Entertainment accessibility in smart cities: A computational perspective

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Abstract: This study explores how smart city strategies can improve access to cultural and entertainment events in Bucharest for young people aged 18–25, with a focus on marginalized groups. Using a mixed-methods approach, the research combines quantitative and qualitative data to find insight into barriers and user needs. Results reveal that 73% of the participants are willing to use an app with great interest in free utilization, a simple interface and geolocation-based prediction for available parking space. These ideas formed Forfest, a Next.js-based Progressive Web Application built with JavaScript (JS) and Tailwind CSS features, including offline browsing, a responsive design approach, multilanguage support and location-based filters. The study illustrates the importance of user-centered tools for promoting cultural inclusion and digital citizenship.

Keywords: Smart cities, Cultural event access, Web-based Progressive Applications, Youth participation.

Accesibilitatea divertismentului în orașele inteligente: o perspectivă computațională

Rezumat: Acest studiu analizează modul în care strategiile de oraș inteligent pot îmbunătăți accesul tinerilor cu vârste cuprinse între 18 și 25 de ani la evenimentele culturale și de divertisment din București, cu accent pe grupurile marginalizate. Folosind o abordare bazată pe metode mixte, cercetarea combină date cantitative și calitative pentru a identifica obstacolele și nevoile utilizatorilor. Rezultatele arată că 73% dintre participanți sunt dispuși să utilizeze o aplicație, fiind foarte interesați de utilizarea gratuită, de o interfață simplă și de predicții bazate pe geolocalizare privind locurile de parcare disponibile. Aceste idei au stat la baza creării Forfest, o aplicație web progresivă bazată pe Next.js, construită cu JavaScript (JS) și funcționalități Tailwind CSS, incluzând navigarea offline, un design adaptabil, suport multilingv și filtre bazate pe locație. Studiul ilustrează importanța instrumentelor centrate pe utilizator pentru promovarea incluziunii culturale și a cetățeniei digitale.

Cuvinte-cheie: orașe inteligente, acces la evenimente culturale, aplicații web progresive, participarea tinerilor.

1. Introduction

The advancement of smart and innovative approaches in Bucharest could provide a good opportunity to ensure better access to culture and entertainment for young people from less privileged or even marginalized areas. Although digital technologies and age-appropriate urban design principles are gradually integrated into cross-sector programs, many of the systemic issues that young people confront with remain unaddressed. These include digital illiteracy, economic hardship and the lack of open, youth-friendly digital tools. Therefore, last-mile accessibility in the digital realm is essential. Technological solutions – especially those designed for people with disabilities, such as adaptive interfaces or responsive design frameworks – are necessary to providing equal opportunities for accessing online cultural platforms (Krasowska & Zwoliński, 2022). For example, ubiquitous computing models such as Multiple Associative Computing (MASC) embed accessibility requirements directly into the architecture itself (Telles, Luis & Da, 2016). However, current implementations do not meet the usability standards and inclusion needs of marginalized youth.

In addition to physical or cognitive accessibility, financial inclusion is critical. Inclusive smart city frameworks should promote low-cost access models and responsive digital services that help reduce participation barriers. Moreover, accessible design should account for neurodivergent

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users (Soares, 2019; Oliveira da Silveira & Schoproni Bichueti, 2024), who are often overlooked in the development processes of mainstream platforms. Progressive Web Applications (PWAs) offer a viable framework for enhancing urban entertainment ecosystem accessibility. Through features such as offline support, adaptive interfaces and reduced bandwidth usage, PWAs can be a good fit for low-connectivity environments and especially younger audiences (Kothapalli, n.d.). However, most of these systems have not directly served the unique usability requirements and inclusivity concerns of disadvantaged youth.

To address these limitations, this paper proposes a computational model designed to assess and enhance entertainment accessibility for individuals through digital infrastructure. It also introduces performance and usability guidelines for the development of inclusive platforms, with technological innovation at its core. At the same time, the study also emphasizes the need for maintaining older forms of community engagement to avoid exacerbating the digital divide. The primary contribution of this research is the design and partial implementation of Forfest, a modular PWA that aims to integrate accessibility principles into the cultural event discovery process. Designed based on user studies, the characteristics of Forfest incorporate location-aware guidance, multilingual support and offline support. The project offers an empirical case of how digital technologies can support the objectives of smart cities by promoting inclusive cultural participation.

This study first contextualizes the research problem by highlighting the accessibility challenges reported by youth in Bucharest and by formulating the study's guiding questions. It then synthesizes the relevant literature on smart-city inclusion and cultural participation before outlining the mixed-methods research design. The paper subsequently describes the development workflow of the Forfest platform together with its technical architecture and design choices. Next, it discusses the empirical findings and their implications for inclusive access to entertainment and concludes with practical recommendations and directions for future work.

