Co-creation and urban transformation: the application of design thinking for participatory solutions in Rio Tavares, Florianópolis

Cocriação e transformação urbana: a aplicação do design thinking para o desenvolvimento de soluções participativas no bairro Rio Tavares, Florianópolis.

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ABSTRACT

Cities face increasingly complex challenges that demand innovative and collaborative solutions. The lack of participatory urban planning and the need for more humanized approaches have generated negative impacts on the quality of life, including the loss of cultural identity, inadequate urban mobility, and environmental damage. This article analyzes the application of Design Thinking, focusing on the immersion and analysis stages, within a participatory urban transformation process in the Rio Tavares neighborhood of Florianópolis, Brazil. This growing neighborhood faces challenges such as the lack of urban infrastructure and the need for preserving cultural and environmental heritage. This study investigates how Design Thinking can engage the community in identifying and understanding these problems, promoting empathy, and gaining a clear understanding of local needs. The research employed an experience report methodology with data collection through a participatory mural at two cultural events held in the neighborhood. The results revealed the main challenges faced by the neighborhood and highlighted the importance of citizen participation in the urban transformation process.

Keywords: Design Thinking; Citizen Participation; Urban Transformation; Co-creation; Sustainability

RESUMO

Cidades enfrentam desafios cada vez mais complexos que exigem soluções inovadoras e colaborativas. A falta de planejamento urbano participativo e a necessidade de abordagens mais humanizadas geram impactos negativos na qualidade de vida, como a perda de identidade cultural, mobilidade urbana inadequada e danos ambientais. Este artigo analisa a aplicação do Design Thinking, com foco nas etapas de imersão e análise, em um processo de transformação urbana participativa no bairro Rio Tavares, em Florianópolis, Brasil. Este bairro em crescimento enfrenta desafios como a falta de infraestrutura urbana e a necessidade de preservação do patrimônio cultural e ambiental. O estudo investiga como o Design Thinking pode engajar a comunidade na identificação e compreensão desses problemas, promovendo a empatia e um claro entendimento das necessidades locais. A pesquisa utilizou a metodologia de relato de experiência com coleta de dados por meio de um mural participativo em dois eventos culturais realizados no bairro.

Palavras-chave: Design Thinking; Participação Cidadã; Transformação Urbana; Cocriação; Sustentabilidade.

INTRODUCTION

The Rio Tavares neighborhood in Florianópolis, Santa Catarina, Brazil, is undergoing a rapid and intense urban transformation, driven by the construction of large real estate developments and increasing verticalization. While this development brings economic benefits and opportunities to the region, it also causes negative impacts on residents' quality of life. Chaotic traffic, insecurity for pedestrians and cyclists, loss of cultural identity, and environmental aggressions, such as the lack of adequate basic sanitation, are increasingly present problems in the daily life of the neighborhood. Large developments arrive promising improvements but often neglect the negative impacts they generate on the quality of life and the preservation of local culture.

Considering this scenario, the Rio Tavares community in Florianópolis has mobilized and sought alternatives to face the challenges and build a more sustainable future for the neighborhood. Initiatives such as FiscalizaRT, a movement of residents who acted to reduce inconvenience and propose improvements in the works of the Doutor Antônio Luiz Moura Gonzaga State Highway between 2022 and 2023; the RioTavibes Movement, which sought to improve urban infrastructure through popular participation; the South Island Security Group, which arose from the urgency to protect women and children on the trails and streets of the south of the island; and the *SOS Lagoinha - Comissão da Lagoa Pequena*, which is dedicated to the environmental preservation of *Lagoa Pequena*, a small lagoon in the neighborhood, and its surroundings, among other community actions, demonstrate the residents' engagement and the importance of citizen participation in urban transformation.

Given the need for innovative solutions and the importance of considering the community's demands, Design Thinking emerges as a promising methodology to promote more sustainable and participatory urban development. Design Thinking, as Brown (2009) points out, is a human-centered approach that seeks innovative solutions through empathy, collaboration, and experimentation. This methodology, which has its roots in design thinking and creativity, values the participation of the various actors involved, encouraging the co-creation of solutions that meet the real needs of the community. In the context of urban transformation, Design Thinking, as a tool for facilitation and knowledge exchange, can be used to engage citizens in identifying problems, generating ideas, and prototyping solutions, promoting more inclusive and democratic development.

