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DELIBERATIVE PUBLIC RELATIONS IN SUSTAINABLE URBAN TREE MANAGEMENT: THE VARAŽDIN MODEL OF PARTICIPATORY COMMUNICATION

DELIBERATIVNI ODNOSI S JAVNOŠĆU U ODRŽIVOM UPRAVLJANJU URBANIM STABLIMA: VARAŽDINSKI MODEL PARTICIPATIVNE KOMUNIKACIJE

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SUMMARY

This study examines the unique Varaždin model of urban green management, implemented by the company Parkovi d.o.o. It innovatively incorporates public relations as the fourth pillar of management, alongside tree selection and planting, tree cadastre, and professional tree care. Qualitative analysis shows that communication is a crucial and essential element of management, fostering transparency and boosting citizen participation. The findings demonstrate that informative, educational, participatory, and crisis communication strategies can improve institutional credibility, build trust, and strengthen local identity. The company Parkovi d.o.o. 's innovative public relations approach is also applicable to other utility companies and can be implemented in Croatia and other European countries.

Key words: public relations, deliberative communication, sustainability, urban forestry, green management

Ključne riječi: odnosi s javnošću, deliberativna komunikacija, održivost, urbano šumarstvo, zeleno upravljanje.

INTRODUCTION

In modern urban systems, communication is a vital part of governance. Communication in urban forestry is a way to negotiate and build community interests with natural resources (Habermas, 1984); it also helps establish trust and shared values. Managing urban green areas is no longer just a technical

task; it now includes arboriculture[1], planting planning, and vegetation care. It is also becoming a more interdisciplinary field that involves social sciences, especially communication studies. The sustainability of urban green spaces depends on the health of trees and infrastructure, as well as the citizens' values, trust in institutions, and social and communication standards among experts, authorities, and the community. That is why, in modern management, communication and social factors must work together to promote more open decision-making, active public participation, and shared responsibility for these spaces. When it comes to climate change, urbanisation, and rising population expectations, the roles of actors and decision-makers in urban forestry have to be redefined (Konijnendijk, 2018). Company Parkovi d.o.o. in Varaždin has set up a tree management system that is based on four major parts: (1) selection and planting of trees, (2) tree cadastre, (3) professional tree care, and (4) public relations.

This paper analyzes the implementation of public relations through communication theories and models in the context of sustainable tree management within the Varaždin model, exploring its role in improving the legitimacy, transparency, and sustainability of governance decisions in urban forestry.

THEORETICAL FRAMEWORK: COMMUNICATION IN THE CONTEXT OF PUBLIC INTEREST AND URBAN FORESTRY

According to McQuail (2010), communication is a dynamic and multidimensional process, not just the transfer of information. It is through communication that social relations are shaped, meaning is created, and perceptions of reality are formed. Since it enables symbolic exchange that establishes social norms, identities, and shared values, communication plays a constructive role in social life. When it comes to shaping public opinion and political culture, McQuail particularly highlights the importance of institutionalized communication.

In the field of public relations, Grunig and Hunt (1984) identified four basic models of public relations, which describe how organizations communicate with the public: the press agency and publicity model, the public information model, the two-way asymmetrical model, and the two-way symmetrical communication model. "Those four models can be seen as a simplified presentation of an organization's values, goals, and behavior when practicing public relations." (Tomić, 2013, p. 233)

For democratic systems and organizations aiming to serve the public interest, the most normatively acceptable model is symmetrical two-way communication. This model does not assume that the organization controls the communication process, but that meaning is created through interactions between equal actors, the organization and its public.

In line with the legitimate demands of the public, symmetrical two-way communication assumes a mutual exchange of views, openness to reasoned criticism, and a willingness to adjust institutional actions. It is precisely feedback, which results from the establishment of quality two-way communication, that is not only technical but also a fundamental element of politically and ethically responsible communication. This model highlights the importance of reciprocity, mutual understanding, and jointly shaping reality, viewing communication as a social relationship rather than just a broadcast of content.

The key to transforming communication from a one-way information transfer to an interactive, dialogic, and reflective process lies in its ability to build trust, improve institutional credibility, and legitimize management decisions over time. In public resource management, such as green spaces, this approach fosters communication as a form of social participation, collective decision-making, and community empowerment through transparency and inclusiveness.