2. Research problem

Accessibility and inclusiveness in entertainment opportunities designed for young adults in Bucharest represent a complex challenge within the broader smart city development framework. Although digitization aims to improve urban life through better technology, many young people remain economically marginalized and excluded from the digital economy.

Providing well-structured young adults' entertainment is challenging within Bucharest's smart city development framework. Although these initiatives aim to improve urban life through technology and innovation, they often overlook the needs of marginalized populations, such as low-income or digitally excluded youth. Members of these groups face barriers such as poor digital literacy "that hinder them from being regular users of online entertainment platforms" (Petríková, D. & Petríková, L. 2019) or financial constraints that restrict participation in cultural events (Pérez-del Hoyo et al., 2016). Additionally, individuals with disabilities often find digital and physical media that are inaccessible, limiting their enjoyment (Marchigiani, 2020). Conversely, smart technologies –represented through inclusive urban planning and intelligent infrastructure – serve as the 'hardware' for an equitable environment, providing conditions for fairer design and planning (Telles, Luis & Da, 2016; Oliveira da Silveira & Schoproni Bichueti, 2024). While digital innovation shows promise, its value depends on how effectively it mirrors and reacts to the multiple lives of urban citizens, particularly marginalized youth.

3. Literature review

In Bucharest, smart city initiatives are increasingly being utilized to generate digital technology-driven models for collaborative urban governance and to provide entertainment access for marginalized youth. This relationship has been the subject of various research, such as in (Colding, Nilsson & Sjöberg, 2024). According to previous studies**,** an analysis using Amartya Sen's Capability Approach conceptual aid examines whether access provided by digital tools represents real freedom or merely technical access. Unlike conventional smart-city frameworks

based on infrastructure, affordability or user demand, the Capability Approach draws a distinction between capabilities – the real opportunities available to people – and functionings, the actions and values individuals can experience in their daily city life. When this framework is applied to cultural participation, analysis moves beyond the dichotomous question of whether platforms are accessible to young people, instead exploring the extent to which they allow them to engage in authentic cultural engagement. This framework is relevant to the current study, as it helps to understand how barriers such as digital literacy, language and socio-economic factors prevent digital access from translating into tangible opportunities for cultural participation.

In related research, the sociotechnical lens and the Quadruple Helix Model have been used to account for the marginalization of disabled individuals (Zhou, Loiacono & Kordzadeh, 2023). Their results highlight an important gap in existing literature and emphasize the need for cross-disciplinary approaches to integrate inclusivity within technology design. Moreover, (Pérez-del Hoyo et al., 2016) propose a refined model of urban accessibility, with the platform as an intelligent environmental design, illustrating the potential life-changing benefits of simplifying infrastructure through inclusive design principles. In addition to these empirical findings, well-founded theory and models, such as the Technology Acceptance Model (TAM), states that perceived usefulness and ease of use are the most salient determinant factors in technology adoption; this extends to digital entertainment services as well (Colding, Nilsson & Sjöberg, 2024).

Despite these contributions, smart city planning processes often overlook young adults, as recent studies revealed (Shtebunaev, Gullino & Larkham, 2023). Lack of Inclusion: Young people are often left out of the smart city development processes, resulting in a "mismatch" between digital solutions and lifestyle preferences and experiences, particularly within the area of cultural/entertainment participation. The literature review shows that smart cities must adopt inclusive models, promote the development of interdisciplinary work and resort to participative rules more often when designing their frameworks. However, digital innovation has its limits, as its effectiveness depends on its ability to mirror and react to the multifaceted challenges experienced by urban residents, particularly marginalized youth.

4. Methodology

This analysis combines quantitative and qualitative research with an exploratory approach of inquiry that focuses on the digital needs of young people (aged 18-25) in Bucharest and their access to cultural activities.

The cross-sectional study, utilizing an online questionnaire (Google Forms) as a data collection tool, was available via social media and academic mailing lists for one week. A non-probability, convenience sampling method was adopted to recruit participants. Although the sample size was small (n = 44), which is consistent with the exploratory nature of the study, the results provide an initial evidence base for future development. The majority of respondents were undergraduates, with an even spread of gender identities and digital skills levels. The survey consisted of 25 questions, including 18 closed-ended types aimed at maintaining quantitative data, and 7 open-ended questions for maintaining qualitative data (7 questions). A full list of the 25 questions used in the survey can be found in Appendix A. Other common themes include a desire for more local language support, easier navigation and personalised pages recommendations based on user data.

