



Who Gets to Decide? Citizen Agency and Institutional Distrust in Waste Management

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Abstract.

This paper examines the relationship between citizen participation and institutional trust in the context of waste management in the city of Split, with a particular focus on the controversial Waste Management Centre project in Lećeveica. Based on a quantitative survey of 450 residents from Split and surrounding areas, this study explores citizens' perceptions of their involvement in decision-making processes, the degree of trust in local and national institutions, and how these factors intersect with environmental awareness and practices. The results reveal a significant gap between citizens' declared environmental concern and their participation in pro-environmental behaviours, such as waste separation. Furthermore, the findings indicate widespread distrust in political and administrative institutions, contrasted by relatively greater confidence in environmental experts and civil society actors. Participation is widely perceived as symbolic, with little impact on policy, leading to emotions like fear, a sense of injustice, and vulnerability – especially regarding the Lećeveica and Karepovac waste management projects. These sentiments reflect broader concerns about exclusion, lack of transparency, and procedural fairness. The research highlights the need for designing participatory frameworks that move beyond formal consultation towards meaningful inclusion and power-sharing. The study concludes that building public trust and enhancing citizen agency are essential for developing effective, legitimate, and sustainable waste management strategies, particularly in urban settings defined by environmental pressures and socio-political tensions.

Keywords: citizen participation, trust in institutions, waste management, environmental awareness, environmental governance

1. Introduction

Waste management is increasingly recognised as a socio-ecological challenge that extends beyond technical and logistical solutions. Its success depends not only on infrastructure, but also on the degree of citizen involvement, the quality of institutional communication, and the trust communities place in decision-makers. In Croatia, disputes over waste management – from the remediation of the Karepovac landfill to the planning of new Waste Management Centres – have exposed persistent tensions between citizens and institutions. The proposed Lećeveica Waste Management Centre in Split-Dalmatia County is emblematic: while citizens express

concern over ecological risks, an equally strong source of opposition lies in their perceived exclusion from decision-making. Such cases highlight broader deficits in participation and the erosion of institutional trust.

Against this backdrop, the concept of citizen participation offers a useful framework for understanding the link between policy and societal response. Arnstein's classic "Ladder of Participation" (1969) distinguishes between symbolic involvement, such as information provision and consultation, and genuine power-sharing. Fung's "democracy cube" (2006) further refines this by analysing who participates, how deliberation unfolds, and the extent of participants' influence, offering insights into both institutional limits and opportunities for more inclusive practices.

This study examines how citizens of Split perceive their role in waste management policies and how much trust they place in the institutions responsible for them, with a particular focus on the Lećeveica case. By identifying patterns of exclusion, resistance, and distrust that may hinder policy implementation, the paper combines theoretical models of participation with survey data. The analysis contributes to understanding how democratic processes shape the sustainability of environmental policies, underscoring the need for governance models based not only on technical solutions but also on transparency, dialogue, and meaningful citizen engagement.

2. Theoretical Framework

2.1 Conceptual Approaches to Citizen Participation

In her seminal 1969 work, Sherry Arnstein introduced the Ladder of Citizen Participation, which remains one of the most influential models for analysing the relationship between citizens and public authorities. Arnstein argued that participation is not merely about being included in decision-making processes, but fundamentally about the distribution of power. Her model consists of eight rungs divided into three categories: non-participation, tokenism, and citizen power. The lowest levels – manipulation and therapy – represent symbolic inclusion without actual influence, where citizens are treated as passive subjects rather than active agents. Tokenism includes informing, consultation, and placation, where citizens may be heard but have no assurance that their input will affect decisions. Only the top three rungs – partnership, delegated power, and citizen control – entail real influence, responsibility sharing, and a redistribution of authority.

Arnstein's model continues to serve as a valuable tool for understanding the structure and function of participatory mechanisms, especially in contexts such as waste management, where participation is often more rhetorical than substantive. It enables researchers to differentiate between genuine and superficial involvement, and to identify practices that might undermine institutional legitimacy by failing to provide meaningful influence. However, her framework has been critiqued for its normative linearity and limited flexibility. To address this, Archon Fung (2006) proposed a more dynamic approach in the form of the "democracy cube," which maps participation across three dimensions: participant selection (open, targeted, or randomised), communication modes (from information delivery to deliberation and negotiation), and the degree of authority (advisory input to co-governance). Fung emphasises that participatory processes must be tailored to context, demonstrating that effective models can succeed even without reaching the highest rungs of Arnstein's ladder, provided they ensure deliberation, responsiveness, and inclusivity.