The model of symmetrical two-way communication supports the idea that communication is the foundation of participatory public policy. Heath (2006) argues that public policy is sustainable only if it is based on open, inclusive, and deliberative communication that respects diverse perspectives,

[1] Arboriculture (Lat. *arbor*: tree + *cultura*), an activity focused on the establishment and cultivation of woody plants in parks, avenues, gardens, and settlements. Unlike silviculture, which seeks to produce the most valuable and biologically stable forest stands, arboriculture emphasizes the morphological and aesthetic features as well as the biological properties of individual trees. *Croatian Encyclopedia*, online edition. Miroslav Krleža Institute of Lexicography, 2013–2025. Accessed July 30, 2025. https://www.enciklopedija.hr/clanak/arborikultura

involves citizens in co-decision making, and guarantees transparency. Public policy remains sustainable only when it relies on communication that is open, inclusive, and deliberative, respecting various viewpoints, engaging the public in decision-making, and ensuring transparency. (Heath, 2006). Communication thus shifts from a supporting role to a strategic tool that influences public interests, mobilizes communities, and legitimizes management processes. In urban forestry, this means that each tree, beyond being a biological entity, also serves as a communicative symbol of the relationship between professionals, government, and the community.

In sustainable urban forestry, communication plays a multidisciplinary role. It acts as a means for sharing knowledge, a tool for education, and a space for discussion. Communication is not just about transferring information; it is a method of shared learning and collaborative meaning-making. In deliberative planning, it creates a space for mutual understanding and the development of shared knowledge. (Innes & Booher, 2004). According to Habermas, deliberative democracy depends on the idea that the legitimacy of public decisions is achieved through rational, inclusive debate among equal participants. Habermas states that political decisions are legitimate only if they result from a public dialogue among equals involved in the decision-making process that concerns them, where they can freely, without coercion or fear, share their opinions. (Habermas, 1984). Such a debate is not necessarily formal but must be open, accessible, and driven by arguments. In this framework, communication provides the normative basis for building a common will in a diverse society.

Tree management in urban areas involves many professional, emotional, and cultural issues and requires a thoughtful approach to be effective. Trees in cities are more than just living organisms. They embody the history of a place, the identity of a community, a sense of belonging, and environmental safety. Any action taken on them, especially removal, pruning, or planting, can provoke strong public reactions. Therefore, urban tree management is not only a technical task but also a communication challenge that demands sensitivity, transparency, and community involvement.

Citizens are no longer just passive recipients of information from professionals or city officials. They are also equal participants with a legitimate right to understand plans, voice opinions, and take part in decision-making. This participation not only includes the right to protest or criticize but also involves active responsibility for collective choices. Through participatory forums, public debates, educational sessions, and open consultative processes, diverse perspectives can be shared, and communicative rationality, as defined by Habermas, can be achieved, where decisions are based on argumentative dialogue rather than unilateral, authoritative action.

This deliberative aspect not only enhances the legitimacy of management decisions but also, over time, builds trust between institutions and the community, encourages a sense of shared responsibility, and supports collective action for the public good. In this way, urban forestry becomes more than just a sectoral task. It evolves into a community-driven social initiative, where natural resources are viewed as public assets and communication acts as a tool to protect and collaboratively manage them.

The legitimacy of management practices depends on the level of citizen involvement in decision-making, and transparency and credibility of information are crucial for building trust. Communication in public spaces must provide citizens with accurate and relevant information, presented clearly enough for them to understand and utilize so that they can form their own informed opinions.

In this sense, communication is not just a neutral transfer of data but a social process that allows the public to actively interpret, evaluate, and respond to decisions affecting the shared space. When information is intentionally hidden, downplayed, or only accessible to the professional elite, the essential trust between the administration and the community is harmed. Conversely, open and accessible communication encourages a sense of involvement, responsibility, and a willingness among citizens to collaborate on developing sustainable solutions.