These observations influenced the creation of the Forfest platform, in terms of interface design as well as feature prioritization. Written consent was obtained from all participants who completed the questionnaire and no personal identifiers were collected. The research adhered to ethical standards of social research, ensuring voluntary participation and maintaining confidentiality of information throughout the study. The mixed-methods approach allowed for an exploration of both user behavior and expectations, as well as development of practical recommendations for an inclusive platform design. By combining these inputs with the users' experiences, the method supported the creation of a digital solution that is not only technically effective but also socially relevant for young adults in Bucharest.

5. Research contribution

This study introduces a locally validated digital solution—Forfest—that bridges the gap between smart city initiatives and the social practices of marginalized youth in Bucharest. Unlike the previous research, which typically focuses on theoretical or policy-level analyses, this study follows up with a functional PWA (Progressive Web Application) that empirically applies our theoretical results. Forfest directly addresses existing digital barriers such as complex interfaces, limited language options and inadequate network communication. Furthermore, the study's findings provide a computational approach and practical knowledge that can guide future smart city projects aiming to increase participation among non-dominant communities.

6. Development workflow

The implementation followed an iterative, user-centered design approach. A working prototype was developed and continuously improved based on input from representative users. As shown in Figure 1, user feedback testing was used to refine the app's navigation, visual presentation, and overall usability.

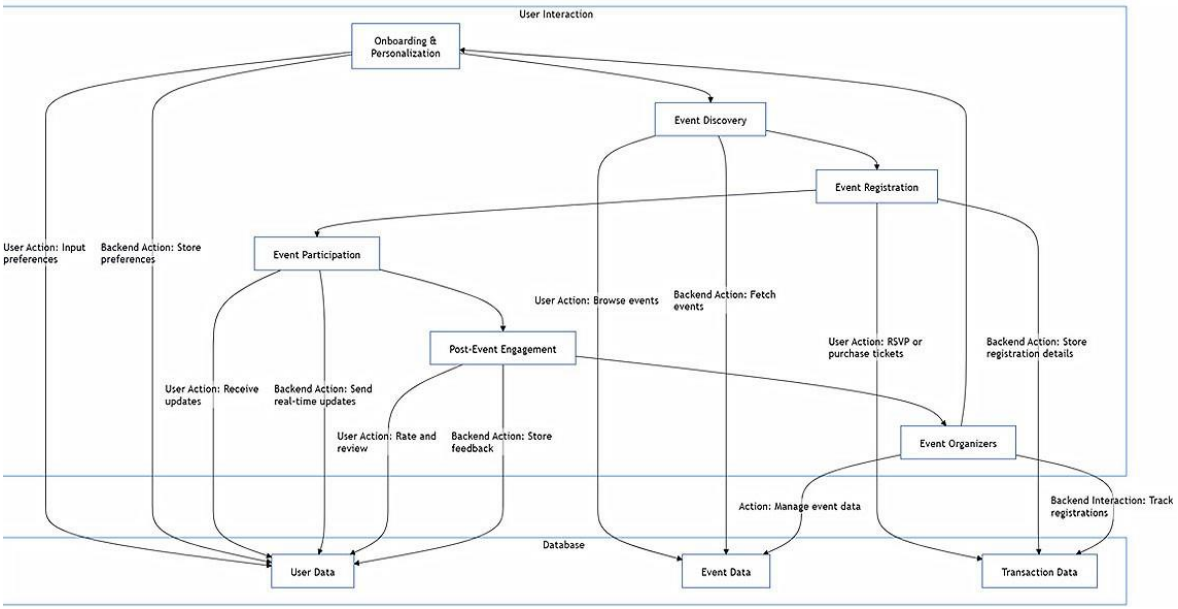

Figure 1. User interaction architecture workflow (Source: own research)

Figure 1 illustrates a structured flowchart depicting the sequential stages of an event management system (user enrollment, event launch/search, ticketing, request for support on accessibility and user activity after the events). It uses automation and a centralized data repository to improve user experience and inclusiveness. This figure, created by the authors, represents the system architecture and user interaction flow within the proposed model.

6.1. System architecture and interface overview

The Forfest system is designed as a modular Progressive Web Application (PWA) tailored for the cultural and entertainment needs of young people in Bucharest. The system follows accessibility, offline and user-centric interaction patterns. Built on a modern JavaScript stack — Next.js (v13. 5. 1), Tailwind CSS, TypeScript and next-pwa — the system aims to address connectivity and usability challenges identified in the initial user research. As illustrated in Figure 2, this hierarchy is compatible with the smart city model, promoting resilience and inclusivity.

