

Pro-Environmental Civic Participation in the USA: The Effects of Social Media, Pro-Environmental Lifestyle and Climate Experiences

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Abstract

This study addresses the link between social media use and pro-environmental civic participation considering the moderating effect of social media affordances (public realm) on one hand, and lifestyle behaviors and climate change experiences (personal realm) on the other. We combine communication theory and behavioral models and using a sample of USA individuals (N = 7225) based on the American Trends Panel to predict variations in pro-environmental behavior. We show that social networks rather than information are more effective in predicting pro-environmental behavior. Moreover, a pro-environmental lifestyle as well as climate change experiences at the community level increase the likelihood for pro-environmental participation. However, affordances related to socioeconomic variations generate variations to pro-environmental civic participation. We conclude that in order to capture the depth of pro-environmental civic participation, it is necessary to theoretically and empirically bridge between private and public expressions of pro-environmental awareness.

Keywords

Pro-Environmental Behavior, Socio-Economic, Digital Information, Digital Networks, Private Expressions, Public Expressions, Climate Changes, USA

1. Introduction

Pro-environmental civic behavior (hereafter CP) is the “behavior that harms the environment as little as possible or even benefits the environment” (Steg & Vlek,

2009: p. 309). Pro-environmental behaviors range from actions that are relatively easy for private individuals to perform (e.g., recycling, bicycling and green food consumption) to more demanding activities in the public sphere (e.g., bicycling to work and becoming involved with civic and political institutions seeking to mitigate the problems and instigate pro-environmental policies). More recently, activist behaviors recently received broad public attention when Just Stop Oil activists threw soup at Van Gogh's "Sunflowers" painting. Evidence indicates that the vast majority (90%) of North Americans and Europeans and 70% of individuals from an additional 40 countries (Seyranian et al., 2022) consider climate change to be a "very or extremely serious problem" (León et al., 2020) often reported in terms of a "wicked problem" (Head, 2008). Yet the factors associated with pro-environmental civic participation remain elusive. Here we focus on the specific behavior related to pro-environmental behavior. We combine assumptions from communication models and behavioral theories to expand our perspective regarding the role of social media in shaping pro-environmental civic participation.

Social media (SM) have gained importance in understanding issues related to our global community and environmental concerns (Shah et al., 2021). Individual and public concerns shared on SM platforms have increased hopes that sharing information and experiences regarding climate change will boost pro-environmental awareness and pro-environmental behaviors (Renouf, 2021). In the United States, about seven out of ten individuals use social media for social contacts, news content and entertainment (Pew Research Center, 2018). A quarter of US adults regularly get their news from YouTube, followed by Twitter (14%), Instagram (13%), TikTok (10%), Reddit (8%), LinkedIn (4%), Snapchat (4%), Nextdoor (4%), WhatsApp (3%) or Twitch (1%).

Indeed, SM platforms have been described as "subjectively 'lived' public spaces" (Volkmer, 2014: 1) where it is easy to discuss, deliberate and decide on actions and for shaping the potential for pro-environmental pro environmental civic behavior (Kaun, 2017; Sisco, 2021). Not surprisingly, SM yields a broad range of outcomes that manifest in local community groups (Phua et al., 2017), charitable fundraising, participation in cause-related events and community projects, disseminating virtual petitions, sharing resources, and coordinating people online to take part in off-line actions, such as boycotts, protests, and sit-ins (AlAlwan et al., 2017; Haro-de-Rosario et al., 2018). There is now ample evidence of the growing centrality of SM in providing climate change information and pro-environmental awareness (Dubois et al., 2019; Kircaburun et al., 2020). Yet, the public realm of SM in accessing and sharing environmental information is nonetheless, reported as insufficient to promote pro-environmental behaviors due to variations in users' private realm. First, individual affordances manifest in socioeconomic variations can shape SM use and CP (Broomell et al., 2015; Hazlett & Mildenerger, 2020; Marlon et al., 2021). Second, a pro-environmental lifestyle is a strong factor in motivated attention, which shapes interest in CP (Boy & Uitermark, 2020). Third, climate change experiences pro-

vide significant information about the context of CP (Walton & Jones, 2022; Whitmarsh & Capstick, 2018; Lang & Ryder, 2016; Demski et al., 2017; Glas et al., 2019). Indeed, studies now often address the possibility that SM use does not ensure that all main aspects of effective communication, source, target, and task, are connected are properly addressed (Seyranian et al., 2022).

Clearly, there is limited evidence of an interdisciplinary approach addressing how private and public aspects of individual pro-environmental attitudes and use of SM merge in order to generate a path of behavioral expression of pro-environmental CP. In this study, we pose the following research questions:

RQ1: To what extent will the public realm of SM, lead to CP controlling for SM affordances?

RQ2: To what extent will the public realm of SM, lead to CP controlling for pro-environmental lifestyle?

RQ3: To what extent will the public realm of SM, lead to CP controlling for climate change experiences (personal, community and global).

2. Background

The centrality of CP focuses mostly on the sociocultural context of individuals' behaviors. According to the Pro-environmental Action Model (TPAM), a central model in pro-environmental studies, Web 2.0 and SM provide informational, experiential and relational functions that increase the potential of initiating and facilitating personal, social, and contextual pathways leading to environmentally responsible behaviors (Matthew et al., 2015). Yet, according to the Context Comparison Model (CCM) (Seyranian et al., 2022), SM often lacks coherence in connecting the three main aspects of effective communication: source, target, and task. When activities for acquiring and sharing SM information differ from the everyday and general environment and from tasks that affect individuals' own situations and beliefs, CP reflects the individuals' fit of SM activity (Peralta et al., 2017). The concept of affordances offers a major perspective for addressing the private variations of SM use (Gibson, 1979).

