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Gamifying the Post-Fordist City: A strategy to enhance awareness of heritage at risk

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Abstract

The Italian city of Turin provides a paradigmatic example of post-Fordist urban transformation, shifting from a 20th-century industrial capital into a city focused on culture and leisure. The historical district of San Salvario perfectly exemplifies this trajectory. Today, the neighborhood faces a challenge of overshadowed heritage: the physical landscape, now widely consumed through the lens of a vibrant night-time scene, often fails to communicate the deeper historical layers and complex narratives that define the area's true identity to the diverse public that inhabits and traverses it.

In general, many contemporary cities actively leverage their cultural and historical assets to gain a competitive edge in attracting tourism. However, this strategy often leads to the over-utilization of urban space, which introduces significant risks. This rapid intensification presents a dual challenge: first, it poses a risk to heritage, as the historic fabric is prioritized for consumption rather than preservation; second, it creates a risk for local residents, whose daily lives are increasingly disrupted, eroding its livable character. San Salvario exemplifies these challenges. Beneath modern pressures lies a layered heritage, ranging from the tangible Valentino Castle to the intangible multicultural Madama Cristina Market.

Applying digital gamification to urban heritage, this research proposes an interactive mobile serious game designed to rescue the neighborhood's past and empower civic participation. For this educational purpose, the game serves as a dynamic research instrument, utilizing the comprehensive historical archives of MuseoTorino as one of the primary evidentiary foundations to ground its narrative in urban memory. Players navigate through four chronological epochs: the pre-1980s era, reflecting its foundational historic identity; the 1980–1990, the industrial crisis; the 1990–2006 transition, marked by institutional restructuring; and the 2006–present, defined by the rapid intensification of the night-time scene. By traversing these epochs, users compare the evolution of each node, bridging the contemporary landscape with its historical roots. Furthermore, the application features diverse interactive modules tailored to the unique history of each specific node.

Crucially, this gamified educational experience acts as a catalyst for civic participation through a strategic 'Value-Exchange Loop.' Users at the final level are invited to contribute their own ‘digital traces’ like their contemporary photos, personal reflections, and ideas to specific nodes on a shared digital map. By gathering this content through a secure, moderated collaborative mapping framework, the game functions as a participatory platform to organically foster a collective urban identity while ensuring data integrity and community safety. Ultimately, this demonstrates how digital edutainment can safeguard authentic heritage, build civic memory, and support urban governance.

Keywords: Post-Fordist Turin; Heritage at risk; Overshadowed heritage; Awareness deficit; Digital Gamification.

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Writing this thesis has been more than an academic endeavor; it has been an intimate journey through the streets of Turin, the city that welcomed me as an international student and became a defining chapter in my life. This work is born from my own curiosity—the quiet questions that arose the moment I first stood before the Castello del Valentino, captured by the layers of history that define this place. These pages carry not just data, but the emotions and memories of the moments that made Turin mean something truly special to me.

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List of Abbreviations

ASCT : Historical Archives of the City of Turin
CUX: Cultural User eXperience
CX : CampusX (referring to the CX Turin Belfiore student housing)
EDISU : Regional Agency for the Right to University Education
ETS : Third Sector Entity (used in "San Salvario ETS")
EU : European Union (used in "non-EU migrants")
FCS : 2025 UNESCO Framework for Cultural Statistics
FIAT : Italian Automobile Factory Turin
GIS : Geographic Information System
GPS : Global Positioning System (used in "GPS geofencing")
GUI : Graphical User Interface
HUL : Historic Urban Landscape
ICT: Information and Communication Technologies
IRES : Institute for Economic and Social Research (used in "IRES Piemonte")
ISTAT : National Institute of Statistics (used in "ISTAT Census")
JPEG : Joint Photographic Experts Group (used in "Save as JPEG")
MBC : Molecular Biotechnology Center
NPCs: Non-Playing Characters
OSI : Industrial Molding Workshops
PDF : Portable Document Format
PPGIS : Public Participation GIS
QGIS : Quantum Geographic Information System
UI : User Interface (used in "2D UI Design")
UNESCO : United Nations Educational, Scientific and Cultural Organization
UX: User Experience

Chapter 1, Introduction

1.1 Background and Context

This introductory chapter serves as the foundational framework for the thesis, establishing both the theoretical and practical context of the research. It introduces the central themes of post-industrial urban transformation and the subsequent challenges of heritage preservation, specifically focusing on the intersection of digital gamification and collaborative urban stewardship. To systematically navigate these concepts and outline the research trajectory, the chapter is logically divided into five primary sections.

Following this context, the Problem Statement identifies the critical contemporary challenges currently facing the neighborhood. It unpacks the "awareness deficit" occurring between transient city users and the historic fabric, highlighting how intensive nightlife consumption places heritage at risk, specifically creating a risk to heritage assets and causing severe disruption for local residents. This section emphasizes how the over-utilization of urban space threatens to overshadow the deeper historical layers and complex narratives that define the true identity of the district.

Transitioning from the core problem to the proposed intervention, the Aim and Scope section details the educational objectives of the research. It defines the target audiences—ranging from long-term local residents to temporary university students—and outlines how digital gamification and procedural learning can be leveraged as practical tools to enhance awareness of the neighborhood's overshadowed heritage. The primary goal of the interactive game is to ensure that users recognize and understand San Salvario's rich historical identity, rather than merely treating the physical environment as a superficial backdrop for nocturnal leisure. This section also firmly establishes the specific research questions that guide the study, exploring how a digital platform can act as an educational bridge.

The Methodology segment then outlines the mixed-methods approach utilized to conduct the research. It briefly explains how digital urban history, spatial mapping, and interactive interface design are combined to successfully translate static archival data into a dynamic, location-based digital platform. Finally, the Structure of the Thesis concludes the chapter by providing a clear structural roadmap, illustrating how the theoretical frameworks, spatial analyses, and game design methodologies will eventually culminate in the final digital prototype.

1.1.1 The Multi-Layered Urban Landscape

The contemporary urban landscape is rarely a static entity. Instead, space and place must be understood as dynamic processes constructed out of intersecting social, cultural, political, and economic relations, rather than bounded or frozen entities (Massey, 1994). The identity of a city is generated over a long period as it undergoes continuous historical changes, resulting in a unique cultural and historical heritage deeply embedded in its specific environment and *genius loci*; it is defined as "the set of meanings which are gathered by a place" (Norberg-Schulz, 1979), wherein human engagement connects physical materiality to subjective significance. This spirit does not remain static or fixed; rather, it is actively created

and continually shaped in the present by the lived experiences, memories, and interactions of the inhabitants who spend time in a particular setting (Lokas, Petrović, and Rakonjac, 2023). Under this framework, the human habitat is understood as a "socio-cultural rhizome," and genius loci acts as an intangible quality of a material site perceived both physically and spiritually by its users (Markevičienė, 2012). From an integrated urban conservation perspective, this represents "the substance of place, the formation of the genetic order of place and its interrelations" (Rifaioglu and Güçhan, 2008), manifesting as a dialectical link between the physical built environment—such as historic street grids and architectural forms—and the socio-economic routines of the people who inhabit them. Furthermore, this spatial character can be understood through the lens of a "thymic space"—a fundamental mode of lived spatiality where material objects and localised practices, such as traditional craftsmanship, act as active emotional vectors that catalyse human-place bonding and make subjects resonate with the surrounding landscape (Vecco, Montagner, and Srakar, 2020).

To accurately understand and manage historic cities today, contemporary urban planning relies heavily on the Historic Urban Landscape (HUL) paradigm (UNESCO, 2011). The HUL approach represents a critical shift away from monument-focused, isolated preservation toward a holistic and systemic understanding of urban heritage (Bandarin & van Oers, 2012). It frames the city as a continuous historical layering of cultural values, arguing that the preservation of both tangible and intangible pasts—including land use patterns, spatial organization, social practices, and visual relationships—is crucial for sustainable urban development (Bandarin & van Oers, 2012; UNESCO, 2011).

Because these historical layers chronologically interpenetrate one another, preserving a historic city requires an understanding of the entire dynamic system and the fluidity of its assets over time. Nowhere is this multi-layered spatial complexity more evident than in the neighborhood of San Salvario, located just outside Turin's historical city centre. Comprehending the contemporary city requires an appreciation of its early industrial layers, its working-class districts, and the ordinary structures that define its built environment (Tamborrino, 2012). Beneath San Salvario's modern dynamics lies a highly stratified heritage that continuously evolves in meaning and function. The area's spatial identity is firmly anchored in its 19th-century orthogonal grid layout, its early industrial manufacturing facilities, and an "Architecture of Tolerance" defined by a uniquely dense concentration of multi-religious monuments (Malcovati, 2012; Bolzoni, 2022).

However, the definition of what constitutes a "heritage asset" continuously fluctuates. Heritage is not simply a static "thing" or a collection of material assets, but rather an active, dynamic cultural process and a discourse concerned with the negotiation of social meanings and identities in the present (Smith, 2006). To conceptualise this term more completely, a heritage asset should not be understood as a naturally inherited, passive object of the past, but rather as an active, dialogical process—functioning as a verb as much as a noun—that is constantly created and recreated through "a set of attitudes to, and relationships with, the past" (Harrison, 2013). From this critical perspective, heritage assets are not stable physical entities but complex, hybrid assemblages that are actively selected and mobilised in the present for contemporary social, economic, and political purposes (Harrison, 2013). This performative

and constructed nature is further reinforced by contemporary heritage studies, which highlight that a heritage asset does not possess intrinsic, self-evident value; rather, its status is created by the very act of being "named" and recognised as such through a performative speech act (Albert et al., 2013). Within this constructive framework, these assets function as dynamic resources for continuously developing identities and sustainable human development (Albert et al., 2013).

Phenomenologically, this transition of ordinary, functional space into a recognised heritage asset can be understood through the shift from *milieux de mémoire*—living, spontaneous environments of everyday memory—into *lieux de mémoire*, or dedicated sites of memory (Nora, 1989). When rapid urban transformations rupture a community's unselfconscious, spontaneous connection to its everyday space, society is forced to deliberately heritagize the material traces that remain (Nora, 1989). In this sense, a heritage asset becomes a *lieu de mémoire*—a hybrid, mutant entity "torn away from the movement of history" and reconstituted by a conscious "will to remember" in order to stop time, block the work of forgetting, and materialise the otherwise elusive, intangible dimensions of local memory (Nora, 1989).

Consequently, community awareness of these assets shifts drastically across decades (Smith, 2006). For example, structures that were perceived strictly as utilitarian, functional everyday spaces during the 1950s and 1960s—such as traditional artisanal workshops, ground-floor commercial storefronts, and municipal public baths—are only now being revered as vital pieces of tangible and intangible cultural heritage. This fluidity highlights how the meanings and values of urban spaces can be lost, ignored, or suddenly reclaimed depending on the prevailing socio-economic context. Therefore, this research acknowledges the crucial "when" of heritage, recognising that current conservation efforts are attempting to protect narratives and buildings that previous generations did not yet view as historically significant, especially as the district navigates rapid commercial transformation and gentrification (Bolzoni, 2019; Bolzoni and Semi, 2023).

1.1.2 The Post-Fordist Shift: Turin from the 1980s towards the future

To comprehend the current socio-spatial dynamics of historic neighborhoods like San Salvario, it is essential to ground the analysis in a robust historical perspective. Turin provides a paradigmatic example of post-Fordist urban transformation, tracing a distinct chronological trajectory over the last four decades (Cotella, 2011; Vanolo, 2015). This macro-level urban shift can be understood through five defining milestones:

1980–1990 (The Industrial Crisis & Migrant Landing Zone)

The collapse of the traditional Fordist manufacturing model led to massive job losses and demographic shifts across the city, leaving vast industrial voids in the urban fabric (Dansero & Spaziante, 2016). During this period, San Salvario's emptying residential and commercial spaces transformed the district into a primary "landing zone" for new waves of transnational migrants, establishing a diverse but vulnerable social landscape (Bolzoni, 2022).

1990–2006: Institutional Transition, Pro-Growth Agendas, & The Olympic Catalyst

This era was defined by deep political and economic restructuring. A pivotal turning point occurred with the 1993 national electoral reforms, which allowed for the direct election of mayors, enabling local institutions to break the historical gridlock between industrial and political powers (Pinson, 2002; Bolzoni & Semi, 2023). This fostered a new era of collective governance, where Turin shifted toward an entrepreneurial, pro-growth agenda aimed at emancipating the city from the hegemony of FIAT (Vanolo, 2008; Bolzoni, 2019). Through strategic tools like the 1995 Masterplan and the 2000 Strategic Plan, the municipality actively repositioned Turin as a center for culture, service, and knowledge-based economies (Pinson, 2002; Dansero & Spaziante, 2016). This strategic pivot culminated in the 2006 Winter Olympics, which served as a watershed mega-event to successfully rebrand the city internationally (Cotella, 2011). In San Salvario, this period witnessed fierce bottom-up civic activism; associative networks managed to stabilize the area, successfully navigating the transition from a "stigmatized" zone to a celebrated, albeit fragile, model of multicultural integration (Bolzoni, 2022).

2006–2026 (Commercialization & The Student Movida)

The post-Olympic push toward a cultural and creative economy attracted a massive influx of university students and the new urban middle class (Bolzoni & Semi, 2023). This demographic shift triggered rapid commercial gentrification and "eveningification"[1], turning the historic streets into a highly contested landscape of nocturnal consumption, characterized by tensions over the use of public space and the rise of the so-called *malamovida* [2] (Petrilli & Vanolo, 2025).

2026–2033 (The Cultural Horizon & Future Vision):

As Turin prepares its candidacy for the 2033 European Capital of Culture, urban strategies are shifting toward sustainable heritage and community co-creation. This vision is further institutionalized by the establishment of the *Comitato Torino 2033*, a multi-disciplinary body officially appointed by the *Comune di Torino* to steer the city's bid. This committee is tasked with ensuring that the cultural transformation process is firmly rooted in active citizen engagement and the collaborative design of urban policies, as outlined in the official communications and the manifesto available on the *Torino 2033* portal. This initiative emphasizes that culture must function as a primary driver for long-term social development,

[1] The term "eveningification" refers to the transition of historic, often residential or mixed-use urban districts into landscapes of nightlife consumption. (Petrilli & Vanolo, 2025; Bolzoni & Semi, 2023).

[2] “Malamovida” refers to the negative impacts of excessive nightlife, often termed the "colonization of the night" by young revelers. The resulting noise, overcrowding, and disorderly behavior create conflicts with local residents, often eclipsing historic public space usage with a monolithic landscape of consumption and sparking tensions over safety and the right to inhabit the neighborhood (Petrilli & Vanolo, 2025; Bolzoni & Semi, 2023).

utilizing the city's post-industrial landscape as a foundation for community-led regeneration (European Commission, 2017; Daldanise, 2020).[3]

For almost a century, Turin was globally recognized as a definitive Fordist city, the ultimate Italian "one-company town" whose economic, social, and spatial life revolved almost entirely around the FIAT automobile manufacturing industry (Cotella, 2011; Vanolo, 2015). However, following the deep industrial crisis of the 1980s—which led to the loss of tens of thousands of manufacturing jobs, severe demographic decline, and millions of square meters of abandoned industrial land—the city's identity as an industrial powerhouse was profoundly fractured (Dansero & Spaziante, 2016; Bolzoni & Semi, 2023). This triggered a prolonged period of urban decay, social distress, and political uncertainty (Cotella, 2011).

The institutional turning point occurred in 1993, when a national reform allowed for the direct election of the mayor, ushering in a new era of collective governance and breaking the historical gridlock between industrial and political powers (Pinson, 2002). With the old industrial system collapsing, local authorities shifted toward an entrepreneurial, pro-growth agenda aimed at emancipating the city from the hegemony of FIAT (Vanolo, 2008; Bolzoni, 2019). Through tools like the 1995 Masterplan and the 2000 Strategic Plan, the municipal government actively began to reposition Turin globally, moving from a rigid manufacturing base to a knowledge, culture, and service-based economy (Pinson, 2002; Dansero & Spaziante, 2016). This macro-level urban shift peaked with the 2006 Winter Olympic Games, a catalyst that actively and successfully rebranded Turin as a vibrant, cosmopolitan center of culture, creativity, and leisure, effectively transforming its external image (Cotella, 2011; Vanolo, 2015). Today, this trajectory continues as Turin actively prepares its official candidacy for the 2033 European Capital of Culture, seeking to use this rebranded cultural identity and its post-industrial heritage as a primary driver for future social and economic development (Vanolo, 2015; Daldanise, 2020). The defining chronological milestones of this city-wide macro-transition are visually summarized in (Figure1) below.

[3] San Salvario serves as a pioneering pilot site for the 2033 agenda through the *Casa del Quartiere* , an officially designated territorial outpost tasked with activating community-led cultural co-design. Digital gamification assists this process by translating the district's layered heritage into an interactive platform, empowering residents to act as co-authors of the city's European dossier by contributing their personal reflections and ideas. Further details regarding San Salvario's role are explored in Section 1.1.4, while the specific contributions of digital gamification are examined in Chapter 4.

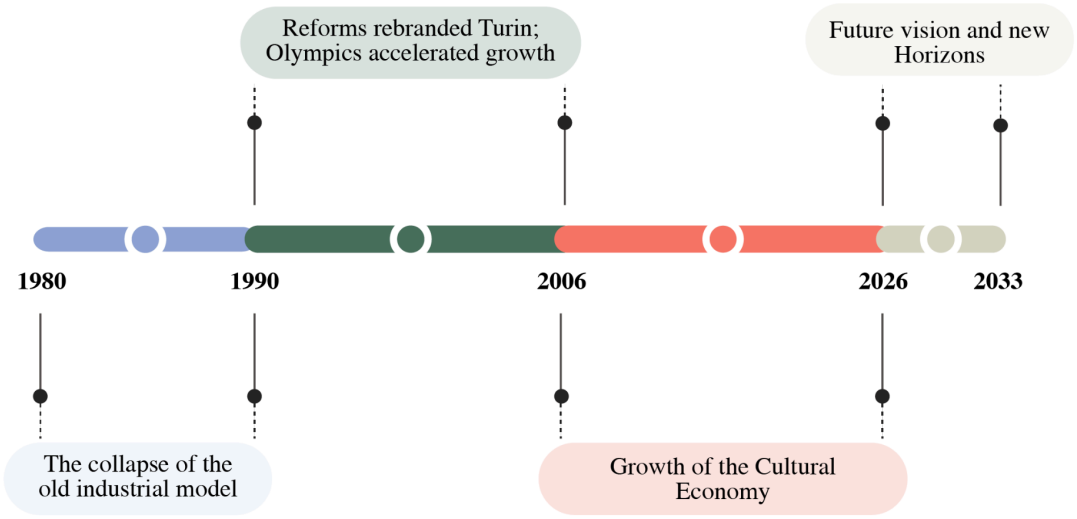

Figure 1.1 - Timeline of Turin's post-Fordist urban transformation from the 1980s to the 2033 horizon. Timeline elaborated by the author using Adobe Illustrator.

