

Analyzing the role of environmental citizenship in addressing consequences of climate change from a social perspective

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ABSTRACT

The resolution of environmental issues and problems is contingent on the actions and behaviors of citizens. In this regard, environmental citizenship is of particular significance due to the commitment and accountability of individuals toward problems. The current study examined the level of environmental citizenship and its role in addressing climate change-related problems in Amedi City, Iraq. The statistical population of this study consisted of 11,000 people from the city, and a simple random sampling technique was used to select 420 individuals as a statistical sample. A questionnaire was used to collect the necessary data, and its validity and dependability were also evaluated. SPSS 23 was utilized to verify the results. The findings indicated that citizens' commitment to the environment and addressing one of the environmental crises, i.e., climate change, is adequate (4.02). According to demographic variables, citizens' commitment to addressing the climate change adverse and harmful effects was investigated. The results of the ANOVA test indicated that neither gender ($F = 1.26$) nor age ($F = 4.53$) has a significant relationship with environmental citizenship ($P > 0.01$). In contrast, there was a significant relationship between the level of education ($F = 43.49$) along with socioeconomic status ($F = 24.17$), and environmental citizenship ($P < 0.01$). Also, according to the independent t-test, only spatial connection exhibited a significant relationship among the environmental citizenship parameters ($P < 0.01$), including spatial connection ($T = 5.12$) and local message framework ($T = 0.86$). In conclusion, it was determined that effective policymaking could increase people's commitment and sense of responsibility toward environmental consequences.

Keywords: Environmental Citizenship, Social analysis, Climate change, Spatial connection.

Article type: Research Article.

INTRODUCTION

Nowadays, environmental crises pose an alarming threat to human life, endangering the lives of humans and other creatures (Vafina *et al.* 2020). Among these environmental threats and crises are climate change, the depletion of the ozone layer, deforestation, the food crisis, rising living standards, rising human demand, and technological progress (Berkowitz *et al.* 2005; Molajou *et al.* 2021a; Afshar *et al.* 2022; Khosravi *et al.* 2022). As a result of irresponsible human actions, exploitative and unprincipled use has gained popularity and turned public opinion in a worrying direction. It has also increased global environmental awareness (Mdehheb *et al.* 2020). Humanity's industrial revolution, followed by unsustainable behavior, is the primary cause of recent climate change (Molajou