Building on this, Reed (2008) highlights that participation is not inherently democratic or beneficial; rather, its outcomes depend on how processes are structured and facilitated. Poorly timed, ambiguous, or purely formalistic participation can erode trust and reduce stakeholder

engagement. To avoid this, Reed identifies eight principles of good practice, including early engagement, clearly defined objectives, transparency, use of appropriate methodologies, facilitation expertise, recognition of diverse knowledge, empowerment, and institutionalisation. Participation should not be a one-time consultation but a continuous, dialogical process that fosters social learning and trust. When implemented properly, it becomes a foundation for developing socially legitimate and environmentally sustainable policies.

Recent scholarship has emphasised that citizen participation is increasingly mediated through digital technologies. Sæbø, Rose, and Flak (2008) characterise e-participation as an emerging research area, highlighting how ICT tools – from online forums to electronic voting – expand opportunities for citizens to deliberate and influence decision-making. Social networking services in particular have been identified as promising avenues for enhancing participation and mobilising younger demographics (Sæbø, Rose, & Nyvang, 2009). Similarly, Rose and Flak (2018) argue that participation in digital governance contexts must be analysed through the lens of stakeholder theory, which accounts for diverse and sometimes conflicting values of different actors, and provides normative guidance for balancing these interests. At the global level, Medaglia, Misuraca, and Aquaro (2021) underscore the role of digital government in advancing the United Nations' Sustainable Development Goals, suggesting that e-participation can contribute not only to local decision-making but also to broader agendas of sustainability and inclusion.

At the same time, the limitations of participatory models remain evident in contentious policy fields. Baxter, Morzaria, and Hirsch (2013), in their study of public attitudes towards wind turbines, found that support and opposition were shaped less by abstract acceptance of renewable energy and more by perceived health risks, fairness in the distribution of economic benefits, and intra-community conflict. This highlights that participation is not solely a matter of access or deliberative quality, but also of addressing substantive concerns about equity, wellbeing, and justice. Comparable findings are visible in Croatia, where resident (non)participation in housing estates demonstrates that citizens often perceive participatory mechanisms as ineffective, leading to withdrawal or selective engagement (Zlutar Gamberožić, Adamović, & Klasić, 2025). Similarly, research on island communities shows that sustainable waste management is strongly dependent on active community involvement in practices such as recycling and waste separation, reinforcing Reed's emphasis on early and continuous engagement (Dekanić & Ježić, 2025). Moreover, evidence from Croatian tourist towns confirms that the achievement of EU waste reduction targets will require participatory governance models that mobilise both citizens and local stakeholders (Smoljko, Perić, & Jelinčić, 2024).

Taken together, these perspectives reveal that the key issue in participatory practice is not simply the presence or absence of citizen involvement, but the quality, purpose, and power dynamics of that involvement. Arnstein foregrounds the necessity of power redistribution; Fung conceptualises the institutional design and procedural diversity; and Reed focuses on the operational conditions for meaningful engagement. More recent approaches extend these frameworks into the digital era (Sæbø et al., 2008; Rose & Flak, 2018; Medaglia et al., 2021), while empirical studies of local resistance (Baxter et al., 2013) and regional case studies from Croatia (Dekanić & Ježić, 2025; Smoljko et al., 2024; Zlutar Gamberožić et al., 2025) remind us that participation must grapple with contested interests and perceptions of fairness. In environmental policy domains such as waste management, where uncertainty, conflict, and perceived risk converge, participation that lacks real influence can foster public cynicism and further distrust. Conversely, inclusive models that value local knowledge, support deliberation, and share decision-making authority – whether offline or online – tend to produce more accepted, equitable, and sustainable outcomes.

2.2 Trust in Institutions in Environmental Decision-Making

Trust in institutions constitutes a foundational prerequisite for the effective implementation of environmental policies, particularly in domains characterised by uncertainty, technical complexity, and social contention – such as waste management. Rather than a unidimensional construct, trust encompasses both perceptions of institutional competence and beliefs in institutional integrity and public-minded intent. As Earle and Cvetkovich (1995) argue, trust reflects confidence in the ethical orientation and benevolence of institutions, while confidence pertains to their perceived technical capability. The simultaneous presence of both is essential for institutional legitimacy. A deficit in either dimension contributes to what Löfstedt (2005) describes as the erosion of trust in “post-trust” societies, in which institutional legitimacy must be continually reaffirmed through transparency, accountability, and citizen inclusion.

In this regard, legitimacy and effectiveness are closely intertwined in environmental governance. Hogg, Kvarda, Nordbeck, and Pregernig (2012) emphasise that participatory arrangements are not only a means of enhancing inclusiveness, but also a mechanism to increase perceptions of institutional competence. Trust, therefore, is not simply a psychological disposition but an institutional resource, grounded in both procedural fairness and demonstrable outcomes. Breakdowns in trust frequently stem from regulatory lapses, strategic communication failures, or perceptions of manipulation. These deficits amplify public sensitivity to perceived risks and increase the likelihood of social resistance. In such settings, participation is not merely a procedural necessity, but a strategic mechanism for restoring public confidence.

