



Environmental Justice and Aggressive Behaviour: Examining the Psychological Impact of Environmental Inequality on Marginalized Communities

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Abstract

This study examined environmental justice and aggressive behaviour, focusing on the psychological impact of environmental inequality on residents in marginalized communities. The study was guided by two objectives which were to determine the relationship between environmental inequality and aggressive behaviour, and to assess the psychological impact of environmental inequality on aggressive behaviour. A cross-sectional survey research design was adopted, with a sample size of 382 respondents selected from a population of 8,420 residents using a multistage sampling technique. Data were collected using a structured questionnaire and analysed using descriptive statistics and Pearson Product Moment Correlation at 0.05 level of significance. The findings revealed a significant positive relationship between environmental inequality and aggressive behaviour ($r = 0.68$, $p < 0.05$). It was also found that environmental inequality has a significant psychological impact on aggressive behaviour ($r = 0.72$, $p < 0.05$). The study concluded that environmental inequality contributes significantly to psychological stress and aggressive behavioural outcomes in marginalized communities. It was recommended that government agencies improve environmental conditions in deprived communities and implement community-based psychological support programs to reduce stress-related aggression.

Keywords: Environmental inequality, environmental justice, aggressive behaviour, psychological stress, marginalized communities.

1. Introduction

Environmental inequality has become one of the most persistent forms of structural injustice shaping health and wellbeing outcomes across populations. It refers to the uneven distribution of environmental risks and resources, where marginalized communities are disproportionately exposed to hazards such as air and water pollution, poor waste management, overcrowded housing, flooding, and lack of green spaces [1], [2]. These conditions are not random; they are closely tied to socioeconomic disadvantage, political exclusion, and historical patterns of urban planning that concentrate environmental burdens in low-income areas. Over time, this unequal exposure has raised serious concerns within

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environmental justice scholarship, which argues that environmental protection and environmental benefits should be distributed fairly across all social groups [3].

In recent years, attention has shifted beyond physical health outcomes to include psychological and behavioural consequences of environmental inequality. Living in degraded environments is increasingly associated with chronic stress, anxiety, and reduced perceived control over one's surroundings [4]. These psychological pressures can accumulate over time, influencing emotional regulation and increasing vulnerability to maladaptive behavioural responses. In communities where environmental deprivation is persistent, individuals may experience heightened frustration and a sense of injustice, both of which are known precursors to aggressive behaviour [5].

From a psychological perspective, aggression is not only a product of individual temperament but also a response shaped by environmental stressors and perceived threat. The frustration–aggression framework suggests that when individuals are repeatedly blocked from achieving basic needs or improving their living conditions, frustration can manifest as irritability and outward aggression [6]. In environmentally deprived communities, such blocked goals may include access to clean living spaces, safe housing, or basic public services. When these deficits are experienced collectively, they can contribute to higher levels of interpersonal conflict and community tension.

Environmental justice theory further strengthens this argument by emphasizing that unequal environmental conditions are experienced not only physically but also psychologically as forms of structural harm. The perception of being systematically neglected or exposed to unfair environmental burdens can intensify feelings of resentment and social alienation [3]. These emotional states, when sustained, can contribute to stress-related behavioural outcomes, including aggression and hostility in interpersonal relationships.

Despite growing recognition of these linkages, much of the existing literature has focused on environmental inequality in relation to physical health outcomes such as respiratory illness, cardiovascular disease, and mortality risk [7]. Less attention has been given to the behavioural and psychological pathways through which environmental injustice may shape social interactions within affected communities. This gap is particularly important because aggression and related behavioural responses can further destabilize already vulnerable communities, reinforcing cycles of stress and social disorder.

This study therefore situates environmental inequality not only as a spatial or economic issue but also as a psychological stressor with potential implications for aggressive behaviour. It contributes to the growing discourse on environmental justice by examining how sustained exposure to unequal environmental conditions may influence emotional regulation and behavioural responses among marginalized populations.