A practical example of the application of Design Thinking to stimulate citizen participation in urban transformation projects is presented by Günther, Martinetz, and Bienzeisleer (2023). In their study, the authors demonstrate how the active participation of citizens, facilitated by Design Thinking, contributed to developing a sustainable urban mobility plan in Chemnitz, Germany. Through co-creation processes, citizens were involved in identifying problems, generating ideas, and choosing the measures to be implemented, resulting in a project that reflected the needs and desires of the local community.

Despite the growing interest in Design Thinking and citizen participation, the literature still lacks studies that investigate how these approaches can be combined and effectively applied in urban transformation contexts, especially in neighborhoods with specific characteristics. Hospers (2014) highlights the importance of overcoming growth-focused thinking and adopting a civic engagement approach to address the challenges of urban transformation in shrinking cities, such as Florianópolis.

The need for more humanized and participatory approaches in urban planning is emphasized by Günther et al. (2023), who demonstrate how active citizen participation can contribute to more sustainable urban development accepted by the community. However, the effectiveness of citizen participation depends on several factors, including the design of the participatory process, the community's mobilization capacity, and the openness of public managers to incorporate citizens' demands and ideas, as pointed out by Rocak and Keinemans (2023).

In the specific case of Rio Tavares, the gap manifests itself in the need for a participatory process that goes beyond simple consultation and allows for the co-creation of solutions based on the demands and expectations of the local community. It is necessary to investigate how Design Thinking can be used as a tool to overcome the challenges of citizen participation, such as the lack of representativeness, the difficulty of accessing information, and the power asymmetry between the different actors involved.

This research is relevant because it seeks to fill the gap in the literature on applying Design Thinking in participatory urban transformation contexts, contributing to developing new approaches and tools for urban planning and development. The study is important because it can generate knowledge about how Design Thinking can be used to empower local communities and promote citizen participation in building more just, democratic, and sustainable cities.

The research is justified by the need to understand the impacts and challenges of applying Design Thinking in urban transformation projects in neighborhoods with specific characteristics such as Rio Tavares, which has a strong connection to nature and a diverse and engaged community. The relevance of investigating this theme is anchored in the scarcity of studies that explore the application of Design Thinking in participatory urban transformation contexts, as pointed out by Wenander (2024). The need to understand the role of this methodology in community mobilization and engagement in urban planning and development processes, considering local particularities and the diversity of actors involved, is also highlighted by Günther et al. (2023). Additionally, Rocak and Keinemans (2023) emphasize the importance of investigating the challenges and opportunities of citizen participation in urban transformation projects, especially regarding the effectiveness of Design Thinking in generating innovative and sustainable solutions and promoting citizen participation in an inclusive and equitable manner.

Consideringthis context, this research seeks to answer the following central question: How can Design Thinking help improve citizen participation in the urban transformation of the Rio Tavares neighborhood in Florianópolis, aiming for more sustainable development?

The objective of this study is to analyze the application of Design Thinking, specifically the immersion and analysis stages, in a participatory process that aims at the more sustainable development of the locality, seeking to identify and understand the challenges of the Rio Tavares neighborhood in Florianópolis, with a focus on promoting citizen participation and a deep understanding of the needs and expectations of the local community.

THEORETICAL FRAMEWORK

Concepts and Characteristics of Design Thinking

For Tim Brown (2009), Design Thinking is an approach that seeks to solve problems collectively and collaboratively, from a perspective of maximum empathy with its users, clients, or consumers. Product development is centered on people, not only the end consumer but everyone involved in the project's central idea.

The process consists of trying to map and merge the cultural experience, worldview, and processes inserted into the lives of individuals to gain a more complete

view of problem-solving and thus better identify barriers and generate viable alternatives to overcome them. According to David Kelley, a Stanford University professor who founded the innovation consultancy IDEO, design thinking does not start from mathematical premises but from surveying the real needs of its consumer; it is a predominantly "human" approach that can be used in any business area.