2.1. SM Affordances

Gibson's concept of affordances (Gibson, 1979) accounts for the fact that various users may perceive an object in extremely different ways, depending on their context, competences and objectives according to one's personal situation and beliefs (Peralta et al., 2017). Indeed, according to integrated theory, prosocial behavior depends on the availability of human, financial, and social capital. The strength of affordances lies in the individual's perceptions of "action possibilities" (Orban et al., 2021). For example, affordances in terms of available time or time allocations often reflect demographic and socio-economic status (Grandin et al., 2022). First, age is a central component of affordances: Ageing individuals are less likely to rely on digital sources for shaping CP attitudes (Mano, 2014) but their time affordances are higher, pointing to a stronger inclination towards

environmental issues through social networking sharing (Shareef et al., 2019) and shaping pro-environmental CP (Grandin et al., 2022). Second, higher education increases the likelihood of engaging in prosocial behavior, especially because according to the economic perspective “civic returns to education” are associated with investments in human capital and variations in education are likely to have differential effects in producing CP engagement. Third, gender is an important indicator of more empathetic relationships and of a tendency to contribute and assist. At the same time, gender affects time affordances because women may differ from men in the extent of their household responsibilities due to the multiplicity of family tasks. Tags, citations, and mentions (van Dijck & Poell, 2015) can easily decrease women’s SM affordances, thus affecting their CP (Grandin et al., 2022). Analysis of big data reports for 21,706,806 Facebook users in ten countries across Asia, Africa, the Americas, and Europe points to the existence of gender disparities in various Facebook liking practices related to expressions of civic engagement (Laor, 2022). Finally, income and especially low financial resources affect individual affordances hence affecting their CP. Some lifestyle activities, for example, such as green consumption, recycling, signing petitions or engaging in environmental organizations, are more appealing to individuals with higher incomes, whereas individuals with lower SES focus on the perceived risks associated with environmental hazards but are less inclined toward CP (Kennedy & Sonnerfeldt, 2015; Minocher, 2019; Mavrodieva et al., 2019). We therefore hypothesize that:

H1: Variations in SM affordances/socioeconomic factors will shape CP.

2.2. Pro-Environmental Behavior: An Information Perspective on the SM/CP Link

SM platforms provide information and set the stage for users to learn. Hence, these platforms shape the potential for sharing updated content that reflects different perspectives and for voicing individual and group opinions about social issues, thus reinforcing mitigation of pro-environmental agendas (Hall, Tinati, & Jennings, 2018). At the information level, this sharing supports processing and internalization of learning about climate risks. As a result, of this type of subjective knowledge, SM users develop pro-environmental attitudes and endorse pro-environmental causes that support climate change action. Similarly, sharing experiences can also shape knowledge on the personal level (Rosenthal, 2022). Consequently, individuals can further adhere to and promote the advancement of pro-environmental behavior (Nah & Yamamoto, 2018) simply because they are aware of the outcomes of environmental problems and of potential solutions, thus offering a significant channel for CP (Gil-Lacruz et al., 2019). Indeed, recent studies indicate that ICT diffusion along with education boost environmental performance by raising awareness about environmental issues that stimulate energy recycling and conservation practices (Deshuai et al., 2022). In fact, pro-environmental learning models such as Responsible Environmental

Behavior (REB) (Hines, Hungerford, & Tomera, 1987; Kollmuss & Agyeman, 2002) incorporate knowledge as an important antecedent for pro-environmental behavior (Kollmuss & Agyeman, 2002). More specifically, the REB model suggests that those who express greater intentions to act in an environmentally responsible manner are more likely to engage in action. It further suggests that factors such as knowledge about the existence of an environmental problem and about actions to address the problem are precursors to action. Some studies (Negev et al., 2008) describe how environmental information affects attitudes (awareness, willingness to act, sensitivity to environmental issues and love for nature, sense of responsibilities) and behavior (environmental activism and consumption patterns) by transforming knowledge into measurable results and performance tasks, such as utility bills and conservation tips. We therefore hypothesize that:

H2: SM use for information related to pro-environmental causes will increase CP.

An important feature of SM is its potential to facilitate sharing personal experiences (Rosenthal, 2022). Existing studies indicate that using SM enables to cope with climate experiences (Lang & Ryder, 2016; Chon & Park, 2020). As people share, their understanding of climate change increases and can trigger emotional responses among those participating in the SM interactions (Demski et al., 2017).