et al. 2021b). Individuals and organizations should undergo significant behavioral changes to achieve sustainability and climate change objectives (Khan *et al.* 2019). Government policies have typically altered behavior to rely on financial regulation and measures or influenced market-based measures such as eco-friendly consumerism or trade determined by financial markets (Mabon *et al.* 2019; Pouladi *et al.* 2020). In recent years, emphasis has been placed on the significance of civil society, with activists viewed as citizens rather than consumers (Kythreotis *et al.* 2019). In general, promoting environmentally friendly behavior in this area has received less consideration. Consequently, it is possible to act in civil society by fostering environmental citizenship. It is important to note that environmental citizenship does not necessitate the replacement of financial and directive strategies (Devaney *et al.* 2020). In a sustainable society, the role of the citizen is prioritized over that of the consumer, and in environmental sociology, the environmental citizen is considered alongside the civil citizen (Christine Wamsler *et al.* 2020). Environmental citizenship necessitates that environmental preservation issues are at least as necessary as scientific and economic advancements (Mees *et al.* 2019). Consequently, the responsibilities of an ecological citizen extend to include all other species of the environment and future generations of citizens in addition to society's current population. Environmental citizens' stories are necessary for achieving the goals and plans of climate change policies (Turrini *et al.* 2018). Individual commitment to the adverse effects of climate change can catalyze necessary behavioral changes and provide the context for adopting adaptation policies. Citizens are frequently unconcerned about the adverse effects of climate change; one reason is the belief that the threat is remote from the location and time of its occurrence (Crane *et al.* 2008). People do not perceive climate change as a primarily personal threat. Psychological distance is the separation from issues, places, people, and events based on a person's direct experience. Theoretically, the subjectivity of the problem's psychological visibility elevates as distance increases. Psychological distance may inhibit climate change commitment (Williams *et al.* 2019). So that, people believe that there is no need to alter their lifestyles, since the issue is external to them. Climate change is frequently perceived as a distant threat, awareness alone is insufficient to inspire commitment (Karim *et al.* 2020). On the other hand, climate change does not motivate individuals to seek information about it. People typically avoid threats, deny them, act shocked, and seek justifications for their current lifestyle and behavior. Typically, they rely on mental shortcuts to assess risks, interpret information, and select responses (Brody *et al.* 2008). These mental processes influence appropriate psychological responses, such as responsibility acceptance, motivational commitment, etc. (Eom *et al.* 2018). Given the direct and personal effects of climate change, local or direct consequences such as damage or pressure from large-scale weather events or destruction of landscapes may be perceived. Regarding attitude change, social-psychological theories emphasize the significance of personal dependence (Heikkinen *et al.* 2019). Investigators have discovered that the type of information or its content does not determine the impact of a message. Instead, greater mental dependence on the request is crucial for accepting responsibility and expressing consequences (Kitsai *et al.* 2021). Therefore, as personal dependence and interest in the message increases, so makes the effort required to process it. Messages will be more effective if they emphasize the local nature of climate change. In other words, activities that create regional dependence are effective in gaining an understanding of local impacts and reduction opportunities (Rousell & Cutter-Mackenzie-Knowles 2020). Local messages inspire more significant commitment, since they are associated with a stronger personal connection. Additionally, these message frames alter people's attitudes regarding climate change mitigation (Jagers *et al.* 2016). Spatial connection is a significant factor in determining people's responses that have received little attention in climate change-related research. A set of cultural characteristics determines the location (Wolf *et al.* 2009). The place provides information about where we live or are from and our personalities and identities. People have a past and a future that unite them. When there is a strong connection between a person and his or her environment, the person feels a sense of identification with the environment and a sense of shared destiny with the environment. In such a circumstance, the symbols and events of the revered location are also significant to the individual (Jagers *et al.* 2014). According to some studies, people are more likely to pay attention to a location where they feel a sense of belonging than to a location where they do not belong. The role of place belonging is likely complex, however, in some groups, it impedes action (Uren *et al.* 2019). Locations are evaluated based on their cultural and religious significance. This variable is essential in determining people's attitudes and behavior regarding climate change, since it can sometimes create a sense of safety. Additionally, spatial connectivity is associated with self-reported environmental protection behaviors (Nash *et al.* 2020). In the new era, the destruction of natural resources and environmental pollution are accelerated due to changes in lifestyle and technological advancements in various

industries. Therefore, it is of the utmost importance to investigate methods for mitigating harmful effects and enhancing existing environmental conditions. Also, climate change has become a significant issue that will, directly and indirectly, overshadow numerous environmental concerns. Investigating the effect of environmental citizenship on the adverse effects of climate change is crucial. The main target of the study is to investigate the environmental citizenship of the residents in Amedi City, Iraq, concerning climate change by analyzing various demographic variables. This study examines environmental citizenship parameters, including spatial connection and local message framework innovations.