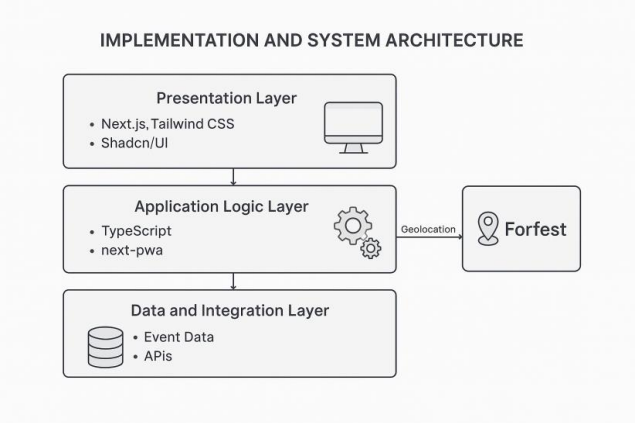

Figure 2. Implementation and system architecture (Source: own research)

Figure 2 illustrates the multi-layered structure of the system, based on a three-tier model: presentation, application logic, and data & integration. This modular design not only enhances maintainability and scalability but also serves as the basis for the inclusive functioning of the platform. The presentation layer uses Next.js and Tailwind CSS to support a mobile-first design and ensure a consistent user interface, with Shadcn/UI providing convenient component architecture. The application logic, built with TypeScript and integrated with next-pwa, manages all key user interactions and caching mechanisms, thereby enabling offline access and language-localized scenarios. The data and integration layer controls how events are fetched and organized using mock datasets and potential API integrations. Additionally, glocalization services linked between the application logic and interface layers provide personalized information as further illustrated in Figure 3 and Figure 4.

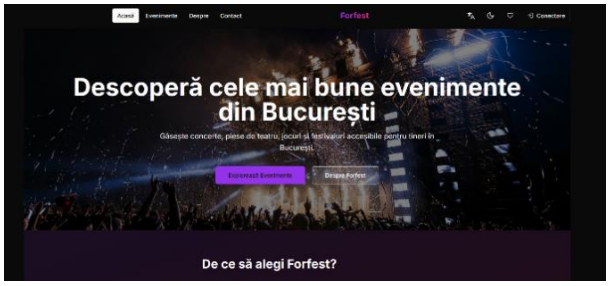

Figure 3. Home Page
(Source: own research)

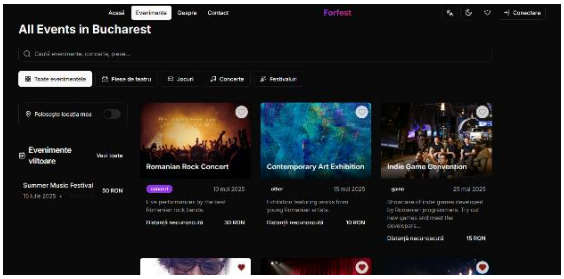

Figure 4. All categories with Events
(Source: own research)

As illustrated in Figure 3, the home page provides a visually engaging introduction to the site. It includes high-contrast graphics, localized language content, and two call-to-action buttons for browsing the event. The design emphasizes simplicity and negative space, encouraging immediate discoverability without requiring signup or navigating menus.

The interface shown in Figure 4 allows users to explore the assorted categorized events by theme and type. The design includes filtering options for refining search results based on event type, location or time and date. The smart grid dynamically adapts content according to user preferences and geolocation, highlighting activities relevant to the user, reflecting principles of smart city personalization. As demonstrated in Figure 5 and Figure 6, the administrative interface supports key management functions.

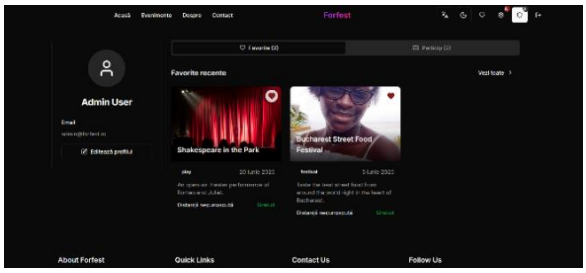

Figure 5. Admin User
(Source: own research)

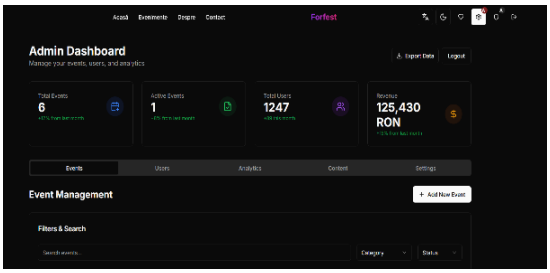

Figure 6. Admin Dashboard
(Source: own research)

Figure 5 illustrates the admin functionalities. The screenshot depicts the interface as a logged-in admin user, representing a gateway to instance activities, account information and base navigation options. It is an intuitive dayparting system, enabling even non-technical users – referred to as “local digital managers" – to construct profiles and refine their content preferences.