2.3. Climate Change Experiences: A Relational Function to the SM/CP Link

Emotional reactions, also known as the “experience-perception link”, capture the importance of predispositions towards pro-environmental causes (Lang & Ryder, 2016). Several studies show that Americans’ opinions regarding climate change more than their opinions on any other factor, reflecting their personal experience with (Rosenthal, 2022) and vulnerability to changes in environmental threats. The level of information about these experiences can affect the level of perceived efficacy about climate change (Hornsey et al., 2021), especially when individuals share experiences of major environmental incidents (Hoffmann et al., 2022). Additional evidence indicates that heightened climate change concerns and risk perceptions following weather disasters such as flooding (Demski et al., 2017; Hamilton-Webb et al., 2017) affect individuals’ willingness to reduce energy use (Ogunbode et al., 2017) and increase their likelihood to make pro-environmental donations (Marlon et al., 2021). Indeed, such personal experiences confirm pre-existing values, attitudes, and beliefs regarding climate change through processes of motivated reasoning. Thus, local experience but not global awareness together with subjective experiences of environmental change, personal beliefs about climate change were stronger predictors of environmental concerns (Marlon et al., 2021) and willingness to engage in specific mitigation acts (Broomell et al., 2015). Nevertheless, some studies have shown that expe-

riencing extreme weather events does not increase environmental concerns unless moderators such as abnormal local temperatures or financial damages are evident. We therefore hypothesize that:

HB: Climate change experiences will increase CP.

A combination of central SM features, information and shared experiences has been central in pro-environmental models that have the potential to prompt individuals to increase their pro-environmental CP. Yet the evidence regarding the effect of these factors on pro-environmental CP is limited and conflicting, thus motivating increased interest in the importance of attitudes and behaviors (Ertz et al., 2016). For this reason, SM effects on human behavior are empirically assessed using behavioral theories of reasoned action (Larson, 2018).

2.4. Pro-Environmental Behavior: A Behavioral Perspective to the SM/CP Link

The theory of reasoned action and planned behavior (TPB) (Ajzen, 1991) provides important clues to human behavior by focusing on the “intention to act” and on “perceived behavioral control” (or on the extent to which an individual feels able to act). The ABC behavioral theory extends the activation theory by focusing on the link between attitudes (A), behavior (B) and context (C), all of which are necessary to understand human behavior (Stern, 2000). The ACB model makes it possible to distinguish between individual behaviors (e.g., recycling, resource conservation or green consumption) and environmental activism (e.g., belonging to an environmental group and engaging in political actions) (Bhagat & Kim, 2023). This distinction has been helpful in CP studies because it differentiates between public sphere and private sphere environmentalism (Stern, 2000). The public sphere includes active (e.g., involvement in environmental groups and demonstrations) and non-active public behavior (e.g., joining environmental groups and supporting policy). The private sphere incorporates purchasing behavior, maintenance and use of household equipment and waste disposal behavior. The differences between the public and the private sphere enable us to understand why endorsing pro-environmental lifestyles may affect CP (Dubois et al., 2019; Kircaburun et al., 2020). SM use transcends individuals’ public and private worlds. As a result, people may use SM for pro-environmental purposes and may be likely to adopt a pro-environmental lifestyle and endorse daily routines in the private sphere (e.g., saving energy, recycling and using public transportation) but they will not necessarily pursue CP in the public sphere (Walton & Jones, 2022), or vice versa. Indeed, according to the ABC perspective and TPB theory, pro-environmental behavior in the private sphere indicates “motivated attention” to environmental concerns that may instigate public pro-environmental behaviors, including CP. We therefore hypothesize that:

HA: Pro-environmental lifestyle will increase CP.

3. Methods

Data source: During the week of April 20-19, 2021, the Pew Research Center re-

leased the American Trends Panel (Wave 89) data comprising a nationally representative panel of randomly selected U.S. adults. Panelists participated via self-administered web surveys. Provision of a tablet and wireless internet connection managed by Ipsos were available for those who do not have internet access at home. The original data set included 13,749 US residents aged 18 - 24. *Study sample:* The study is based on individuals reporting having experienced extreme weather events over the past 12 months in the area where they live and reported positively to civic participation activities (see definition below) providing the final sample of the study (N = 4120), constituting 32% of the total sample. The composition of the sample indicates that 51% are above 49 years old, 57% are women and 61% have a higher than high school education. The study is a secondary analysis and hence there are no ethical issues.

Dependent Variables: Civic participation (CP): In the context of global climate change, here is a list of activities that some people do and others do not. "Please indicate whether you have done each of the following activities in the past year:" Attended a protest or rally to show support for addressing climate change; volunteered for an activity focused on addressing climate change; donated money to an organization focused on addressing climate change; contacted an elected official to urge them to address climate change {1 = Yes, I have done this}. The final variable CP is the total sum of the positive answers to the variable from one = a single activity through three = three activities.

Independent Variables: SM use: 1) SM networks: Have you done any of the following on social media in the past few weeks: followed an account; interacted with posts; posted or shared something focusing on the need for action on global climate change? {1, Yes, at least one}. 2) SM information: Which statement best describes your reaction to content on social media that focuses on global climate change? When I see content on social media about climate change (one = yes).

Independent Variables: Moderators: 1) Pro-environmental effort: How often, if ever, do you make an effort to live in ways that help protect the environment? {1 = all the time, 2 = some of the time, 3 = not too often 4 = not at all}. 2) Pro-environmental lifestyle: Do you or do you not do each of the following in your everyday life to help protect the environment: eat less meat; drive less or carpool; reduce your food waste; use fewer plastics that cannot be reused (e.g., plastic bags, straws, cups); reduce the amount of water you use {1 = Yes, I do this}. The final variable is the sum of the positive answers to the variable.