1.1.3 Why San Salvario? A Paradigmatic Laboratory of Post-Industrial Urban Change (1980–Present)

Within this broader context of post-industrial transition, San Salvario represents a perfect, paradigmatic laboratory for observing the complex spatial and social transformations affecting contemporary European cities (Bolzoni & Semi, 2023).To visually contextualize this analysis, the following map illustrates the neighborhood's geographical position within the broader urban fabric of Turin, occupying a dense 19th-century grid situated immediately south of the historical city centre.

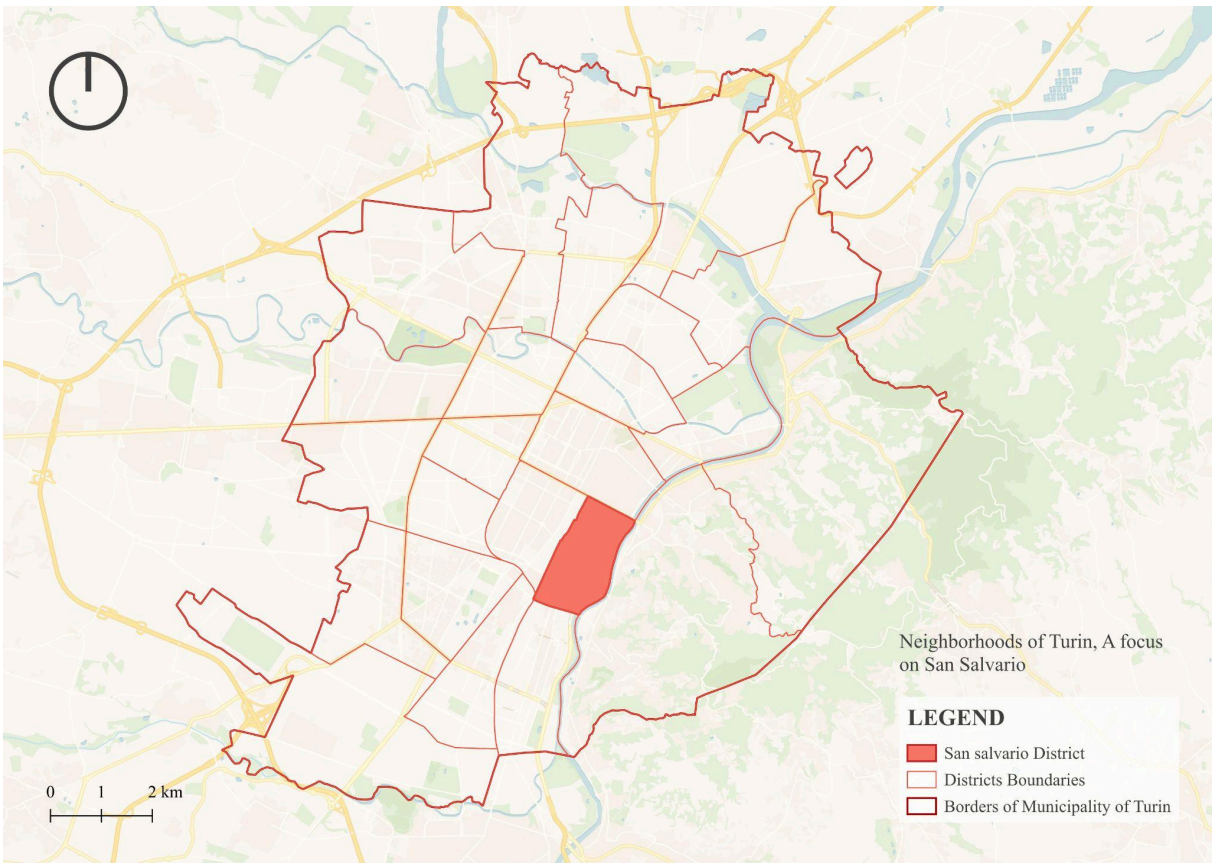

Figure 1.2 - Geographical position of the San Salvario district within the broader urban fabric of City of Turin. Map elaborated by the author using QGIS software. Basemap: OpenStreetMap contributors.

Figure 1.3 - Strategic location of the San Salvario district between Porta Nuova railway station and Parco del Valentino. Map elaborated by the author using QGIS software. Basemap: OpenStreetMap contributors.

Located strategically between the Porta Nuova railway station and the Valentino Park (Parco del Valentino), the district has experienced a dramatic trajectory of decline and revitalization over the past three decades. Historically serving as a working-class neighborhood closely tied to the nearby industries, San Salvario suffered deeply during the 1980s industrial crisis. Because of its affordable housing stock and its immediate proximity to the central railway station, the neighborhood transitioned during the 1990s into a primary "landing zone" for diverse waves of transnational migrants (Bolzoni, 2022). During this period, San Salvario was widely stigmatized in public and media discourses as a symbol of urban crisis, characterized by social distress, building deterioration, and difficult inter-ethnic coexistence (Allasino et al., 2000; Bolzoni, 2019).

However, the active intervention of local socio-cultural associations and civic groups eventually managed to stabilize the area, transforming its public image from a problematic enclave into a celebrated model of integration (Bolzoni, 2019). Ironically, it was precisely this newly established "gritty," diverse, and authentic atmosphere that began to attract the attention of university students, young professionals, and representatives of the new urban middle classes (Bolzoni, 2022). Following the post-Olympics push toward a cultural economy in the late 2000s, this massive influx of students sparked a profound wave of urban change, fundamentally altering the functional landscape of the neighborhood from everyday retail to an aggressive night-time economy (Bolzoni, 2016; Vanolo, 2025).

As Rosa Tamborrino observes, such post-industrial crises force European cities to adapt and restructure their urban spaces, a process that is inevitably accompanied by a profound remodulation of collective memory and the gradual rediscovery of their industrial heritage (Tamborrino, 2024). In the case of San Salvario, this rapid spatial restructuring has placed several complex heritage layers and their associated collective memories at acute risk of being forgotten; among the most prominent of these endangered dimensions are the neighbourhood's early industrial legacy, its traditional working-class craftsmanship, and its diverse transnational migrant heritage.

First, the early industrial heritage represents a critical historical layer currently at risk of absolute erasure. Historically functioning as the original cradle of Turin's automotive dominance by hosting the pioneering FIAT manufacturing facility, the district's compact built environment has undergone a severe process of deindustrialisation (Vanolo, 2015). This macro-economic shift has triggered what urban historians describe as a form of "urban clearing" (Montanari, 2012), where highly significant productive spaces have been physically demolished or heavily converted without any systematic documentation of the everyday labour histories and social relations they once anchored (Dansero and Spaziante, 2016).

Moreover, closely tied to this industrial past, the memories of manual craftsmanship and the working-class identity of the district's physical assets are being obscured. Traditional ground-floor workspaces and small-scale artisanal ateliers, which historically represented a rich, localised repository of manual knowledge, are increasingly displaced by modern, service-oriented commercial developments (Naclerio and Brandellero, 2025; Bolzoni and Semi, 2023).

Concurrently, the district's diverse transnational migrant heritage faces an acute threat of spatial and cultural invisibility. Owing to its immediately adjacent position to the central gateway of the Porta Nuova railway station and the subsequent availability of cheap, fragmented rental housing, San Salvario functioned from the late 1980s onwards as Turin's primary transnational "landing zone" (Cingolani, 2016). This rapid concentration of international populations initially occurred in a climate of public neglect and institutional vacuums, leading to localised social distress and highly visible inter-ethnic tensions during the mid-1990s (Allasino, Bobbio, and Neri, 2000).

Consequently, San Salvario serves as the ideal case study to investigate how digital gamification projects can be deployed to recover and communicate this hidden cultural significance to the public. As Tamborrino argues in her work on the public use of history, digital tools and platforms are now essential to bridge this awareness deficit, actively 'making visible' the meanings, narratives, and developments of the past for a contemporary society (Tamborrino, 2016).

1.1.4 San Salvario as a Pilot Site for Turin 2033

The urgency of addressing the awareness deficit in this district is further amplified by the current urban ambitions of Turin.Specifically, the city is actively preparing its official candidacy to become the European Capital of Culture in 2033, an adventure it will undertake alongside a partner "twin" city in the Netherlands (Turin 2033, 2025).As outlined in the official application guidelines, this title is not merely an award for a city's past, but an

ambitious, forward-looking process aimed at using culture as a primary driver for long-term social development and community-led regeneration (European Commission, 2017). A successful candidacy strictly requires a broad European dimension and active citizen engagement to co-create a shared, inclusive vision of the future, ensuring that culture reaches beyond traditional audiences to actively involve the local population in urban planning (European Commission, 2017). For Turin specifically, the official bid aims to use this opportunity to strengthen the local sense of belonging to a common European identity, while promoting creativity as a vital engine for urban renewal and social experimentation (Torino 2033, 2025).

Within this high-profile European framework, San Salvario serves as a crucial "pilot site" for testing these innovative, bottom-up cultural strategies. At the heart of this effort is the neighborhood's *Casa del Quartiere*. Housed in a renovated 19th-century building that formerly served as the municipal public baths, this space was launched in 2010 to function as an open social and cultural venue where civil associations, residents, and local actors can meet, interact, and organize activities together (Bolzoni, 2019). Because of its established historical role in community mediation and local networking, the *Casa del Quartiere* has been officially designated by the *L'Europa è di Casa* project guidelines as one of the eight territorial outposts (*presidi territoriali*) tasked with activating parallel processes of cultural co-design across Turin.

This initiative aims to bring the European dimension directly into local neighborhoods by developing authentic cultural visions based on community co-creation. In this context, residents and local associations are not passive spectators, but act as commissioners, co-authors, and deliberative subjects actively shaping the city's official European dossier. Consequently, studying San Salvario at this pivotal moment is highly relevant to ensure its multi-layered history can be preserved and contribute meaningfully to the city's cultural future.

1.2 Problem Statement

Historically, local governments focused primarily on managing public services, local welfare, and basic infrastructure (Harvey, 1989; Lauermann, 2018). However, modern city planning has shifted toward a more business-like approach, where local authorities actively use commercial redevelopments and promotional campaigns as standard tools to attract external investment and tourism (Harvey, 1989; Lauermann, 2018).

While this approach aims to boost local economies, it often creates a severe mismatch between a city's commercially projected image and its lived reality (Zhao, Edelenbos, and de Jong, 2025). To appeal to visitors and investors, urban planning strategies frequently package and promote local cultural assets in a superficial way, which can hide the gradual displacement of the actual community (Zhao, Edelenbos, and de Jong, 2025). Consequently, a deep conflict emerges between top-down promotional goals and the preservation of authentic local identities, leaving a gap where community history and values are overshadowed by commercial narratives (Abdelraouf, Abdel-Latif, and ElSerafi, 2025).

In San Salvario, this commercial trajectory has created a sharp friction between the neighbourhood's layered history and its rapid transformation into a nightlife hub. This tension is expressed through three core problems. First, an awareness deficit has emerged because the district's complex history—anchored in early industrial labour and craft traditions—remains invisible to temporary visitors who interact with the area only through the lens of leisure (Bolzoni and Semi, 2023). Second, the district's urban identity faces systematic erasure as traditional workshops and everyday spaces are replaced by homogeneous commercial venues (Gerosa and Tartari, 2021). Finally, this unchecked commercial popularity subjects the area's Historic Urban Landscape to multi-dimensional pressures: accelerating the physical wear of fragile, 19th-century built assets, disrupting the functional mixed-use character of the ground-floor streetscape, and imposing a heavy social burden of noise, waste, and spatial alienation on permanent residents (Palermo et al., 2024; Petrilli and Vanolo, 2025).

1.2.1 The Awareness Deficit: Beyond the Appearance of San Salvario

Fundamentally, the awareness deficit in San Salvario represents a severe fracture between the internal, lived identity of the community and the external image projected to the broader public (Cotella, 2011). While the district is sustained by complex multicultural networks and historically layered architecture, this everyday reality—the "ordinary" city—often remains invisible and hard for the general public to understand unless it is actively mediated (Tamborrino, 2014). Instead of utilizing collaborative place-making to bridge this deficit, the current urban trajectory relies on paternalistic, top-down governance that prioritizes immediate economic returns over cultural authenticity (Sewell & Ntounis, 2025). This dynamic produces an "aestheticized" version of the neighborhood where genuine cultural and historical markers are either ignored or transformed into superficial commodities, effectively muting the voices of long-term residents (Bolzoni, 2022). Consequently, the awareness deficit manifests as a profound loss of "local ownership" over the neighborhood's narrative. Because the community's true heritage is stripped from the public realm to make way for a more marketable external brand, it creates a sense of disorientation and spatial exclusion for everyday citizens, alienating them from their own familiar surroundings (Mugnano, Tepeli Türel, & Terenzi, 2022; Sewell & Ntounis, 2025).

1.2.2 Risk of Losing Urban Identity

The rapid socio-spatial transformation of San Salvario poses a severe threat to the preservation of its urban identity, placing the district at acute risk of permanently losing its authentic "spirit of the place" or *genius loci*. As Rosa Tamborrino and Willeke Wendrich (2017) argue, cultural heritage is only ever partially preserved if its physical, social, and historical context is lost. When urban promotion is driven exclusively by top-down commercial interests and the "elitisation" of urban spaces, it reduces a neighbourhood's complex identity to a superficial, single-faceted brand, stripping the heritage of its authentic context (Fouseki and Nicolau, 2018). As observed in comparable districts undergoing rapid aestheticisation, this commodification of diversity leads to a profound "loss of place identity," causing long-term residents to feel estranged and displaced from their own familiar

surroundings, even without physical relocation (Shaw and Hagemans, 2015; Gerosa and Tartari, 2021).

Furthermore, the failure to actively safeguard both the tangible and intangible values of the historic urban landscape risks the irreversible erasure of the district's history, a process of *damnatio memoriae* where the authentic industrial and working-class past is overwritten by generic commercial regeneration (Tamborrino, 2024; Dehghan Pour Farashah, 2024). As Sewell and Ntounis (2025) note in their "usable past" theory, a place brand that ignores its historical landscape inevitably alienates its citizens and degrades local pride. Therefore, to prevent the loss of San Salvario's authentic identity to the homogenising forces of overtourism and the dominance of leisure-use, there is an urgent need to transition from top-down municipal strategies to a collaborative heritage stewardship approach. By rescuing this forgotten heritage and actively integrating it into the neighbourhood's contemporary narrative, urban planners can restore the district's collective memory and safeguard the fundamental pillars of its cultural character.

1.2.3 Urban Heritage at Risk: The Multi-Dimensional Threats of Over-Consumption

The systemic promotion of San Salvario as a vibrant nightlife and entertainment hub has transformed this historic quarter into an intensive playground for transient leisure consumption, exposing its multi-layered Historic Urban Landscape (HUL) to a severe dual burden (UNESCO, 2011; Bandarin and van Oers, 2012). Within this highly pressurized post-industrial context, the concept of "heritage at risk" must be explicitly redefined: it does not merely refer to the isolated physical decay of individual monuments, but rather to the comprehensive erosion of the interconnected physical, functional, and social layers that constitute the district’s authentic character (UNESCO, 2011; Bandarin and van Oers, 2012). This systemic threat manifests through several prominent risks that compromise both the tangible built environment and the daily, lived practices of the local community.

Among the most immediate of these pressures is the physical risk imposed upon the neighbourhood's built assets, where the relentless, high-volume flow of nocturnal users places unprecedented structural and material stress on a fragile urban fabric. Carlo Promis's compact 1851 orthogonal street grid, narrow residential corridors such as Via Baretti and Via Berthollet, and historical squares like Largo Saluzzo were structurally designed for local residential and commercial integration, leaving them entirely unprepared to absorb thousands of nighttime visitors (Malcovati, 2012; Palermo et al., 2024). This intense human saturation accelerates the physical wear and micro-spatial degradation of historic brickwork, facades, and public pavements, which is further Rent-compromised by the severe lack of green spaces and permeable surfaces within the dense quadrilatero (Ingaramo and Negrello, 2024). Consequently, the physical integrity of the historical townscape is compromised by a circular process of environmental and structural neglect, turning these historic streetscapes into highly degraded zones of consumption (Ingaramo and Negrello, 2024).

Concurrently, a profound functional risk threatens to permanently disrupt the balanced, mixed-use character of San Salvario through the aggressive expansion of a leisure-based night-time economy. This rapid process of "eveningification" has systematically dismantled the district's daytime vitality (Petrilli and Vanolo, 2025). Traditional, ground-floor commercial storefronts, neighborhood-serving retail spaces, and small-scale artisanal workshops—which historically preserved a rich repository of manual knowledge and everyday sociability—are progressively displaced by cocktail bars, design lounges, and high-volume pubs (Naclerio and Brandellero, 2025; Bolzoni and Semi, 2023). This functional monoculture leads to the micro-spatial privatization of the public realm, as historic streets and open gathering spaces like Largo Saluzzo are saturated with commercial seating platforms (*dehors*) to serve nighttime consumers, functionally excluding residents during the day and eroding the diverse, everyday practices that sustain the area's quality of life (Ingaramo and Negrello, 2024; Bolzoni, 2016).

Closely aligned with this functional shift is the social risk borne directly by the permanent local community, who face severe spatial alienation within their own overused neighbourhood. The speculative reconfiguration of San Salvario's public spaces to prioritize transient visitors and university students imposes a heavy daily burden of noise pollution, waste accumulation, and traffic congestion on the long-term resident population (Petrilli and Vanolo, 2025; Ingaramo and Negrello, 2024). This "colonization of the night" deprives residents of their fundamental right to rest and access essential services, fostering a deep sense of exclusion and forcing the most vulnerable inhabitants to relocate (Bolzoni and Semi, 2023). This severe social disruption has triggered active civil resistance and the formation of vocal grassroots committees, such as *Rispettando San Salvario*, highlighting a deep-seated spatial conflict over the right to inhabit the city (Bolzoni, 2019). Ultimately, the failure to manage this intensity of use transforms the district into a precarious environment where both the heritage that defines the neighborhood and the community that sustains it are fundamentally threatened by the mechanisms of their own commercial success (Bolzoni and Semi, 2023; Vanolo, 2015).