THE CONCEPT OF THE VARAŽDIN SUSTAINABLE TREE MANAGEMENT MODEL

The tree management model in Varaždin is rooted in four main pillars that enhance urban green spaces through these processes: (1) selecting and planting tree species, (2) maintaining a tree database, (3) providing professional care for trees, and (4) engaging the local community. The concept of inte-

grated sustainability supports this governance approach, aiming to balance ecological, technical, and social aspects of urban development (FAO, 2016). The model aims to address challenges such as climate change, urbanization, and increasing population expectations by leveraging knowledge, skills, research, and transparent communication with residents. Urban forestry is no longer just about planting and caring for city trees; it has become an interdisciplinary field that includes urban planning, landscape architecture, ecology, sociology, and communication," (Konijnendijk, 2018, p. 4).

The fourth pillar, which introduces public relations, marks a new step in Croatian urban forestry by challenging the traditional view of public communication as merely an exchange of information. It also highlights a shift toward two-way, participatory, and deliberative relationships between institutions and citizens. This pillar aims to foster understanding and appreciation of professional interventions through timely, competent, and mutual communication, while also encouraging the community to share responsibility for effectively managing urban green spaces. It helps legitimize decisions and raises awareness among citizens of all ages about the value of urban nature through information, education, and participation. According to Konijnendijk (2003), to achieve long-term goals and gain social approval, urban forestry must involve the local community at every stage of planning and implementation; they are essential to the sustainability of policies and practices regarding urban green spaces (Konijnendijk, 2003, p. 181). This dimension focuses on ensuring that professional interventions are meaningful and accepted through timely, professional, and two-way communication. It encourages community co-responsibility in managing urban green spaces. Governance legitimacy is reinforced by providing information and education, promoting citizen participation in discussions, and boosting ecological, cultural, and social awareness of the importance of public urban green spaces.

TREE SELECTION AND PLANTING

The selection of tree species to be planted in Varaždin depends on their compatibility with local spatial and ecological conditions, their ability to achieve desired functional and ecological goals, and their role in protecting and restoring biodiversity in the urban ecosystem. This process follows European arboriculture standards, and the planting material must meet the required quality standards. The trees' resistance to abiotic and biotic stressors, as well as their ability to adapt to climate change, are also taken into account. High-quality planting is crucial for a sustainable, long-term investment in the city's green infrastructure.

TREE CADASTRE

Strategic and transparent management relies on the tree cadastre. Besides its technical role of documenting and monitoring tree health, the cadastre also serves as a communication tool, making planned and completed interventions, management standards, and connections with GIS systems accessible to the public (Nowak et al., 2008). The information is gathered through Visual Tree Assessment (VTA) and is updated regularly.

TREE CARE

The history of organized maintenance of green spaces in Varaždin dates back to the late 18th century, when designing public parks, avenues, and tree-lined boulevards was a key part of the city's identity. Today, this practice has evolved into a modern, scientifically supported, and interdisciplinary system that includes certified arborists, European Tree Workers (ETW), Visual Tree Assessment (VTA) experts, and specialists in other fields such as urban foresters, agronomists, landscape architects, and specialized technicians for mechanized tree management. Tree care in Varaždin conforms to European arboriculture standards, covering pruning, planting, stabilization, and assessment. This approach ensures high expertise, safety, and best practices in urban tree management. Advanced diagnostic tools are used, and all interventions in the urban environment are professionally documented and explained. This strategy helps maintain the resilience, health, and safety of city trees and fosters public confidence in municipal experts' skills.

PUBLIC RELATIONS

The fourth pillar is public relations. PR is an essential aspect of the long-term management of green areas in the city, as it facilitates openness, citizen involvement, and society's acceptance of professional activities. Their organised form of collaboration comprises information-sharing, education, engagement, and crisis-communication channels, forming a complete system of public dialogue. Online platforms, blogs, thematic discussion forums, and citizen-led projects, particularly those involving children and youth, promote citizen participation. By doing so, communication disseminates information and provides a platform for discussing issues, joint learning, and decision-making on matters affecting the urban environment. In this context, communication is not an addition to professional knowledge but an inseparable part of it, as it helps build understanding, trust, and a shared sense of responsibility for preserving and enhancing green infrastructure. Varaždin is establishing a prototype of socially acceptable, participatory, and resilient management of the urban green land for the population.