In the book "Design Thinking for Educators" by IDEO, Design Thinking is presented as a mental model. It means believing that we can make a difference by developing an intentional process to arrive at the new, at creative solutions, and create a positive impact. Design Thinking makes you believe in your creativity and the purpose of transforming challenges into opportunities.

Design Thinking, according to the book "(Re) Thinking Design Thinking" by Pereira, Menegali, and Fialho (2022), stands out for its human-centered approach, seeking innovative solutions through empathy, collaboration, and experimentation. The process values active participation and the co-creation of solutions that meet the community's needs, making it especially relevant for urban transformation.

Liedtka (2011) defines Design Thinking as an iterative and human-centered process that aims to solve complex problems through a structured approach that emphasizes empathy and collaboration. This methodology typically involves five main stages: empathize, define, ideate, prototype, and test, which collectively focus on understanding the user's needs and motivations to create innovative solutions.

The five stages of Design Thinking according to Liedtka:

1. **Empathize:** This stage involves understanding the needs and motivations of users or customers, placing them at the center of the design process. It focuses on gaining insights into the target audience's experiences.

2. **Define:** In this stage, the problem is identified and defined based on the insights gathered during the empathize stage. It involves synthesizing information to create a clear problem statement that guides the design process.

3. **Ideate:** Ideation is the stage where creative solutions are generated to solve the defined problem. It encourages brainstorming and innovative thinking to create groundbreaking ideas.

4. **Prototype:** Prototyping involves creating tangible representations of the ideas generated during the ideation stage. These prototypes can be tested and refined to ensure they effectively meet users' needs.

5. **Test:** The final stage of design thinking involves testing the prototypes with users to obtain feedback and insights. This feedback is used to further refine the solutions and ensure they are aligned with user expectations and requirements.

Pereira, Menegali, and Fialho (2022) highlight that various tools and techniques are used in each stage of Design Thinking, such as interviews, empathy maps, brainstorming, prototyping, and usability testing, aiming to facilitate communication, collaboration, and idea generation. In the context of urban transformation, Design Thinking proves to be an effective methodology to engage the community, promote co-creation, and develop innovative and sustainable solutions that meet the real needs of citizens.

Citizen Participation in Urban Transformation

Numerous studies emphasize the importance of citizen participation in urban transformation, particularly for creating more just, democratic, and sustainable cities. However, the effectiveness of this participation depends on several factors, as Rocak and Keinemans (2023) point out. The design of the participatory process, the community's mobilization capacity, and the openness of public managers to incorporate citizens' demands and ideas are crucial elements for the success of initiatives that aim to engage the population in decision-making about the future of their neighborhoods and cities.

Hospers (2014) highlights the importance of overcoming growth-focused thinking and adopting a civic engagement approach to address the challenges of urban transformation in shrinking cities, such as Florianópolis. In his study on Leipzig, Germany, the author emphasizes the need for policies that promote the active participation of citizens in decision-making about the city's future. Active citizen participation, facilitated by methodologies such as Design Thinking, can contribute to more sustainable urban development accepted by the community, as demonstrated by Günther et al. (2023) in Chemnitz, Germany.

However, citizen participation faces significant challenges. The study by Rocak and Keinemans (2023) in Heerlen North, the Netherlands, a city that also faces the challenges of urban shrinkage, points out that the complexity of municipal rules and the lack of trust in institutions can lead citizens to feel that their influence is limited. Furthermore, the power asymmetry between the different actors involved (such as residents, public authorities, and companies) and the difficulty in accessing information can hinder the effective participation of the community.

For citizen participation to be truly transformative, it is essential to go beyond simple consultation and allow for the co-creation of solutions based on the demands and expectations of the local community. It is in this context that Design Thinking presents itself as a promising tool, capable of facilitating dialogue, collaboration, and citizen engagement in building a more sustainable and desirable future for their neighborhoods and cities.