1.3 Aim and Scope

1.3.1 The Educational Objective: Digital Gamification and Procedural Learning

The primary aim of this thesis is to actively address the awareness deficit and the subsequent threat of losing the neighborhood's authentic urban identity by deploying digital gamification as a practical educational tool. The everyday reality of the historical city often remains obscured because traditional text-based historical archives and static preservation methods frequently fail to engage contemporary, digitally native populations, ultimately leading to a disconnection from local identity (Tamborrino, 2014). To bridge this gap in historical knowledge , this research proposes the design of a location-based mobile application that functions as an interactive digital platform utilizing gamification. For the remainder of this study, this proposed solution will be referred to as the "interactive edutainment platform."

Also, to help restore the community's sense of place, this research translates rigorous historical and architectural data into an accessible, interactive, location-based platform. Interactive spatial media are essential for augmenting traditional research, overcoming the "limits of text" in digital humanities to effectively communicate cultural significance and safeguard the unique identity of a heritage site from being forgotten (Champion, 2015).

The pedagogical scope of this interactive edutainment platform is rooted in digital heritage interpretation theory, specifically leveraging the concept of "procedural learning"—the process of learning history by doing, exploring, and testing hypotheses rather than passively reading. Digital games uniquely offer procedural knowledge instead of merely descriptive facts, allowing players to actively explore the constraints and affordances of historical environments to better understand the cultural identity of past inhabitants (Champion, 2016). The game requires players to observe, mimic, and understand the authentic, historically situated behaviors of past generations to progress, making the acquisition of cultural knowledge the primary mechanic of success (Champion, 2016). By actively visualizing the "unuseable past," the digital platform ensures that history is not merely preserved in closed archives. Instead, such digital approaches transform static data into a dynamic, spatial experience, bridging the gap between history and memory through the active "public use of history" (Tamborrino, 2016). This allows the community's collective heritage to be actively performed and reclaimed in the streets, directly combating the loss of urban identity by making the district's true *genius loci* visible and playable for a modern audience.

1.3.2 The Target Audience: Empowering Citizens and Engaging Students

To define the scope of this intervention, the research primarily targets the everyday citizens and long-term residents of San Salvario. Authentic urban identity cannot be imposed from the top down; rather, it must be cultivated from the bottom up by the community itself (Hudson et al., 2017). Because the ultimate goal of the project is to counteract the loss of neighborhood character, engaging local citizens in the gamified digital platform is essential to operationalize a true "collaborative stewardship" approach (Daldanise, 2020). By actively involving residents in the final stages of the game—prompting them to share their memories, ideas, and interactions—the project empowers citizens to act as the primary co-authors of their neighborhood's narrative. This ensures that the district's identity accurately reflects their lived experiences and authentic cultural heritage, rather than a superficial commercial image dictated by external forces (Gerosa & Tartari, 2021).

Secondary to the local residents, the project specifically targets the significant population of university students and temporary city users who frequent the district. Following the post-2006 Olympic push toward a cultural economy, San Salvario transformed into a highly desirable destination for the new urban middle class, with students becoming the dominant users of its public spaces and the primary actors within its intensive night-time economy, or *movida* (Bolzoni & Semi, 2023; Petrilli & Vanolo, 2025). While these students spend a significant amount of time in the neighborhood, they often interact with it merely as a superficial backdrop for nocturnal leisure, remaining disconnected from its multi-layered

history. If left unaddressed, this superficial consumption threatens to reduce the district's deep historical narrative to an "unuseable past" (Sewell & Ntounis, 2025).

Rather than attempting to resolve this spatial conflict by alienating the neighborhood's newest users, the aim of the game is to educate and integrate them. Through digital gamification, the objective is to transform this specific demographic from passive consumers of the night-time economy into active, informed participants who understand and respect the cultural significance of the streets they inhabit (Champion, 2016). Ultimately, using the game to bridge this awareness deficit between long-term citizens and temporary students is crucial for fostering social cohesion, ensuring both groups can collaboratively contribute to a unified, sustainable neighborhood identity.

1.3.3 The Practical Solution: A Gamified Platform for Built Heritage Education

Faced with the tangible threat of heritage erasure, this thesis presents digital gamification not merely as a theoretical inquiry, but as a practical urban planning tool designed to connect modern city users with the endangered built heritage of the district (Champion, 2015). To understand the value of this digital intervention, it is necessary to examine how built heritage is defined within contemporary policy. According to the 2025 UNESCO Framework for Cultural Statistics (FCS), the historic built environment is not a static collection of material structures preserved in perpetuity, but rather encompasses areas of both tangible and intangible components, including living urban landscapes and groups of buildings (UNESCO, 2025). Furthermore, built heritage functions as an ongoing, complex, and socially embedded process; while historic physical spaces are initially constructed, they are continuously reproduced, reinterpreted, and layered with new meanings by the myriad social actors who interact with them daily (Dwyer and Alderman, 2008). This heritage layer therefore inextricably links the tangible spatial assets with the intangible social practices, collective memories, and daily routines of the communities that inhabit them, actively sustaining the memory of the built environment (UNESCO, 2025).

Rather than presenting these layers through passive archives, the proposed digital platform serves as an interactive medium that translates these complex spatial narratives into an engaging and accessible experience (Tamborrino, 2016). By leveraging serious game mechanics, the application aims to spark a profound affective connection and ludic involvement, ensuring that users are deeply engaged on an emotional level. Through this playful immersion, players are encouraged to look at the urban landscape with "new eyes," helping them build a positive relationship with the space, find personal motivation, and foster a deep, empathetic connection to the historical inhabitants of the neighbourhood (Champion, 2016; Mortara et al., 2014).

Crucially, this foundational concept of learning by doing was pioneered by Maria Montessori, whose pedagogical methods revolutionized education by replacing passive recitation with

self-directed, tactile engagement.[4] The game relies on cultural mimicry, requiring players to carefully observe, understand, and authentically replicate the historically situated behaviors of past inhabitants (Champion, 2008). By making this behavioral adaptation the primary mechanic of success, the platform ensures that the acquisition of cultural knowledge is the only way to progress (Champion, 2015).

1.3.4 Translating the Built Environment and Chronology into Game Logic

Crucially, within the scope of this thesis, the physical layout of the city is not treated as a purely abstract or theoretical concept; instead, the spatial realities of San Salvario are utilized directly as the structural logic of the gamified solution. The physical street grid is navigated through specific historical "nodes"—localized heritage sites, such as significant squares, former industrial spaces, or ground-floor artisanal ateliers, which possess a rich and multi-layered history (Naclerio & Brandellero, 2025). To fully address the Historic Urban Landscape (HUL) paradigm and demonstrate the fluidity of heritage, the game's scope spans across four distinct chronological epochs: the Pre-1980 era, which represents the foundational industrial period; the 1980–1990 period, characterized by industrial decline and initial socio-economic transition; the 1990–2006 era of institutional reorganization and emerging multicultural dynamics; and the 2006–Today period, marked by the post-Olympic transformation and the acceleration of a leisure-based economy (Bandarin & Van Oers, 2012; UNESCO, 2011).

By utilizing the unchanging physical layout as a constant digital game board, players are forced to navigate and interact with the shifting social, political, and cultural meanings of the exact same historical nodes and architectural spaces across these different decades. Ultimately, by embedding these culturally significant nodes, the neighborhood's complex layout, and its post-industrial timeline directly into the digital game, the project successfully addresses the awareness deficit and lays the necessary participatory groundwork for a collaborative stewardship approach, ultimately helping to restore San Salvario's authentic narrative identity and collective sense of place (Hudson et al., 2017; Daldanise, 2020).

1.3.5 Research Questions and Objectives

Methodologically, this study brings together urban planning, digital heritage, and game design. By researching digital archives, historical maps, and vintage photographs, this project traces how the physical streets and buildings of San Salvario have evolved over the decades. Today, the neighborhood suffers from an awareness deficit , meaning its rich, multi-layered history is obscured by the modern nightlife and entertainment scene, creating a disconnect between the district's everyday appearance and its historical reality.

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[4] *As the inventor of the "learning by doing" method (frequently referred to in her work as auto-education), Maria Montessori established that true learning comes from an individual's spontaneous, self-active interaction with a prepared environment (Gutek, 2004). Her pioneering philosophy serves as a direct inspiration for this thesis, as the proposed digital game seeks to adapt her principles of active, self-correcting, and experiential learning into a virtual historical setting.*

To solve this problem, the final goal of this thesis is to move beyond traditional, static urban maps by creating an interactive digital historical game. Digital games and "edutainment" (educational entertainment) offer a highly effective way to share knowledge, allowing users to actively explore and learn about the past through "learning by doing" rather than just passively reading a textbook. Through this approach, this thesis aims to answer the following primary research questions:

- **RQ1 (The History of the Physical Space):** How does the physical space and architecture of San Salvario reveal the historical transformation of the neighborhood, from its industrial and migrant roots to its current status as a site of intensive leisure consumption?
- **RQ2 (The Game as an Educational Tool):** How can a digital game serve as a practical tool to educate citizens and university students about San Salvario's authentic history, transforming them from passive consumers of the night-time economy into active, informed protagonists?
- **RQ3 (The Positive Side-Effect):** How does actively engaging with local urban history through a digital game foster civic pride and strengthen the neighborhood's community identity from the bottom up?

To answer these research questions, the study will pursue the following objectives:

- Map the historical layers: Organize historical data to demonstrate how the social and cultural meaning of San Salvario's architectural nodes has evolved, highlighting heritage as a dynamic process rather than a static state.
- Design a digital framework: Develop the logical structure and interactive mechanics for a location-based digital platform that utilizes the neighborhood's physical street grid as the primary game environment.
- Demonstrate the value of edutainment: Establish that a playful digital environment helps safeguard local character by transforming players into active participants. Through their in-game engagement and shared reflections, users contribute to a repository of localized knowledge, providing the necessary qualitative resources to foster a genuine, community-led narrative identity (Hudson et al., 2017; Kádár & Klaniczay, 2022; Daldanise, 2020).

1.4 Methodology and Sources

This study works at the intersection of urban planning, digital heritage, and gamification, employing a mixed-methods approach to translate raw historical data into a functional urban policy tool. The methodology is divided into two primary phases: an analytical phase focusing on data collection and spatial mapping, and a design phase dedicated to the creation of the interactive edutainment platform.

1.4.1 The Digital Urban History Approach

To accurately capture the shifting meanings of San Salvario, this research employs a Digital Urban History approach, which utilises Information and Communication Technologies (ICT) to foster active spatial engagement with the neighbourhood's heritage (Tamborrino, 2014). The research methodology begins with the systematic collection of historical cartography, municipal documents, and vintage photographs from various local archives. Following the principles outlined by scholars such as Melissa Terras (2022), this study treats these archival collections as foundational resources, extracting and re-purposing their contents to build a rigorous data repository for the digital game environment.

Rather than approaching these archival records as isolated references, this methodology utilises Geographic Information Systems (GIS) to analyse and visualise the specific locations of identified heritage assets within the district. By mapping these historical nodes onto the contemporary street grid of the neighbourhood, the research provides a precise spatialisation of cultural resources, establishing a structured geographic database designed to support comprehensive heritage documentation and systematically identify the historical significance of each localized asset (Tamborrino and Rinaudo, 2015). This project-level database is conceptualised in direct alignment with Turin's official city-scale virtual archive, MuseoTorino (www.museotorino.it)—a pioneering semantic web platform that uses GIS to link physical urban points with authenticated historical documents and collective memories (Tamborrino, 2012; 2016). This process integrates diverse archival data into a unified analytical framework, effectively linking historical information to specific physical points in the city (Tamborrino and Rinaudo, 2015). Ultimately, this digital approach bridges the gap between historical documentation and collective memory by translating complex archival data into an accessible, interactive digital format, ensuring that the layered past of San Salvario is preserved and communicated to contemporary users (Tamborrino, 2016).

1.4.2 Conceptual framework and UI/UX prototype

The data gathered through the Digital Urban History approach serves as the foundational database for the design of the interactive digital platform, the complete mechanics of which will be discussed in detail in Chapter 4 and Chapter 5. Briefly, this phase translates the spatialized historical records into a location-based mobile application using a hybrid technological stack. According to the UNESCO (2003) *Charter on the Preservation of Digital Heritage*, digital heritage resources are at constant risk of being lost to posterity, meaning their preservation requires active measures to ensure they remain dynamically accessible to the public. Building on this mandate, and as Terras (2016) notes, to survive and be meaningful to contemporary audiences, digital heritage data must be actively used, reused, and designed for interactive engagement rather than just passively stored.

Deliberately avoiding resource-heavy 3D Augmented Reality, the platform utilizes WebGIS for macro-navigation alongside Figma and the Adobe Creative Suite to design highly intuitive 2D Graphical User Interfaces (GUI). To ensure these interfaces effectively engage the

audience, the design framework prioritizes Cultural User eXperience (CUX). As Konstantakis and Caridakis (2020) emphasize, CUX goes far beyond the mere software usability of a cultural product; it integrates both pragmatic functions and hedonic factors—such as user expectations, motivation, and feelings—to ensure that the end-user has a positive, resonant experience when interacting with digital cultural collections. By deeply embedding this cultural user experience into the UI/UX design, the 2D interface is intentionally structured to foster a profound sense of embodiment, entanglement, and immersion (Kenderdine, 2015), ensuring players are deeply connected to the local history and physical space even without the use of complex 3D simulations.

This methodology allows the historically mapped data to be presented as engaging, interactive "edutainment" puzzles rather than static texts. As James Paul Gee (2005) argues, well-designed interactive games are highly effective learning environments precisely because they operate as "hard fun". They provide complex, goal-directed problem-solving spaces where deep learning occurs through active interaction, continuous feedback, and lowered consequences for failure, which encourages players to take risks and explore. By forcing the user to actively navigate the physical urban landscape and solve these historically grounded challenges, the platform transforms users from passive observers into active participants. Ultimately, this integration of gamefulness and cultural UX fosters procedural learning and encourages a true, participatory "public use of history" (Tamborrino, 2016).

1.5 Structure of the Thesis

This thesis is structured into six interconnected chapters that guide the research from theoretical concepts to a practical digital prototype. Chapter 2 establishes the theoretical framework, exploring the Historic Urban Landscape (HUL) paradigm, the threat of the awareness deficit caused by the intensive saturation of space for leisure , and the potential of digital gamification for fostering collaborative stewardship. Chapter 3 acts as the foundational database, cataloging San Salvario's tangible built environment, intangible cultural practices, and contemporary demographic shifts, and organizing this data into four distinct chronological epochs. Chapter 4 outlines the game design methodology, explaining exactly how the historical data is coded into spatial nodes, procedural puzzles, and the strategic "Value-Exchange Loop." Chapter 5 presents the final output, providing a comprehensive visual walkthrough of the interactive digital platform's 2D user interface, its historical levels, and its in-game evaluation mechanics. Finally, Chapter 6 concludes the thesis by answering the core research questions and demonstrating how the digital platform successfully activates the "usable past" as a tool for sustainable urban policy.

Chapter 2, Theoretical Framework

2.1 The Historic Urban Landscape (HUL) and the Fluidity of Heritage

2.1.1 Beyond Monuments: The City as a Multi-Layered Built Environment

For decades, traditional urban conservation relied on an orthodox approach that isolated and protected individual monuments or specific architectural masterpieces, often ignoring the complex social realities surrounding them (Bandarin & Van Oers, 2012). However, in 2011, UNESCO officially adopted the Recommendation on the Historic Urban Landscape (HUL), triggering a profound paradigm shift in how contemporary urban planning addresses the past (UNESCO, 2011). The HUL approach redefines the historic city not merely as a collection of beautiful buildings, but as a living, dynamic ecosystem resulting from the continuous historical layering of cultural and natural values across time (Bandarin & Van Oers, 2012; UNESCO, 2011).

This systemic perspective demands that urban planners look beyond the traditional "historic centre" to consider the broader physical layout, including ground-floor commercial spaces, 19th-century street grids, open squares, and the deep archaeological foundations of the city. Crucially, the HUL approach insists that the tangible built environment is inextricably linked to intangible heritage—the social practices, daily routines, and cultural values of the people who inhabit the space (Bandarin & Van Oers, 2012). This framework challenges the traditional antiquarian approach by introducing an ecological bias, which views the historic landscape as a continuous process shaped by the individuals who use and modify it over time (Taylor, 2016). Therefore, preserving a historic district requires safeguarding the entire interconnected system of physical structures and human experiences, acknowledging that cities are fluid organisms rather than static museums (Bandarin & Van Oers, 2012).

2.1.2 The "When" of Heritage: Shifting Meanings over Time

Because the urban landscape is shaped by successive generations, the definition of what constitutes a "heritage asset" is not fixed; rather, it continuously fluctuates. The HUL paradigm recognizes the dynamic nature of living cities, where the meaning of the built environment changes as new communities arrive and old industries fade. Structures that were perceived strictly as utilitarian or everyday spaces in the mid-20th century—such as industrial warehouses, working-class housing, and public municipal baths—have only recently been recognized as vital components of a city's cultural heritage.

This fluidity highlights a critical concept: the "when" of heritage. Heritage is a socially constructed process, constantly redefined by shifting collective memories, where each generation identifies new significance based on its own lived experiences. In this view, heritage must be understood as an active cultural process or a "verb" rather than a static physical entity, where the present continuously selects and filters historical inheritances to serve contemporary purposes (Harvey, 2001). Rather than being an objective remnant of history, heritage operates as a "contemporary product shaped from history," deeply embedded

in the specific concerns, political agendas, and experiences of the people producing it in any given era (Harvey, 2001).

Building upon this temporal fluidity, heritage goes far beyond the passive inheritance of tangible and intangible objects from previous generations; instead, it is a dialogical phenomenon that is constantly created and recreated as a set of attitudes to, and relationships with, the past (Harrison, 2012). By defining heritage as something perpetually in flux and adaptable to an ever-changing present, it becomes a crucial tool for addressing contemporary social challenges (Harrison, 2012). Consequently, preserving a historic neighbourhood requires an understanding of how the functional, physical spaces have adapted across distinct chronological epochs, from their industrial origins to their current post-industrial realities.

2.2 The “Unuseable Past”: Gentrification and The Dominance of Leisure-Use

2.2.1 The Intensification of Leisure-Oriented Space and the Student-Led Movida

As historic cities transitioned from heavy manufacturing to service-based economies, they entered a post-industrial phase characterized by profound socio-spatial transformations (Cotella, 2012). This shift away from traditional industry reorganizes the distribution of urban opportunity and income, frequently giving rise to a "dual city" marked by deepening spatial and economic segregation between an affluent new professional class and the working poor (Shaw, 2001). In post-industrial cities like Turin, local policies sought to stimulate economic recovery by prioritizing the rapid development of consumer services—particularly nightlife and entertainment—transforming central and peri-central historic districts into landscapes of intensive leisure use. However, as is common in post-industrial urban renewal, this focus on catering to the affluent new urban middle class has triggered severe commercial gentrification, often displacing marginalized residents and businesses to make way for upscale consumption (Shaw, 2001). Consequently, traditional everyday retail, artisan ateliers, and ethnic shops are progressively displaced by cocktail bars, trendy restaurants, and nightclubs, creating heavily homogenized landscapes of consumption.