Independent Variables: Global effect of climate change: To what extent, if at all, do you think global climate change is currently affecting global society? {1 = a great deal; 2 = to some extent; 3 = little; 4 = not at all}. *Community experience of climate change:* "Has the area where you live been affected by any extreme weather events over the past 12 months?" {1 = Yes}. *Personal experience of climate change:* Has you personally experienced any extreme weather events over the past 12 months? {1 = Yes}. *Socioeconomic variations:* Understanding what demographic features contribute to CP is important because these features shape the level of affordances: Age (17 through 98 years old); Gender (1 = male); Edu-

cation (1 = college degree; 2 = some college; 3 = high school graduate or less); Income (1 = low; 2 = medium; 3 = high income).

4. Findings

First, we assess the degree of correlation between the examined variables.

The findings in **Table 1** indicate that the relation between CP and all predicting variables is significant, with the exception of education level, SM pro-environmental information and global concerns. Moreover, no collinearity issues are evident in the findings (**Table 2**). We seek to assess the extent to which each set of variables in the integrative model proposed here determines contributes to variations in predicting CP.

We examine the overall impact of the model variables in four steps: In the first step, we introduce affordances and in the second step, we add SM use. In the third step, which relates to environmental factors, we explore the added effect of climate experiences. Finally, in the fourth step we expand the model by introducing pro-environmental lifestyle. To assess the contribution of each set of variables in predicting CP, we examine the size of the explained variance (R Square). The findings in the tables indicate that the SM affordances related to the socioeconomic variables—age, gender, education and income—explain only a small part of the variance (R Square = 0.080) and hence contributes very little to CP prediction.

Table 1. Correlations between SM use, SM affordances, environmental experiences, pro-environmental lifestyle and pro-environmental behavior (CP).

AFFORDANCES				SM USES		ENVIRONMENTAL EXPERIENCES			PRO-ENVIRONMENTAL BEHAVIORS			
1. <i>Age</i>	2. <i>Gender</i>	3. <i>education</i>	4. <i>Income</i>	5. <i>SM networks</i>	6. <i>SM Information</i>	7. <i>global concerns</i>	8. <i>personal crisis</i>	9. <i>local community</i>	10. <i>lifestyle</i>	11. <i>effort</i>	12. <i>civic participation</i>	
1	1	-0.012	0.122***	0.123***	-0.014	-0.017**	-0.008	-0.008	-0.004	0.013	0.009	0.027***
2		1	0.020*	-0.048***	-0.053***	-0.032***	-0.083***	-0.048***	-0.009	-0.044***	-0.021**	-0.035***
3			1	0.091***	0.009	0.000	0.005	0.018**	-0.012	-0.009	-0.016	0.005
4				1	0.030***	-0.029***	-0.019**	-0.016*	0.044***	0.044***	0.037***	0.072***
5					1	0.052***	0.036***	0.020**	0.084***	0.050***	0.066***	0.150***
6						1	0.126***	0.068***	-0.035***	-0.006	-0.023**	0.012*
7							1	0.242***	-0.141***	0.012	-0.033***	0.010
8								1	-0.079***	-0.002	-0.025**	0.015**
9									1	0.127***	0.164***	0.165***
10										1	0.113***	0.128***
11											1	0.138***
12												1

Table 2. Model summary, R-Square for SM use, affordances, environmental experiences and pro-environmental lifestyle predicting pro-environmental behavior (CP).

		Sum of Squares	df	Mean Square	F	Sig.	R	R Square	Adjusted R Square	Std. Error of the Estimate
AFFORDANCE S SOCIO ECONOMIC EFFECTS	Regression	7647.146	4	1911.787	20.909	0.000 ^b	0.080 ^a	0.006	0.006	9.56202
	Residual	1,184,778.373	12,958	91.432						
	Total	1,192,425.519	12,962							
SOCIAL MEDIA (SM)	Regression	37,333.097	6	6222.183	69.791	0.000 ^c	0.177 ^b	0.031	0.031	9.44219
	Residual	1,155,092.422	12,956	89.155						
	Total	1,192,425.519	12,962							
ENVIRONMENTAL EXPERIENCES	Regression	65,296.751	9	7255.195	83.377	0.000 ^d	0.234 ^c	0.055	0.054	9.32828
	Residual	1,127,128.768	12,953	87.017						
	Total	1,192,425.519	12,962							
PRO-ENVIRONMENTAL LIFESTYLE	Regression	88,950.726	11	8086.430	94.907	0.000 ^e	0.273 ^d	0.075	0.074	9.23059
	Residual	1,103,474.793	12,951	85.204						
	Total	1,192,425.519	12,962							

In the second step, we added the impact of SM use, which explains 25% of the variance (R Square = 0.025). This indicates that after controlling for the level of SM affordances, the use of SM makes a small and significant contribution to the prediction of CP. In the third step, we added environmental experiences. Global community and personal experiences with climate change increase the level of CP prediction to 0.55% (R Square = 0.055), after controlling for the effect of personal background and SM use. Finally, we assessed the impact of pro-environmental lifestyle. Living according to pro-environmental routines added 0.2% to the overall prediction of CP (R Square = 0.020), indicating that individuals who adhere to a pro-environmental lifestyle are more likely to actively engage in CP, after controlling for affordances, climate experiences and social media use. Next, in **Table 3** we use the regression coefficients of the proposed model to assess the specific impact of the model's independent and moderating variables

The findings in **Table 3** indicate the following: First, the impact of SM on CP varies. CP increases only when SM networks are involved (Beta = 0.135), but information regarding the environment has no effect whatsoever. Second, socioeconomic variables have a significant effect on CP. Income (Beta = 0.53) and age (Beta = 0.021) are the main factors that boost CP. A small and negative effect (Beta = -0.015) emerged for gender, indicating that men are less likely to endorse CP. Third, sharing climate experiences has a positive impact on CP. Local community effects play the most influential role (Beta = 0.126), followed by acknowledgment of global climate change effects (Beta = 0.020) and personal crisis

Table 3. Regression coefficients-B (unstandardized) and Beta (standardized), effects of SM use, affordances, environmental experiences and pro-environmental lifestyle predicting pro-environmental behavior (CP).