As is illustrated in Table 1, the sustainable tree management model in Varaždin integrates technical, ecological, and social dimensions. The fourth pillar covers public relations, making urban forestry more transparent, enabling public participation, and giving the model its own unique identity.

Table 1: Varaždin Sustainable Tree Management Model.

Pillar of the Model	Key Features	Role and Contribution to Sustainability	Standards and References
1. Tree selection and planting	- Selection of species adapted to spatial and ecological conditions - High-quality planting material - Resistance to climate change and stressors	- Starting point of long-term investment - Preservation of biodiversity - Adaptation to climate challenges	European Arboricultural Standards
2. Tree cadastre	- Systematic recording and monitoring of tree health - Public access to data and interventions - Integration with GIS systems	- Transparency and strategic planning - Better control and documentation - Tool for citizen communication	Nowak et al. (2008)
3. Professional tree care	- Certified arborists (ETW, VTA assessors) - Interdisciplinary team of experts - Modern diagnostic methods	- Preservation of vitality, resilience, and safety of trees - Public trust in professional expertise - Continuity of Varaždin's horticultural tradition	European Arboricultural Standards
4. Public relations (innovative pillar)	- Two-way, participatory, and deliberative communication - Citizen education, blogs, forums, participatory planting - Crisis communication and public dialogue	- Strengthening trust and decision legitimacy - Citizen co-responsibility in management - Development of a communicative community and collective awareness	Konijnendijk (2003, 2018); Habermas (1984); Grunig & Hunt (1984)

Source: Compiled by the authors

COMMUNICATION AS A GOVERNANCE TOOL - THE CASE OF PARKOVI D.O.O.

Transparency and Trust

The key elements of communication practices are transparency and trust, which have been built at various levels of interaction with the public and within the professional sphere at Parkovi d.o.o. Regular data releases, accessible information bases, and an active online environment centered on trees form the foundation of a trust-based communication system (Sekelj, 2025). The official website of Parkovi d.o.o. Varaždin features content in the Horticulture - Trees section that promotes fairness in managing urban trees. City residents can access information on criteria and reasons for tree removal, planting plans, species choices, and care methods. The site also explains decision-making processes, the professional nature of interventions, and methods used to maintain safety, health, and biodiversity. Parkovi d.o.o.'s annual reports on public space tree management provide a comprehensive overview of activities such as pruning, planting, removal, watering, treatment, and protection of trees. These reports include mon-

itoring tree health, identifying diseases and pests, and considering weather and other environmental factors affecting vitality. They also document notable phenomena and construction-related interventions impacting trees. Regularly published on the official website, these reports promote transparency, helping the community understand the reasoning behind decisions related to green spaces in their neighborhoods, thereby strengthening institutional trust and societal legitimacy of interventions. Beyond static information, Parkovi d.o.o. uses social media to share real-time updates and news, encouraging two-way communication and community involvement. Funded by the Agency for Mobility and EU Programmes through project 2022-1-HR01-KA220-VET-00086554, the Erasmus+ initiative Development of Digital Learning Formats and New Certification Programs in Arboriculture and Urban Forestry in Southeast Europe was coordinated by Urbani šumari (Croatia), with Parkovi d.o.o. participating and supporting. The project aimed to develop tree management strategies and case studies for Varaždin, Schwelm, and Ostrava. This initiative has integrated the city of Varaždin into the European network of urban tree experts. Additionally, Parkovi d.o.o. collaborates on the Urban GreenLeap project, part of the Interreg Euro-MED program involving ten partner organizations. Parkovi d.o.o.'s reputation as a professional, globally relevant, and responsible organization is further reinforced through projects that increase visibility and facilitate knowledge sharing among Varaždin residents. Transparent and timely communication about participation in international projects promotes openness, enhances public trust, and strengthens the legitimacy of local governance. Furthermore, participation in national and international conferences and projects provides ongoing professional development for Parkovi d.o.o., fostering the exchange of best practices and positioning Varaždin as a regional leader in urban green space management.

