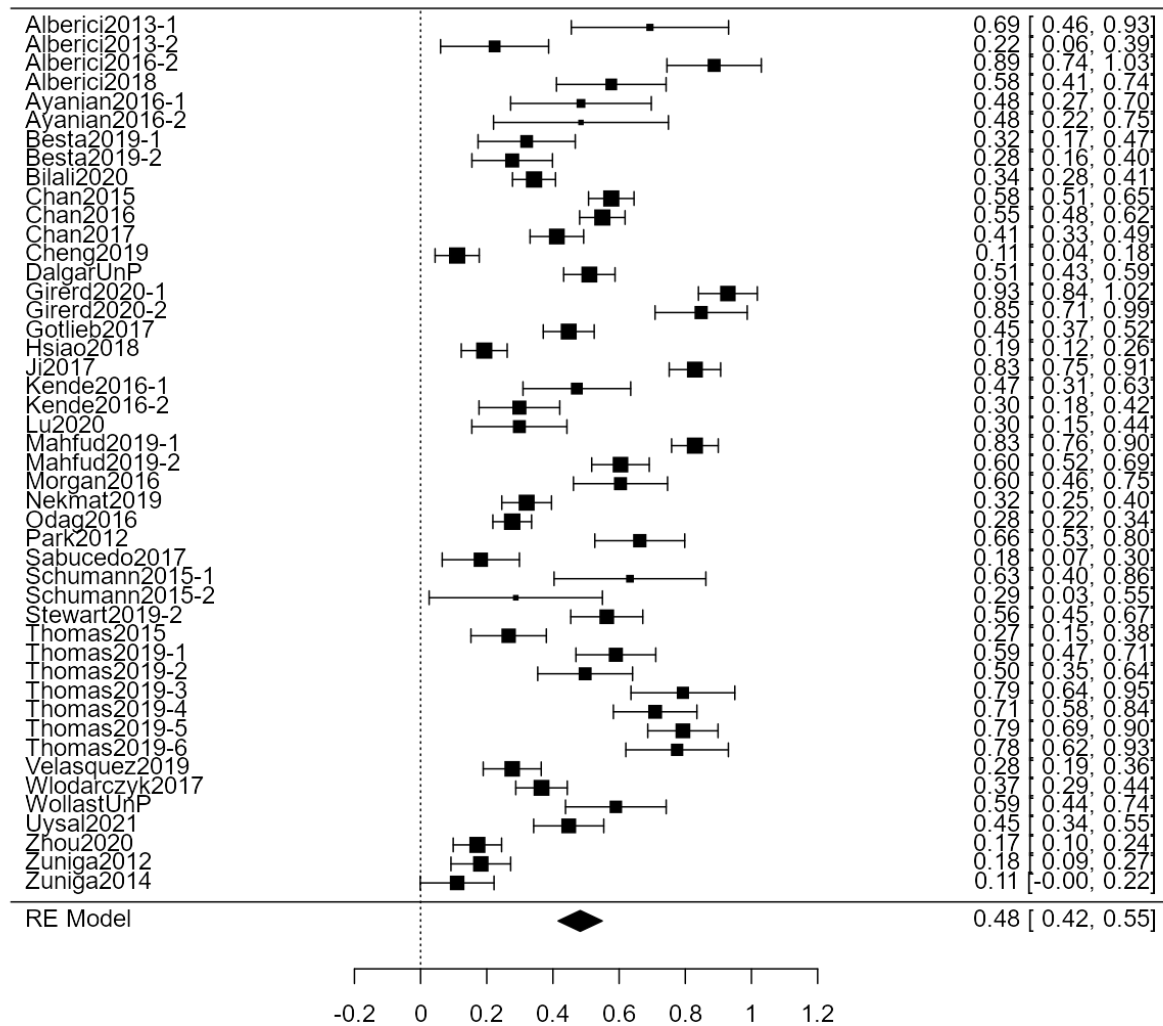
### Overall Effect Size

We included the 34 studies (with 46 different samples) in the current meta-analysis. The average correlation between social identification and participation to collective action is  $r_z = .48$  (95% CI [.416, .549],  $Z = 14.2$ ,  $p < .001$ , see Figure 2). Results revealed that there is a moderate to strong (Cohen, 1992) positive relationship between social identification and participation in collective action. That is, higher identification is associated with frequent participation in collective action. A Cochran's *Q* test was conducted to examine heterogeneity. Results indicated that there is significant heterogeneity across studies ( $Q(45) = 957.645$ ,  $p < .001$ , see Figure 2 and Figure 3). Besides, according to Higgins and Thompson (2002),  $I^2$  is a useful and strong indicator of heterogeneity. In the present study, results ( $I^2 = 95.01\%$ ) indicate that the substantial variance depends on the variability in true effects size