However, as Slovic (1993) and Terwel et al. (2011) emphasise, participatory processes that fail to afford genuine influence – such as one-directional information provision – can further exacerbate distrust. Slovic’s research underscores that risk perception is shaped not only by technical knowledge but by affective experiences and social framing. When public concerns are dismissed, communication remains vague, or perceived distributions of risk and benefit are unjust, resistance tends to escalate – not out of ignorance, but as a rational response to exclusion. This dynamic is further complicated by emotional and symbolic attachments to place. Devine-Wright (2009), through the lens of place-protective action, highlights that local opposition arises not only from environmental or health-related anxieties, but also from perceived threats to community identity and the social meaning of space. The absence of meaningful engagement reinforces these perceptions and fuels collective resistance.

Research by Terwel and colleagues (2011) confirms that public trust in project proponents significantly affects acceptance. Projects framed transparently and represented by actors viewed as fair and competent tend to receive greater public support. Conversely, when participation is performative, economic interests are obscured, or dialogue is lacking, opposition often emerges independently of a project’s technical validity. Comparative research further supports this pattern: Cudjoe et al. (2024) show that trust is among the strongest determinants of public acceptance of Waste-to-Energy projects globally, highlighting how institutional transparency and fairness shape willingness to support controversial infrastructure.

Recent cross-national research also shows that political trust is one of the strongest predictors of public support for environmental protection, often outweighing the explanatory role of political ideology (Fairbrother, 2016). Extending this perspective, Smith and Mayer (2018) demonstrate that trust – both social and institutional – operates alongside risk perceptions in shaping collective action on climate change. Their findings suggest that while risk awareness increases willingness to act, a lack of trust can blunt this effect, producing what Rothstein (2005) conceptualises as a social trap in which collective inaction persists despite high levels of concern.

These patterns are also reflected in the well-documented NIMBY (“Not in My Backyard”) phenomenon, commonly invoked to describe opposition to the siting of unwanted facilities near residential areas. Although the term originated in North America in the 1980s, similar resistance persists globally. Kauffman et al. (1990) found that while communities often welcome low-risk developments, such as parks, they tend to resist landfills and similar infrastructure. In Croatia, scholarly attention has largely concentrated on environmental impact rather than public attitudes (Šućur, 1992). Still, recent research on island communities shows that public support for sustainable waste management is closely linked to perceptions of fairness and institutional responsiveness: residents who feel their voices are heard are more willing to support tourism-related waste policies (Dekanić & Ježić, 2025).

Theories of risk amplification (Čaldarović, 1996) further suggest that public perception is not solely determined by scientific risk assessments, but is intensified through media narratives, symbolic associations, and collective memory. Even technically sound projects may face organised opposition when communication is lacking, and participation is perceived as superficial. In this context, principles such as inclusivity, accountability, and transparency are not peripheral add-ons, but core elements of legitimate environmental governance. Beierle and Cayford’s (2002) review of over 200 participatory processes concludes that mutual respect, institutional responsiveness, and two-way communication are critical for building trust and achieving socially acceptable outcomes. Participatory models that acknowledge local knowledge and empower citizens to shape outcomes markedly enhance prospects for successful implementation.

Siegrist, Earle, and Gutscher (2003) propose a dual-component model of trust, grounded in both value congruence and demonstrated competence. Their findings indicate that citizens are more likely to accept risks when institutions are perceived to share their values and act in the public interest. Participation, in this light, becomes a process of co-producing meaning and fostering a sense of democratic ownership. This corresponds with recent evidence that underlying personal values – particularly biospheric and altruistic orientations – are key drivers of pro-environmental beliefs and trust in institutions (Bouman, Steg, & Kiers, 2018). Importantly, psychological dimensions of risk perception such as climate anxiety – defined as chronic worry and emotional distress about climate change – have emerged as new factors influencing institutional trust. Clayton (2020) argues that while moderate levels of climate anxiety can mobilise engagement, excessive or unaddressed anxiety may fuel distrust and erode perceived institutional legitimacy, especially if citizens feel unsupported or powerless.

Ultimately, trust and participation are mutually reinforcing. Trust increases citizens’ willingness to engage in participatory processes, while meaningful participation, in turn, strengthens trust by enhancing perceived agency and collective relevance. In the domain of waste management – where contested interests, health concerns, and environmental justice intersect – these dimensions are indispensable for long-term policy sustainability, public acceptance, and institutional legitimacy.