Media Communication and Education for Citizens

Citizen education, delivered through accessible, easy-to-understand, and regularly updated information, is a vital means of promoting sustainable tree management in Varaždin. Deuze (2006) states that combining digital participation with communicative access to content forms the foundation for modern communication ethics and the relationships between institutions and citizens. Another important communication channel for Parkovi d.o.o. is the blog Arboristička crtice ("Arboriculture Notes"), where professional yet straightforward writing about recent events in arboriculture and urban forestry is available. The blog covers a wide range of topics, discussing not only the effects of climate change and high temperatures on urban trees but also technical methods to protect trunks and the emergence of new materials and technologies to preserve green spaces. It is informative, educational, and encourages community participation and can help familiarize citizens with tree management issues and involve them in shaping the city's green policies (Grunig & Grunig, 1992). In these practices, Parkovi d.o.o. aligns with public relations as a key part of a sustainable approach to urban green spaces. At the same time, the digital education process includes fieldwork and community activities. For example, a community event called "How to Save the Green Identity of Varaždin Cemetery" took place at the Varaždin City Museum on Urban Forestry Day at the end of 2024.

Parkovi d.o.o. organized the event with external experts, focusing on thuja trees, which are symbolically and scenically important in the Varaždin City Cemetery, one of Croatia's most significant landmarks of landscape architecture. The forum discussed the health of the vegetation, provided the historical and professional background, and shared revitalization plans. The event was open to the public, media, and institutions. Attendees were encouraged to ask questions, share their opinions, and review documentation. The lecture was recorded for online sharing, promoting transparency and easy access to information. This thoughtful approach emphasizes the values of participatory democracy and rational communication (Habermas, 1984).

It is worth noting that since 2022, Parkovi d.o.o. has been publicly addressing the issue through local and national media. On the Parkovi website, there is a dedicated section called Thuja that provides access to all related information, including historical analysis, professional evaluations, restoration plans, and consultation records. Another important aspect of public relations in the sustainable tree management model is its collaboration with the media. According to McQuail (2010), the media serve as a mediator in shaping public opinion and establishing the communicative legitimacy of institutions.

Parkovi d.o.o. actively engages with the public through local and national online portals, television reports, social media, themed campaigns, and publications. People are always interested in events like the "Festival of Trees", planting campaigns, educational workshops for children, and books such as "Secrets of Varaždin Giants".

Besides informing the public, media coverage also educates people about the professional principles of arboriculture and urban forestry.

Parkovi specialists frequently appear in the media to discuss the health of city trees, share plans for planting and restoring trees, participate in EU projects such as UrbanGreenLeap, and showcase innovations, such as using zeolite and hydro-retaining nets. Honest and transparent communication builds trust among citizens and provides a solid foundation for decision-making. Based on the two-way symmetrical communication model (Grunig & Hunt, 1984), Parkovi d.o.o. has developed an active and consistent public communication approach that encourages shared decision-making and responsibility for maintaining urban green spaces.

Crisis Communication and Participatory Management of Public Urban Green Spaces

Consequently, the fourth pillar of sustainable tree management in Varaždin is effective public relations. The focus is on Crisis Communication and Participatory Management of Public Urban Green Spaces. Managing urban green parks involves complex decisions that often concern the public and can be controversial. Therefore, a strong crisis communication system and active citizen engagement are essential for maintaining sustainable, effective governance. The communication model developed by Parkovi d.o.o. is based on expertise, transparency, timeliness, and two-way communication, aligning with recent studies in public and crisis communication (Coombs, 2007; Heath, 2006). When citizens contact the organization through official requests, social media, or the press (by commenting, asking questions, or complaining), the organization responds promptly, professionally, and clearly. Responses are typically justified with explanations referencing arboriculture standards, visual and diagnostic examination results (e.g., Visual Tree Assessment – VTA), and tree cadastre data. This demonstrates that all actions are based on professional assessments rather than arbitrary choices, helping build trust and reduce conflicts (Grunig & Grunig, 1992). Parkovi d.o.o. actively involves citizens as key stakeholders in decision-making, especially regarding requests to remove, replace, or protect trees. Each request is registered through official procedures and reviewed with site inspections by specialists and, if necessary, external experts. Decisions are driven by professional criteria, safety considerations, and landscape principles, which support urban planning and environmental conservation goals. If a citizen's request cannot be approved, Parkovi provides clear, professional explanations and suggests alternatives. This approach fosters mutual respect and open dialogue, promoting rational communication (Habermas, 1984). The case of the tree-lined avenue on Augusta Cesarca Street exemplifies this participatory and crisis communication model. Although previous assessments recommended removing some trees for safety reasons, Parkovi d.o.o., recognizing both the ecological value and emotional significance of these trees to the community, prioritized finding a sustainable solution. Additional diagnostics, including vitality and stability analysis, habitat value, ecological benefits, and potential for biological revitalization, were conducted, embodying the transdisciplinary approach typical of modern urban forestry (Konijnendijk, 2018; Innes & Booher, 2004). The results showed that targeted attention and remediation efforts saved the trees. After two years, follow-up assessments confirmed the decision to preserve them, implementing interventions such as reduction pruning, treatment with Trichoderma harzianum to restore roots, and intensive monitoring. One example involved a linden tree with severely damaged roots. It was designated as a habitat tree to maintain its ecological role and aesthetic contribution. This strategy highlights the integration of ecological, cultural, and communication factors in urban forest management (Young, 2010). The entire process was communicated via the Parkovi website, social media channels, and local media outlets. This increased public awareness, promoted dialogue, and fostered collaboration, making crisis communication a transformative tool for enhancing the democratic process in city environmental management (McQuail, 2010; Lemke, 2007). As demonstrated by Parkovi's approach, two-way, participatory, and professional communication are essential for building trust and ensuring sustainability in modern urban forestry.