More generally, Figure 6 provides an overview of the administration tools. The dashboard displays real-time statistics, overall events, user engagement stats and financial statistics. These insights are visually depicted for quick interpretation, supporting aspect-based content management decisions. The platform also supports a fully functional offline mode, as shown in Figure 7 and Figure 8.

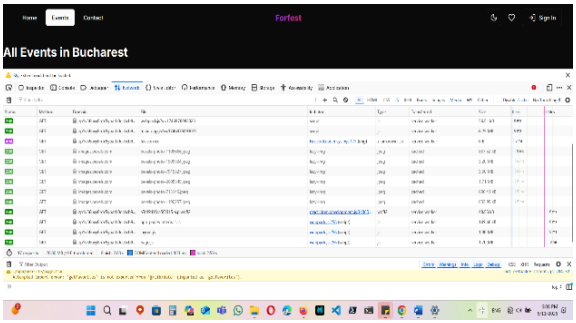

Figure 7. Forfest offline mode – cached assets test
(Source: own research)

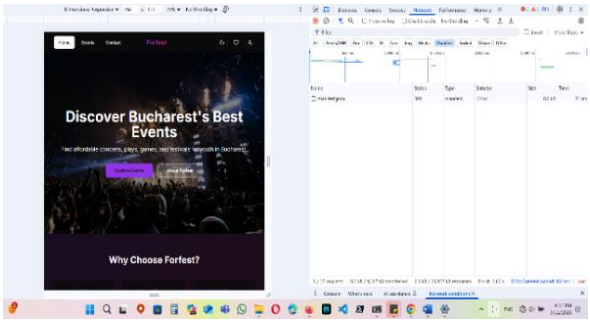

Figure 8. Forfest Offline Mode – Homepage View
(Source: own research)

Figure 7 illustrates tests for connectivity resilience, demonstrating that the application continues operating in offline mode. Browser dev tools confirm that cached assets are used, ensuring users can continue accessing old content in areas with unreliable internet connectivity — an essential feature for the target demographic.

Figure 8 provides a second validation of the system’s offline capabilities, using the homepage interface and developer logs to confirm that caching behavior. This offline-first capability allows users to access, browse and read their saved stories – and in the future, interact with core experiences – even in the absence of reliable network connectivity, addressing one of the project's central design requirements. Overall, the authors' visualizations offer an overview of the core modules and interface components of the system. These range from UI mockups with offline mode to responsive design and inclusive components, presenting a real-life example of how PWA best practices could be used to improve digital accessibility for urban youth.

6.2. Design and implementation

The design and development of the Forfest platform used mobile-first, youth-friendly insights gathered during the research phase. With over 90% of respondents preferring mobile access to cultural information, the interface was designed using a fully responsive, mobile-first approach to match their expressed preferences. Tailwind CSS allowed for highly extensible and responsive layouts, while Shadcn/UI components ensured uniformity and accessibility.

Participants expressed a preference for intuitive filtering tools and minimal cognitive load, which informed features such as category-based filtering (e.g., concerts, games, theater), location-flexible event sorting and purple-to-pink high-contrast gradients. Interactive features, such as bookmarking events and seamless animations, were introduced to increase the level of engagement without sacrificing user experience and accessibility. “Save for later” functionality and user-defined filters were prioritized based on the frequency of qualitative mentions in a direct one-to-one fit between users' needs and design features.

From a technical perspective, the platform was built using Next.js (v13.5.1) for server-rendering and routing, along with TypeScript to guarantee type safety and maintainability of the code. A reusable, component-based design allows for application scalability through dynamic routing, and faster load times for event categories. Offline access to previously cached pages and content, identified as a key feature in the survey for reducing access differences, is enabled through Service Workers through next-pwa. allowing users to browse previously saved content online without an internet connection. Additionally, a password-protected admin area allows the event listings to be managed and site maintenance work to occur without exposing users to anything more than a CMS-style login. As a system design, Forfest achieves several methodological objectives by expressing user requirements as technical building blocks, highlighting the discrepancy between functionality and implementation, and being grounded in the context of Bucharest’s youth. Figure 9 and Figure 10 demonstrate the visual themes of the home interface.