This phenomenon, characterized by the intensive saturation of space for leisure, dramatically alters the demographic use of the physical environment (Petrilli & Vanolo, 2025). In neighborhoods previously characterized by a mix of working-class residents and transnational migrants, the influx of university students and the new urban middle classes leads to a "colonization of the night" (Bolzoni, 2019). The expansion of this leisure-oriented presence (*movida*) creates deep spatial and temporal segregation, where the everyday practices of long-term residents are pushed out of the public realm to make way for the aggressive consumption patterns of young revellers (Petrilli & Vanolo, 2025). This process effectively creates an awareness deficit, as the district's complex historical identity is obscured by the persistent, high-frequency activity of the night-time scene, creating a disconnect between the district's everyday appearance and its historical reality.

2.2.2 The Threat of the "Unusable Past" and the Erasure of Historical Context

The rapid transformation of historic streets into sites for nocturnal recreation generates a profound awareness deficit, driven by a specific conceptual framework of heritage erasure. Crucially, within this process of rapid commercialisation, urban heritage does not disappear physically; rather, it becomes profoundly invisible (Sewell and Ntounis, 2025). The tangible structures—such as traditional artisanal workshops, 19th-century residential corridors, and former industrial spaces—often remain structurally intact and continue to form the physical landscape of the district. However, under the pressure of intense leisure saturation, their authentic historical meanings are systematically detached from the physical places themselves (Tunbridge and Ashworth, 1996). The multi-layered memories and lived experiences that once defined these spaces are stripped away by the new dominant uses, leaving the historic built environment to function merely as an aesthetic, empty container or decorative backdrop for the night-time economy (Bolzoni and Semi, 2023).

As transient users interact with these environments strictly through the lens of entertainment, superficial cultural consumption entirely replaces genuine historical understanding (Petrilli and Vanolo, 2025). To cater to these temporary city users, the complex and sometimes contested history of a district is smoothed over by selective historical curation, where only positive, sanitised, and easily digestible narratives are promoted, deliberately evading the deeper socio-spatial conflicts of the urban landscape (Tunbridge and Ashworth, 1996). When the historical layering of a neighbourhood is overshadowed by this relentless consumption, its local heritage is relegated to what researchers describe as the "unuseable past" (Sewell and Ntounis, 2025).

Because the presentation of the past involves selecting an inheritance for current use, this shift towards a purely consumer-driven environment creates profound heritage "dissonance"—a sharp discrepancy and incongruity between the authentic, lived memories of the local community and the packaged, consumable identity marketed to outsiders (Tunbridge and Ashworth, 1996). The failure to actively manage this detachment of meaning alienates citizens and results in a severe loss of place identity, leaving long-term residents feeling displaced and disoriented within their own familiar surroundings. Therefore, an educational intervention is required to rescue this unusable past, bridge the gap between the producers and consumers of heritage, and reconnect the modern users of the space to its authentic, invisible history.

2.3 Raising awareness about Urban Identity at the Neighborhood Level

2.3.1 Fostering Urban Identity vs. Unregulated Urban Intensification

The process of safeguarding a neighborhood's identity must explicitly reject the neoliberal commodification of urban space, where historical contexts are reduced to superficial assets

for global circulation (Harvey, 1989; Gerosa & Tartari, 2021). In recent decades, urban governance has frequently relied on top-down entrepreneurial strategies that prioritize the rapid intensification of leisure-oriented use of space and international competitiveness over authentic community representation. This approach often treats the neighborhood as a destination to be made "popular" and highly accessible, yet it proceeds without a cohesive cultural framework to mitigate the resulting social and environmental pressure (Vanolo, 2015; Bolzoni, 2016). This lack of a structured cultural framework results in a landscape of intensive consumption where visitor flows are permitted to saturate the district, often causing irreversible harm to both the physical heritage fabric and the everyday quality of life for long-term residents (Bolzoni & Semi, 2023; Palermo et al., 2024).

To effectively protect the *genius loci*, strategies must move away from treating the district as a product for mass consumption. Instead, urban planning must utilize the physical environment and local memories as foundational tools to foster social cohesion, cultural vibrancy, and a shared sense of local ownership (Lucarelli, 2018). As mandated by the Historic Urban Landscape (HUL) paradigm, management policies must integrate the conservation of tangible and intangible heritage with the needs of the resident population, ensuring that the development of public space is not dictated by transient demand but by sustainable, community-centered stewardship (UNESCO, 2011; Bandarin & van Oers, 2012). Without such a protective framework, the unchecked popularity of a neighborhood risks transforming its unique history into an "unuseable past," where the voices and rhythms of the local community are drowned out by the volume of leisure-driven activity (Petrilli & Vanolo, 2025; Sewell & Ntounis, 2025).

2.3.2 The Neighborhood Scale: Protecting Local Diversity

To successfully counteract commercial homogenization and the sanitized, top-down narratives of macro-level city marketing, interventions must be rescaled to the micro-level of the neighborhood (Mugnano, Tepeli Türel, & Terenzi, 2021). Because the urban landscape is an active, living ecosystem shaped by the everyday actions and spatial negotiations of the people who inhabit it, a neighborhood's true character cannot be preserved through broad, superficial branding campaigns. Therefore, protecting local diversity requires deliberately amplifying the voices of those who are often excluded from mainstream entrepreneurial narratives, such as traditional artisans, small-scale manufacturers, and established migrant communities (Naclerio & Brandellero, 2025; Bolzoni, 2022). In neighborhoods experiencing rapid commercial gentrification and "eveningification," these vulnerable groups face the constant threat of having their authentic, everyday spaces displaced or transformed into a commodified, exotic spectacle designed merely for the consumption of the new urban middle class (Bolzoni, 2022).

By focusing intently on the neighborhood scale, urban planners can actively resist this displacement. They can harness a district's interconnected tangible assets—such as its historical architecture, courtyards, and physical street grid—alongside its vital intangible assets, including local craftsmanship, ongoing social activism, and daily cultural rituals (Bandarin & Van Oers, 2012). Engaging these local stakeholders in a collaborative process

empowers them to rebuild a cohesive community identity from the bottom up, effectively transforming forgotten or marginalized histories—the so-called "unuseable past"—into an active, protective resource (Daldanise, 2020; Sewell & Ntounis, 2025). Ultimately, this micro-level approach ensures that the urban environment is not just consumed as a passive backdrop for leisure, but is sustained as a deeply rooted, resilient community space.

2.4 Digital Urban History, Gamification, and Edutainment

2.4.1 From Archival Records to Actionable Knowledge

To effectively address the awareness deficit and communicate the complex history of a neighbourhood to a digitally native generation, urban planners must expand beyond traditional methods of heritage dissemination. While historical archives serve the essential purpose of organizing, maintaining, and preserving physical objects and records that hold enduring historical value, their digital transition presents a complex duality. On the one hand, digital archives offer unprecedented opportunities: they break down geographical barriers, provide rapid and simultaneous access to primary data, and support democratic engagement by making public records accessible to a wider audience on a global scale (Yadav, 2016). On the other hand, relying on digital archives poses significant challenges, particularly the constant threat of technological obsolescence, media deterioration, and the reality that digital files and software programs can easily become fragmented, unusable, or lost if not actively maintained and migrated to new formats (Yadav, 2016).

Furthermore, as Stephen Robertson argues, the mere digitisation of historical documents is only the first step; to ensure these records remain culturally meaningful, scholars must actively integrate them into public life using the Web and spatial mapping, treating digital maps as active research tools for discovering knowledge rather than just passively displaying it (Robertson, 2016). Consequently, when archival data remains confined to closed institutional databases without interactive interfaces or bulk data export options, its potential for a robust, multi-directional transmission of knowledge is severely constrained (Tamborrino & Rinaudo, 2015; Robertson, 2016).

To bridge this gap in this research, a vast array of primary data was systematically gathered by consulting key local repositories, specifically MuseoTorino and the Historical Archive of the City of Turin. This study directly benefited from the opportunity of immediate, open access to these rich digital collections, which provided the essential historical cartography, municipal documents, and vintage photographs necessary to understand San Salvario's evolution. To deal with the inherent challenges of digital fragmentation and the risk of these records remaining isolated in separate databases, this research extracted and repurposed the static files into a unified, gamified digital environment.

By transforming these static records into dynamic spatial nodes within an interactive platform, the project provides a framework for users to generate and apply knowledge in real-time. As demonstrated in projects that construct historical narratives in virtual reality,

extracting archival data and linking it to Geographic Information Systems (GIS) provides a solid framework to explore the spatial interactions of the past, visually transporting users into the historical space (Telling Stories: Historical Narratives in Virtual Reality). This gamification methodology empowers citizens and students not just to access records, but to interact with the underlying data, allowing them to test historical hypotheses and explore urban transformations through a procedural "learning by doing" approach. Furthermore, the deployment of such interactive platforms is crucial for democratizing heritage, ensuring that historical narratives are inclusive, community-driven, and effectively utilized to inform contemporary urban stewardship rather than being exclusively curated by experts (Murphy et al., 2016). Therefore, the field of Digital Urban History must prioritize the translation of archival collections into collaborative, engaging interfaces that facilitate active engagement with the Historic Urban Landscape (HUL).

2.4.2 The Role of Serious Games in Heritage Education

The transition from static archival records to active, actionable knowledge finds its most effective application in the framework of serious games. Rather than being limited solely to passive entertainment, serious games are interactive digital environments purposefully designed to achieve specific educational and civic learning targets through engaging, playful experiences (Anderson et al., 2010; Mortara et al., 2014). By embedding rigorous historical data into their interactive mechanics, these platforms significantly enhance users' learning performance and intrinsic motivation, functioning as a structural tool to inform contemporary urban stewardship (Ye et al., 2021). Crucially, serious games excel because they offer *procedural* rather than *prescriptive* knowledge; instead of presenting facts for passive reading, they provide a space for "hard fun," challenging players to actively learn through exploration, trial and error, and the manipulation of game variables (Champion, 2015). As Erik Champion (2016) suggests, the objective of such a game within a virtual heritage context is to move beyond simple task execution or visual recreation. Instead, the platform aims to convey not just the appearance of cultural artifacts and sites, but the layered meanings, social agency, and cultural significance of the people who originally designed and used them.

True cultural engagement requires more than mere photorealistic representation; it demands the simulation of historically situated behaviors to foster what is known as a "culturally significant presence" (Champion, 2020). A visually detailed digital environment remains sterile if the player lacks the overarching cultural framework to understand the social and historical significance of the space. To effectively bridge the awareness deficit and inform both local citizens and university users about San Salvario's authentic narrative identity, the game must function as a dynamic simulation of this presence. In this model, the acquisition of tacit cultural knowledge—the understanding of "why" and "how" a place was used, and the rituals that took place there—becomes the primary mechanic for progress. Furthermore, the game mechanics must effectively balance the rigor of the historical method with an affective approach that fosters empathy with past cultures, historical events, and the daily lives of previous inhabitants (Mortara et al., 2014).

By grounding these mechanics in the collaborative stewardship of the Historic Urban Landscape (HUL), this approach transforms the neighborhood into a simulated space where players must deeply engage with historical realities and local cultural constraints to succeed. Ultimately, this method turns the passive consumption of space for leisure into informed, active participation. It ensures that the history of the district is not merely viewed, but deeply understood and protected through the users' own critical engagement, making the cultural significance of the neighborhood both visible and actively playable for a modern audience (Champion, 2008; Ye et al., 2021).

2.4.3 Procedural Learning and "Hard Fun"

Computer games are not merely efficient pieces of software; rather, they are complex environments designed around the concept of "hard fun," where users are motivated by curiosity, fantasy, and engaging challenges (Champion, 2015). The primary pedagogical strength of utilizing a digital game for urban heritage is "procedural learning." Procedural learning is the process of learning history by doing, exploring, testing hypotheses, and suffering consequences, rather than by passively reading texts (Champion, 2015). By directly navigating the shifting meanings of the built environment across different chronological eras, the user mentally reconstructs the historical framework through their own active participation.

Crucially, this interactive, trial-and-error approach to acquiring knowledge is not an exclusive product of modern video game theory, but is instead deeply rooted in over a century of proven educational psychology. In the early twentieth century, the pioneering pedagogical methods of Maria Montessori established that true understanding comes from "auto-education"—a process where students learn through tactile, self-directed interaction within a carefully prepared environment, utilizing self-correcting materials rather than passively receiving instruction (Gutek, 2004). The twenty-first-century concept of digital procedural learning functions as a direct technological evolution of this exact philosophy. Just as Montessori's physical didactic materials guided early learners through physical constraints and immediate feedback, the digital game uses procedural rules, spatial boundaries, and interactive challenges to guide the user in actively discovering historical knowledge (Champion, 2015). By translating these established principles of active, self-directed learning into a virtual setting, the gamified platform proves to be firmly grounded in a long, scientifically validated lineage of pedagogical design.

2.4.4 The “Indiana Jones Dilemma” and the Necessity of Informed Engagement

When applying digital design to historic sites, scholars have identified severe ethical and pedagogical challenges, most notably the "Indiana Jones dilemma". As Erik Champion explicitly explains, this dilemma occurs when using a digital game as an educational tool, "where the popular media presentation of archaeology dramatically increases its popularity while diminishing the public understanding of what archaeologists actually do" (Champion, 2015; 2016). This phenomenon, frequently observed in mainstream commercial games,

occurs when historical sites are treated merely as aesthetic playgrounds for destructive, purely recreational, or consumptive interactions, where the protagonist typically destroys the very cultural artifacts they are supposed to be preserving and studying (Champion, 2015). In these environments, the historical context is stripped away, leaving only a "playable" surface that encourages players to interact with a site as if it were a generic, futuristic, or fantasy space (Champion, 2008). If a digital environment allows users to navigate a historic neighborhood acting like modern visitors—ignoring local customs, applying modern logic, or treating the urban fabric as a neutral backdrop—the project fails as a tool for heritage stewardship and instead reinforces cultural ignorance (Champion, 2008; Mortara et al., 2014).

To address this dilemma, theorists argue for a fundamental shift in design logic, moving away from passive "aesthetic playgrounds" toward an Active Educational Framework. A digital simulation that merely allows for aimless exploration is pedagogically insufficient, as it risks trivializing the site and failing to communicate its underlying historical significance (Champion, 2015; Hiriart, 2018). Instead, the literature suggests that the environment must be designed to enforce a rigorous logic where the acquisition of historical knowledge is the primary mechanism for interaction. By requiring the user to observe, understand, and authentically mimic the historically situated behaviors, trade practices, and social rules of a place, the digital platform forces the user to move beyond their modern perspective (Champion, 2008). This approach ensures that the user is not just looking at a site, but is actively internalizing the *genius loci* by learning how to participate in its history, thereby transforming the digital platform into a robust tool for the collaborative stewardship of the Historic Urban Landscape (HUL) (UNESCO, 2011; Bandarin & van Oers, 2012).

2.4.5 Roleplaying and Cultural Rituals

To fully grasp the "otherness of place" in a historic district, game design must incorporate culturally specific roles and rituals (Champion, 2008). Roles and rituals are essential for creating, situating, and maintaining cultural practices (Champion, 2015). Traditional computer games often lack "hermeneutic richness" or interpretation, meaning players are rarely forced to decipher the deeply embedded social rules of the world they are exploring (Champion, 2020). To improve historical learning, a virtual world must allow society to act as curators of tradition, affording players the ability to jockey for social position just as different demographic groups (such as workers, migrants, and students) did in the physical neighborhood over the past decades (Champion, 2015). By embedding these rituals directly into the game's mechanics, history is transformed from an abstract concept into a lived, spatial experience where players can make empathic connections with the everyday realities of past inhabitants (Hiriart, 2018; Mortara et al., 2014).

2.5 Beyond Education: Fostering Collaborative Narratives of Urban Heritage

While the primary theoretical objective of employing gamification and edutainment is educational—designed to reveal the "unuseable past" and teach the history of the built

environment—a highly beneficial secondary outcome organically emerges from this process. In contemporary urban development, municipalities frequently rely on top-down, commercial initiatives to construct an attractive urban image. However, current academic discourse increasingly recognizes that such top-down municipal strategies are often ineffective and overlook the lived experiences of the population. Instead, a modern neighborhood identity is not imposed from above, but is actively co-created by its inhabitants, who serve as the most credible custodians of local culture (Braun, Kavaratzis, & Zenker, 2013). Within this theoretical context, digital gamification functions as a powerful catalyst for participatory heritage management. When interactive platforms encourage users to leave digital traces, share personal reflections, and generate content, they provide the communication tools that empower students and residents to act as active co-authors of their neighborhood's history (Kádár & Klaniczay, 2022).

Nonetheless, the visibility of a district is only beneficial if it remains authentic to its roots. The *genius loci* must be rooted in the communal meanings, historical habits, and distinctiveness of the area (Campelo et al., 2014). When digital edutainment ties its interactive challenges to rigorous historical archives and physical heritage sites, the resulting user-generated visibility is based on this Sense of Place, rather than being reduced to the superficial leisure-oriented consumption of space. As university students and residents engage with the procedural learning of their environment, they begin to understand and respect the cultural significance of the streets they inhabit, which fosters a deep sense of local ownership and civic pride (Daldanise, 2020).

This shared historical awareness builds social cohesion and community resilience from the bottom up, naturally protecting the area against the homogenizing forces of intensive leisure-oriented saturation. Elevating this concept further, participatory, bottom-up processes are not merely a supplementary planning advantage, but a mandatory requirement for achieving cultural sustainability (Zouganeli et al., 2012). A district's narrative identity is only truly sustainable when the host community's input is a prerequisite and is integrated into the development of the neighborhood's character (Zouganeli et al., 2012). Therefore, within the framework of urban planning, edutainment facilitates this mandatory participation: by successfully revealing the history of the streets, gamified platforms allow the neighborhood to organically develop a robust, sustainable collaborative narrative identity as the direct result of a proud and educated population.

Within the framework of this research, the proposed digital platform is intentionally designed to be highly interactive, relying on the direct participation of its end-users. The core objective is to allow citizens to share their own ideas, memories, and comments, thereby transforming the digital environment from a static historical archive into a collaborative, living space. By actively inviting users to contribute their personal experiences and share their feedback, the project utilizes participatory digital media to foster a deeper, community-driven connection to the historic urban landscape, facilitating bottom-up cultural value co-creation (Bonacini et al., 2014).