MATERIALS AND METHODS

The present study was conducted through a survey, and its statistical population consists of all residents in Amedi City. Using a random sampling technique, 420 residents were selected as a statistical sample for this study, and questionnaires were used to collect the necessary data. In order to confirm the validity of the questionnaire, its questions were reviewed based on reliable sources and the opinions of some environmental experts (Moore 2012; Maumoh & Yindi 2021). During May and June 2020, the data were collected, processed by ANOVA (analysis of variance) test in SPSS 23, and analyzed using descriptive and inferential statistics. For statistical results in the current study, a significance level of 0.01 was considered. Included among the demographic variables were gender, age, education, and socioeconomic status. The variables such as age and gender of individuals were elicited through a direct inquiry. Education was determined by a direct inquiry regarding the number of years spent in formal education by the respondent. The study's inclusion criteria include the native of the people in the study area and the participants' age range of 15-50 years. Exclusion criteria included a lack of interest in participating in the study and failure to complete the questionnaires. In order to comply with ethical principles, the participants were first given an overview of the study, its purpose, and its necessity. The participants' participation in the study was voluntary, and they were assured that they could withdraw at any time and on their terms. In addition, we promised that the participants' identities would remain confidential. Due to the need to define the fundamental variables of the study, the following theoretical and operational definitions of the variables were proposed. A person who considers himself committed to preserving the environment and resolving environmental issues is an environmental citizen. In the present study, different aspects of environmental citizenship included personal connection with the issue of climate change, individual knowledge about climate change, its causes, effects, and potential solutions, concern for the impacts of climate change, and actions taken by individuals to mitigate its adverse effects. There were eleven items used to measure this variable. The reliability of this 5-point Likert scale for measuring these items was 0.82. Spatial connection refers to forming cognitive and emotional ties with a specific location. A location is significant to a person due to its cultural or religious significance, opportunities of belonging to the community and environmental harmony, and the ability to achieve personal goals. Six items measured the spatial link variable. The reliability of this 5-point Likert scale for measuring these items was 0.78. The local context of the climate change impacts is essential. Messages that can localize climate change and its influences effectively generate concern and enhance individuals' ability to combat climate change. Focusing on geographically localized messages can reduce the psychological distance between people and the climate change issue as well as rise in their level of commitment. Five items were used to measure the aforementioned variable. The reliability of this 5-point Likert scale for measuring these items was 0.73.

RESULTS AND DISCUSSION

Table 1 shows the results regarding the demographic variables of the study participants indicating that 56.7% and 43.3% of the participants were males and females respectively. The mean age of all participants was 29.34 years; 44.5% were between 25 and 35. In addition, 65.8% had a secondary education, and 57.4% had medium socioeconomic status. The significance level of the results for each demographic variable was evaluated using ANOVA test. According to Table 1, it is evident that the results are significant compared to the level of education and socioeconomic status ($P < 0.01$). Also, environmental citizenship does not differ significantly based on gender or age ($P > 0.01$). In other words, there is no difference between male and female, nor between those of different ages, when it comes to a sense of responsibility toward combating the adverse effects of climate change. Therefore, in the literature of environmental sociology, the environmental attitudes and behaviors of citizens have varied according to the variable's level of education and socioeconomic status. Notably, the results of the questionnaires indicated that environmental citizenship improves by increasing levels of education, whereas the

variable mentioned above indicated an improvement in the medium socioeconomic status. Numerous studies have demonstrated a correlation between gender, age, education, socioeconomic status, and climate change commitment (Baldwin 2012; Barnett & McMichael 2018; Yu *et al.* 2019). According to the findings of this study, education level and socioeconomic status have a significant relationship with the promotion of environmental citizenship, which is consistent with the findings of other studies (Orlove *et al.* 2011; Jakučionytė-Skodienė *et al.* 2020). In addition, the lack of a significant effect of gender and age variables contradicts the findings of other studies (Ahmad *et al.* 2012; Klein *et al.* 2018).

Table 1. The results related to the demographic variables of the study participants.

Demographic characteristics	Classification	Frequency	Percentage	F-value	P-value
Gender	Female	182	43.3	1.26	0.43
	Male	238	56.7		
Age	<25	159	37.9	4.53	0.19
	25-35	187	44.5		
	>35	74	17.6		
	Illiterate	38	9		
Level of education	Secondary education	276	65.8	43.49	<0.01
	Higher education	106	25.2		
	Very poor	28	6.7		
Socioeconomic status	Poor	58	13.8	24.17	<0.01
	Medium	241	57.4		
	Good	72	17.1		
	High	21	5		

According to Table 1, the variables including the level of education and socioeconomic status are significant regarding environmental citizenship. The independent t-test was used to determine the significance level of environmental citizenship parameters, including spatial connection and local message framework. Depending on the location and the effectiveness of local climate change messages, citizens' commitment to solve environmental problems varies. The impact of these two factors on environmental citizenship is evaluated in Table 2. According to the findings, only the spatial connection parameter has a significant relationship with environmental citizenship outcomes ($P < 0.01$).