Urban Transformation: Perspectives and Challenges

Cities are constantly evolving, undergoing a process of urban transformation that encompasses physical, social, economic, and environmental changes. In the current context, marked by challenges such as population growth, resource scarcity, and climate change, well-planned and collaborative urban transformation becomes even more crucial to ensure sustainability and quality of life in cities.

Authors such as Senger et al. (2021) highlight the need to rethink urban space, especially the public space of streets, which is often dominated by motor vehicle traffic. Transforming streets into more people-friendly spaces through temporary or permanent interventions is pointed out as a strategy to promote active mobility, social interaction, and quality of life in cities. These interventions, often temporary and low-cost, allow for testing solutions and assessing their impact before committing to permanent structural changes, encouraging experimentation and adaptation to local needs.

However, urban transformation also presents significant challenges. Rapid and intense urban growth, driven by factors such as real estate speculation and verticalization, can negatively impact residents' quality of life. In addition to the problems already mentioned, such as increased traffic, lack of adequate infrastructure, and environmental degradation, urban transformation can also lead to gentrification, which benefits new residents to the detriment of old ones, and social exclusion, especially in neighborhoods with a history of socio-economic vulnerability, as pointed out by Rocak and Keinemans (2023).

Furthermore, urban transformation often neglects the importance of citizen participation in decision-making about the future of cities. Rocak and Keinemans (2023) highlight that, although citizen participation is fundamental to ensure that urban regeneration projects reflect the needs and expectations of the local community, it often faces challenges such as the complexity of municipal rules, the lack of trust in institutions, and the asymmetry of power between the different actors involved.

Therefore, sustainable urban transformation requires an approach that integrates physical, social, economic, and environmental dimensions and values citizen participation in all process stages. Design Thinking, with its emphasis on empathy, collaboration, and experimentation, presents itself as a promising tool to promote this transformation, allowing the community to actively participate in building innovative and sustainable solutions to urban challenges.

METHODOLOGICAL PROCEDURES

Design Thinking and Visual Tools

According to Liedtka (2011), visualization is the "transformation of information into images that you see, literally with your eyes or figuratively with the eyes of your mind (p. 82)." This transformation can involve representing text, numbers, or other data in images or assembling scattered ideas into a compelling story. In the context of Design Thinking, visualization is fundamental to making ideas concrete, removing ambiguity, and facilitating communication and understanding between team members and users.

Visualization is one of the main tools of Design Thinking and has applications in all stages of project development. We depend on visual methods to make our thinking accessible to others so they can contribute to the problem-solving process. Different forms of visualization are appropriate at different stages of the process, from understanding the problem to prototyping and communicating solutions. Visualization is essential for communication and collaboration, especially when dealing with complex problems that require more than just logic. Visualization allows the mind to recognize simple representations and orient itself quickly, in addition to enabling the creation of vivid mental images that help give meaning to ideas and make them more tangible.

In urban transformation, visualization plays a crucial role by allowing the community to take ownership of the neighborhood's challenges and opportunities, visualizing the possibilities for change, and actively contributing to building a desirable future. The participatory mural used in this study is a practical example of how visualization can stimulate citizen participation and promote the co-creation of solutions to urban challenges. The mural, as a visual and collaborative tool, allows citizens to express their ideas, perceptions, and desires clearly and accessibly, fostering dialogue and

the collective construction of a more sustainable and desirable future for the neighborhood.

Designing the Participatory Mural

The construction of the participatory mural was guided by the tools and concepts of Design Thinking, as presented in Stickdorn and Schneider (2018). Initially, a preparatory research and secondary research phase was carried out, seeking to deepen knowledge about the context of the Rio Tavares neighborhood, its demands and challenges, as well as previous experiences of citizen participation in the region. This initial stage allowed the identification of the main areas of interest of the community and the potential Design Thinking tools that could be used to stimulate participation and the co-creation of solutions.
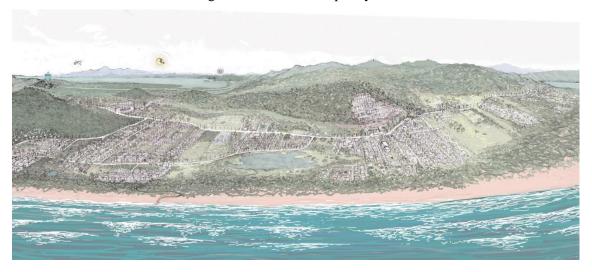
Figure 1 - Participatory mural construction process

Source: Own authorship (2024)

Based on this information, it was decided to use the participatory mural as the main tool for data collection and community engagement. The mural's construction was a collaborative and iterative process that involved the research team and community members. The goal was to create a visual and interactive instrument that would facilitate the expression of residents' ideas, perceptions, and desires, fostering dialogue and collective construction.