rather than depending on sampling error. Therefore, it can be concluded that there are some potential moderators to explain the amount of heterogeneity.

Figure 2. Forest Graph of Average Weighted Effect Size of Social Identification on Participation to Collective Action and the Effect Sizes and Confidence Intervals.



### Assessing Publication Bias

We announced to retrieve as many unpublished studies as possible. However, there is a limited amount of unpublished studies ( $n = 3$ ) included in the meta-analysis. First, according to visual inspection, there is a symmetric distribution which is an indicator of no publication bias (see Figure 3). Moreover, Egger's test provides substantial evidence. Funnel plot asymmetry was not significant for the association between social identification and participation to collective action ( $z = 1.17, p = .244$ ). Therefore, regarding evidence, we concluded that there is no sign of publication bias.

### Moderation Analysis

The results indicating heterogeneity suggested that there are substantial moderators. Therefore, we conducted a subgroup analysis for the potential three moderators (group type, participation type, and *WEIRDness*). Results showed that the group type (emergent vs. pre-existing group) significantly moderates the relationship between social identification and participation in collective action, indicating that the relationship was stronger for emergent group identification ( $r_z = .55, 95\% \text{ CI } [.478, .624]$ ) than pre-existing group identification ( $r_z = .34, 95\% \text{ CI } [.228, .450]$ ). All other moderators were not significant ( $ps > .05$ ). The results were presented in Table 3.

Figure 3. Funnel Plot for the Effect of Social Identification and Participation to Collective Action.

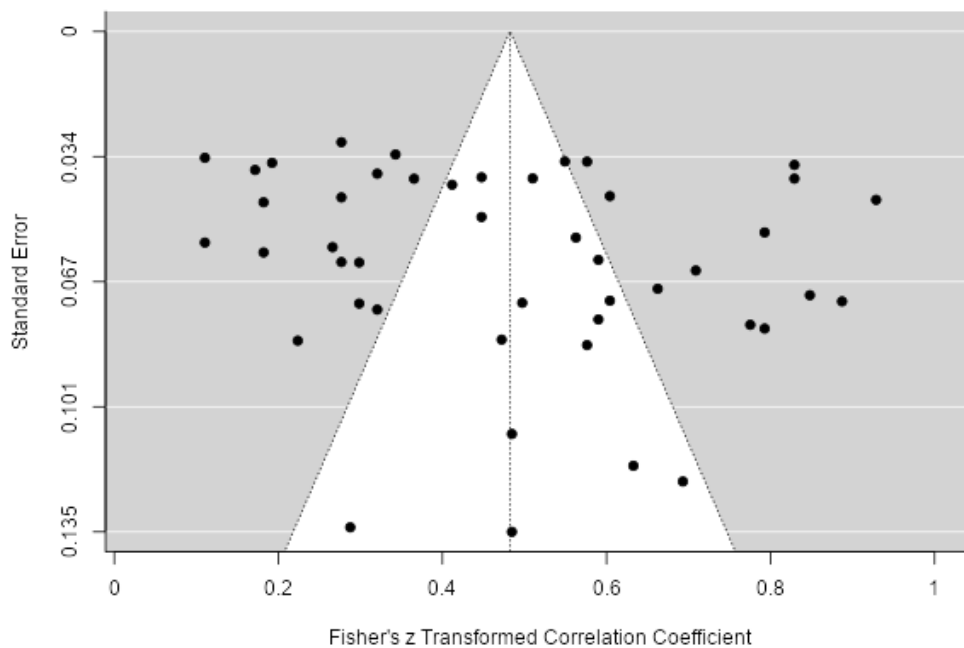


Table 3. Summary of the Moderators on the Relationships Between Social Identification and Participation to Collective Action.