	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>		<i>Sig.</i>
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>	<i>t</i>	
(Constant)	-0.577	0.177		-3.259	0.001
AFFORDANCES: SOCIOECONOMIC EFFECTS					
Age	0.031	0.013	0.021	2.472	0.013
Gender (1 = Male)	-0.288	0.165	-0.015	-1.751	0.080
Education level	0.003	0.019	0.001	0.157	0.875
Income tier	0.026	0.004	0.053	6.131	0.000
SM Uses (SM)					
SM pro-environmental network use	0.153	0.010	0.135	15.800	0.000
SM pro-environmental information search	0.414	0.298	0.012	1.390	0.164
ENVIRONMENTAL EXPERIENCES					
Global effects	0.477	0.217	0.020	2.202	0.028
Personal effects	0.329	0.168	0.017	1.964	0.050
Local community effects	0.215	0.015	.126	14.374	0.000
PRO-ENVIRONMENTAL BEHAVIORS					
Pro-environmental Lifestyle	0.069	0.007	0.084	9.735	0.000
Pro-environmental effort	0.232	0.019	0.108	12.488	0.000

experiences (Beta = 0.017). Fourth, private pro-environmental behaviors are equally important, with daily efforts to mitigate the outcomes of climate change (Beta = 0.108) making the greatest positive contribution to CP, followed by a pro-environmental lifestyle ((Beta = 0.0814).

The results point to the assessment of pro-environmental CP as the outcome of both private/public realms of CP. At the same time, the results also indicate that specific s that SM differences in SM use have a differential effect as well because networking through SM is more important than accessing information. Similarly, adopting a pro-environmental lifestyle that accentuates the centrality of climate change has important effects. Finally, evidence that the community level experiences of climate change are pivotal in shaping CP, suggests that climate change experiences within communities have higher potential, relatively to personal or global experiences, to shape CP.

5. Conclusion and Discussion

Pro-environmental behavior is one of the recurrent means of observing how social changes develop among SM users. One recent example is the incident in which Just Stop Oil activists threw soup at Van Gogh's "Sunflowers" painting. In this study,

we sought to bridge the gap between the public realm of SM use and the private realm of personal background. At the public realm, SM provide pro-environmental information as well as use of networks affect pro-environmental CP. At the private realm, individual level affordances, lifestyle behavior, and climate change experiences could generate the personal background that increases / decreases the potential of CP. To do so, we adopted an interdisciplinary perspective that combined communication studies and behavioral models in order to assess the need to combine the private and public realms of CP.

The private realm and importance of affordances

The access to SM and variations in SM use provide important information about the extent and way individuals access use and communicate on the digital platforms. SM variations in access and use individual level differences. In order to account for these differences we controlled for variations in SM affordances stemming from socioeconomic factors, as manifested in education, income and age differences. The findings indicate that older and more educated individuals with higher incomes are more likely to engage in CP. This is the case also among women, since men are less likely to do so regardless of other socioeconomic variations. SM affordances therefore, moderate the general link between SM use and CP, confirm hypothesis H1 and corroborate with recent studies (Broomell et al., 2015; Hazlett & Mildenerger, 2020).

The public realm and SM effects on CP

Considering the centrality of SM in everyday life, we assumed that the public realm of SM use plays an important role in generating CP in two main ways: accessing information and sharing experiences. This distinction enables to assess the extent that some individuals may rely merely on accessing information while others may share virtual experiences through interactive communication within a group. Indeed, the study's findings indicate that SM use for networking has a higher impact on CP, relatively to SM information, apparently because networks enable individuals to share personal experiences, including climate change experiences. The findings enable therefore to confirm H2 and confirm existing studies regarding the central role of CP in disseminating climate change issues and concerns (Demski et al., 2017).

First, learning and knowing how to change and improve our daily lifestyle to advance climate change causes is important. Pro-environmental behaviors indicate that reported daily efforts to mitigate the outcomes of climate change along with a pro-environmental lifestyle make a positive contribution to CP (Boy & Uitermark, 2020; Bergquist et al., 2019). The study findings reveal that leading a pro-environmental lifestyle increases CP because it reflects the awareness of pro-environmental causes on a daily basis. The evidence suggests that leading a pro-environmental lifestyle reflects the intensity of motivated attention, which in turn shapes interest in CP (Boy & Uitermark, 2020). The evidence provided in the study indicates that indeed a pro-environmental lifestyle has the potential to trigger CP supporting our fourth hypothesis, and assesses an important aspect in

a process of motivated reasoning regarding climate change.

Second, we distinguished between personal, community and global climate change experiences in order to understand why individuals pursue active involvement. Extending upon the concept of motivated attention, we showed that it is community experiences of climate change, rather than personal or global experiences, that can induce CP, possibly due to the potential of sharing through SM networks. The results partially assess our third hypothesis H3 and confirm the importance of accounting for the different variations in climate change experiences existing studies especially those that trigger a sense of immediate threat.