Urban Forestry Participation of Citizens and the Deliberative Aspect of Urban Forestry

This emphasizes the importance of citizen involvement in managing sustainable urban green spaces. Participation enhances social legitimacy, fosters a sense of ownership of the space, and boosts the community's ecological literacy (Konijnendijk, 2003; Young, 2010). Citizens are not merely seen as passive consumers of city resources but as active contributors to shaping spaces through discussions and collaboration with institutions (according to theories of deliberative democracy) (Habermas, 1984). Analyzing posts on the official site of Parkovi d.o.o. and in local and national media reveals that in Varaždin, citizen engagement occurs through several structured and educational programs, primarily aimed at children and youth. Various participatory tree-planting activities are held annually, involving kindergartens, primary, and secondary schools, with children participating. These activities not only enhance the community's green spaces but also promote values of caring for the common good. For example, in 2025, Parkovi d.o.o. launched a project in partnership with the First Private Gymnasium Varaždin to revitalize the town's oldest park. As part of UNICEF's UPSHIFT program, students took part in workshops and hands-on activities to help create a space for young people.

It gave children a chance to more actively contribute to shaping public space and foster a natural desire to care for nature (UNICEF UPSHIFT 2023). The emotional and identity aspects of urban trees show a symbolic link between people, professionals, and the natural world. This is exemplified by Parkovi's Tree of the Year project, which started in 2024.

The project, based on the concepts of cultural ecology (Gunn, 1980), emphasizes the beauty of trees and their role in shaping shared memory and a sense of place. It was localized and expanded across all of Varaždin County, making urban trees even more meaningful as cultural icons and educational sources. In 2024, during the Festival of Trees in Graberje Park, more than 15 schools showcased their work through creative and educational presentations, including tree libraries that symbolically highlighted the importance of trees to the quality of life.

Table 2: The Communication Model of Parkovi d.o.o. in Sustainable Tree Management

Communication Dimension	Practice Description	Channels and Tools	Role and Contribution to Sustainability	Theoretical Framework / References
Transparency and trust	Systematic publication of data on planting, removal, and tree care; annual reports; open access to documents	- Parkovi website - Annual reports - social media	- Strengthening institutional credibility - Building citizens' trust - Social acceptance of interventions	Sekelj (2025); McQuail (2010)
Education and media communication	Educational blog *Arboristička crtice*; workshops, forums, public events; cooperation with media	- Blog - Public forums - Media (local and national) - Festival of Trees, publications	- Increasing ecological literacy - Active engagement of children and youth - Citizen education through accessible content	Grunig & Grunig (1992); Deuze (2006); Habermas (1984)
Crisis communication	Timely responses to citizens, transparent explanation of interventions, use of professional diagnostic methods; example of Augusta Cesarca Street	- Social media - Official responses - Parkovi website - Local media	- Conflict reduction - Trust in expertise and procedures - Legitimacy of crisis decisions	Coombs (2007); Heath (2006); Habermas (1984)
Participation and deliberation	Active involvement of citizens in plantings, workshops, projects (e.g., Tree of the Year, Festival of Trees); *Secrets of Varaždin's Giants* project	- Participatory plantings - UPSHIFT programmes - Tourist guides - Public debates	- Developing a sense of ownership of space - Community co-responsibility - Preservation of identity and cultural ecology	Konijnendijk (2003); Young (2010); Innes & Booher (2004)