Moderator	$r_z$	95% CI	$k$	$p$
Total	.48*	[.416, .549]	46	
Group Type				.001
Group Identity	.34*	[.228, .450]	15	
Protestor Identity	.55*	[.478, .624]	31	
Action Type				.130
Intention	.53*	[.442, .614]	26	
Participation	.43*	[.325, .528]	20	
Weirdness				.670
Weird	.49*	[.405, .583]	29	
Non-Weird	.46*	[.363, .563]	17	

Note. CI, confidence interval;  $k$ , number of studies;  $p$ ,  $p$  values from moderation analysis \* $p < .001$ .

## Discussion

In the present study, we aimed to examine the relationship between social identification and collective action participation through a meta-analysis, and thus, to contribute to the literature regarding the debate on the underlying mechanisms of collective actions in the Internet age (i.e., whether collective actions still do work on the basis of shared social identities). The results showed that there was a moderate to a strong relationship between social identification and participation in the digitally-mediated collective actions. In addition, we examined the role of some potential moderators (i.e., group types to be identified, participation type in collective action, and *WEIRDness* of the sample). The relationship between collective action participation and identification with emergent groups was found stronger compared to the relationship between collective action participation and identification with pre-existing social groups, while none of the other moderators had a significant effect. These results highlighted importance of the two points regarding the research question of whether underlying social-psychological mechanisms of collective actions in the Internet age are the same as those previously.

First, the current meta-analysis indicated that the studies appear as providing empirical support for collective action, rather than the connective action which is basically proposed as a substitute for collective action in the Internet age. The concept of connective action was suggested as a new form of collective action that does not work based on shared social identities (Bennett et al., 2008; Earl & Kimport, 2011). Rather, this new form of action has been considered as relying on (inter)personal digital connections, which make the process of collective action

individualized. If people have participated in digitally-mediated collective actions based overwhelmingly on their individual or interpersonal connections or motivations, results would have shown a weak relationship between social identification and participation. In contrast, our results revealed that social identification is the strong predictor of collective action participation in the Internet age. In other words, consistent with the social identity perspective, collective actions, including those that are organized through social media, seem to share the basic social psychological dynamics (e.g., Postmes et al., 2002; Stott et al., 2018; Thomas et al., 2015; Uysal & Akfirat, 2021a). This result is also consistent with the previous studies that found social identification was the strongest predictor of collective action participation (e.g., Jost et al., 2012; Klandermans, 1997; Stürmer & Simon, 2004; van Zomeren et al., 2008; for a systematic review see Priante et al., 2018).

Second, we also found that the relationship between collective action participation and identification with emergent groups were stronger than identification with pre-existing groups. This finding highlights that the social identification process of collective action might have transformed to some extent in the Internet age. The nature and formation of social identities in the Internet age have been discussed by the researchers from social identity tradition since the collective actions started to be organized through digital platforms. For example, Postmes and Brunsting (2002) argued that digital platforms endorse the promotion of social identity and the formation of new ingroups by influencing the ability to express behavior and the formation of new social identities by reducing the accountability of users. There are also more recent models drawing attention to the changing nature of social identity in digitally-mediated collective actions such as The Social Identity Model of Collective Action (SIMCA; van Zomeren et al., 2008), The Encapsulated Model of Social Identity in Collective Action (EMSICA; Thomas et al., 2009, 2012), and The Identity-Norm Nexus Formation Model (INN; Smith, Thomas et al., 2015). McGarty et al. (2014) proposed that social movements in the Internet age have involved a process by which people previously share similar ideas come to see themselves as a coherent social group or form opinion-based groups throughout communication on digital platforms, as the intergroup context demands (see also Bliuc et al., 2007; McGarty et al., 2009). Thomas and colleagues (2015) asserted that social media helps the formation of a contextually meaningful social identity and that social identification may emerge from the appraisal of injustice and group efficacy beliefs. Similarly, according to the INN model (Smith, Thomas et al., 2015), social movements are not defined by pre-existing groups, ideologies, or identities in the Internet age anymore. Rather, they are driven by the participants' shared aspiration for social change which provides the basis for forming the new ingroup and developing a social identity. Despite some differences, the common point of the recent models is that all suggest digitally-mediated collective actions mostly rely on the emergent identities which are typically specific to the action context (e.g., protestor identity).