Table 2. Independent t-test results for different environmental citizenship parameters.

Independent variable	T-value	P-value
Spatial connection	5.12	<0.01
Local message framework	0.86	0.33

The frequency distribution of participant responses to various environmental citizenship issues is presented in Table 3. Issue of "humans are the main cause of global warming" with a mean of 4.28 out of 5, and issue "UV rays from the sun increase the risk of skin cancer" with a mean of 3.64 out of 5 exhibit the highest and lowest ones, respectively (Table 3). The mean score of 4.02 out of 5 on the cognitive dimension of environmental citizenship demonstrates that citizens have adequate knowledge of climate change and its effects.

Table 3. Percentage of environmental citizenship respondents knowledgeable about climate change

Issue	Completely agree	Agree	No answer	Opposed	Completely opposed	Mean	SD*
Global warming harms the health of my family and me.	43.8	22.7	17.5	14.2	1.8	3.78	1.13
Humans are the main cause of global warming.	58.1	26.2	11.4	4.3	-	4.28	1.26
With climate change, winters will be warmer.	46.5	21.7	19.7	10.2	1.9	4.06	1.08
Pollution caused by factories, industries, and transportation causes the earth to heat up.	55.4	21.8	15.2	7.6	-	4.24	1.22
Deforestation aggravates climate change.	52.7	23.1	17.9	4.9	1.4	4.12	1.34
UV rays from the sun increase the risk of skin cancer.	41.2	21.8	20.3	12	4.7	3.64	1.17

*SD = Standard deviation

Multiple approaches are required to expand and strengthen citizens' targeted commitment and responsibility to mitigate the adverse effects of climate change. Among these methods is messaging. Depending on the

characteristics of the message audience, the level of commitment to this phenomenon varies. This study also revealed that place ties significantly impact environmental citizenship. Numerous studies have demonstrated that the absence of location dependence has been one of the obstacles in order to implement policies to combat climate change (Allgaier 2019; Jorgenson *et al.* 2019; Wamsler *et al.* 2020). In addition, the results of other questionnaires indicated that citizens adhere to environmental standards in terms of consumption. In this regard, the highest mean values were for less private car use and energy-efficient light bulbs (Brink & Wamsler 2018). Given the mean of the issues, the mean score for environmental citizenship was 3.57 out of 5, indicating that the consumption-based environmental commitment of citizens is medium. In addition, the findings revealed that residents have a strong spatial connection to their city. In addition, the mean spatial connection of citizens is described as 4.11, exhibiting a high level. The local framing of climate change's adverse effects has also displayed an emotional impact. In other words, the city residents experience the adverse effects of climate change. The mean level of influence derived from the framework of the local climate change messages was 4.31, exhibiting a very high level of influence. Among the present study's limitations is that only the Amedi City natives were investigated. In order to establish environmental education programs, it is suggested that in addition to cognitive and knowledge aspects, emotional and attitude aspects should also be addressed. Regional policymakers should consider climate change's trans-temporal and trans-spatial nature and its apparent effects on Amedi City. They should employ various strategies to generate public support for climate change mitigation policies. Establishing the commitment and support of various segments of the population requires using communication strategies that local media can implement effectively.

CONCLUSION

The current study's objective was to investigate environmental citizenship and its parameters in Amedi, considering various demographic factors. This city is one of the most important tourist destinations. Due to its abundant natural resources, its residents rely more on the natural world, highlighting the significance of the environment and the need to protect it for the local population. The results indicated that level of education and socioeconomic status significantly correlate with environmental citizenship. Additionally, the spatial connection parameter is related to the variables aforementioned.

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