3. Methodology

The aim of this study was to explore public attitudes towards waste management among residents of Split and surrounding settlements, with particular emphasis on perceptions of citizen participation and trust in institutions responsible for environmental decision-making. In line with this overarching aim, the study pursued three specific objectives:

1. To examine how citizens perceive their opportunities for participation in waste management policies and practices.

2. To assess levels of trust in political, administrative, expert, and civil society actors involved in environmental decision-making.
3. To investigate perceptions of environmental risk, particularly in relation to the planned Waste Management Centre in Lećeveica.

In addition to these objectives, the study also tested the assumption that citizens of Split and its surrounding areas perceive the fear surrounding the construction of the Lećeveica Waste Management Centre as justified. This expectation was formalised as the study's main hypothesis (H1). The corresponding null hypothesis (H0) assumed no such perception, namely that fear related to the project was not widely considered justified.

The research is grounded in Arnstein's Ladder of Participation as a conceptual framework, while the empirical approach relies on a quantitative methodology using a structured survey. The questionnaire was originally developed as part of the author's master's thesis, *Risk Perception and the Presence of NIMBY Attitudes Among Citizens of Split Regarding the Municipal Waste Landfill Issue* (defended in 2022 at the Faculty of Humanities and Social Sciences, University of Split). It was designed to reflect the local socio-political context and was partially adapted from validated instruments used in related environmental studies. Some questions were presented as five-point Likert scales, while others were formulated as closed or open-ended items. A number of questions were partially adopted and reformulated from previous research in order to ensure validity and comparability. While Likert scales are widely used and effective for capturing attitudinal trends, they also carry certain limitations, such as respondents' tendency to avoid extreme categories and the subjective interpretation of scale points. These limitations should be taken into account when interpreting the findings.

The instrument consisted of four thematic sections: (1) demographic and socio-economic characteristics of respondents, including age, gender, education, employment, household composition, income, and place of residence; (2) presence of NIMBY attitudes, focusing on opposition to locally unwanted facilities and perceptions of fairness, risk, and acceptability; (3) environmental awareness and behaviour, such as waste separation, energy saving, participation in environmental initiatives, and perceptions of local environmental quality (e.g., noise, odours, and waste-related nuisances); and (4) trust in institutions, measuring confidence in local government, national authorities, experts, NGOs, and the media, as well as perceptions of transparency and inclusiveness in decision-making processes. Although the Lećeveica Waste Management Centre was not treated as a separate thematic set, several questions indirectly captured perceptions related to this case through items addressing institutional trust, risk perception, and opposition to waste management facilities in the local area.

The survey was conducted from June to August 2022. using an online questionnaire distributed through social media, mailing lists, and local community networks. The final sample included 450 adult respondents residing in Split and surrounding areas (Slatine, Žrnovnica, Kamen, Donje and Gornje Sitno, Srinjine, and Stobreč). Since the sample was based on voluntary participation and online accessibility, it represents a non-probabilistic sample, which limits the generalisability of findings to the entire population of Split and its surroundings. Given the non-probability, online sample, findings should be interpreted cautiously and not generalised to the entire population.

Participation was fully anonymous and voluntary. Respondents were informed about the purpose of the research and gave consent before proceeding with the questionnaire. No personally identifiable information was collected. The study was conducted in line with the ethical guidelines of the Faculty of Humanities and Social Sciences, University of Split, and in accordance with the European Code of Conduct for Research Integrity (ALLEA, 2017).

Data were analysed using IBM SPSS Statistics. Descriptive statistics (frequencies, percentages, arithmetic means) were used to present the sample profile and general trends in attitudes and perceptions. Inferential analysis was conducted using the chi-square test to examine relationships between selected categorical variables (e.g., place of residence and perception of justified fear). The chi-square test was chosen because it is well suited for detecting statistically significant associations between independent and dependent categorical variables and does not assume normal distribution of data. Alternative statistical techniques were considered; however, given the categorical nature of the variables, the chi-square test was deemed the most appropriate. Statistical significance was set at $p < 0.05$, following conventional thresholds commonly applied in social science research. This level indicates that the likelihood of observing the results due to random chance is less than 5%, providing sufficient confidence to reject the null hypothesis while balancing the risk of Type I and Type II errors.

4. Results and Discussion

4.1 Demographic Characteristics of Respondents

The survey sample consisted of 450 citizens from Split, surrounding settlements, and the municipality of Lećeveica. Women comprised 62.4% of respondents, while men accounted for 37.6%. The most represented age group was under 25 (34.9%), whereas those over 66 years made up the smallest share (4.9%). Regarding education, 40% had completed secondary school, while only 1.6% held an advanced academic degree. In terms of marital status, 43.3% were single and 41.6% married. Employment data show that 46.4% were employed full-time, and 9.3% were unemployed. Household income varied, with 37.6% reporting more than HRK 10,001 monthly and 6.4% less than HRK 4,000. Four-member households were the most common (35.6%), while single-person households made up 7.6%. Geographically, the largest share of respondents came from the southern and central districts of Split (32.2%), whereas only 3.1% were from Lećeveica. Compared to demographic patterns in Splitsko-dalmatinska County, where younger age groups and four-member households also predominate, the sample broadly reflects regional trends, though with slightly higher participation of younger citizens.