However, from an urban planning and digital heritage perspective, it is fully recognized that allowing open, user-generated content requires rigorous oversight. Permitting unregulated public interaction in digital heritage projects poses significant ethical and operational challenges, raising critical questions about how these communications should be moderated, controlled, and protected from misuse (Economou, 2015; Colley, 2015). Therefore, although the platform acts as an independent, community-centered initiative—independent of direct municipal integration—the collaborative data must still be strictly managed by the platform's administrators. To ensure the digital environment remains a safe and effective tool for heritage stewardship, its architectural design incorporates strict curation protocols, user authorization, and moderation mechanisms (Koukopoulos & Koukopoulos, 2016). By implementing content filtering and community-driven reporting, the proposed framework guarantees that the shared ideas and comments remain aligned with the project's educational goals, maintaining a reliable, interactive, and respectful digital public realm while effectively mitigating the risks of inappropriate content (Kitchin, 2014).

2.6 Conclusion: Bridging Theory and Practical Application

As established throughout this theoretical framework, the preservation of historic urban environments requires moving beyond the static protection of individual monuments to embrace the systemic Historic Urban Landscape (HUL) paradigm (UNESCO, 2011). When historic districts face aggressive commercial gentrification and the dominance of leisure-use , their complex histories risk becoming an "unuseable past," overshadowed by the persistent awareness deficit caused by high-frequency, superficial activity (Petrilli & Vanolo, 2025; Sewell & Ntounis, 2025). To counteract this, this thesis proposes the use of digital edutainment as a tool for collaborative heritage stewardship . By employing interactive mechanisms such as procedural learning and contextual behavioral adaptation , modern city users are encouraged to move beyond passive consumption and actively engage with local history, organically fostering a sense of civic pride and community-led narrative identity from the bottom up (Champion, 2015; Daldanise, 2020).

However, to successfully implement this digital educational solution, these theoretical principles must be grounded in a specific physical and social reality. A location-based digital game cannot function without rigorous historical data and a clearly defined physical layout to serve as its foundation. Therefore, before designing the interactive platform, it is strictly necessary to thoroughly analyze the target environment. The neighborhood of San Salvario in Turin serves as the perfect paradigmatic case study for this application, as it acutely experiences the tensions between a rich, multi-layered past and the rapid, homogenizing consumption of space for leisure.

Chapter 3, The Tangible and Intangible Heritage of San Salvario

This chapter provides the foundational data required to systematically comprehend the neighborhood of San Salvario and construct the proposed digital game. First, it examines the district's historical background, transitioning from its 19th-century physical layout to its post-Fordist reality. Second, it analyzes the demographic profile of the area, establishing exactly who inhabits the space and defining the target audience for the digital intervention. Finally, the chapter presents a chronological analysis of the district across three distinct post-Fordist eras (from 1980 to the present). For each era, specific tangible and intangible assets are selected and detailed. These selections demonstrate how the exact same spatial layout was continually repurposed by different communities over time, establishing the foundational knowledge needed to design the spatial nodes and chronological "levels" of the digital game.

3.1 San Salvario: From 19th-Century Foundation to Post-Fordist Laboratory

3.1.1 The Theoretical Imperative: The Temporal Dimension of Urban Heritage

To comprehensively understand the contemporary socio-spatial dynamics of San Salvario during Turin's post-Fordist transition, it is essential to first decode the historical layers that forged the district's physical and social container. Comprehending the contemporary city requires an appreciation of its early industrial layers, its working-class districts, and the ordinary structures that define its built environment (Tamborrino, 2012; Tamborrino, 2023). Heritage is not a static object frozen in time; rather, building points of connection and paths of dialogue in the challenge of adaptation requires utilizing urban history as a terrain for comparison (Tamborrino, 2023). Because these historical layers chronologically interpenetrate one another, preserving and understanding a historic city requires grasping the entire dynamic system and the extreme fluidity of its assets over time. Consequently, the pre-1980s history of San Salvario cannot be viewed as a mere passive backdrop; it is the active, permanent structural grid that absorbed, mediated, and survived the violent socio-economic shocks of the twentieth century.

Therefore, before analysing the crises and transitions of the modern post-Fordist era, we are examining its 1851 urban birth, the strategic positioning of its transit hubs, its unique multi-religious anchors, and its early industrial archaeology, the following paragraphs establish how the physical layout and collective memory of the district were constructed, ultimately proving that the contemporary neighbourhood is the direct, layered consequence of its 19th-century and Fordist foundations.

3.1.2 The 1851 Orthogonal Grid: Erasing the "Allea Oscura" to Forge a Flexible Infrastructure

The physical foundation of the modern neighborhood is strictly rooted in the mid-19th-century urban expansions that followed the 1840 demolition of Turin's ancient boundary walls. The current street layout is the direct result of the 1851 urban plan designed

by architect Carlo Promis (Malcovati, 2012). This plan fundamentally altered the preexisting landscape by enforcing the cancellation of the "Allea Oscura," an ancient diagonal tree-lined suburban avenue that historically connected the Valentino Castle to the city gate (Malcovati, 2012). In its place, Promis imposed a highly regular, orthogonal framework of streets and 19th-century blocks designed to extend the geometry of the Roman city (See Figure 3.1) (Malcovati, 2012). Crucially for the neighborhood's post-Fordist future, this dense grid was designed to tightly integrate residential and commercial functions, placing active storefronts and artisan workshops on almost every ground floor. This structural flexibility provided the exact spatial infrastructure that would later absorb the district's shifting commercial identity over the ensuing decades (Bolzoni & Semi, 2023).

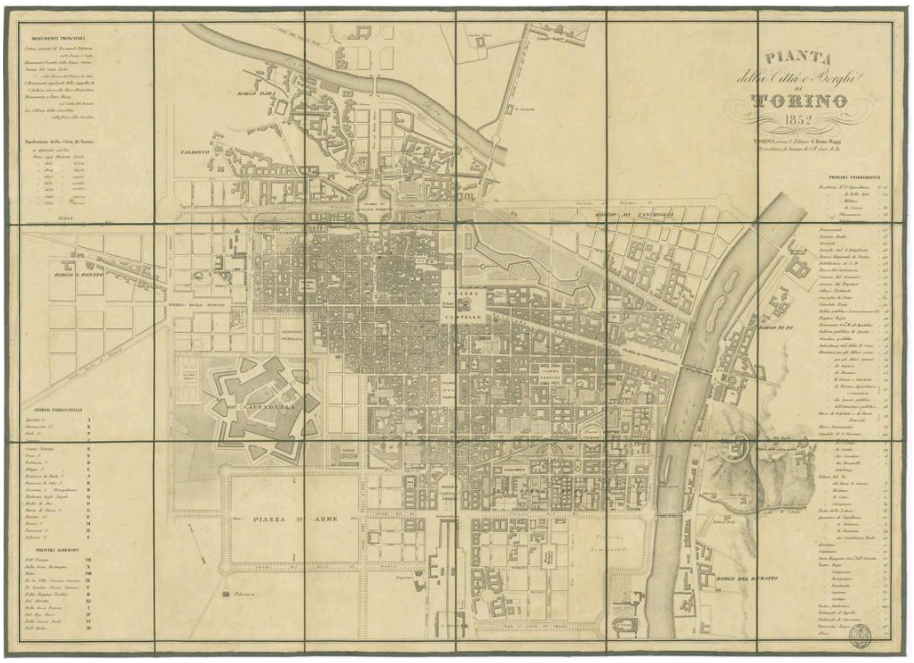


Figure 3.1 - Figure 3.1. Map of the City and Villages of Turin, 1852. ASCT, Simeom Collection, D 104. © Historical Archives of the City of Turin. Source: https://www.museotorino.it/view/s/f9cfa1170c70409f8033ad38e5ad9c92

3.1.3 Porta Nuova: The Architectural Genesis of the City's "Landing Zone"

Simultaneous to the construction of the residential grid, the district's impenetrable western border was defined by the realization of the monumental Porta Nuova railway station, built between 1865 and 1868 by engineers Alessandro Mazzucchetti and Carlo Ceppi (Mirone, 1962). Designed originally to connect Turin to Genoa and subsequently to the French rail networks, the station was conceived not only as a functional infrastructure but as a grand representative gateway to the capital (Mirone, 1962). However, its sociological impact on San Salvario was even more profound than its architectural presence. Because of its immediate proximity to this massive transit hub, the adjacent western blocks of the neighborhood were structurally destined to function as the city's primary "landing zone" for newly arrived populations, establishing a permanent spatial boundary between transient newcomers and long-term residents (Bolzoni, 2019; Semi, 2015). Figure 3.2 provides one of the earliest

illustrations of Porta Nuova, capturing the monumental scale of its interior shortly after construction.

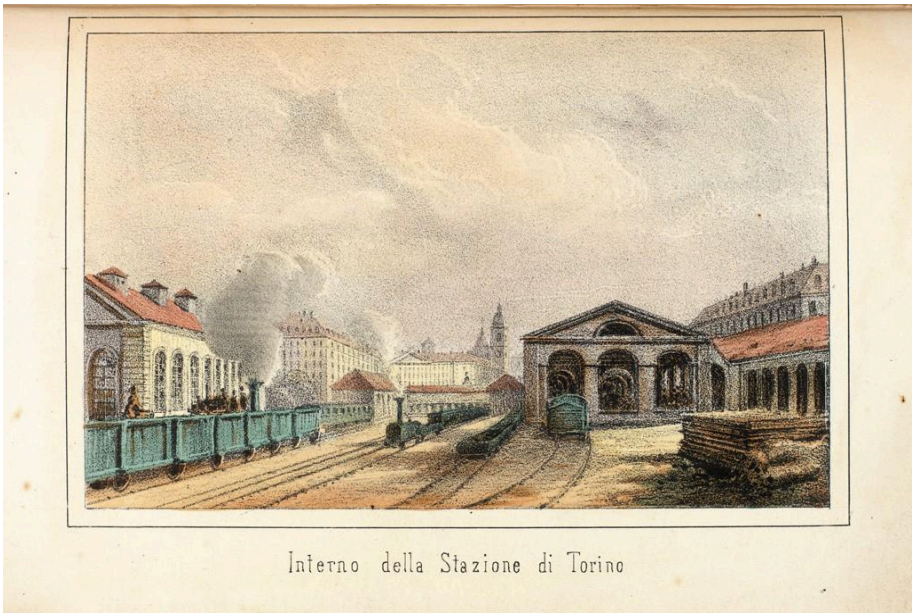


Figure 3.2 - Porta Nuova Station, interior, lithograph. © Historical Archives of the City of Turin. Source: https://www.museotorino.it/view/s/9d35107137e24b878382ac486844ae6d

3.1.4 The "Treno del Sole" and the Fordist Migration Shockwave

This function as a primary landing zone was dramatically cemented during Turin's explosive Fordist industrial boom. Following World War II, Turin transformed into the quintessential Italian "company town," where the entire societal structure, physical rhythm, and economic life were dictated by the FIAT automobile industry (Bagnasco, 1986; Cotella, 2011). To feed this massive industrial machine, the city attracted a profound demographic influx of rural populations and southern Italians. Migrants arrived in massive numbers at Porta Nuova via the famous "treno del sole" (the train of the sun), a continuous railway convoy that collected workers from Sicily, Calabria, Basilicata, and Campania (Grillo, 1958; Maiia, 1960). In their first days in Turin, many of these southern migrants slept outdoors on the benches of the station or in the nearby Valentino Park until they received their first factory wages (Grillo, 1958). Consequently, the dense, working-class blocks of San Salvario immediately absorbed this demographic shockwave, establishing a powerful historical precedent of migration and social adaptation that would perfectly mirror the arrival of transnational migrants in the 1990s.

3.1.5 The "Architecture of Tolerance": Multi-Religious Anchors in a Catholic City

Contrasting with the utilitarian transit spaces of the station, San Salvario simultaneously developed a uniquely dense concentration of multi-religious monuments, distinguishing it from the rest of the Italian urban landscape. Following the 1848 Albertine Statute (Figure 3.3), which officially granted freedom of worship to non-Catholic populations, the

neighborhood became the designated spatial hub for religious minorities (Campobenedetto, Giorda, & Robiglio, 2014). This led to the construction of the neo-Gothic Waldensian Temple (1851-1853) on Corso Vittorio Emanuele II and the monumental Moorish-style Jewish Synagogue (1880-1884) in Piazzetta Primo Levi. In a direct attempt to assert territorial dominance, the Catholic Church responded by rapidly erecting the Church of Santi Pietro e Paolo (1865-1867) on Via Saluzzo (Campobenedetto, Giorda, & Robiglio, 2014). This historic "Architecture of Tolerance" proved vital in the post-Fordist era, as these very monuments later acted as the primary decentralized welfare hubs during the institutional vacuums of the late 20th century.

Figure 3.3 - Celebrations in Piazza San Carlo for the granting of the Albertine Statute, 1848. Lithograph. Source: https://www.museotorino.it/view/s/4b767a17f98341c6bda50c38c9db217c

3.1.6 Early Industrial Archaeology and the Genesis of the "One-Company Town"

While the global image of Fordist Turin is intrinsically linked to the massive peripheral mega-plants of Lingotto (1923) and Mirafiori (1939) (Vanolo, 2015; Bigazzi, 1994), the actual genesis of the city's automotive hegemony occurred squarely within the borders of San Salvario. In 1899, the very first headquarters and production plant of the *Fabbrica Italiana Automobili Torino* (FIAT) was established on Corso Dante. Accompanied by other pioneering manufacturing facilities, such as the Ex Fabbrica Schiapparelli chemical plant built in 1906 on Via Sant'Anselmo, the neighborhood functioned as the original incubator of the city's industrial identity (Cotella, 2011; Bagnasco, 1986). The eventual closure and relocation of these early factories left behind a rich tapestry of industrial archaeology and architectural voids within the district.

3.1.7 Wartime Devastation and the Legacy of Utilitarian Voids

The neighborhood's physical fabric was violently interrupted during the Second World War. In Figure 3.4 you can see a Historical map classifying the severity of wartime building damage across the San Salvario district and surrounding areas. The map indicates destroyed buildings in red, severe damage in purple, and light damage in light pink.
As a strategic industrial hub, Turin was subjected to devastating aerial bombardments in 1942 and 1943. Within San Salvario, high-explosive and incendiary bombs inflicted catastrophic damage on critical infrastructure, severely compromising residential blocks, the Jewish Synagogue, and the Church of Santi Pietro e Paolo. Among the casualties were the municipal public baths on Via Morgari, originally constructed in the early 20th century by engineer Camillo Dolza to serve the local working class (Bolzoni, 2019). The ruin and subsequent decades of abandonment of such utilitarian structures created profound physical voids in the neighborhood. However, in the post-Fordist era, these exact historical voids would provide the critical spatial opportunities required for the neighborhood's regeneration, culminating in the architectural reclamation of the ruined baths into the modern *Casa del Quartiere*, the ultimate symbol of San Salvario's contemporary civic resilience.

Figure 3.4 - Damage to buildings 1:5000, 1942-1945. Zone 2: Borgo San Salvario, Valentino Park, Old Barriera di Nizza, Borgo San Secondo, Crocetta. ASCT, Types and drawings, folder 68, file 2 drawing 2 – quadrant 2. © Historical Archives of the City of Turin. Source: https://www.museotorino.it/view/preview/af4e613837f7400789fcba51ef09ee92/i/

3.2 Demographics

To successfully design an urban intervention—such as a digital game that builds community identity and tackles the "awareness deficit"—it is first necessary to understand the specific characteristics of its end-users. Therefore, this demographic analysis is firmly anchored in the objective statistical reality of the local urban fabric.

A defining characteristic of San Salvario is its extreme physical density, which dictates the spatial scale of any local project. While the city of Turin has an average density of roughly 6,547 inhabitants per square kilometre, San Salvario accommodates 35,734 residents (2024) within just 2.46 square kilometres, pushing its average density to a highly concentrated 14,526 inhabitants per square kilometre (see Figure 3.5).

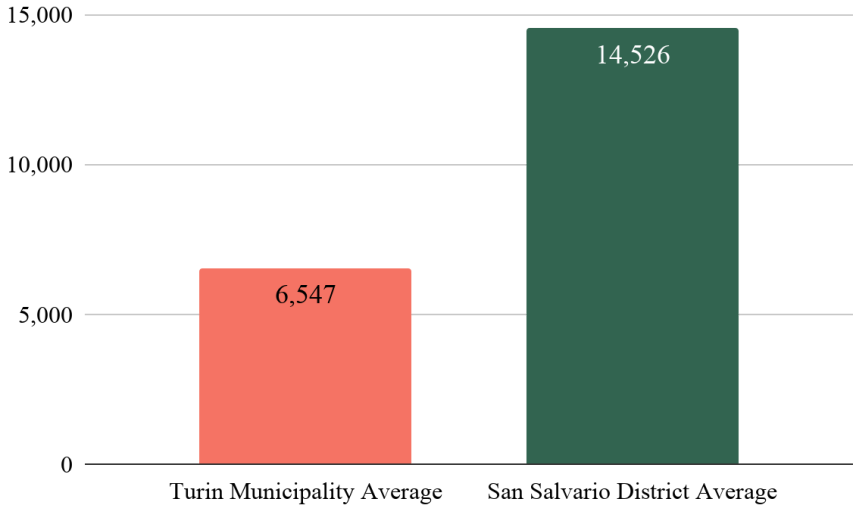


Figure 3.5 - Comparison of the average population density between the city of Turin and the San Salvario district (2024). Source: Elaboration of demographic data from the Municipality of Turin (Archivio Anagrafico).

Beyond physical density, the sociological profile of the individuals who actually occupy these blocks reveals a complex generational reality. The ISTAT permanent resident database demonstrates that the sub-municipal core possesses a severe aging index of 222.3, meaning there are more than two elderly residents over the age of 64 for every single child under 14. However, the proposed mobile game focuses squarely on the active adult and young adult population (aged 15 to 64) (See Figure 3.6). Representing the demographic core of the neighbourhood, this group possesses the essential digital literacy and technological fluency required to effectively navigate and interact with a mobile application. By targeting this digitally native demographic, the platform can mobilize them to act as a bridge between the older generation's fragile memories and the transient young student population. Ultimately, these active residents become the necessary co-authors of authentic, bottom-up civic participation, ensuring the district's heritage is protected through genuine community empowerment.