To facilitate the identification of problems for each area of the neighborhood, an illustrated map of Rio Tavares was used as the basis for the participatory mural, serving as a background so that participants could visualize the different regions and points of interest. Participants were encouraged to identify the problems and paste their post-its with suggestions in the corresponding areas of the map. This division of the map into sectors, combined with the spatial visualization provided by the background map, allowed for a more detailed and localized analysis of community demands, facilitating the identification of patterns and the prioritization of actions.

Figure 2 - Map of Rio Tavares illustrated by the artist Gabriel Caetano and used as a background for the Participatory Mural

Source: Gabriel Caetano (2024)

The suggestion categories were defined based on previous discussions with the community and the analysis of the main demands and challenges of the neighborhood.

The chosen categories were:

- Environment and Sustainability

- Security

- Mobility, Infrastructure, and Urban Planning

- Sport, Culture, Leisure, and Tourism

- Health, Well-being, and Social Assistance

- Education, Social Development, and Local Commerce

- Communication and Technology

These categories were considered comprehensive and relevant to the residents, allowing them to express their opinions and ideas about the various aspects of life in the neighborhood.

Figure 3 - Posters with mural instructions and about the Design Thinking process

Source: Own authorship (2024)

To aid in the understanding and engagement of the participants, two posters with visual instructions on using the participatory mural were created. The first poster presents the step-by-step process of how to interact with the mural, from exploring the map to pasting post-its with suggestions, inviting residents to participate and make a difference. The second poster explains how Design Thinking can help in citizen participation and urban transformation. The instructions were illustrated with simple drawings and vibrant colors, making them visually appealing and easy to understand, even for those less familiar with reading or Design Thinking.

Community Engagement and Data Collection

Data collection took place at two distinct events: "Dia do Manezinho" and the "Igreja de Pedra Free Fair". "Dia do Manezinho" took place on June 1, 2024, at the Puerto Escondido space in Rio Tavares. The date was instituted by municipal law no. 6.764/2005 to honor the natives of the city, affectionately called "manezinhos." The date celebrates

local culture and attracted a diverse audience, including residents, tourists, and neighborhood regulars.

Figure 4 - Engagement of participants with the participatory mural on "Dia do Manezinho"

Source: Own authorship (2024)

Data collection at the "Igreja de Pedra Free Fair" took place on July 20, 2024. The Capela São Luiz Gonzaga, affectionately known as "Igreja de Pedra" (Stone Church), transcends its historical and religious value by becoming a meeting point for the Rio Tavares community. In addition to celebrations and festivities, the chapel houses a food fair that takes place every Saturday, bringing together local producers and residents in search of fresh, quality products. The fair, in addition to fostering the local economy and conscious consumption, strengthens community ties, attracting a diverse audience, from families looking for fresh ingredients for their meals to regional cuisine enthusiasts and visitors who want to experience the welcoming atmosphere of Rio Tavares.

During the events, the mural was set up in a prominent location, with instruction posters and the necessary materials for participation. The research team was present to assist participants, answer questions, and encourage collaboration. These two strategic choices made it possible to reach a large number of people and promote the participation of those who, even if they do not live in the neighborhood, identify with its culture and challenges.

The suggestions and ideas collected on the participatory mural were photographed and transcribed into a digital file, ensuring data preservation and facilitating further analysis. The analysis of the collected data was carried out with the help of Design

Thinking tools, such as grouping ideas by category and identifying patterns and insights. This analysis allowed the identification of the main challenges and opportunities pointed out by the community, as well as the areas of the neighborhood that require greater attention and intervention.