Acknowledging the significance of SM potential in sharing of posts and links, photos and videos on CP, indicates that SM is an effective communication means for disseminating pro-environmental information (Kennedy & Sommerfeldt, 2015; Glas et al., 2019). Equally important are differences in affordances and climate change experiences that sustain the bridge between individuals' "public" and "private" facets of life that are ultimately essential for a successful CP.

6. Practical Contribution

The potential of promoting pro-environmental CP is higher when we examine the private/public realms of CP. This indicates that a person's potential to access pro-environmental information regarding climate changes could be reinforced within a learning process provided by cultural and educational institutions and hence increase the level of climate change coconsciousness. Acknowledging and rewarding a pro-environmental lifestyle would be a central concern among younger and older individuals and across all cultural segments of the US society.

The climate change mitigation process should be nurtured at digital networking platforms as well in order to enable the more personal sharing of private experiences because it is through sharing of videos and photos that climate changes can be addressed as a crisis and a threat rather than a single personalized case. The digital sharing could then minimize the inability and lack of interest to contribute to pro-environmental lifestyle and civic participation necessary to mitigate the catastrophic outcomes of climate change among a wider section of population in the USA.

7. Limitations and Recommendations for Future Research

This study has several limitations. First, the CP concept used here does not cover all modes and channels of civic participation. Future studies need to expand the CP definition. Second, a thorough conceptual examination of all the interactions would necessitate a different sample and a different methodology than those available in the present study. Third, in the present study we did not control for cultural effects. Cultural differences may account for differences in use of SM as well as CP. Some of these differences manifest in the perceptions and reports of

climate change experiences, since such experiences are more frequent in some parts of the world than in others. Using an integrative and interdisciplinary perspective to assess the interactions between the public and private level factors can provide a more accurate estimation of CP.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Alalwan, A. A., Rana, N. P., Dwivedi, Y. K., & Algharabat, R. (2017). Social Media in Marketing: A Review and Analysis of the Existing Literature. *Telematics and Informatics*, 34, 1177-1190. <https://doi.org/10.1016/j.tele.2017.05.008>
- Bergquist, M., Nilsson, A., & Schultz, P. (2019). Experiencing a Severe Weather Event Increases Concern about Climate Change. *Frontiers in Psychology*, 10, Article 220. <https://doi.org/10.3389/fpsyg.2019.00220>
- Bhagat, S., & Kim, D. J. (2023). Examining Users' News Sharing Behaviour on Social Media: Role of Perception of Online Civic Engagement and Dual Social Influences. *Behaviour & Information Technology*, 42, 1194-1215. <https://doi.org/10.1080/0144929X.2022.2066019>
- Boy, J. D., & Uitermark, J. (2020). Lifestyle Enclaves in the Instagram City? *Social Media and Society*, 6. <https://doi.org/10.1177/2056305120940698>
- Broomell, S. B., Budescu, D. V., & Por, H. H. (2015). Personal Experience with Climate Change Predicts Intentions to Act. *Global Environmental Change*, 32, 67-73. <https://doi.org/10.1016/j.gloenvcha.2015.03.001>
- Chon, M.-G., & Park, H. (2020). Social Media Activism and News Sharing Social Media Activism in the Digital Age: Testing an Integrative Model of Activism on Contentious Issues. *Journalism & Mass Communication Quarterly*, 97, 72-97. <https://doi.org/10.1177/1077699019835896>
- Demski, C., Capstick, S., Pidgeon, N., Sposato, R. G., & Spence, A. (2017). Experience of Extreme Weather Affects Climate Change Mitigation and Adaptation Responses. *Climatic Change*, 140, 149-164. <https://doi.org/10.1007/s10584-016-1837-4>
- Deshuai, M., Hui, L., & Ullah, S. (2022). Pro-Environmental Behavior-Renewable Energy Transitions Nexus: Exploring the Role of Higher Education, Information and Communications Technology Diffusion. *Frontiers in Psychology*, 13, Article 1010627. <https://doi.org/10.3389/fpsyg.2022.1010627>
- Dubois, G., Sovacool, B., Aall, C., Nilsson, M., Barbier, C., Herrmann, A., & Sauerborn, R. (2019). It Starts At Home. Climate Policies Targeting Household Consumption and Behavioral Decisions Are Key to Low-Carbon Futures. *Energy Research & Social Science*, 52, 144-158. <https://doi.org/10.1016/j.erss.2019.02.001>
- Ertz, M., Karakas, F., & Sarigöllü, E. (2016). Exploring Pro-Environmental Behaviors of Consumers: An Analysis of Contextual Factors, Attitude, and Behaviors. *Journal of Business Research*, 69, 3971-3980. <https://doi.org/10.1016/j.jbusres.2016.06.010>
- Gibson, J. (1979). *The Theory of Affordances: The Ecological Approach to Visual Perception*. Houghton Mifflin.