Considering the finding that collective action participation correlated strongly with emergent group identification than pre-existing group identification, which is also in line with the assumptions of the recent models mentioned above, digital communication appears to help the formation of new ingroups and to facilitate identification with these newly formed context-specific protestor groups. Supporting this point, Adam-Troian et al. (2021) showed that increase in plural pronoun use (e.g., 'we', 'us') in digital platforms predicted *Protest* and *Participant* counts the following week in the US, and the reverse was not true.

Although it might be plausible concluding that forming new groups and identifying with emergent groups become more essential than identifying with pre-existing groups in large scale collective actions organized through digital platforms, one must be cautious when reaching such an inference. Given the fact that the studies in the current meta-analysis were conducted either during the collective actions or just a short while later, it is also possible that people have participated in the collective actions simply because their formal organizations or ideological groups might have demanded it. But afterward, the same people would have started to identify with the emergent group stronger than their pre-existing group. This might have been because of the transformative effect of experiencing the collective action itself (Drury & Reicher, 2000, 2009) that the self-categorizations of crowd members might change as a function of their interactions with the out-group during the action (see Vestergren et al., 2018, 2019), and a social identity that doesn't exist previously may develop as a function of intergroup dynamics. On the other hand, this situation might not mean a transformation of pre-existing identities into emergent identities. People might have been highly identified with an emergent group just because it becomes salient during the action. That is, being a protestor would be more salient and dominant compared to being, for example, an environmentalist, a socialist, or an LGBTQ+. Whatever the case, the aforementioned transformation seems to occur just after the action started, as a function of intergroup confrontation as ESIM suggested. As such, digital platforms like microblogging and social media would contribute very little, if not any, to this process.

However, the other possibility also seems very plausible. That is, the influence of digital platforms on social identities might begin long before the collective action takes place. Different from the previous years, today people communicate and share information, ideas, and emotions instantaneously thanks to the widespread use of internet-based platforms (Jost et al., 2018). These online behaviours can cultivate the strong social identity which seems to be required for offline collective action (for a review see Greijdanus et al., 2020). Digital technologies might facilitate consensus process through sharing a) information and ideas on the context that out-group treat the ingroup illegitimately, unfairly, and unjustly, b) the emotions as the appraisal of the unjust outgroup treatment, i.e., resentment, anger, c) the contents of the emergent group that is in the process of being formed, i.e., values and norms d) the route of the action.

Another point we have to note is that neither participation type nor *WEIRDness* of the sample as the potential moderators that were considered as to explain the heterogeneity was not found significant in the relationship between identification and collective action participation. Regarding the participation type, this result is in line with the theory of planned behavior (Ajzen, 1985), which suggests intention is the strongest predictor of behavior. It should, however, be stated that this result does not mean that intention predicts collective action participation. It just indicates that the effect of social identification is the same for these two types of measures. Nevertheless, it is noteworthy that one's identification with the relevant group predicts both collective action intentions and behaviors. As for *WEIRDness*, an increasing number of studies tested the social psychological models of collective action participation which placed the social identification in the heart of the model such as SIMCA in different contexts including non-weird countries (see van Zomeren, 2019). Moreover, numerous studies examined the "core motivations" of collective action (van Zomeren, 2016; van Zomeren et al., 2008) including social identification in non-weird contexts (Ayanian & Tausch, 2016; Saab et al., 2016; Uysal & Akfirat, 2021b; for discussion see van Zomeren & Louis, 2017). The vast majority of these studies provided similar findings with *WEIRD* samples that social identification is a strong predictor of collective action participation. Yet, van Zomeren (2016, 2019) noted that although core motivations such as social identification might be similar across cultures, how they come into the fore and trigger action is context-sensitive. That is, these core motivations need to be unlocked by cultural and contextual conditions.