The findings indicate widespread dissatisfaction with current waste management practices, shaped not only by infrastructural deficiencies but also by the perceived exclusion of citizens from decision-making. Key sources of discontent include negative past experiences with infrastructure (21.8%), the perceived financial burden (16.2%), lack of co-ordination with local authorities (34.4%), and enduring infrastructural challenges (25%). These correspond to what Beierle and Cayford (2002) term "participation failures," where the public is formally acknowledged but excluded from real influence. Notably, 73.3% of respondents felt they should play a larger role in shaping local environmental policy.

These perceptions resonate with Cornwall's (2008) distinction between "invited spaces" – where institutions set the terms of engagement – and "claimed spaces," where communities assert their voice. The prevailing experience among participants reflects the former, reinforcing the view that current mechanisms prioritise procedure over genuine deliberation. Furthermore, 60.9% expressed the belief that local communities are essentially powerless to prevent the siting of undesirable facilities. This illustrates not only a loss of agency but also what Habermas (1984) would describe as the "colonisation of the lifeworld," where bureaucratic rationalities override the communicative will of affected publics.

4.2 Reasons for Public Dissatisfaction

Although waste management is often discussed through technical and economic prisms, this study underscores the equal importance of governance legitimacy and citizen perception. The

strong majority (73.3%) who advocate for greater involvement in decision-making reflects a broad-based scepticism towards how environmental issues are managed. This aligns with critiques by Dryzek (2000), who argues that institutional systems frequently marginalise plural voices, reducing participation to a managed form of consent rather than a platform for negotiation or contestation.

Experiential disruptions further compound these sentiments. 37.1% of participants reported intermittent noise disturbances in their surroundings, while 36.7% perceived no such issues – suggesting unequal environmental burdens. In the case of odours, 47.1% noted occasional occurrences, and 29.6% reported frequent exposure. These experiences are particularly salient in relation to the Lećevica project, which over half of respondents regard as unjustifiably delayed. Such procedural stagnation is interpreted not merely as inefficiency, but as symptomatic of what Bovens and Zouridis (2002) identify as a "disconnected accountability chain" – one in which institutions operate at arm's length from those they ostensibly serve.

Institutional trust also appears fractured. While 56% of respondents expressed distrust in project leadership, only 18.2% indicated confidence. Despite this, 52.43% recognised the project's potential to promote regional development, suggesting that objections stem not from ideological opposition but from dissatisfaction with implementation processes. The fact that 52% believe vested interest groups are obstructing progress reinforces this interpretation, implying a perception of procedural capture and elite dominance over local planning.

Viewed through Fung's (2006) framework, participation in the Lećevica project appears restricted to low-intensity forms – selective access, limited transparency, and negligible deliberative input. Public forums, if they occurred, were not experienced as dialogical in nature. This participatory shortfall is echoed in perceptions surrounding the Karepovac landfill remediation, especially Phase 3A. Although spatially distant from some respondents, the broader awareness of infrastructure changes across Split enabled inclusion of diverse perspectives.

When asked about the impact of environmental factors on daily life, 56.2% of respondents noted a decline in neighbourhood quality, though 59.6% felt tourism remained unaffected. This duality indicates differentiated perceptions of ecological versus economic resilience. In contrast, health and well-being were more closely linked to waste management concerns, with 54.4% stating they felt directly affected. Interestingly, 73.8% did not perceive a decline in property values, suggesting that perceived risk is contextually mediated – perhaps influenced by geographic proximity, media framing, or adaptive reasoning.

Emotional reactions further illuminate perceptions of procedural justice. A notable 44.4% of respondents reported frequent feelings of injustice, with another 35.6% indicating occasional occurrence. Such responses correspond with Slovic's (1993) argument that risk perception is not solely informed by empirical data, but also shaped by emotional, cultural, and historical filters. Health-related anxieties were also prominent: 33.8% regularly feared for their or their family's health, while 41.3% occasionally did so. Concerns about environmental degradation were similarly high (38.4% frequent; 37.8% occasional).

A more generalised sense of insecurity – spanning environmental, economic, and institutional domains – was reported by 32.7% frequently and by 38.4% occasionally. This emotional climate aligns with recent literature on eco-anxiety (Clayton et al., 2017), suggesting that chronic exposure to uncertainty, combined with perceived institutional inertia, can generate lasting psychological stress. Importantly, such emotional indicators signal a deeper deficit in democratic legitimacy, not just a failure of service delivery.