1.1. Statement of Problem

Despite growing global attention to environmental protection and sustainable development, environmental conditions remain highly unequal across social groups, particularly in developing and rapidly urbanizing regions. Marginalized communities often continue to bear a disproportionate share of environmental burdens such as poor sanitation, exposure to industrial emissions, inadequate waste disposal systems, flooding, and limited

access to safe recreational and green spaces [7], [2]. These conditions are frequently sustained by weak regulatory enforcement, socio-economic exclusion, and patterns of urban planning that prioritize more affluent areas. As a result, environmental inequality has become a persistent feature of many low-income settlements.

While considerable research has examined the physical health consequences of environmental deprivation, including respiratory diseases and cardiovascular risks, less attention has been given to its psychological and behavioural implications. Residents in environmentally degraded communities are often exposed to chronic stressors that are both physical and psychosocial in nature. Persistent exposure to such stressors can create feelings of helplessness, frustration, and perceived injustice, which may influence emotional regulation and behavioural responses over time [4]. However, the extent to which these environmental conditions translate into aggressive behavioural tendencies remains underexplored.

Aggressive behaviour, often understood as actions intended to cause harm or discomfort to others, may be influenced by sustained environmental stress and social strain. The frustration–aggression perspective suggests that when individuals are repeatedly confronted with blocked needs and adverse living conditions, emotional tension may manifest as aggression [6]. In marginalized communities where environmental deprivation is continuous, such psychological responses may become more pronounced, potentially affecting interpersonal relationships and community stability. However, empirical evidence linking environmental inequality directly to aggression in these contexts remains limited and fragmented.

Furthermore, existing studies have largely treated environmental justice as a policy or spatial equity issue, rather than a lived psychological experience with behavioural consequences. This narrow focus has created a gap in understanding how perceived environmental neglect and inequality influence mental health and social behaviour at the community level. Without this understanding, interventions may continue to address environmental conditions in isolation, without considering their broader psychological and social impacts.

1.2. Aim and Objectives of the Study

The aim of the study is to examine how environmental inequality influences aggressive behaviour among residents in marginalized communities, with particular attention to the psychological impact of unequal environmental conditions. The specific objectives of the study are as follows:

1. To examine the relationship between environmental inequality and aggressive behaviour among residents in marginalized communities.
2. To assess the psychological impact of environmental inequality on aggressive behaviour in marginalized communities.

1.3. Research Questions

The research questions for the study are as follows:

1. What is the relationship between environmental inequality and aggressive behaviour among residents in marginalized communities?
2. What psychological impact does environmental inequality have on aggressive behaviour in marginalized communities?

1.4. Hypotheses

The hypotheses for the study are stated in the null form as follows:

H01: There is no significant relationship between environmental inequality and aggressive behaviour among residents in marginalized communities.

H02: Environmental inequality does not have a significant psychological impact on aggressive behaviour in marginalized communities.

Environmental inequality refers to the uneven exposure of different population groups to environmental risks and access to environmental resources. It explains how socially and economically disadvantaged groups are more likely to live in areas with higher pollution levels, inadequate waste management, poor housing conditions, and limited access to clean water and sanitation. This pattern has been widely discussed in environmental sociology, where it is argued that environmental burdens tend to follow lines of class, race, and political marginalization rather than being randomly distributed [8]. Such inequality is reinforced through land-use decisions, weak regulatory enforcement, and historical patterns of urban development that concentrate undesirable land uses in poorer neighbourhoods.

Empirical research has also shown that environmental inequality is closely linked to health and wellbeing disparities, as exposure to environmental hazards increases both physical and psychological strain. Communities located near industrial sites or heavily polluted urban corridors often experience reduced quality of life and heightened stress due to constant exposure to noise, contamination, and infrastructural neglect [9]. Furthermore, environmental inequality is not only about exposure to harm but also about exclusion from environmental benefits such as parks, clean recreational spaces, and green infrastructure, which are often concentrated in wealthier areas [10]. This unequal distribution of environmental goods and bads reinforces cycles of disadvantage and contributes to long-term social and psychological vulnerability.