Source: Compiled by the authors

These arrangements promote active civic engagement by improving children's and youth's participatory skills, which is essential for the long-term sustainability of urban nature management (Innes & Booher, 2004). A distinctive aspect of Varaždin's participatory approach is the introduction of the Varaždin Giants tourist guide, created in partnership with the Tourist Guides Association and Varaždin City Museum. The guide showcases the cultural and historical importance of trees in the city, depicting them as landmarks that highlight green spaces as cultural infrastructure, combining educational narratives and historical contexts (European Commission 2020). Parkovi d.o.o. also frequently provides citizens the opportunity to suggest new locations for planting trees, establishing a two-way communication channel and encouraging shared responsibility in shaping the urban environment. This method aligns with contemporary participation models that blend technical skills with community involvement in decision-making (Grunig, 1992; Heath, 2006). It serves as a participatory approach to managing urban green spaces that not only supports the ecological health of city trees but also strengthens community resilience—a vital factor given the climate and social challenges of the 21st century.

Parkovi d.o.o.'s communication approach is a two-way, participatory, and deliberative system rather than just an extension of technical tree management. It uniquely blends transparency, education, crisis communication, and participation, reaffirming communication as the fourth pillar of sustainable urban forestry management.

IMPACT OF COMMUNICATION INTEGRATIONS

The example of communication, recognized as a key element of governance that builds a communicative community (Habermas, 1984), enhances civic participation, stabilizes public policies through trust, and boosts local pride in urban natural resources, as seen in the Varaždin model. Adding communication as a vital part of the Varaždin sustainable tree management model marks a significant change in governance and the participatory, deliberative role of public space. This approach shifts the relationship between institutions and citizens toward collective action, mutual trust, and responsibility. A communication strategy that promotes two-way interaction, openness, and inclusiveness fosters a communicative community where citizens and experts can discuss shared resources, like urban green spaces. It is based on Jürgen Habermas's idea of "communicative rationality," which argues that the validity of social decisions depends on argumentation rather than authority (Habermas, 1984).

The governance model would enhance citizen engagement beyond traditional methods like surveys, comments, and proposals by including innovative approaches such as participatory workshops, blogs, festivals, and forums. Evidence from using deliberative methods, especially in activities like tree restoration or developing civic spaces, shows that citizens do not weaken managerial effectiveness but rather increase social acceptance and sustainability over time (Innes & Booher, 2004; Young, 2010). The stability of public policies results from consistent, timely, and professional communication that builds trust. Parkovi d.o.o. has built institutional trust by publishing annual reports, providing expert explanations of interventions, proactively addressing complaints, and participating in international cooperation and certification processes. An example is the trees on Augusta Cesarca Street, where decades of observation, transparent reporting of diagnostic procedures, and recognition of habitat values led to professionally based, socially acceptable compromise solutions. Communication also involves integrating daily green space management into the city to strengthen local identities with urban resources. Projects like "Tree of the Year," "The Secrets of Varaždin Giants," and "The Festival of Trees" effectively link expertise, the community, and natural heritage. These initiatives create an emotional and symbolic bond between people and their environment, promoting conservation and the proper use of social green spaces (Konijnendijk, 2003; Lemke, 2007). In summary, the Varaždin model of sustainable tree management demonstrates that integrating communication is not just a technical practice but an essential element for sustainable urban tree management in 21st-century cities. These knowledge-based, dialogue-driven, and community-centered models offer a way to build more resilient and fair urban communities amid increased climate risks and, more importantly, declining trust in institutions.