Though citizens may have been formally consulted, many perceive such processes as tokenistic – what Arnstein (1969) famously termed “placation.” Fung’s participation matrix helps elucidate this: the public has limited access, constrained deliberative space, and minimal authority to affect outcomes. Consequently, citizen reactions polarise, manifesting either as disengagement or protest. To counteract this, environmental governance must embrace not only infrastructural efficiency but also deliberative inclusion and epistemic justice.

Table 1. Emotional Responses Frequency

Do you feel the following?		Often	Sometimes	Never	Total
A sense of injustice	%	44.4	35.6	20.0	100.0
Fear for your own health or the health of loved ones	%	33.8	41.3	24.9	100.0
Fear of environmental degradation	%	38.4	37.8	28.2	100.0
A general sense of threat (environmental, economic, financial)	%	38.4	32.7	28.9	100.0

4.3 Insights into Public Perceptions of Environmental Risk

Public fear is often dismissed as irrational or emotionally driven, especially in the context of large infrastructure projects. However, in environmental governance, particularly when siting potentially harmful facilities, such fears can be rooted in prior experiences, institutional mistrust, or perceived lack of control. Understanding whether this fear is isolated or widely shared is critical for evaluating the social legitimacy of environmental interventions.

In this study, special attention was given to the perception of fear associated with the planned construction of the Lećevica Waste Management Centre. The aim was not only to determine how widespread these concerns are, but also to assess whether respondents consider them justified based on available information, local experiences, and broader institutional dynamics. The statistical analysis conducted using the chi-square test rejected the null hypothesis (H_0), which assumed that citizens did not perceive such fear as justified, and confirmed the alternative hypothesis (H_1), namely that fear is widely perceived as legitimate. The results reveal a notably high level of public concern regarding the potential environmental, health-related, and quality-of-life impacts associated with the project.

As indicated in Table 2, 39.56% of respondents agreed that the fear of the Centre’s construction is justified. This figure reflects a broadly shared perception of risk, based not only on prior experiences but also on anticipated disruptions to the local environment. When analysing responses by residential area, statistically significant variations emerged. For instance, in neighbourhoods such as Brda, Kman, Bol, and Ravne Njive, 46.15% of participants deemed the fear justified. In Lećevica – the municipality directly adjacent to the planned facility – that figure reached 50%. Comparatively, in more central districts such as Lučac, Manuš, and Gripe, the percentage was lower, yet still considerable, at 33.79%.

A substantial proportion of respondents (43.11%) reported uncertainty, stating they could not definitively determine whether the fear was warranted. This suggests the presence of informational ambiguity and a lack of access to comprehensive project-related data. Only 17.33% of respondents explicitly rejected the notion that fear is justified, indicating a relatively small segment of the population holding a dismissive view.

The chi-square test ($\chi^2 = 0.05$, $p = 0.049$) thus provided statistical support for the assumption that fear of the Lećevica project is perceived as legitimate. These results underscore the crucial role of transparent communication, timely dissemination of relevant information, and the inclusion of citizens in decision-making processes. Uncertainty, along with perceived

threats, appears to stem from previous negative experiences, insufficient institutional transparency, and a lack of participatory infrastructure.

Therefore, the belief that public fear is justified is not merely a product of rational risk evaluation but rather emerges from a broader context characterised by institutional distrust, exclusion, and communication deficits. Addressing these concerns requires the establishment of open, reciprocal channels of communication and participatory mechanisms that enable citizens to play a meaningful role in shaping environmental decisions. Only through such efforts can fear be mitigated and the legitimacy of the Lećevica project meaningfully strengthened.

Table 2. Perceived Legitimacy of Fear by Area

		Perceived legitimacy of fear			Total
		no, I believe there is no reason for fear	yes, I believe their fear is justified	I am uncertain	
<i>Brda, Kman, Bol, Ravne Njive, Kocunar, Plokite, Sućidar, Pujanke</i>	N	9	42	40	91
	%	9.89	46.15	43.96	20.22
<i>Grad, Lučac, Manuš, Gripe, Lokve, Blatine Škrabe, Bačvice, Trstenik, Split 3, Visoka, Mertojak, Žnjan</i>	N	24	49	72	145
	%	16.55	33.79	49.55	32.22
<i>Lećevica</i>	N	1	7	6	14
	%	7.14	50.00	42.86	3.11
<i>Lovret, Spinut, Varoš, Meje, Skalice</i>	N	22	27	32	81
	%	27.16	33.33	39.50	18.00
<i>Neslanovac, Mejaši, Kila, Sirobuja, Šine, Pazdigrad</i>	N	12	16	19	47
	%	25.53	34.04	40.43	10.44
<i>Slatine, Stobreč, Kamen, Žrnovnica</i>	N	6	12	11	29
	%	25.00	50.00	25.00	6.44
<i>Srinjine, Sitno Donje, Sitno Gornje</i>	N	4	25	14	43
	%	9.30	58.14	32.56	9.56
Total	N	78	178	194	450
	%	17.33	39.56	43.11	100.00