The current paper has also some limitations. First, although it is impossible to include qualitative research into the meta-analysis, this impossibility limits our understandings of how digital platforms contribute to the social identification process, and thus collective actions from the initial to the final phase (e.g., Smith et al., 2018). Second, *non-WEIRD* samples included in the current meta-analysis were from only five different cultures (China, Egypt, Hong Kong, Taiwan, and Turkey). Including more diverse cultural settings as a *non-WEIRD* might allow us to better comprehend cultural variations in the relationship between social identification and collective action participation via digital platforms. Third, though collective action covers a large range of collective behavior from sign campaign to marches, sit-in actions to physical encounters with the out-groups (e.g., police), we did not differentiate between them. We only make a distinction between actual behavior and behavioral intention. Although there is an assumption in collective action research that participation in all kinds of collective actions shares the same psychological mechanisms, some scholars argue that there are conceptual distinctions among offline collective actions, protests, riots, and uprisings (Radburn & Stott, 2019; Wahlström, 2011). Further studies should focus on the moderator role of the distinctions between the action types.

Lastly, it may not be so easy to separate emerging identities from pre-existing ones. Although our findings indicate that pre-existing group identity is a weaker predictor of participation in collective actions than emergent group identity, especially in the Internet age, this does not mean that emergent or collective action-specific identities are entirely independent of the previous identities. Further research that would examine the dynamic interplay between pre-existing identities and emergent group identities seems to be needed. We also encourage further studies that focus on those who do not have politicized identities before and identify with an emergent identity in collective actions.

## Conclusion

Despite the limitations, the present meta-analysis provides support for the notion that social identification is still the basic psychological process of collective action participation in the Internet age, in contrast with the assumptions of connective action. The results revealed that there is a moderate to a strong positive relationship

between social identification and participation in collective action. Moreover, our findings showed that group type moderates the relationship between social identification and collective action participation in the digital era, collective action participation has a stronger correlation with emergent group identification than pre-existing group identification.

## Footnotes

1. We contacted the authors of 18 studies in which Pearson's  $r$  was not reported. The seven of them responded to us providing the necessary statistics (a response rate of 39%).
2. The list all search terms can be seen at the project page on OSF.
3. The call for unpublished data can be seen at the project page on OSF.
4. We used the same WEIRDness categories as in Many Labs 2 (Klein et al., 2018). As Singapore was not included in Many Labs 2, we decided to categorize Singapore in the WEIRD category by consensus among the authors. In addition, we used the cultural distance tool (Muthukrishna et al., 2020), which was developed based on the World Value Survey, as empirical support for our decision and compared Singapore with the US. It was seen that Singapore has a value of .0419, which is even smaller than most countries treated as a WEIRD such as Poland (.0885), France (.0988), Hungary (.1201), and Spain (.0846). Thus, it is reasonable to categorizing Singapore in the WEIRD countries list. We also re-analyzed data by categorizing Singapore as non-WEIRD, but there were no statistically significant differences in the pattern of results ( $p = .739$ ).
5. In Thomas et al. (2015) both real participation in collective action and intention were measured by the same scale. Since the items assessing the real behaviors seem to be more concrete evidence, we considered the scale as a measure for real participation rather than a measure for intention.

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\*= Articles included in the meta-analysis

## Supplementary Material

One of the purposes of the current study is to examine the effects of the “Group Type” moderator, in the relationship between identification and collective action participation. This required us to classify each study in terms of the identification groups (i.e., preexisting or emergent). However, the three of the studies provided the correlation coefficients for both the emergent identities and preexisting identities (see Table S1). When trying to solve this issue and to place the study in the correct category, we took into account the theoretical and empirical considerations.

One of these studies that provided the statistics for both identification types was Bilali et al.’s longitudinal study (2020), in which both liberal identification (pre-existing) and movement identification (Anti-Trump) were measured. In this study, political identification was assessed twice (Time 1 and Time 2). However, movement identification and movement participation were assessed once (only at Time 2). None of the correlation coefficients included in the meta-analysis was yielded from the longitudinal data. It is also possible that longitudinal or cross-sectional measures constitute another moderator, which we did not examine. Therefore, as a result of the discussion, we concensualized that movement identification (emergent) should be included in the meta-analysis.