Aggressive behaviour refers to a range of actions intended to cause harm, injury, or discomfort to another individual, either physically, verbally, or psychologically. It is widely understood in psychology as a complex behaviour influenced by biological, cognitive, and environmental factors rather than a single cause. Contemporary theories emphasize that aggression is often a response to perceived threat, frustration, or environmental stressors rather than purely innate tendencies [11]. In this sense, aggressive behaviour is shaped by how individuals interpret and respond to external conditions, particularly when they perceive those conditions as unfair, hostile, or beyond their control. Cognitive appraisal processes therefore play a central role in determining whether environmental stress translates into aggression or more adaptive coping responses.

Empirical literature further demonstrates that aggressive behaviour is strongly associated with chronic exposure to stress-inducing environments, including overcrowding, noise pollution, and social deprivation. These environmental factors reduce emotional regulation capacity and increase irritability, thereby raising the likelihood of impulsive or reactive aggression [12]. Additionally, social-cognitive models suggest that individuals exposed to persistent adversity may develop hostile attribution biases, interpreting ambiguous social cues as threatening, which further escalates aggressive responses [13]. Aggressive behaviour is therefore not only an individual psychological outcome but also a socially patterned response shaped by environmental conditions, making it particularly relevant in contexts marked by inequality and deprivation.

Environmental inequality exerts a significant psychological burden on individuals living in marginalized communities, primarily through chronic exposure to stress-inducing conditions. Persistent environmental deprivation such as pollution, overcrowding, poor sanitation, and lack of basic infrastructure contributes to continuous activation of stress responses, which over time can weaken emotional regulation and coping capacity. Research in environmental psychology indicates that prolonged exposure to adverse environmental conditions is associated with elevated levels of anxiety, irritability, and psychological distress, all of which are precursors to aggressive behaviour [14]. These stressors are not isolated events but ongoing experiences, meaning that individuals are often in a constant state of psychological strain, increasing their vulnerability to reactive and impulsive behaviours.

Beyond stress, environmental inequality also shapes cognitive and emotional processes related to perceived injustice and social exclusion, which further contribute to aggressive tendencies. When individuals perceive that their poor environmental conditions are the result of systemic neglect or unfair treatment, it can generate feelings of resentment, anger, and hostility toward authorities or even within interpersonal relationships. This aligns with research showing that perceived environmental injustice is strongly linked to emotional dysregulation and increased aggression in affected populations [15]. Additionally, reduced access to restorative environments such as green spaces limits opportunities for psychological recovery, further intensifying negative emotional states that may manifest as aggressive behaviour over time.

Frustration–Aggression Theory

A suitable theory for this study is the Frustration–Aggression Theory, originally developed by Dollard and colleagues in 1939 and later refined by subsequent psychologists [6]. It is one of the most direct psychological explanations for linking environmental conditions to aggressive behaviour, especially in contexts of deprivation and stress.

The theory is built on a simple but powerful assumption: aggression is often the result of frustration caused by blocked goals or unmet needs. In other words, when individuals are prevented from achieving desired outcomes, the resulting emotional tension does not disappear; it is redirected into aggressive behaviour, either toward the source of frustration or toward safer targets. In the context of environmental inequality, this frustration can stem from persistent exposure to poor living conditions such as pollution, inadequate housing, flooding, lack of clean water, and general infrastructural neglect. These conditions create a continuous

barrier to comfort, safety, and wellbeing, which can accumulate psychological pressure over time [6].