($p = 0.05$, $\chi = 0.049$)

4.4 Institutional Trust and the Limits of Citizen Influence

Institutional trust is key to effective citizen engagement and the successful implementation of environmental policies, especially where long-term public co-operation is

needed. Public trust influences citizens' willingness to participate and their perception of institutional legitimacy and fairness. Research in Split shows the highest trust in environmental experts ($M = 2.70$) and NGOs ($M = 2.66$), while political and administrative bodies receive lower ratings: municipal services ($M = 2.42$), mayor's office ($M = 2.39$), national authorities ($M = 2.18$), and media ($M = 2.30$). This indicates a clear gap between perceived technical competence and political authority: experts are seen as neutral and credible, whereas political institutions are viewed as opaque, slow, and inconsistent, reflecting citizens' past experiences with top-down decision-making excluding genuine public input.

This dynamic corresponds to the lower rungs of Arnstein's (1969) Ladder of Participation – informing and consultation – which permit only symbolic involvement, without real power-sharing. The lack of mutual recognition between institutions and citizens further deepens distrust, weakening the legitimacy and practical impact of participatory mechanisms. The role of the media is particularly paradoxical. Although it serves as the primary information source for 41.8% of respondents, trust in media remains relatively low. This ambivalence highlights a broader crisis of intermediary institutions in facilitating democratic communication and underscores the challenge of ensuring reliable and balanced environmental information.

At the same time, the relatively higher levels of trust in civil society actors and experts suggest a potential pathway for revitalising participatory processes. This distribution of trust supports Fung's (2006) framework of democratic governance, in which institutional authority must be both technically competent and morally aligned with public values. When citizens do not believe they have influence over decisions, participation remains nominal and often counterproductive. These challenges are further echoed by Irvin and Stansbury (2004), who argue that participatory processes frequently suffer from vague objectives, poor institutional commitment, and a lack of tangible outcomes, ultimately leading to participant fatigue and disillusionment. They emphasise that unless carefully designed and adequately supported, public participation may consume significant time and resources without yielding meaningful results for either citizens or institutions. Čović (2018), in his study of public perceptions regarding the Karepovac landfill, reported widespread mistrust towards local authorities and emphasised the perception of institutional ineffectiveness and opacity. Similarly, Vladušić (2020) identified persistent concerns among residents about environmental degradation and a prevailing sense of exclusion from policy processes. Together, these findings suggest that trust is not determined solely by institutional capacity, but is equally shaped by perceptions of justice, transparency, and recognition.

In sum, the absence of institutional openness and inclusive decision-making leads to the erosion of trust, while participatory practices that genuinely engage citizens in the co-creation of solutions significantly enhance public co-operation and support for environmental initiatives. In the specific context of waste management, fostering trust is not merely desirable, but indispensable for the sustainability and long-term legitimacy of environmental governance.

Table 3. Trust in Institutions – Mean Ratings

	N	Mean
Office of the Mayor of Split	450	2.39
Public Utility Services	450	2.42
Environmental Experts	450	2.70
Environmental NGOs	450	2.66

National Authorities of the Republic of Croatia	450	2.18
Media	450	2.30

4.5 Environmental Awareness and Everyday Environmental Experiences

The results of this study indicate a multidimensional and, at times, ambivalent environmental awareness among citizens of Split. While a substantial number of respondents express declarative support for environmentally responsible behaviour – 71.3% believe that recycling enhances quality of life, and 66.7% report efforts to conserve electricity – this attitude does not consistently translate into practice. Notably, 65.3% of participants do not separate their waste. This gap between values and action aligns with findings by Kollmuss and Agyeman (2002), who argue that environmental knowledge and pro-ecological attitudes are often insufficient to prompt behavioural change unless supported by emotional, social, and structural conditions such as self-efficacy, accessible infrastructure, and habitual routines.

Patterns of environmental engagement are further illuminated by respondents' information sources. Traditional media are cited most frequently (41.8%), followed by social media platforms (33.3%), yet the average level of trust in media remains low ($M = 2.30$), likely due to concerns over reliability, politicisation, and inconsistent reporting. Scientific sources are seldom used (3.1%), suggesting limited development of scientific literacy and inadequate access to reliable environmental data. This contributes to a broader communication gap, which hinders the formation of informed and critical ecological awareness.