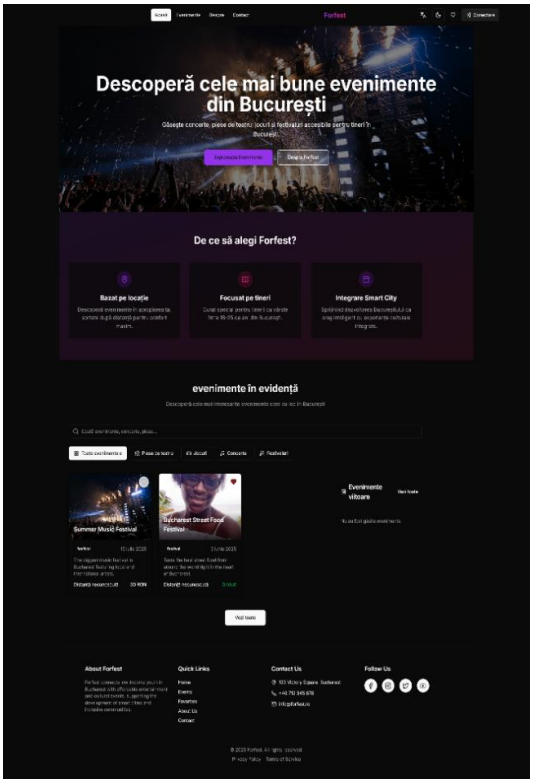

Figure 9. Forfest in Dark Mood
(Source: own research)

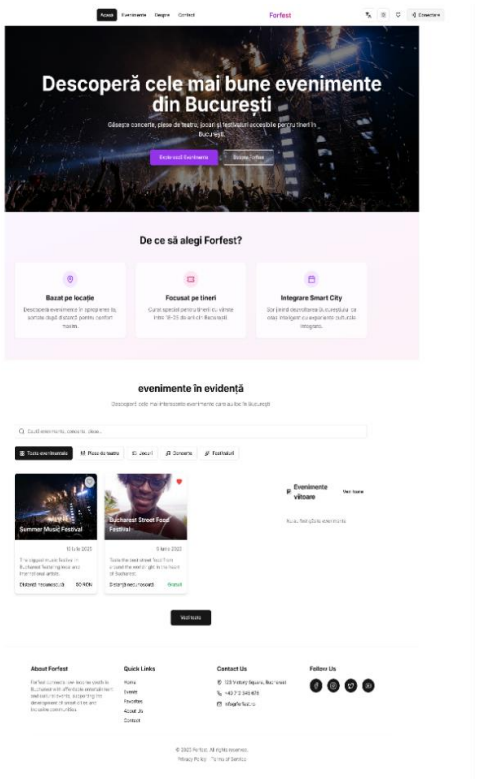

Figure 10. Forfest in Light Mood
(Source: own research)

Figure 9 and Figure 10 illustrate the Forfest PWA home interface in light and dark modes. The interface features a clean, mobile-friendly structure for usability and interactivity with a youth audience. In light mode (Figure 9), readability of the design is achieved through high-contrast colors and a neutral background that are suited to light conditions. In dark mode (Figure 10), the display reduces eye strain in low-light conditions, using strong highlights and contrast to capture attention. Both themes share a consistent layout: hero promotional text, a value proposition emphasizing geolocation-based discovery and content aligned with youth interests and Smart City objectives. Underneath is a dynamic, filterable list of events, with each card displaying image previews, category, date, price and distance to the user. The responsive design scales perfectly to

any screen size, and as a Progressive Web App, the platform allows offline access to previously visited content, ensuring functionality even without an internet connection.

The manifest handles offline functionality while the user is on the site, appearing native. json. It utilizes a rule presented in a self-explanatory JSON configuration file. The browser fetches sub-resources and parses the manifest – referenced in the HTML's head section – to gather metadata about the PWA, including "name", "short_name", "icons", assets, color scheme and display mode. Once installation requirements are met, such as a secure context and an installed service worker, the browser indicates to the user that the app is installable.

Although Forfest is still in the early stages of system development, the current prototype requires event and geolocation data in a test format supplied by the authors. Future deployment will include data in real time from GIS services and cultural open-data APIs provided by municipal or institutional sources. This approach avoids fragmentation or outdated information, maintaining accurate event details and availability, as well as reliable location-based guidance.

6.3 Technical advantages and limitations of the Forfest PWA

The Forfest prototype demonstrated several technical advantages that led to the adoption of a Progressive Web Application (PWA) architecture. These include offline functionality via service workers, fast loading times with lazy loading and code splitting, the ability to install the app directly on the device home screen without an app store, as well as full-screen display, multilingual support, and high-contrast accessibility. These characteristics resonate with the needs of young users in low-connectivity environments.

However, the current framework has several limitations. Models are generated from mock datasets, which restrict real-time event accuracy on the platform. Additionally, while PWAs support offline browsing, users would require network access when discovering events. Browser-based discrepancies also persist, as not all browsers fully support all features, such as push notifications or background synchronization. Recognizing these limitations is essential to guide the next phase of system development.