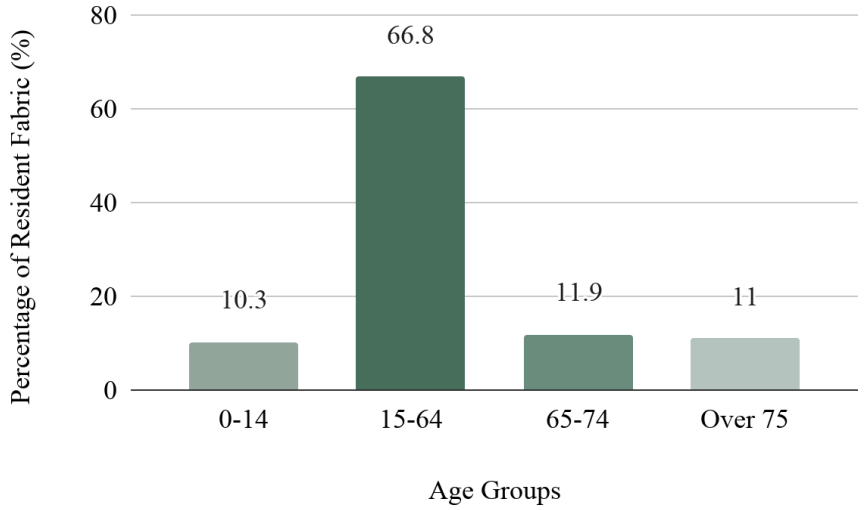


Figure 3.6 - Age distribution of permanent residents in the San Salvario district (2023). Source: Elaboration of demographic data from the City of Turin.

To complete this sociological profile, the analysis must also systematically evaluate the gender distribution within the resident population. As contemporary urban studies and feminist geographies highlight, the built environment and the daily use of public spaces are never strictly neutral; rather, they are experienced, negotiated, and navigated differently depending on gender (Mattogno, 2014; Massey, 1994). In a highly dense and stratified district like San Salvario, establishing the objective statistical balance between male and female residents is a crucial component of the demographic profile. This data—especially when cross-referenced with the severe aging index and the shifting migrant presence—helps clarify the social dynamics of the neighbourhood, as different demographics possess distinct everyday routines, spatial vulnerabilities, and ways of interacting with the historic street grid. (See Figure 3.7)

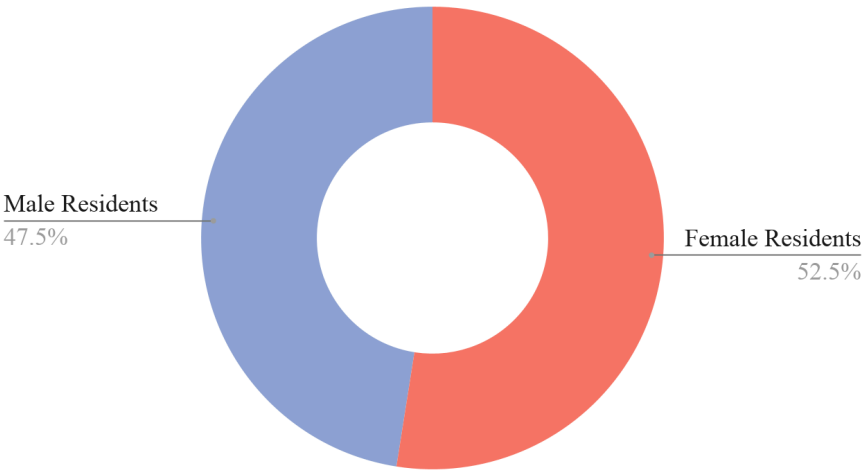


Figure 3.7 - Gender distribution of permanent residents in the San Salvario district (2023). Source: Elaboration of ISTAT [5] records.

In addition, San Salvario's urban space is heavily impacted by Turin's massive academic network, which includes a highly mobile pool of roughly 126,000 university students city-wide. This demographic presence is heavily anchored directly to the district's borders via the neighboring Polytechnic University branch housed at the Valentino Castle and the science faculties located on Corso Massimo d'Azeglio. While this transient population dominates the neighborhood's public spaces during the night-time economy—locally known as the *movida*—it tends to interact with the historic space superficially, treating the physical environment merely as a backdrop for nocturnal leisure. By leveraging these localized demographic parameters, the project explicitly aims to act as a data-driven educational bridge. The goal is to translate the deep historical memories of the permanent residents into an engaging experience that transforms the student user base from passive consumers of the night-time economy into active, informed participants. (See Figure 3.8)

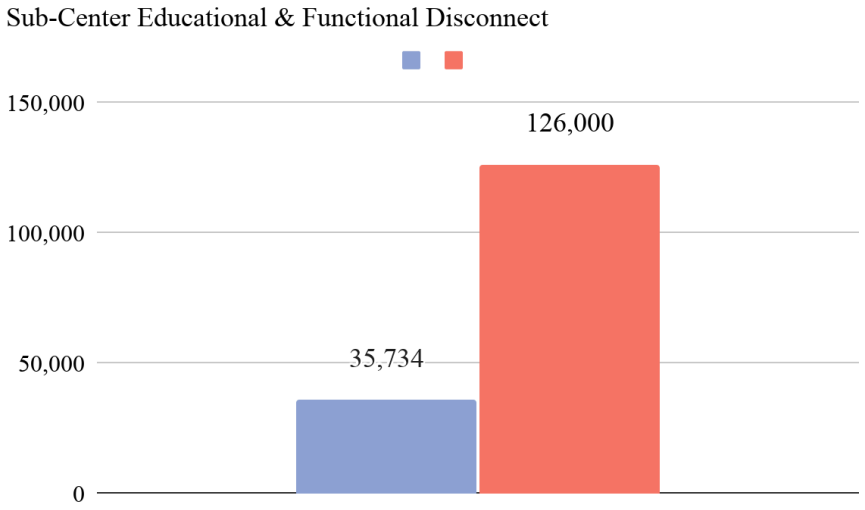


Figure 3.8 - Demographic comparison between the permanent resident population of San Salvario (2024) and the transient university student population across the city of Turin (2020). Source: Elaboration of demographic data from the Municipality of Turin and IRES [6] Piemonte.

Understanding who inhabits San Salvario is essential for any contemporary urban intervention. Following the collapse of the Fordist industrial model, the neighborhood experienced a profound demographic shift. The emptying of working-class housing and early industrial spaces created a vacuum in the dense street grid. Attracted by the availability of affordable housing and the strategic proximity to the Porta Nuova central railway station, the neighborhood quickly transformed into a primary "landing zone" for a massive influx of

[5] ISTAT is the Italian National Institute of Statistics, the primary government agency responsible for demographic and economic census data in Italy.
[6] IRES Piemonte is the official regional research institute that conducts statistical and sociological studies on socio-economic and territorial trends within the Piedmont region.

transnational migrants. Over the course of two decades, the foreign-born population rose steadily, providing the area with a highly diverse and multicultural character. (See Figure 3.9)

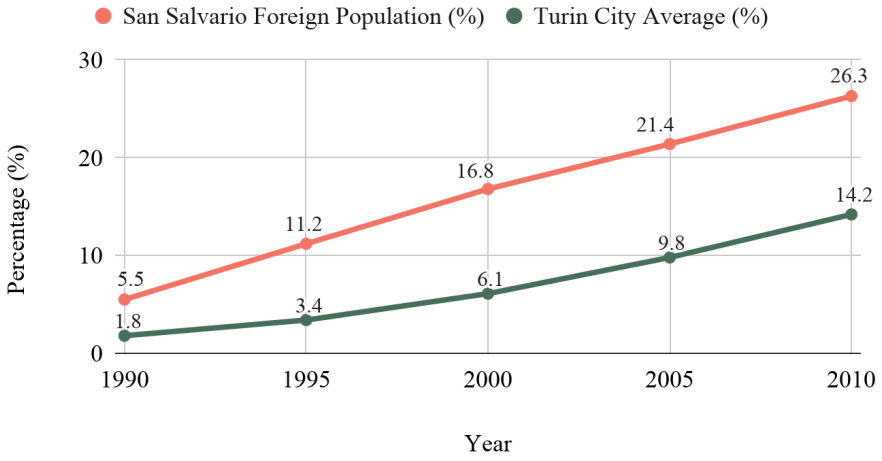


Figure 3.9 - Longitudinal analysis of the transnational "Landing Zone" effect (1990–2010), comparing the foreign-born population percentage in San Salvario to the Turin municipal average. Source: Elaboration of historical demographic data from the Municipality of Turin (2011).

However, this multicultural landscape was subsequently altered by a second major demographic transition. Following the city's strategic shift toward a post-Fordist cultural and leisure economy—heavily catalysed by the 2006 Winter Olympics—San Salvario's "authentic" and "gritty" atmosphere began to attract a new urban middle class. The district became a magnet for a massive influx of university students and young professionals who utilized the historic streets as their primary hub for nightlife and socialization, a phenomenon locally known as the *movida*. This rapid "studentification" and commercial gentrification led to a significant statistical decline and the gradual displacement of the original multicultural communities as the new population entered and consumed the district. (See Figure 3.10)

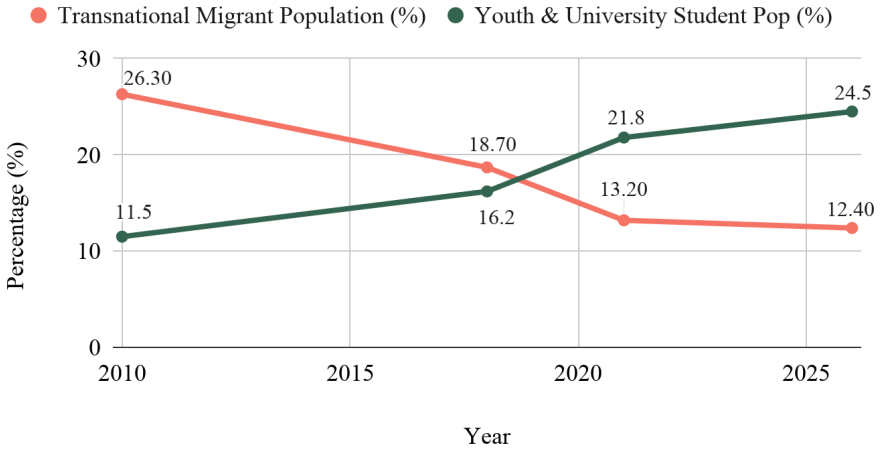


Figure 3.10 - Demographic displacement matrix via studentification (2010–2025), illustrating the inverse relationship between the contraction of long-term migrant networks and the rapid concentration of transient youth demographics in San Salvario. Source: Elaboration of demographic data from the Municipality of Turin (2026).

This complex demographic reality directly informs the strategic selection of the target audience for the proposed digital game. The primary audience consists of the everyday citizens and long-term residents of San Salvario. Because authentic civic participation and community-led place-making must be constructed from the bottom up, actively engaging these citizens is absolutely crucial. This inclusive approach ensures that local inhabitants can act as the vital co-authors of their own community identity, sharing their deep-rooted memories and intangible heritage to protect the neighbourhood from superficial commercial homogenization and spatial exclusion (Hudson et al., 2017; Daldanise, 2020). Simultaneously, the secondary audience comprises the massive influx of university students and temporary city users. While this transient demographic currently represents the dominant force utilizing the neighbourhood's public spaces at night, their engagement with the district is often highly superficial, treating the historically layered physical environment merely as a passive backdrop for nocturnal leisure and consumption. In response, the digital game serves as a necessary educational intervention to bridge the awareness deficit and successfully integrate this secondary demographic. By immersing them in the authentic narratives of the district, the platform ensures they recognize the area's deep historical roots, ultimately transforming them from passive consumers of the night-time economy into active, informed participants who respect the everyday reality of the local community.

3.3 The Three Post-Fordist Eras: Historical Shifts, Tangible, and Intangible Assets

To comprehensively analyze San Salvario and build the logical framework for the digital game, the neighborhood's history from 1980 to the present is divided into four chronological eras. Each era is defined by distinct social shifts and specific tangible and intangible assets.

It must be noted that while mapping tangible assets is a straightforward cartographic exercise, mapping intangible assets presents a significant methodological challenge. As urban historian Rosa Tamborrino argues regarding the "public use of history" in the digital age, digital humanities must open up to the temporal dimension of a city by connecting immaterial narratives to physical spaces to bridge the gap between history and memory (Tamborrino, 2014; Tamborrino, 2016). Intangible heritage—such as social practices, community memories, and daily routines—does not have a strict physical origin or geometric boundary. However, to operationalize these assets for the digital game, this research maps intangible heritage by identifying the *most frequent places* where these practices occurred, effectively anchoring immaterial cultural phenomena to specific physical locations within the 1851 street grid.

The assets for each era have been deliberately selected to demonstrate a relationship: they reveal how the exact same spaces and architectural forms were continually repurposed by different communities over time.

3.3.1 1980–1990: The Industrial Crisis and Migrant Landing Zone

The 1980s represented a profound turning point for Turin, marking the severe collapse of its traditional Fordist manufacturing model (Cotella, 2011). For decades, Turin functioned as the quintessential one-company town, with its economic and social life inextricably tied to the FIAT automobile industry (Vanolo, 2015). When the global economic shocks of the late 1970s and 1980s hit, the city faced a dramatic deindustrialisation process, leading to the loss of tens of thousands of industrial jobs and bringing the city's previous economic miracle to a sudden halt (Pinson, 2002; Vanolo, 2015). This crisis created massive spatial and demographic vacuums across the city, leaving behind vast urban voids (Dansero, Giaimo, & Spaziante, 2000). The 1980s crisis of the automotive sector exposed the deep vulnerabilities of Turin's welfare and social structure, bringing traditional working-class neighbourhoods to a critical breaking point and creating enclaves of marginality (Vassallo, 2016). In the specific context of San Salvario, the sudden emptying of working-class housing and early industrial spaces created a highly available and affordable real estate market (Bolzoni & Semi, 2023). Consequently, the neighbourhood quickly transitioned into a primary "landing zone" for new waves of transnational migrants, establishing a highly diverse, multicultural, yet socially vulnerable landscape (Bolzoni, 2022).

To accurately capture the spatial reality of this era, the Porta Nuova Railway Station, the Ex Fabbrica Schiapparelli on Via Sant'Anselmo, the early *Passante Ferroviario* (Underground Railway) infrastructure, the Torino Esposizioni complex, and the University of Turin's Scientific Hub have been selected as the primary tangible assets. The rationale for this broad selection is rooted in the fact that these structures served as the defining physical anchors of the neighbourhood's complex post-Fordist transition. The railway station functioned as the literal architectural gateway and initial shelter for the new arrivals, dictating the geography of the initial migrant settlement (Bolzoni, 2019). Simultaneously, the emptying pharmaceutical factory physically embodied the exact industrial voids that facilitated the neighbourhood's demographic shift by leaving large, vacant spaces waiting to be repurposed (Dansero & Spaziante, 2000).

However, the physical collapse of the Fordist industrial economy also laid the groundwork for future infrastructural and cultural shifts (Colombino & Vanolo, 2016). Initiated in 1986, the construction of the *Passante Ferroviario* began to physically alter the city's borders, representing the profound infrastructural rupture between the old industrial grid and the city's future urban regeneration (Dansero & Spaziante, 2016). Furthermore, amidst the landscape of industrial crisis, the earliest seeds of a cultural and knowledge-based economy were planted within the neighbourhood's boundaries.The Torino Esposizioni complex, situated within the Valentino Park, provided the physical container for the inaugural Turin International Book Fair (*Salone del Libro*) in 1988, marking a pioneering attempt to test a new cultural identity for the city (Cotella, 2011; Salone del Libro Archive, 2025).

Finally, the physical consolidation of the University of Turin's scientific faculties along Corso Massimo d'Azeglio established a quiet institutional anchor within the district (City of Turin, 2016). While the massive demographic wave of "studentification" would only come to dominate the district decades later, these educational buildings provided the structural

foundation that would eventually support the neighbourhood's transition into a post-industrial hub of youth and knowledge. (See Figure 3.11)

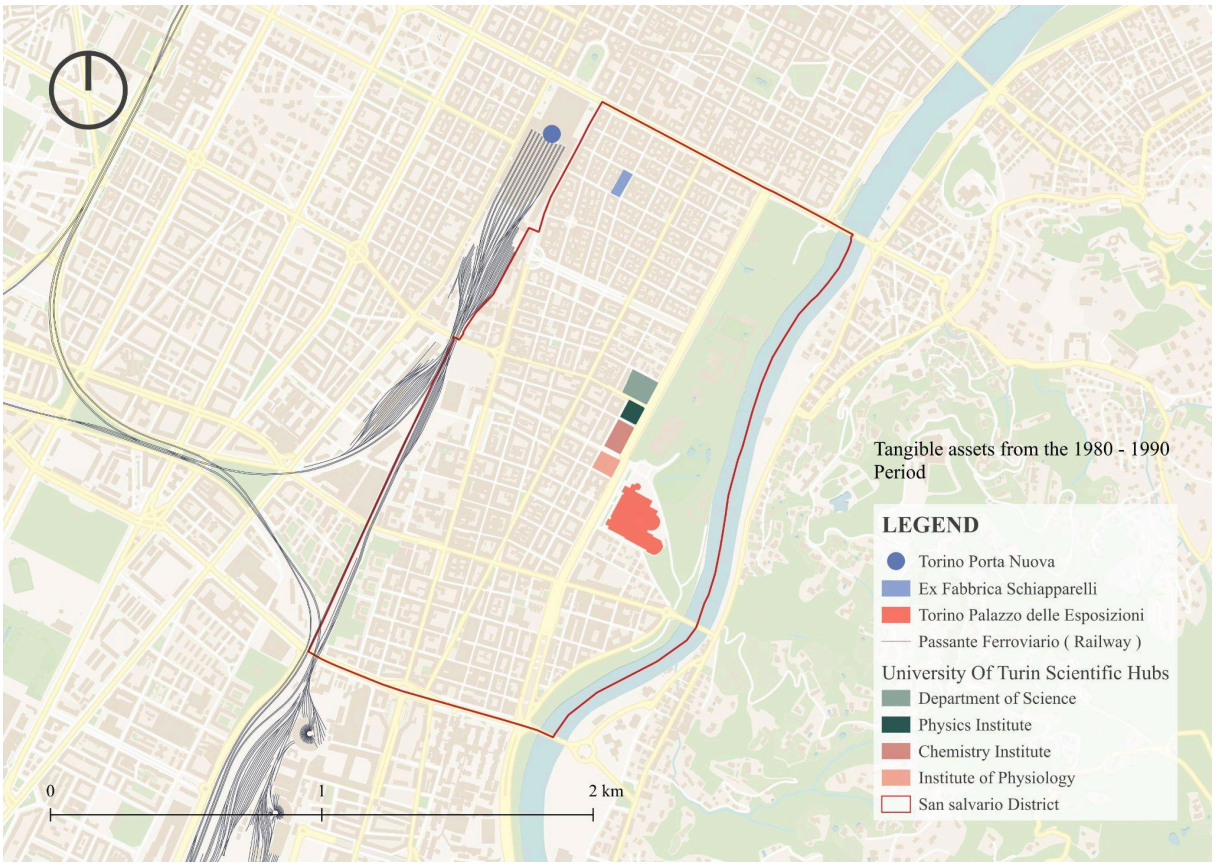


Figure 3.11 - Map of 1980–1990 tangible assets in San Salvario. Map elaborated by the author using QGIS software. Basemap: OpenStreetMap contributors.