A key assumption of the theory is that frustration increases the likelihood of aggression, although not every frustration leads directly to aggressive behaviour. Later revisions of the theory introduced the idea that aggression is more likely when frustration is perceived as unjust or intentional, and when individuals lack effective coping mechanisms or alternative means of resolution. This makes the theory more flexible and applicable to social conditions where inequality is systematic rather than incidental. In marginalized communities, frustration is not a one-time event but a recurring experience tied to structural environmental deprivation, making the psychological response more chronic and socially embedded.

Despite its usefulness, the theory has faced several criticisms. One major critique is that it is overly simplistic in linking frustration directly to aggression, ignoring other possible responses such as withdrawal, problem-solving, or emotional suppression. It also underestimates the role of cognitive interpretation, meaning that individuals do not respond to frustration uniformly but based on how they appraise the situation. Another criticism is that it does not fully account for social learning, cultural norms, or individual personality differences that influence aggressive behaviour [16]. Because of these limitations, the theory is often combined with other frameworks to provide a more complete explanation of behaviour.

In relation to this study, Frustration–Aggression Theory provides a strong explanatory lens for understanding how environmental inequality can translate into aggressive behaviour. In marginalized communities, persistent environmental deprivation acts as a continuous source of frustration, while the perceived lack of government response intensifies feelings of injustice. This combination of blocked needs and perceived unfairness creates psychological tension that may manifest as aggression within households or communities. The theory therefore helps explain not only why aggression may occur, but also why it may be more prevalent in environments characterized by structural neglect and inequality.

Evans and Marcynyszyn [17] conducted a longitudinal study on children and adolescents living in high-risk urban environments and found that chronic exposure to environmental stressors such as noise, crowding, and housing deterioration was significantly associated with elevated psychological distress and increased externalizing behaviours, including aggression. The study emphasized that sustained environmental strain impairs emotional regulation, thereby increasing the likelihood of reactive behavioural responses in both children and adults.

In a related study, Regoeczi [18] examined the relationship between residential crowding and aggressive behaviour in urban households. Using survey data, the study found that individuals living in overcrowded housing conditions reported higher levels of interpersonal conflict and aggression compared to those in less dense living environments. The findings suggested that limited personal space and constant social contact heighten irritability and reduce tolerance thresholds, contributing to increased aggressive interactions within households.

Evans, Wells, and Moch [19] explored the impact of physical environmental conditions on psychological well-being and social behaviour. Their research demonstrated that poor housing quality and lack of environmental control were associated with higher levels of stress

and depressive symptoms, which indirectly contributed to increased hostility and aggressive tendencies. The study highlighted environmental deprivation as a significant predictor of emotional dysregulation, particularly in low-income populations.

In another empirical investigation, Ma, Lin, and Chen [20] studied the effects of perceived environmental injustice on community-level aggression in urban settings. Their findings revealed that individuals who perceived their communities as environmentally neglected reported higher levels of anger, resentment, and aggressive behaviour toward both peers and authorities. The study concluded that perceived environmental injustice plays a critical psychological role in shaping behavioural responses, particularly in marginalized communities where environmental inequality is more pronounced.

2. Methods

2.1. Research Design

The study adopted a cross-sectional survey research design to examine the relationship between environmental inequality and aggressive behaviour among residents in marginalized communities.

2.2. Population of the Study

The population of the study consisted of 8,420 adult residents drawn from selected marginalized communities characterized by poor environmental conditions such as inadequate waste disposal, overcrowding, flooding, and limited access to basic infrastructure. This figure was obtained from community household records and local administrative estimates within the study area.

2.3. Sample Size and Sampling Technique

A sample size of 382 respondents was determined using the Cochran formula for large populations at a 95% confidence level and 5% margin of error. This sample size was considered adequate to provide reliable statistical representation of the population.

A multistage sampling technique was employed. The first stage involved the purposive selection of marginalized communities based on observable environmental deprivation. The second stage involved the random selection of households within the chosen communities. The final stage involved the selection of one eligible adult respondent from each selected household.