Figure 5 – The participatory mural at Igreja de Pedra.

Source: Own authorship (2024)

RESULTS

A total of 122 suggestions for neighborhood improvement were collected, with 76 from the first event and 46 from the second. This section will delve deeper into the analysis of the results, exploring the main demands and aspirations of the Rio Tavares community, expressed through the 122 suggestions collected on the participatory mural.

Table 1 - Data collection at the events

Categories (Areas of Focus)	Dia do Manezinho	Igreja de Pedra Free Fair	Total Suggestions
Security; Mobility, Infrastructure, and Urban Planning	27	13	**40**
Environment and Sustainability	18	16	**34**
Sport, Culture, Leisure, and Tourism	11	5	**16**
Health, Well-being, and Social Assistance	8	5	**13**
Education, Social Development, and Local Commerce	6	4	**10**
Communication and Technology	6	3	**9**
Total Suggestions	76	46	**122**

Source: Own authorship (2024)

The following presents the challenges and opportunities identified, organized by category in descending order of the number of suggestions, highlighting the most significant concerns in each area.

Security, Mobility, Infrastructure, and Urban Planning

The "Security; Mobility, Infrastructure, and Urban Planning" category received the most significant number of suggestions, highlighting the importance of these issues to the community. Urban mobility emerged as the main concern, with an emphasis on the need for improvements in public transport, safer and more accessible bike paths, and sidewalks in good condition. Security was also a recurring theme, with requests for increased policing and efficient public lighting. The neighborhood's infrastructure was also the target of several suggestions, such as the need for paving the streets and drainage to prevent flooding.

Environment and Sustainability

The second most mentioned category was "Environment and Sustainability", demonstrating the community's concern for the neighborhood's environmental preservation. Concerns about the preservation of Lagoinha and the need for its decontamination and revitalization stood out. Selective collection and composting were also mentioned, with requests for the expansion of collection and environmental education campaigns. The preservation of green areas and the creation of parks and squares were also important demands, evidencing the community's desire for a greener

and more sustainable neighborhood. The community also expressed concern about the exploration of Pedrita, expressing the desire that the area be recovered and transformed into a park.

Figure 6 - Analysis and synthesis of improvement suggestions

Source: Own authorship (2024)

Sport, Culture, Leisure, and Tourism

The third most mentioned category was "Sport, Culture, Leisure, and Tourism," indicating the neighborhood's potential for developing these areas. The creation of spaces for sports, such as a park for children, and promoting cultural and tourist events were the main suggestions. The community also expressed the desire to value local culture and promote ecotourism, taking advantage of the natural beauty and rich history of the neighborhood. The creation of a cultural center, a community library, and the provision of cultural workshops were also mentioned demands.

Health, Well-being, and Social Assistance

The fourth most mentioned category was "Health, Well-being, and Social Assistance," revealing the importance of access to health and assistance services for the community. The maintenance and expansion of UPA Sul services was the main demand, followed by the need for dengue prevention and care and offering health prevention and

promotion programs. Social assistance was also mentioned, with requests for quality SUS (Brazilian public healthcare system) and public education.

Education, Social Development, and Local Commerce

The fifth most mentioned category was "Education, Social Development, and Local Commerce," indicating the importance of these aspects for the quality of life in the neighborhood. The lack of educational institutions and technical courses was one of the main challenges identified. The need to support local commerce was also highlighted, with the suggestion of more honest pricing practices and the preservation of local commerce and the population. Education was also mentioned, with requests for teachers for autistic students and holding events such as hackathons and innovation fairs for eco-social solutions.

Communication and Technology

The "Communication and Technology" category received the fewest suggestions but still pointed to important challenges. Improving the internet signal and creating an application to report environmental crimes were the main demands, highlighting the importance of connectivity and technology for the neighborhood's development and the digital inclusion of its residents. The community also showed interest in creating communication channels to organize and share information, such as WhatsApp groups and collaborative platforms.