- Gil-Lacruz, A. I., Marcuello, C., & Saz-Gil, M. I. (2019). Gender Differences in European Volunteer Rates. *Journal of Gender Studies*, *28*, 127-144. <https://doi.org/10.1080/09589236.2018.1441016>
- Glas, R., Lammes, S., Lange, M., Raessens, J., & Vries, I. (2019). *The Playful Citizen: Civic Engagement in a Mediatized Culture*. Amsterdam University Press. <https://doi.org/10.5117/9789462984523>
- Grandin, A., Guillou, L., Sater, R., Foucault, M., & Chevallier, C. (2022). Socioeconomic Status, Time Preferences and Pro-Environmentalism. *Journal of Environmental Psychology*, *79*, Article 101720. <https://doi.org/10.1016/j.jenvp.2021.101720>
- Hall, W., Tinati, R., & Jennings, W. (2018). From Brexit to Trump: Social Media's Role in Democracy. *Computer*, *51*, 18-27. <https://doi.org/10.1109/MC.2018.1151005>
- Hamilton-Webb, A., Manning, L., Naylor, R., & Conway, J. (2017). The Relationship between Risk Experience and Risk Response: A Study of Farmers and Climate Change. *Journal of Risk Research*, *20*, 1379-1393. <https://doi.org/10.1080/13669877.2016.1153506>
- Haro-de-Rosario, A., Sáez-Martín, A., & Del Carmen Caba-Pérez, M. (2018). Using Social Media to Enhance Citizen Engagement with Local Government: Twitter or Facebook? *New Media & Society*, *20*, 29-49. <https://doi.org/10.1177/1461444816645652>
- Hazlett, C., & Mildenerger, M. (2020). Wildfire Exposure Increases Pro-Environment Voting within Democratic but Not Republican Areas. *American Political Science Review*, *114*, 1359-1365. <https://doi.org/10.1017/S0003055420000441>
- Head, B. (2008). Wicked Problems in Public Policy. *Public Policy*, *3*, 101-118.
- Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and Synthesis of Research on Responsible Environmental Behavior: A Meta-Analysis. *The Journal of Environmental Education*, *18*, 1-8. <https://doi.org/10.1080/00958964.1987.9943482>
- Hoffmann, R., Mutarak, R., Peisker, J., & Stanig, P. (2022). Climate Change Experiences Raise Environmental Concerns and Promote Green Voting. *Nature Climate Change*, *12*, 148-155. <https://doi.org/10.1038/s41558-021-01263-8>
- Hornsey, M., Chapman, C. M., & Oelrichs, D. M. (2021). Ripple Effects: Can Information about the Collective Impact of Individual Actions Boost Perceived Efficacy about Climate Change? *Journal of Experimental Social Psychology*, *97*, Article 104217. <https://doi.org/10.1016/j.jesp.2021.104217>
- Kaun, A. (2017). Our Time to Act Has Come: Desynchronization, Social Media Time and Protest Movements. *Media, Culture and Society*, *39*, 469-486. <https://doi.org/10.1177/0163443716646178>
- Kennedy, A. K., & Sommerfeldt, E. J. (2015). A Postmodern Turn for Social Media Research: Theory and Research Directions for Public Relations Scholarship. *Atlantic Journal of Communication*, *23*, 31-45. <https://doi.org/10.1080/15456870.2015.972406>
- Kircaburun, K., Alhabash, S., Tosuntaş, Ş. B., & Griffiths, M. D. (2020). Uses and Gratifications of Problematic Social Media Use among University Students: A Simultaneous Examination of the Big Five of Personality Traits, Social Media Platforms, and Social Media Use Motives. *International Journal of Mental Health and Addiction*, *18*, 525-547. <https://doi.org/10.1007/s11469-018-9940-6>
- Kollmuss, A., & Agyeman, J. (2002). Mind the Gap: Why Do People Act Environmentally and What Are the Barriers to Pro-Environmental Behavior? *Environmental Education Research*, *8*, 239-260. <https://doi.org/10.1080/13504620220145401>
- Lang, C., & Ryder, J. D. (2016). The Effect of Tropical Cyclones on Climate Change Engagement. *Climatic Change*, *135*, 625-638. <https://doi.org/10.1007/s10584-015-1590-0>