3.3.2 1990 - 2006 Institutional Transition, Urban Crisis, and the Olympic Catalyst

The period between 1990 and 2006 was marked by an intense trajectory from severe urban crisis toward a radical institutional and physical recovery. The early 1990s represented a brief but volatile era defined by the violent collision of political, economic, and demographic shocks (Cotella, 2011). Politically, the watershed Tangentopoli ("Clean Hands") corruption scandals of 1992 triggered the spectacular collapse of traditional local and national governments, creating a deep institutional vacuum (Cotella, 2011; Pinson, 2002). Economically, the dismantling of state-level trade protections with the completion of the Single European Market in 1992 flooded the Italian market with foreign competition, plunging the FIAT automobile industry into a severe crisis and exacerbating local unemployment levels (Cotella, 2011). Simultaneously, the city experienced an immigration shockwave as the growing presence of transnational migrants reached a critical mass without adequate municipal welfare or housing policies to support them (Allasino, Bobbio, & Neri, 2000).

At the local neighbourhood scale, these overlapping crises turned San Salvario into a national emblem of degradation (Bolzoni, 2019). The district was defined by a severe housing

crisis—with 1992 data indicating that over 27% of San Salvario's residents lived in degraded housing conditions, nearly triple the city average—as well as highly publicised inter-ethnic friction and the emergence of informal street economies (IRES Piemonte, 1995; Bolzoni, 2022) (See Figure 3.12 and Table 3.1). To spatially anchor the analysis of this turbulent period, the deteriorating nineteenth-century residential housing stock and the district's historic "Architecture of Tolerance" emerge as the primary tangible assets. The non-EU migrant population was heavily concentrated within the North-Western blocks of the grid, immediately adjacent to the Porta Nuova station, where overcrowded buildings became the spatial manifestation of the city's welfare crisis (Allasino, Bobbio, & Neri, 2000) (See Figure 3.12). However, this marginalization was not uniform, revealing a stark spatial polarization within the district. While the north-western blocks absorbed the housing crisis, the eastern and southern edges closer to Valentino Park retained a distinctly affluent demographic. Here, a significant concentration of upper-middle-class professionals persisted, highlighting how severe vulnerability and wealth coexisted just blocks apart within the same historic grid.
(See Figure 3.13).

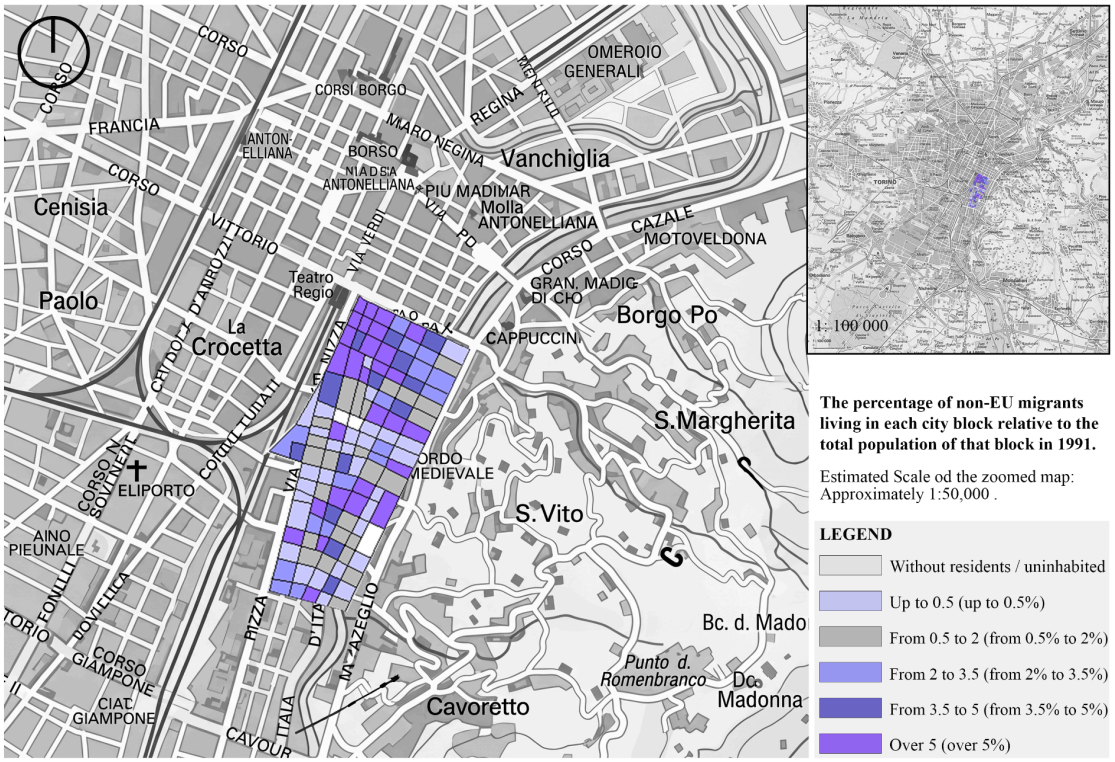


Figure 3.12 - Spatial distribution of non-EU migrants in the San Salvario neighbourhood, Turin (1991). This figure was produced by the author using Adobe Photoshop by overlaying block-level demographic data from IRES Piemonte onto a cropped section of the "Urban development - Turin and Genoa" base map (Touring Club Italiano & National Research Council, 1992). Source: https://www.didaweb.net/mediatori/articolo.php?id_vol=860

Former Neighborhoods (1992)	Number of Degraded Buildings	No. of Inhabitants in Degraded Housing	Total Population	% of Population in Degraded Housing
Centro	109	5,414	46,716	11.59%
Barriera di Milano	697	17,604	48,912	35.99%
Aurora	385	12,780	43,022	29.71%
San Salvario	231	10,654	39,437	**27.01%**
San Donato	211	5,870	50,283	11.67%
Crocetta	20	1,108	41,998	2.64%
Others	2,192	41,318	685,458	6.03%
Turin (Total)	**3,845**	**94,749**	**955,827**	**9.91%**

Table 3.1 - Distribution of degraded housing stock and affected populations across Turin's former neighborhoods (1992). Source: Osservatorio Giovanile Comune di Torino, 1993. Translated and adapted by the author.

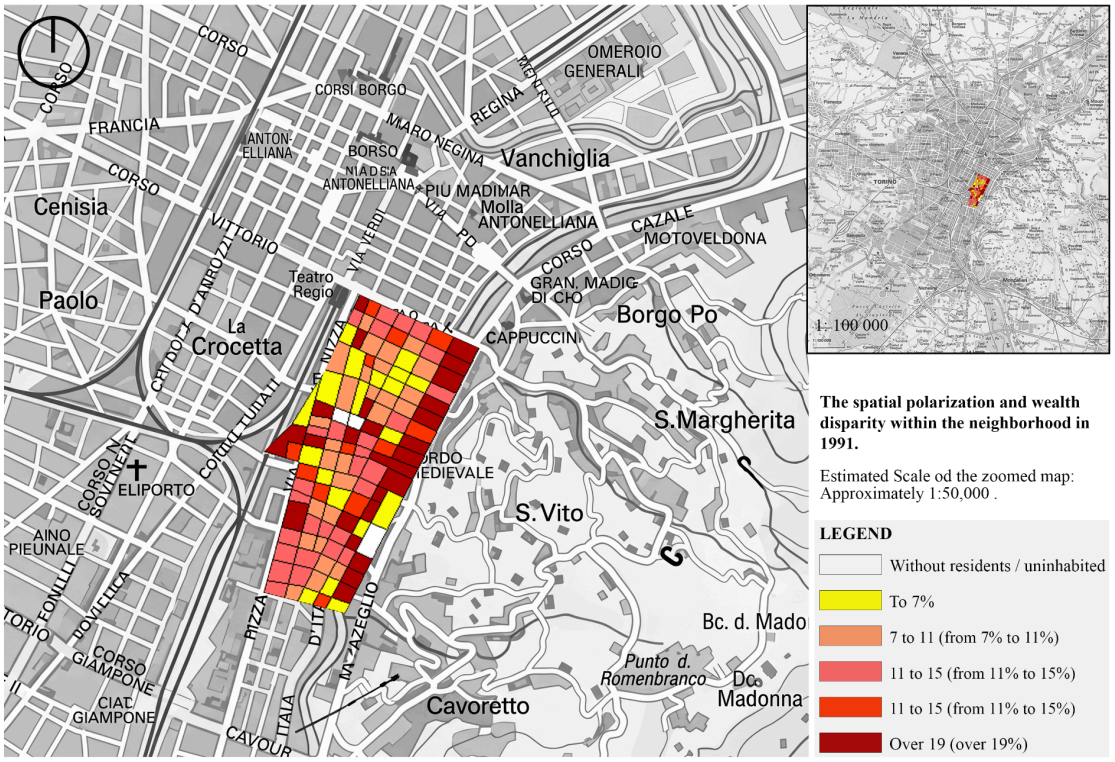


Figure 3.13 - Distribution of upper-middle-class professionals in the San Salvario neighborhood, Turin (1991). This figure was produced by the author using Adobe Photoshop by overlaying block-level socio-professional data from IRES Piemonte onto a cropped section of the "Urban development - Turin and Genoa" base map (Touring Club Italiano & National Research Council, 1992). Source: https://www.didaweb.net/mediatori/articolo.php?id_vol=860

In stark contrast to this residential decay, the monumental religious buildings—the Waldensian Temple, the Jewish Synagogue, and the Catholic Church of Santi Pietro e Paolo—operated as vital decentralised community hubs. These historical monuments were surrounded by auxiliary functions that stepped in to provide essential reception, orientation, and welfare assistance for newly arrived migrants when municipal support was entirely lacking (Campobenedetto, Giorda, & Robiglio, 2014; Allasino, Bobbio, & Neri, 2000). (See Figure 3.14)

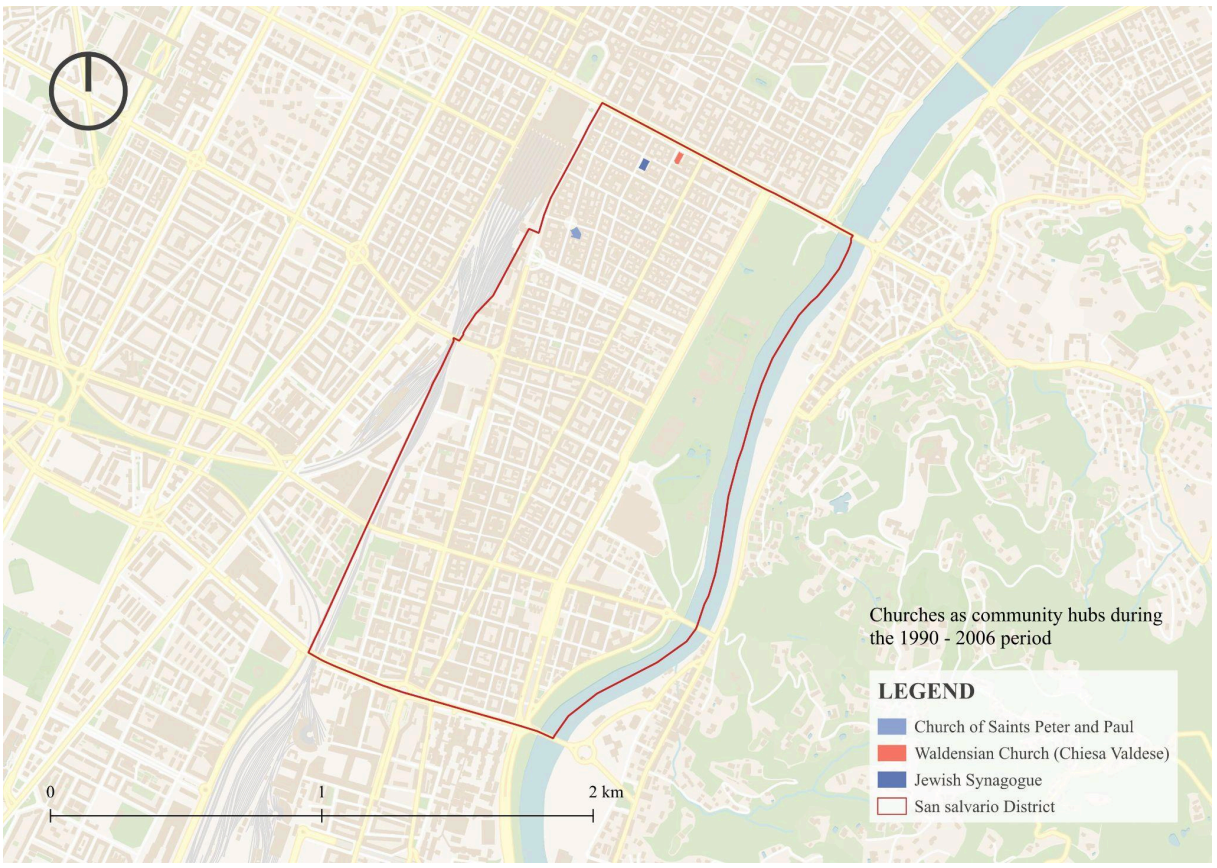


Figure 3.14 - Map of civic resilience nodes (churches and community hubs, 1990–2006). Map elaborated by the author using QGIS software. Basemap: OpenStreetMap contributors.

Ultimately, this absolute political vacuum paved the way for crucial reforms, notably the 1993 direct election of mayors, which transferred significant governance power to civil society and ushered in a proactive "pro-growth" agenda (Pinson, 2002; Belligni & Ravazzi, 2012). Through the implementation of the 1995 Masterplan and the 2000 Strategic Plan (Torino Internazionale), local authorities actively aimed to emancipate the city from the hegemony of FIAT by rebranding Turin as a dynamic, cosmopolitan destination focused on knowledge, tourism, and creativity (Cotella, 2011; Vanolo, 2008).

While the municipality focused on city-wide rebranding, San Salvario relied on the fierce activism of its own civil society to manage its recovery. The defining intangible assets of this era were the dense networks of socio-cultural associations and bottom-up civic activism. The establishment of the Agency for the Local Development of San Salvario in 1998 was a pivotal moment. The Agency and its affiliated groups fulfilled a crucial role in building local social capital, mediating inter-ethnic conflicts, and connecting residents with local authorities (Bolzoni, 2019; Bolzoni & Semi, 2023). This community-led place-making completely transformed San Salvario's public image from a dangerous district into a celebrated model of multicultural integration. This era of urban transition peaked with the 2006 Winter Olympic Games, a watershed mega-event that provided massive infrastructural investments and successfully transformed the international perception of the city, perfectly aligning with San Salvario's newly stabilized, authentic, and diverse identity (Vanolo, 2015; Crivello, 2011).

To anchor this period of civic recovery in the physical space of the district, the *Casa del Quartiere* (the former municipal public baths) (See Figure 3.15) on Via Morgari has been

selected as the primary tangible asset. The rationale for this selection is that the building perfectly embodies the physical and social transition of the era. Originally constructed in the first decade of the 20th century by municipal engineer Camillo Dolza, this utilitarian welfare structure served the local working-class population until it was severely damaged by high-explosive bombs during World War II (MuseoTorino, 2012). For decades, the site remained underutilized until it was physically reclaimed and subjected to a massive architectural restoration between 2003 and 2005. The resulting *Casa del Quartiere* transitioned from a ruined utilitarian facility into an essential, multifunctional hub for community regeneration, providing the physical stage required for the neighborhood's social revival (Bolzoni, 2022).

(a) (b)

Figure 3.15 - Spatial and structural metamorphosis of the Via Morgari public welfare architecture. (a) The underutilized, ruined condition of the early 20th-century municipal public baths prior to the adaptive reuse intervention. (b) The restored, active contemporary courtyard of the Casa del Quartiere, functioning as a bottom-up hub for civic integration. Source: Adapted from the Association of the Local Development Agency of San Salvario ETS (2026), https://sansalvario.org/wp-content/uploads/2016/06/0.jpg , https://sansalvario.org/wp-content/uploads/2016/06/1-1.jpg

Also, the Madama Cristina Market representing the municipality's "ordinary" infrastructural interventions, the historical market square underwent a major physical redevelopment between 1999 and 2001. The construction of new brick shelters and a multi-story underground parking facility modernized the square, anchoring it as the primary commercial infrastructure for the district's diverse, multi-ethnic clientele (City of Turin, 2016).

In addition, the Murazzi-Valentino Riverfront, As part of the Strategic Plan's goal to reclaim the city's rivers, the intense regeneration of the Murazzi river area and its pedestrian connection to the Valentino Park physically linked San Salvario's eastern border to the city's new post-Fordist landscape of leisure and nightlife (Cotella, 2011; Vanolo, 2015).