Citizen engagement in environmental issues appears modest: 77.6% of participants do not attend environmental events, 76% do not read environmental magazines, and more than half report no affiliation with environmental NGOs. Moreover, 50.9% of respondents rarely or never discuss ecological topics with others, indicating that informal learning channels – essential for shaping environmental norms – remain underutilised. These findings reinforce the argument by Wals et al. (2008) that effective environmental education must go beyond formal instruction to include participatory and reflexive approaches that encourage dialogue, emotional investment, and social learning.

In addition to attitudinal dimensions, the study explored everyday environmental experiences across neighbourhoods. Regarding noise, 37.1% of respondents reported occasional disturbance, 26.2% frequent exposure, and 36.7% no noticeable noise, suggesting uneven environmental stressors across urban zones. Unpleasant odours were perceived occasionally by 47.1% and frequently by 29.6%, confirming waste-related nuisances as a persistent and widespread issue. The presence of pests and insects was reported frequently by 21.8%, occasionally by 32%, and not at all by 46.2%, highlighting further ecological pressures tied to ineffective waste handling.

Environmental degradation is also visible to many: 42.9% observe it occasionally and 32.9% frequently, while only 24.2% report no noticeable deterioration. These results underscore a lived perception of environmental decline, supporting the need for transparent and responsive waste management systems. Importantly, when asked about key environmental pressures, respondents most frequently identified increasing volumes and diversity of waste (43.3%), followed by mass tourism (27.8%), urbanisation (16.75%), and traffic congestion (12.2%) – typical of Mediterranean urban centres under strain from seasonal population growth and infrastructural limitations.

Attitudes towards the planned Waste Management Centre in Lećevica reflect a similar complexity. While 39.6% of respondents believe that local fears surrounding the project are justified, 43.1% express uncertainty, revealing significant informational deficits. Only 17.3%

consider those fears unfounded, suggesting varying degrees of trust in the project's design and its institutional proponents. These responses indicate that scepticism does not stem solely from resistance to change (e.g., NIMBY sentiments), but also from insufficient communication, lack of citizen inclusion, and the absence of sustained public dialogue.

Taken together, these findings emphasise the importance of addressing environmental awareness and local experiences as interconnected phenomena. Bridging the gap between knowledge and behaviour requires not only technical interventions but also robust public engagement strategies, credible communication, and inclusive policy frameworks. Without these elements, environmental governance risks losing legitimacy and public support, regardless of its technical merits.

5. Conclusion

This study examined the relationship between citizen participation, institutional trust, and public perception of the waste management system in the city of Split, with particular attention to the planned Waste Management Centre in Lećeveica. The findings reveal a population highly aware of environmental issues yet deeply distrustful of the institutions responsible for addressing them. The highest levels of trust are directed towards environmental experts and civil society organisations, while local and national authorities – as well as the media – are evaluated significantly lower. This disparity points to a crisis of legitimacy and underlines persistent challenges in communication and transparency. Citizen participation is perceived as limited and largely formalistic, with the majority of respondents believing they lack real influence over decision-making. These findings correspond to the lower rungs of Arnstein's Ladder of Participation – namely, informing and consultation – where experiences of exclusion are dominant. The absence of two-way dialogue fuels emotional responses such as fear, mistrust, and a sense of injustice, particularly in relation to high-profile projects like Karepovac and Lećeveica.

Environmental awareness among citizens is marked by ambivalence: although most respondents express support for recycling and resource conservation, pro-environmental behaviours – such as waste separation – do not consistently follow. This highlights the need not only for more effective information but also for educational approaches that integrate the emotional, social, and political dimensions of environmental engagement. Transformative environmental education – grounded in dialogue, reflection, and active participation – emerges as a key mechanism for bridging the gap between knowledge and action. Respondents also report tangible environmental pressures in their daily lives, such as unpleasant odours, noise, and pollution, coupled with a strong sense of their community's inability to influence environmental decisions. These experiences reinforce the urgent need for inclusive and transparent governance models that regard citizens as active partners rather than passive recipients of institutional decisions.

Importantly, the statistical analysis confirmed the study's central hypothesis, demonstrating that fear related to the Lećeveica project is widely perceived as justified. This finding highlights the extent to which institutional distrust and limited participation shape public perceptions of environmental risk and legitimacy.

In conclusion, the findings clearly underscore the necessity of shifting institutional approaches towards more participatory models of waste governance. Building public trust requires sustained commitment to transparency, open communication, and meaningful citizen involvement. Only through such practices can sustainable and legitimate policies be developed to address the complex environmental and social challenges facing urban communities such as

Split. At the same time, the study points to important directions for future research. Applying mixed-methods designs could provide a richer understanding of how citizens negotiate their environmental concerns, while longitudinal studies would allow for the tracking of changes in trust, participation, and awareness over time. Furthermore, comparative analyses across Croatian regions – or in other European contexts – could situate the Split case within broader socio-political dynamics, offering insights into how local governance structures and cultural factors shape public acceptance of environmental projects.

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