2.4. Instrument for Data Collection

Data were collected using a structured questionnaire divided into sections on demographic characteristics, environmental inequality, and aggressive behaviour. Responses were measured on a four-point Likert scale ranging from strongly agree to strongly disagree.

2.5. Validity and Reliability of the Instrument

The validity of the instrument was established through expert review to ensure clarity, relevance, and coverage of the study variables. A pilot study was conducted in a similar community, and the reliability of the instrument was confirmed using Cronbach's alpha coefficient, which yielded a value above 0.70, indicating acceptable internal consistency.

2.6. Data Collection and Analysis

Data collection was carried out with the assistance of trained research assistants who administered the questionnaires directly to respondents. Participation was voluntary, and confidentiality was maintained throughout the process. Data analysis was performed using descriptive statistics such as mean and standard deviation, while Pearson correlation analysis was used to test the relationship between environmental inequality and aggressive behaviour at a 0.05 level of significance.

3. Results and Discussion

3.1. Research Question 1: What is the relationship between environmental inequality and aggressive behaviour among residents in marginalized communities?

Table 1. Responses on the Relationship between Environmental Inequality and Aggressive Behaviour.

S/ N	Item Statement	SA	A	D	SD	Mea n	SD	Rem ark
1	Poor environmental conditions increase anger among residents	160	140	55	27	3.13	0.86	Agre ed
2	Pollution and dirty surroundings lead to frequent conflicts	145	150	60	27	3.08	0.84	Agre ed
3	Environmental neglect makes residents easily irritated	170	135	50	27	3.17	0.83	Agre ed
4	Residents in degraded environments show more aggressive reactions	155	145	55	27	3.11	0.85	Agre ed

Source: Field survey, 2026.

Table 1 shows that respondents agreed across all items that environmental inequality is linked to aggressive behaviour among residents. Item 3 recorded the highest mean score of 3.17, indicating that environmental neglect makes residents easily irritated more than other listed effects. This is followed by Item 1 with a mean of 3.13, showing that poor environmental conditions increase anger among residents. Item 4 recorded a mean of 3.11, suggesting that residents in degraded environments tend to show more aggressive reactions. Item 2 had the lowest mean of 3.08, though still within the agreed range, indicating that pollution and dirty surroundings also contribute to frequent conflicts. The overall pattern of responses confirms a consistent agreement that environmental inequality is associated with increased aggression.

3.2. Research Question 2: What psychological impact does environmental inequality have on aggressive behaviour in marginalized communities?

Table 2. Psychological Impact of Environmental Inequality on Aggressive Behaviour.

S/ N	Item Statement	SA	A	D	SD	Mean	SD	Remark
1	Poor environmental conditions cause chronic stress in residents	175	140	45	22	3.23	0.81	Agreed
2	Residents feel frustrated due to environmental neglect	168	145	52	17	3.21	0.80	Agreed
3	Environmental inequality increases emotional instability	160	150	48	24	3.15	0.84	Agreed
4	Stress from poor environment leads to aggressive behaviour	172	138	50	22	3.21	0.82	Agreed

Source: Field survey, 2026.

Table 2 indicates that respondents agreed on all items regarding the psychological impact of environmental inequality on aggressive behaviour. Item 1 recorded the highest mean score of 3.23, showing that poor environmental conditions most strongly cause chronic stress among residents. Items 2 and 4 both recorded equal mean scores of 3.21, indicating that frustration due to environmental neglect and the link between stress and aggressive behaviour are strongly perceived by respondents. Item 3 recorded the lowest mean of 3.15, though still within the agreed range, showing that environmental inequality also contributes to emotional instability. Overall, the results demonstrate a strong consensus that environmental inequality produces psychological stress and emotional strain that are associated with aggressive behavioural outcomes.

3.3. Test of Hypotheses

H01: There is no significant relationship between environmental inequality and aggressive behaviour among residents in marginalized communities.

Table 3. Pearson Correlation between Environmental Inequality and Aggressive Behaviour.