- Laor, T. (2022). My Social Network: Group Differences in Frequency of Use, Active Use, and Interactive Use on Facebook, Instagram and Twitter. *Technology in Society, 68*, 123-142. <https://doi.org/10.1016/j.techsoc.2022.101922>
- Larson, H. J. (2018). The Biggest Pandemic Risk? Viral Misinformation. *Nature, 562*, 309. <https://doi.org/10.1038/d41586-018-07034-4>
- León, B., Negredo, S., & Erviti, M. C. (2022). Social Engagement with Climate Change: Principles for Effective Visual Representation on Social Media. *Climate Policy, 22*, 976-992. <https://doi.org/10.1080/14693062.2022.2077292>
- Mano, R. (2014). Social Media, Social Causes, Giving Behavior and Money Contributions. *Computers in Human Behavior, 31*, 287-293. <https://doi.org/10.1016/j.chb.2013.10.044>
- Marlon, J. R., Wang, X., Mildenerger, M., Bergquist, P., Swain, S., Hayhoe, K., & Leiserowitz, A. (2021). Hot Dry Days Increase Perceived Experience with Global Warming. *Global Environmental Change, 68*, Article 102247. <https://doi.org/10.1016/j.gloenvcha.2021.102247>
- Matthew, T. B., Omoto, A. M., & Winter, P. L. (2015). Using Web 2.0 and Social Media Technologies to Foster Pro-Environmental Action. *Sustainability, 7*, 10620-10648. <https://doi.org/10.3390/su70810620>
- Mavrodieva, A. V., Rachman, O. K., Harahap, V. B., & Shaw, R. (2019). Role of Social Media as a Soft Power Tool in Raising Public Awareness and Engagement in Addressing Climate Change. *Climate, 7*, Article 122. <https://doi.org/10.3390/cli7100122>
- Minocher, X. (2019). Online Consumer Activism: Challenging Companies with Change.org. *New Media & Society, 21*, 620-638. <https://doi.org/10.1177/1461444818803373>
- Nah, S., & Yamamoto, M. (2018). The Integrated Media Effect: Rethinking the Effect of Media Use on Civic Participation in the Networked Digital Media Environment. *American Behavioral Scientist, 62*, 1061-1078. <https://doi.org/10.1177/0002764218764240>
- Negev, M., Sagy, G., Garb, Y., Salzberg, A., & Tal, A. (2008). Evaluating the Environmental Literacy of Israeli Elementary and High School Students. *The Journal of Environmental Education, 39*, 3-20. <https://doi.org/10.3200/JOEE.39.2.3-20>
- Ogunbode, C. A., Liu, Y., & Tausch, N. (2017). The Moderating Role of Political Affiliation in the Link between Flooding Experience and Preparedness to Reduce Energy Use. *Climatic Change, 145*, 445-458. <https://doi.org/10.1007/s10584-017-2089-7>
- Orban, G. A., Lanzilotto, M., & Bonini, L. (2021). From Observed Action Identity to Social Affordances. *Trends in Cognitive Sciences, 25*, 493-505. <https://doi.org/10.1016/j.tics.2021.02.012>
- Peralta, C., Wojcieszak, M., Lelkes, Y., & De Vreese, C. (2017). Selective Exposure to Balanced Content and Evidence Type: The Case of Issue and Non-Issue Publics about Climate Change and Health Care. *Journalism & Mass Communication Quarterly, 94*, 833-861.
- Pew Research Center (2018). *American Trends Panel Wave 35*. <https://www.pewresearch.org/internet/dataset/american-trends-panel-wave-35/>
- Phua, J., Jin, S. V., & Kim, J. J. (2017). Gratifications of Using Facebook, Twitter, Instagram, or Snapchat to Follow Brands: The Moderating Effect of Social Comparison, Trust, Tie Strength, and Network Homophily on Brand Identification, Brand Engagement, Brand Commitment, and Membership Intention. *Telematics and Informatics, 34*, 412-424. <https://doi.org/10.1016/j.tele.2016.06.004>
- Renouf, J. S. (2021). Making Sense of Climate Change—The Lived Experience of Experts. *Climatic Change, 164*, Article No. 14. <https://doi.org/10.1007/s10584-021-02986-5>

- Rosenthal, S. (2022). Information Sources, Perceived Personal Experience, and Climate Change Beliefs. *Journal of Environmental Psychology, 81*, Article 101796. <https://doi.org/10.1016/j.jenvp.2022.101796>
- Seyranian, V., Lombardi, D., Sinatra, G. M., & Crano, W. D. (2022). Optimizing Climate Change Communication: Context Comparison Model Method. *Frontiers in Psychology, 13*, Article 897460. <https://doi.org/10.3389/fpsyg.2022.897460>
- Shah, Z., Wei, L., & Ghani, U. (2021). The Use of Social Networking Sites and Pro-Environmental Behaviors: A Mediation and Moderation Model. *International Journal of Environmental Research and Public Health, 18*, Article 1805. <https://doi.org/10.3390/ijerph18041805>
- Shareef, M. A., Mukerji, B., Dwivedi, Y. K., Rana, N. P., & Islam, R. (2019). Social Media Marketing: Comparative Effect of Advertisement Sources. *Journal of Retailing and Consumer Services, 46*, 58-69. <https://doi.org/10.1016/j.jretconser.2017.11.001>
- Sisco, M. R. (2021). The Effects of Weather Experiences on Climate Change Attitudes and Behaviors. *Current Opinion in Environmental Sustainability, 52*, 111-117. <https://doi.org/10.1016/j.cosust.2021.09.001>
- Steg, L., & Vlek, C. (2009). Encouraging Pro-Environmental Behavior: An Integrative Review and Research Agenda. *Journal of Environmental Psychology, 29*, 309-317. <https://doi.org/10.1016/j.jenvp.2008.10.004>
- Stern, P. C. (2000). Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues, 56*, 407-424. <https://doi.org/10.1111/0022-4537.00175>
- Van Dijck, J., & Poell, T. (2015). Social Media and the Transformation of Public Space. *Social Media + Society, 1*. <https://doi.org/10.1177/2056305115622482>
- Volkmer, I. (2014). The Global Public Sphere: Public Communication in the Age of Reflective Interdependence. *European Journal of Communication, 30*, 115-116. <https://doi.org/10.1177/0267323114567273h>
- Walton, T. N., & Jones, R. E. (2022). An Information-Theoretic Approach to Modeling the Major Drivers of Pro-Environmental Behavior. *Sustainability, 14*, Article 14668. <https://doi.org/10.3390/su142214668>
- Whitmarsh, L., & Capstick, S. (2018). Perceptions of Climate Change. In S. Clayton, & C. Manning (Eds.), *Psychology and Climate Change* (pp. 13-33). Academic Press. <https://doi.org/10.1016/B978-0-12-813130-5.00002-3>