7. Results and discussion

The results of this investigation highlight the vast potential of inclusive, user-controlled digital tools to address cultural accessibility gaps for marginalized youth in Bucharest. Through a mixed-method design and in the context of developing the Forfest PWA prototype platform, this study systematically investigated the expectations and behavior of young adults between the ages of 18 -25 and what constrains them regarding participation in cultural and entertainment activities. The survey was conducted in a structured online questionnaire in the Romanian language and circulated over the course of one week. The distribution occurred through social networks and the academic environment of a university in Bucharest. The questionnaire comprised of 25 questions: 18 close-ended questions for quantitative analysis and 7 open-ended questions designed to solicit qualitative information.

The results of the survey indicate a strong demand among young people for a comprehensive cultural-events application. Seventy-three percent of respondents indicated they would use such an online service (“Definitely” or “Most likely”) and 84% considered the ability to save events more important. Additionally, 79% currently explore events via social media, revealing the necessity for a more organized and shareable tool. An emphasis on simple usability (71%) and location-based search options (59%) highlights the need for a low-threshold, youth-friendly online tool like Forfest. These results also confirm, to some extent, the necessity of developing and using the application to enable cultural participation in Bucharest. These quantitative results are supported by qualitative feedback, which emphasized the importance of local language content (including the user interface), minimalistic design and location-based event filtering. Overall, this broad spectrum of research directly influenced the Forfest PWA, which integrates event-saving mechanisms, location-based contextual recommendations and an intuitive

interface. Visual documentation of the platform's current iteration is provided in appendix A to demonstrate practical feature implementation.

At the time of writing, the Forfest PWA is fully operational and undergoing final development iterations, incorporating feedback from early user testing. This incremental approach is an instantiation of participatory and inclusive design for a platform that can evolve in response to the lived experiences and digital self-representation of its intended users. The Forfest case study demonstrates that overcoming second-level digital divides is not only a matter of technology provision but also depends on responsiveness to the social and cultural circumstances in which users operate. The project offers a transferable model for integrating youth-led feedback into urban digital solutions, effectively connecting the aspirations of smart city strategies with the community-level realities. The findings further reveal how smart city policies may affect the geography of entertainment for young adults in Bucharest, especially those from marginalized groups. A survey of the respondents identified several challenges, as well as reasons for being unable to engage users, including low digital literacy, financial insecurity and limited access to other local user-friendly digital tools. Additionally, 73% of respondents expressed a desire to use their own solution and 84% wanted event saving. These results underscore the need for mobile-first-oriented digital services tailored to individual users' needs. Forfest represents a modular PWA framework designed for low connectivity, multilingual support and accommodation of interface limitations identified during testing. Its implementation in Bucharest provides a model for how data-driven development can help alleviate digital and cultural divides in areas of need.

Finally, we recommend that future research (1) investigate strategies for improving youth engagement in smart city design and how ICT can promote digital inclusion, including the use of assistive ICT and other related approaches, and (2) evaluate whether platform features influence sustained user engagement. Furthermore, the scalability of such solutions and approaches should be demonstrated through longitudinal studies comparing them across different cities to identify common factors for ensuring accessibility to cultural services in diverse urban environments.

8. Conclusion and future work

The findings illustrate how smart city strategies shape the accessibility and inclusivity of entertainment for young adults in Bucharest, focusing on vulnerable categories. The survey revealed key obstacles, including digital literacy, financial barriers and a limited selection of locally available digital tools. Data shows that 73% of respondents expressed a favorable disposition toward using an app and 84% valued event saving capabilities, highlighting a demand for user-driven, mobile-first digital services. These gaps in the ecosystem are addressed by Forfest, a modular PWA framework for low-connectivity environments, multilingual access and inclusive interface designs. Its implementation in Bucharest demonstrates how data-driven development can serve as a tool for narrowing the digital and cultural divides in some of Europe's most underserved regions.

Future research should explore methods for increasing youth involvement in smart city planning, evaluate the impact of assistive technologies for digital inclusion and examine how platform features influence sustained engagement. Longitudinal analyses and cross-city comparisons are also suggested to assess scalability and potential models of practice transfer, ensuring the provision of equal opportunities for equally diversified cultural services in varied urban environments.

It should be noted that the current study involved a relatively small sample (n = 44) primarily composed of undergraduate participants, which may limit the generalizability of the findings. Therefore, future studies should expand the sample to include individuals with diverse residential dispositions, socioeconomic levels and education backgrounds, as well as broader representation across neighborhoods in Bucharest, to provide a more comprehensive understanding of cultural accessibility among urban youth.

Author contributions

Conceptualization: A.J.; Data Curation: S.T.; Supervision: M.M.; Validation: A.J.; Writing—original draft: A.J.; Writing—review and editing: A.J. and M.M. All authors have read and agreed to the published version of the manuscript.