Regarding the study by Kende et al. (2016), we examined the measurement tools that emergent identity was assessed by a single item that “it is important to me that I can talk to other students about issues that concern us”, while preexisting group identification (student identification) was assessed by a frequently used tool with three items (Becker et al., 2011). As a result of discussion we decided to include this in the preexisting identity category.

Regarding the study by Thomas et al. (2015), as global identification was assessed by items like “how strongly do you feel attachment to the world as a whole?”, we agreed that the abstraction level of global categorization is broader than group-level categorization. Turner and Haslam (2001) distinguished the three levels of abstraction: interpersonal (e.g., being smart), intergroup (being Turkish), interspecies (being human). A social identity is usually considered more inclusive categorization than personal identities but less inclusive than interspecies (Oakes et al., 1994). On the other hand the authors also provided correlation coefficients for a social group based identity as well (i.e., Anti-Kony opinion-based social identification). Based on this theoretical distinction we thought that it might be more appropriate to place this study into “emergent identity” category.

Table S1. *Classification of the Studies Included in the Meta-Analysis Based on the “Group Type” Moderator.*

	Emergent	Preexisting
1. Alberici & Milesi (2013) Study 1	Politicized identity (Italian Five Star Movement)	
2. Alberici & Milesi (2013) Study 2		Political identification
3. Alberici & Milesi (2016) Study 2	Politicized identity (Italian SNOQ activists)	
4. Alberici & Milesi (2018)	Politicized identity (Italian Water Movement)	
5. Ayanian & Tausch (2016) (Two studies)	Politicized identity. (Egypt Anti-Mursi)	
6. Besta et al. (2019) (Two studies)	Proster identity (movements against Polish anti-abortion law)	
<b>7. Bilali et al. (2020)</b>	<b>Anti-Trump Movement identification*</b>	<b>Political identification (being leftist-rightist)</b>
8. M. Chan (2016)		Political party identification
9. M. Chan (2017)	Identification with HongKong prodemocracy movement	
10. W. Chan et al. (2017)		Hong Konger identity
11. Cheng et al. (2019)		Socio-economic status
12. Dalgat et al. (2021)	Gezi Park Protestors identification	
13. Girerd et al. (2020) (Two studies)		Neoliberal identity
14. Gotlieb & Thorson (2017)		Green living identification
15. Hsiao & Yang (2018)	Identification with Sunflower Movement in Taiwan.	
16. Ji et al. (2017)		Hong Konger identification
17. Kende et al. (2016) Study 1	Politicized group identification (student occupation of an auditorium),	

<b>18. Kende et al. (2016) Study 2</b>	<b>Politicized group identification</b>	<b>Grup identification (being student)*</b>
19. Lu et al. (2020)		HongKonger,
20. Mahfud et al. (2021) (Two studies)		Political identification
21. Morgan & Chan (2016)	Identification with Occupy movement	
22. Nekmat & Ismail (2019)		LGBTQ
23. Odağ et al. (2016)	Gezi Park Çapulcu	
24. Park & Yang (2012)		Identification with being environmentalist
25. Sabucedo et al. (2017)		Party identification (Europe austerity policies)
26. Schumann & Klein (2015) (Two studies)		Identification with being Environmentalist
27. Stewart et al. (2019)	Identification with the protestors (Gezi Park)	
<b>28. Thomas et al. (2015)</b>	<b>Anti-Kony Opinion-based Social Identification*</b>	<b>Global identification</b>
29. Thomas et al. (2019) (6 different samples)	Self-categorization as a supporter of Syrian refugees	
31. Uysal & Akfirat (2021b)	Gezi Park Protestor identification	
32. Velasquez et al. (2019)		Hispanic/Latino identification
33. Włodarczyk et al. (2017)	Protestor group (15 M) identification	
34. Wollast et al. (2021) (two samples)	Hongkong anti ELAB identification	
35. Zhou & Qiu (2020)		Womenhood, feminist identification
36. de Zúñiga et al. (2012)		Political party identification
37. de Zúñiga et al. (2014)		Political party identification

*Note.* The studies, bold in the table, reported the correlation coefficients for both preexisting group identification and emergent group identification.

\* The correlation coefficient included in the meta-analysis.

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