The research results reveal a broad spectrum of challenges and opportunities for urban transformation in the Rio Tavares neighborhood. The suggestions collected on the participatory mural demonstrate the diversity of the community's needs and expectations, ranging from basic infrastructure and safety issues to demands for leisure, culture, social development, and environmental preservation. Applying Design Thinking through the participatory mural allowed the community to express themselves and actively contribute to identifying these challenges, highlighting the importance of citizen participation in the urban transformation process.

DISCUSSION

The application of Design Thinking in the context of Rio Tavares' urban transformation, even in its initial stages of immersion and analysis, demonstrated significant potential for community engagement and the identification of local challenges.

The participatory mural, as the central tool of the research, allowed residents, visitors, and others interested in the neighborhood to express their perceptions, desires, and suggestions in a clear and accessible way. The expressive participation of the community, with more than 120 suggestions collected, demonstrates the relevance of the initiative and the population's desire to contribute actively to building a better future for the neighborhood.

The analysis of the suggestions revealed a diversity of challenges and opportunities, distributed across the six categories of the mural. The "Security; Mobility, Infrastructure, and Urban Planning" category concentrated the most significant number of suggestions, indicating the priority of these issues for the community. The concern with urban mobility, especially the need for improvements in public transport and infrastructure for pedestrians and cyclists, reflects the reality of a growing neighborhood facing increased traffic and a lack of adequate planning. The demand for more security, with an emphasis on policing and public lighting, also expresses a legitimate concern of residents who seek a safer and more peaceful environment to live in.

The second most mentioned category, "Environment and Sustainability," highlights the community's sensitivity regarding environmental preservation, especially Lagoinha, an essential local ecosystem. The suggestions for the decontamination and revitalization of Lagoinha, as well as for the expansion of selective collection, demonstrate the residents' desire for a more sustainable neighborhood in harmony with nature.

The other categories reveal other essential demands of the community, related to the quality of life, social development, and the appreciation of local culture. The need for more leisure and cultural options, support for local businesses, and investments in health and education point to a desire for transformation that goes beyond infrastructure and security issues, seeking a more complete and welcoming neighborhood for all.

The application of Design Thinking, even if limited to the immersion and analysis stages, demonstrated its potential to promote citizen participation and generate valuable knowledge about the neighborhood's challenges and opportunities. The emphasis on empathy and collaboration, hallmarks of the methodology, allowed the community to feel heard and valued, contributing to building a sense of belonging and empowerment.

However, it is essential to recognize that this study represents only the beginning of a broader urban transformation process in Rio Tavares. Continuing the research, with the application of the remaining stages of Design Thinking, will be fundamental for the

co-creation of solutions and the implementation of projects that effectively respond to the community's demands.

The experience in Rio Tavares also offers valuable insights into the challenges and opportunities of citizen participation in urban transformation contexts. The need to overcome barriers such as the lack of representativeness, the difficulty of accessing information, and the power asymmetry between the different actors involved requires developing strategies and tools that guarantee inclusion and equity in the participatory process. Design Thinking, with its flexibility and human focus, can be an essential ally in this journey, contributing to building more just, democratic, and sustainable cities.

CONCLUSION

This study explored the application of Design Thinking, focusing on the immersion and analysis stages, in a participatory urban transformation process in the Rio Tavares neighborhood of Florianópolis. The results demonstrate the potential of this methodology to engage the community in identifying and understanding urban challenges, promoting citizen participation, and building collective knowledge about the neighborhood. The participatory mural, used as the primary data collection tool, proved effective in stimulating community participation and generating a rich set of information about the needs, expectations, and aspirations of residents.

However, this study represents only the initial phase of a broader urban transformation process in Rio Tavares. The next stages of Design Thinking, such as ideation, prototyping, and testing solutions, will be fundamental for the co-creation of projects and interventions that respond to the challenges identified by the community.

Thus, this article serves as a basis for future research exploring the complete application of Design Thinking in the urban transformation of Rio Tavares, from identifying problems to implementing solutions. Continuing the study will allow for a deeper understanding of the role of Design Thinking in promoting citizen participation and building more just, democratic, and sustainable cities. The following articles in the series are expected to report on applying the remaining stages of Design Thinking, presenting the results and impacts of co-creating solutions with the community, and the lessons learned throughout the process.

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