CONCLUSION

Planting urban trees is not just a technical and horticultural issue; it also helps the city address climate change, biotic threats, and urbanization. It requires a comprehensive strategy that integrates ecological, technical, and social aspects of sustainability. The Varaždin model of sustainable tree management, developed by the municipal company Parkovi d.o.o., demonstrates that communication should be the central element of sustainable urban nature management, not just a supplementary tool. All parts of this program are based on four interconnected components: the selection and planting of trees, a tree cadastre, professional care, and public relations. This model emphasizes the importance of interdisciplinary and participatory methods in fostering a resilient urban ecosystem. The most innovative feature is the addition of a fourth, equal pillar, public relations. This includes timely, professional, inclusive communication; education; crisis management; participation; media transparency; and international cooperation. The benefits of this communicative approach are reflected in the creation of communicative communities built on transparency and mutual trust (Habermas, 1984); the empowerment of civic participation through projects, education, and deliberation (Innes & Booher, 2004); the stabilization of public policies via social consensus (Grunig & Hunt, 1984); and the strengthening of local identity through green spaces as a core part of urban identity (Young, 2010). Examples of practical implementation, such as the Arboristične crtice blog, the Tree of the Year project, public forums, partnerships with educational and tourism sectors, and global initiatives, illustrate how communication in this model extends beyond basic information sharing to foster resilience, social cohesion, and a sense of place within urban ecosystems. To further develop the Varaždin sustainable tree management model, several specific steps can be proposed to enhance institutional, communication, and educational components. The first step would be formalizing the model through an official document, regulation, or strategy that institutionalizes the four-pillar approach (tree selection and planting, cadastre, care, and public relations). Such a document would clearly outline procedures, responsibilities, and action criteria, providing greater legal and operational clarity. Additionally, developing digital participatory tools, like interactive maps, tree condition reporting apps, and online forums, would encourage citizen engagement. These tools would improve access to information, facilitate two-way communication, and foster a more inclusive government. A crucial element for the model's success and credibility is establishing an evaluation framework to systematically monitor and assess the impacts of communication activities. Indicators such as citizen trust, participation, and perceptions of professional decisions can help optimize strategies. It's also recommended to strengthen collaboration with the academic community, particularly in fields like communication, urban forestry, and environmental protection. Scientific evaluation of current practices and joint research can provide theoretical support and help promote the model within academia and practice. Finally, professional publications, seminars, training, and mentorship by other government units would enable the model to be replicated elsewhere. This approach would allow the Varaždin sustainable tree management model to serve as a reference for sustainable, participatory urban green space management at both national and European levels. It could inspire other cities to adopt a sustainable, inclusive, and participatory approach where the community is an equal partner instead of just an observer. The examples demonstrate that sustainable tree management cannot succeed without active social involvement and open, two-way communication. In conclusion, the Varaždin approach exemplifies not only professionalism in urban forestry but also a new democratic ecological policy, building trust between institutions and citizens through knowledge, dialogue, and shared attention to urban green resources. Communication is not only a practical tool but also a strategic resource for sustainable development. It fosters transparency in decision-making, promotes scientific understanding, reduces resistance to change, and cultivates a shared sense of responsibility. Through deliberative processes and interaction, it unites expertise and community, enhancing social cohesion and the long-term stability of public policies related to urban nature. The strategy underscores that communication is essential for improving citizens' ecological literacy, which is vital for the city's effective response to climate change.

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SAŽETAK

Radom je istražen jedinstveni, varaždinski model upravljanja gradskim zelenilom, poduzeća Parkovi d.o.o., kojim su inovativno, uz odabir i sadnju vrsta, katastar drveća i profesionalnu njegu drveća, uvedeni odnosi s javnošću kao četvrti stup upravljanja. Kvalitativnom analizom je dokazano kako je komunikacija značajan i neizostavan aspekt upravljanja jer promiče transparentnost i osigurava veće sudjelovanje građana. Rad potvrđuje da informativni, edukativni, participativni i krizni komunikacijski pristupi mogu poboljšati institucionalni kredibilitet, izgraditi povjerenje i pridonijeti izgradnji lokalnog identiteta. Inovativni model uvođenja odnosa s javnošću poduzeća Parkovi d.o.o. primjenjiv je i na druga komunalna poduzeća te se može koristiti u Hrvatskoj i drugim europskim zemljama.