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Ayah JAROUR s-a născut în Palestina. A obținut diploma de licență în Ingineria sistemelor informatice în 2015 și diploma de master la Universitatea Al-Azhar, Facultatea de Sisteme Informatice de Management. În prezent, urmează un doctorat la Catedra de Informatică, Facultatea de Automatică și Calculatoare, Universitatea Națională de Știință și Tehnologie POLITEHNICA București. Interesele sale de cercetare se concentrează pe orașele inteligente, în special în domeniile divertismentului și culturii. Activitatea sa de cercetare se axează pe analiza sistemelor și dezvoltarea de aplicații pentru orașe inteligente care încurajează participarea civică prin intermediul platformelor bazate pe cultură și divertisment. De asemenea, a publicat lucrări științifice evaluate inter pares în domeniile orașelor inteligente și inovației digitale. În prezent, ocupă funcția de manager de proiect, supervizând proiectele pe întreaga durată a ciclului de viață, de la analiză până la implementare.

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Mariana MOCANU is university professor in the Department of Computer Science - Faculty of Automatic Control and Computers, from the National University of Science and Technology POLITEHNICA Bucharest. She coordinates the e-Government Master's program. She participated in the development of the National Qualification Framework in Romanian higher education system and contributed at both European and national levels to curriculum development and quality assurance in higher education. Her main research interests include interoperable products and services for decision support based on geospatial data, the development of information systems for industrial and economic processes, and systems engineering and project management. She has published over 100 scientific papers, which have been cited more than 350 times. Professor Mocanu served as coordinator of national and European projects (H2020 Twinning project Data4Water, Erasmus projects etc.) and is co-author of two patents.

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Appendix A — Survey questionnaire

Part 1. Quantitative questions (18 items)

Section A: Market need & App utility

Q1: Do you find it difficult to access cultural or entertainment events in your area?

Always	14%	Sometimes	44%	No	42%

Q2: If you had access to a free app that displays local low-cost or free events, would you use it?

Definitely	50%	Most likely	23%	Maybe	18%	No	9%

Q3: What types of events do you prefer? MULTIPLE-CHOICE

Music	66%	Theater	66%	Movies	57%
Games/ competitions	27%	Community Events	50%	Workshops	38%

Q4: How do you currently find out about events?

Social media	79%	Friends	9%	Posters/Ads	7%
Usually, I do not find out about events			5%		

Q5: Do you think there's a lack of entertainment apps tailored for low-income youth in your area?

Yes, definitely	55%	Maybe	39%	No	6%

Q6: Do you believe a unified app for all events in your city would help increase your participation?

Yes	50%	Maybe	39%	No	11%

Section B: UI/UX design expectations

Q7: How would you like the app interface to look?

Simple and clean	48%	Detailed, with multiple options	25%
Social-media style	13%	Colorful and vibrant	14%

Q8: Which color themes do you prefer for app design?

Soft/neutral colors (blue, purple)	41%	Dark colors (black, gray)	18%
Bright colors (yellow, orange)	11%	No preference	30%

Q9: Do you prefer icons or text labels for menu options?

Icons	23%	Text	27%	Both	50%

Q10: What makes an app interface more comfortable to use for you?

Simple screen layout	71%	Large buttons	4%
Visuals and images	20%	Few options on screen	5%

Q11: What would you expect to see on the home screen of a youth events app?

List of nearby events	57%	Map of events	21%
Categories (music, games...)	15%	Login/register prompt	7%

Q12: Do you usually face difficulty with apps that have too many screens or steps?

Yes	25%	Sometimes	41%	No	34%

Q13: Should the app show events without requiring login?

Yes	71%	No	11%	Doesn’t matter	18%

Q14: How important is it that the app shows events based on your location?

Very important	59%	Important	30%	Not important	11%

Q15: What type of content helps you decide to attend an event?

Photos	14%	Short video	16%
Reviews/comments	13%	Practical info (time, location, price)	57%

Q16: Which interactive features would you like in the app? MULTIPLE-CHOICE

Save events to favorites	84%	Share events	50%
Personalized notifications	52%	Comments and reviews	57%

Q17: Would you like an app to support your local language?

Yes	67%	No	5%	Doesn’t matter	28%

Q18: Would you like the app to support text enlargement or color adjustment options?

Yes	48%	No	20%	Haven’t thought about it	32%

Part 2: Qualitative questions (7 items)

Tell me about the last time you attended a cultural or entertainment event. How did you find out about it?

What do you feel are the main challenges that prevent you from participating in such events?

If there was an app called Forfest that helps you find nearby free or affordable events, what is the first thing that comes to your mind?

Do you think an app like this could change how you discover events? Why or why not?

What features would you like to see in such an app that would make you feel like it's made for you?

From your experience with similar apps, what aspects do you expect might be unclear or complicated in the design?

What features or needs would you like this type of app to include to be useful and easy for you to use?