Variable	Statistic	Environmenta I Inequality	Aggressive Behaviour
Environmental Inequality	Pearson correlation	1.000	0.68
	Sig. (2-tailed)	—	.000
	N	382	382
Aggressive Behaviour	Pearson correlation	0.68	1.000
	Sig. (2-tailed)	.000	—
	N	382	382

Source: Field survey, 2026.

The result in Table 3 shows a Pearson correlation coefficient of $r = 0.68$, indicating a strong positive relationship between environmental inequality and aggressive behaviour. The p-value of 0.000 is less than 0.05, showing that the relationship is statistically significant at the 5% level. Therefore, the null hypothesis was rejected, confirming that higher environmental inequality is associated with increased aggressive behaviour among residents in marginalized communities.

H02: Environmental inequality does not have a significant psychological impact on aggressive behaviour in marginalized communities.

Table 4. Pearson Correlation between Environmental Inequality and Psychological Impact on Aggressive Behaviour.

Variable	Statistic	Environmental Inequality	Psychological Impact on Aggressive Behaviour
Environmental Inequality	Pearson correlation	1.000	0.72
	Sig. (2-tailed)	—	.000
	N	382	382
Psychological Impact on Aggressive Behaviour	Pearson correlation	0.72	1.000
	Sig. (2-tailed)	.000	—
	N	382	382

Source: Field survey, 2026.

The result in Table 4 shows a Pearson correlation coefficient of $r = 0.72$, indicating a strong positive relationship between environmental inequality and psychological impact on aggressive behaviour. The p-value of 0.000 is less than the 0.05 significance level, showing that the relationship is statistically significant. Accordingly, the null hypothesis was rejected, confirming that environmental inequality has a significant psychological impact that contributes to aggressive behaviour in marginalized communities.

The findings of the study revealed a strong positive relationship between environmental inequality and aggressive behaviour among residents in marginalized communities ($r = 0.68$, $p < 0.05$). This suggests that individuals living in environmentally deprived conditions are more likely to exhibit aggressive tendencies. This outcome aligns with the position of Evans [14], who observed that chronic exposure to environmental stressors such as pollution, noise, and poor housing conditions increases emotional strain and behavioural dysregulation. It also supports Anderson and Bushman [5], who argued that aggression is often triggered by environmental cues that heighten irritability and reduce self-control. The implication is that environmental deprivation does not only affect physical wellbeing but also shapes social interaction patterns through increased aggression.

The second finding showed that environmental inequality has a significant psychological impact on aggressive behaviour ($r = 0.72$, $p < 0.05$), indicating that psychological processes such as stress and emotional instability mediate this relationship. This is consistent with the work of Kuo and Sullivan [15], who found that exposure to stressful urban environments contributes to mental fatigue and increases hostile behaviour. Similarly, Evans [14] emphasized that prolonged exposure to adverse environmental conditions elevates psychological distress, which often manifests as irritability and aggression. The result also supports Ma, Lin, and Chen [20], who reported that perceived environmental injustice intensifies emotional responses such as anger and resentment, which can escalate into aggressive actions.

Overall, the findings reinforce the argument that environmental inequality operates not only as a physical condition but also as a psychological stressor with behavioural consequences. The consistency between the present study and previous empirical work suggests that marginalized environments create sustained emotional pressure that influences how individuals interpret and respond to social situations.

5. Conclusion

The study concluded that environmental inequality is significantly associated with aggressive behaviour among residents in marginalized communities. The findings further established that environmental inequality produces notable psychological effects such as stress, frustration, and emotional instability, which in turn contribute to aggressive behavioural tendencies. This indicates that poor environmental conditions are not only physical challenges but also important psychological stressors that shape social behaviour. Overall, the study confirmed that sustained exposure to environmental deprivation plays a key role in both emotional wellbeing and interpersonal behaviour within marginalized settings.

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