Alongside these physical structures, the analysis identifies the dense networks of socio-cultural associations, everyday multicultural sociability, and artisanal collaboration as the defining intangible assets of the 1993–2006 era. Specifically, the establishment of the Agency for the Local Development of San Salvario in 1998 was a pivotal moment. The reason for selecting these specific immaterial practices is that civic engagement—rather than

top-down municipal planning—was the true engine of the neighbourhood's recovery (Bolzoni & Semi, 2023). The Agency and its affiliated groups fulfilled a crucial role in building local social capital, mediating inter-ethnic conflicts, and connecting residents with local authorities (Bolzoni, 2019). Simultaneously, the daily routines around the Madama Cristina Market generated an intangible space of spontaneous, everyday multicultural integration, while the emergence of contemporary artisan workshops added a new layer of creative, post-industrial production to the district (Naclerio & Brandellero, 2025; Vanolo, 2015). (See Figure 3.16)

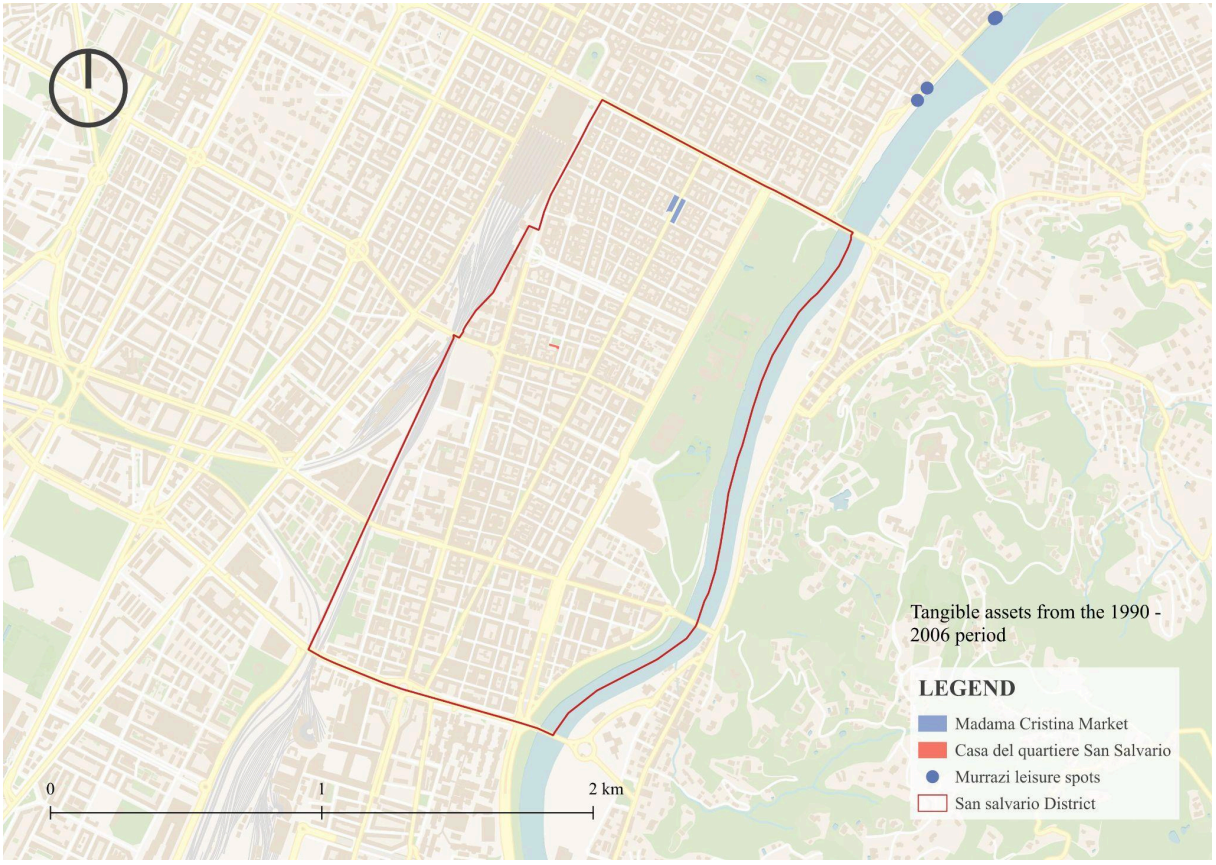


Figure 3.16 - Map of tangible and intangible assets (1990–2006). Map elaborated by the author using QGIS software. Basemap: OpenStreetMap contributors.

3.3.3 2006–Present: Commercialization, Adaptive Reuse, and the Student Movida

The period following the 2006 Winter Olympics marked a definitive shift in Turin's strategic trajectory, solidifying the city's focus on a post-industrial cultural and leisure economy (Vanolo, 2015). In San Salvario, this shift, combined with the neighbourhood's reputation for having a gritty and authentic atmosphere, attracted the new urban middle class and a massive influx of university students (Bolzoni, 2022). This demographic transition triggered a rapid and intense process of commercial gentrification and "studentification" across the district (Bolzoni & Semi, 2023). Traditional everyday retail and ethnic shops were progressively displaced by cocktail bars, trendy restaurants, and nightclubs, a phenomenon described as the "eveningification" of the neighbourhood (Petrilli & Vanolo, 2025). Ultimately, this transition turned the historic streets into a highly contested landscape of nocturnal consumption, widely

known as the movida, where the urban night was effectively colonized by young revellers (Bolzoni, 2016; Petrilli & Vanolo, 2025).
To map the spatial reality of this current era, the tangible assets can be categorized into the educational anchors driving studentification, the physical infrastructure of the *movida*, and the post-industrial creative hubs born from adaptive reuse. The dramatic rise in the student population required a new physical infrastructure within the neighborhood. The definitive institutional anchor of this era is the Department of Biotechnology on Via Nizza. Its primary Molecular Biotechnology Center (MBC) opened exactly in 2006, followed by the inauguration of its massive second research block expansion (MBC 2) in 2022, establishing a formidable high-tech academic footprint on the district's western border. Complementing this institutional hub are specific residential and studying assets designed entirely for the new demographic. The CX[7] Turin Belfiore, opened in 2021 as a student dormitory, represents the modern wave of private, high-end student housing capitalizing on the district's attractiveness. Furthermore, the Edisu[8] Michelangelo Study Room, opened and expanded well after 2006 into a high-capacity night-study hub, acts as a critical modern driver for nighttime student crowds, blending the academic routine with the neighborhood's nocturnal rhythms. Finally, the infrastructural redevelopment of the Scalo Nizza former railway yard serves as a vital spatial boundary, reflecting the ongoing modernization of the district's transit and logistical borders.

To accurately capture the spatial reality of this contemporary era's leisure landscape, pedestrianized public squares, such as Largo Saluzzo, and the highly flexible active storefronts have been selected as the primary tangible assets. The rationale for this selection is that these specific spaces operate as the physical epicenters of the new leisure landscape and commercial-led gentrification (Zukin et al., 2009; Bolzoni & Semi, 2023). To specifically handle the modern nightlife boom and the intense pedestrian traffic, connecting corridors like Via Baretti were closed to cars after 2010, heavily pedestrianized, and reprogrammed through the installation of permanent outdoor commercial platforms (*dehors*).

Furthermore, these ground-floor spaces frequently host forms of "temporary urbanism," prominently exemplified by the unconventional Paratissima art festival which operated in the district between 2008 and 2011 (Rota & Salone, 2014). This bottom-up cultural initiative repurposed standard commercial equipment, storefronts, and private courtyards into temporary exhibition galleries, completely blurring the boundaries between public and private spaces and proving the extreme spatial flexibility of the district's physical grid (Rota & Salone, 2014; see Figure 3.17).

[7] CampusX (CX) is a major private network of modern student co-living and dormitory facilities in Italy, which operates a prominent, large-scale branch (CX Turin Belfiore) within the San Salvario district.
[8] EDISU is the regional public agency in Piedmont responsible for managing university student welfare, including public housing, cafeterias, and financial aid.

Figure 3.17 - Temporary urbanism at the 2011 Paratissima festival. Source: Rota & Salone (2014), https://www.researchgate.net/profile/Carlo-Salone/publication/261840743/figure/fig1/AS:296773097672708@1447767629157/Qualitative-evaluation-of-Paratissima-as-a-culture-led-event.png

While traditional retail was displaced by the *movida*, the neighborhood's surviving industrial architecture was simultaneously gentrified into hybrid spaces of leisure and creative production. The most prominent example of this adaptive reuse is TOOLBOX Coworking, established in 2010 within the former OSI (Officine Stampaggi Industriali) metallurgical complex. Rather than facing demolition, this massive 10,000-square-meter industrial void along the railway was regenerated into a cutting-edge creative hub hosting the first Italian FabLab, demonstrating bottom-up, post-Fordist architectural recovery. This trend of adaptive reuse extends deep into the neighborhood's commercial leisure sector, where historic productive spaces have been physically preserved but functionally converted into trendy gastronomic venues. For instance, the Lanificio San Salvatore on Via Sant'Anselmo successfully repurposed the architecture of a historic wool mill into a prominent, eclectic cocktail and dining hub, utilizing the industrial aesthetic to attract the cosmopolitan middle class. Situated nearby, this massive venue provides a flagship example of both adaptive reuse and continuous commercial turnover. Originally, the architecture of this historic printing house (*ex tipografia*) was preserved and functionally converted into "Dash Kitchen," (Today's name is Amarillo Pub) an upscale restaurant and lounge. The renovation deliberately maintained the raw industrial volumes, exposed concrete, and metallic structures to attract the new cosmopolitan middle class. However, reflecting the rapid pace of commercial gentrification and the intensifying demands of the student-led *movida*, the space was subsequently rebranded into a lively, high-energy American-style pub named Amarillo - Wild Pub. This rapid functional transition from a refined design lounge to a high-volume pub perfectly encapsulates the extreme spatial flexibility of the district and its ongoing adaptation to the aggressive night-time economy.

Although the physical reclamation and massive architectural restoration of the former municipal public baths began during the previous era, the resulting *Casa del Quartiere* was officially inaugurated and opened to the public in the summer of 2010. The launch of this facility provided a vital civic counter-balance to the aggressive commercialization of the *movida*. Functioning as an open social and cultural venue, the *Casa del Quartiere* definitively transitioned from a restored architectural shell into an active, multifunctional hub where civil associations, long-term residents, and local actors can meet, interact, and organize activities together. By hosting a café, community workshops, language courses, and socio-cultural events, it established a permanent physical stage for local networking and community mediation, anchoring the district's civic resilience exactly as the surrounding streets were being rapidly consumed by the new leisure and night-time economy (Bolzoni, 2019).

Alongside these physical structures, the analysis identifies the practices of nocturnal socialization—the *movida*—contrasted against the counter-narratives of resident resistance as the defining intangible assets of the present era. The reason for selecting these conflicting immaterial practices is that this duality perfectly highlights the contemporary spatial conflict over the right to the city (Bolzoni, 2022). While the aforementioned *Casa del Quartiere* provided a formal, physical stage to foster community cohesion, the aggressive expansion of the night-time economy simultaneously generated severe, informal civic pushback in the streets. The massive gatherings of young people drinking and socializing in public spaces until the small hours resulted in noise complaints, the visible hanging of protest banners from residential balconies, and the formation of neighbourhood committees such as *Rispettando San Salvario* (Bolzoni, 2019; Petrilli & Vanolo, 2025). Ultimately, this maps an intense intangible conflict: the transient student population colonizing the public squares for leisure, directly opposed by long-term residents demanding their right to sleep and reclaiming the district's civic identity. (See Figure 3.18)

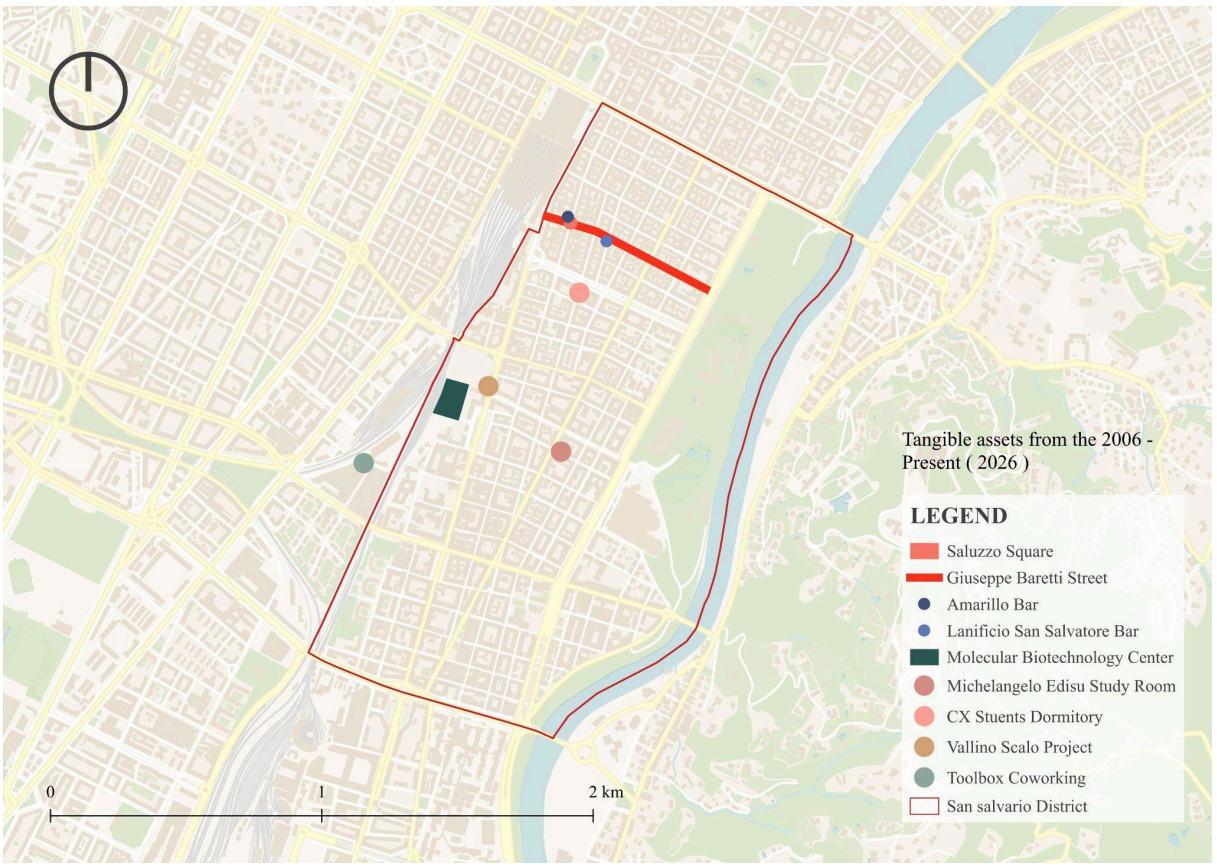


Figure 3.18 - Map of tangible and intangible assets (2006–2026). Map elaborated by the author using QGIS software. Basemap: OpenStreetMap contributors.

3.4 Conclusion: Bridging Urban Analysis and Digital Intervention

The comprehensive spatial and demographic analysis of San Salvario demonstrates that the district's heritage is a highly fluid and dynamic process rather than a static historical artefact (Smith, 2006). Over the span of just four decades, the permanent physical container of the nineteenth-century street grid has absorbed a profound sequence of socio-economic shocks. As detailed throughout this chapter, the exact same architectural spaces and ground-floor commercial storefronts have radically shifted in function and meaning—transitioning from an industrial working-class hub, to a contested migrant landing zone, through a period of intense institutional transition and multicultural resilience, and ultimately into a heavily commercialised landscape of nocturnal leisure (Bolzoni & Semi, 2023). This trajectory is captured precisely within the three distinct post-Fordist eras examined: the 1980–1990 industrial crisis, the 1990–2006 institutional recovery and Olympic catalyst, and the post-2006 studentification and adaptive reuse. Consequently, this rapid demographic turnover—culminating in the massive contemporary influx of university students and the aggressive expansion of the *movida*—has generated a severe "awareness deficit" within the neighbourhood (Cotella, 2011). The deep, multi-layered history of the permanent residents is currently obscured by a superficial, consumption-driven narrative. If these successive historical phases remain trapped in traditional, passive academic archives, the authentic identity of San Salvario risks being permanently reduced to an "unuseable past," entirely

disconnected from the daily experience of its modern, transient users (Sewell & Ntounis, 2025).

To effectively counteract this cultural erasure and bridge this profound awareness deficit, this research directly applies the theoretical methodologies of urban historian Rosa Tamborrino. As Tamborrino argues regarding the "public use of history" in the digital age, digital humanities must open up to the temporal dimension of a city by connecting immaterial narratives to physical spaces in order to bridge the gap between history and memory (Tamborrino, 2014; Tamborrino, 2016). Rather than relying on static preservation methods, the rich catalog of tangible landmarks and intangible cultural practices identified in this chapter must be actively mobilised through a "Digital Urban History" approach. The three distinct post-Fordist eras outlined above establish the essential chronological and spatial database required for a contemporary urban planning intervention, which will serve as the foundational architecture for the proposed interactive digital platform.

The tangible anchors—ranging from the historic markets and multi-religious monuments to the *Casa del Quartiere* and repurposed industrial voids—will function as the physical game board. Simultaneously, the intangible assets, such as the migrant narratives, artisanal collaboration, and the civic protests of long-term residents, provide the exact "hidden data" needed to drive the interactive gameplay. As Tamborrino and Rinaudo (2015) demonstrate, this digital mapping approach allows the physical city itself to become a dynamic spatial experience, fusing data from different archives into a unified geographical frame. Ultimately, by translating these specific geographical nodes, social tensions, and demographic shifts into a participatory digital environment, modern city users will be forced to actively navigate the shifting meanings of the built environment, transforming them from passive consumers into active protagonists in the creation of historical knowledge (Tamborrino, 2016). The specific theoretical principles, spatial mapping techniques, and design methodologies required to transform this urban analysis into a functional digital tool are detailed in the following chapter.

Chapter 4, Methodology A Digital Game-Based Approach to Heritage

4.1 Introduction: Bridging the "Awareness Deficit" through Edutainment and the HUL Paradigm

This chapter outlines the methodological framework used to design the interactive digital platform for the San Salvario neighbourhood. To effectively address the area's challenges, this framework operates at the intersection of urban planning, digital heritage, and gamification. The foundational approach is grounded in the Historic Urban Landscape (HUL) paradigm, which recognizes historic environments as complex, dynamic systems where different urban forms from the past—along with their interconnected tangible and intangible values—continuously intertwine to shape the contemporary city (UNESCO, 2011; Bandarin & van Oers, 2012). Rather than viewing heritage as a static entity, this methodology approaches San Salvario as a "multi-layered" spatial environment.

As established in the previous chapters, San Salvario suffers from a severe "awareness deficit," where its rich, multi-layered history is overshadowed by its current status as a nightlife and commercial hub. The neighbourhood's authentic heritage has become obscured beneath a monolithic, consumption-driven imaginary fuelled by the rapid expansion of the evening economy and the *movida* (Bolzoni, 2016; Petrilli & Vanolo, 2025). To solve this and rescue the neighbourhood's "unuseable past," this project employs an "edutainment" (educational entertainment) strategy via a location-based, 2D digital serious game.

Crucially, the ultimate aim of this digital intervention is an instrument for civic participation and collaborative urban planning (Cerreta & Daldanise, 2017). By engaging residents and transient users in the digital co-creation of the district's history, the application collects valuable, location-based qualitative data regarding how the community perceives, uses, and values specific public spaces. This participatory data can then be provided directly to the local government to inform better, more inclusive urban planning policies for the neighbourhood. Ultimately, this edutainment methodology bridges the awareness deficit by ensuring the historical narrative is not merely consumed, but actively performed, functioning as a community-driven data engine to protect local identity against the homogenizing forces of modern consumption (Gerosa & Tartari, 2024).

4.2 Theoretical Framework: Principles of Interactive Digital Heritage Gaming

The design of the proposed application is deeply rooted in the theories of digital heritage scholar Erik Champion. Champion defines interactive digital heritage as the attempt to convey not just the physical appearance, but the meaning, significance, and associated social agency of cultural artifacts through interactive digital media (Champion, 2015). To ensure the game provides a meaningful cultural experience rather than just a superficial tourist application, the methodology transcends passive digitization by transforming the user into an active protagonist in the historical narrative (Tamborrino & Rinaudo, 2015). The platform is specifically designed as an accessible 2D mobile experience, completely avoiding

resource-heavy 3D environments, and is structured around three fundamental design questions (Champion, 2015):

4.2.1 Define the Exact Learning Goals

What specific, forgotten narratives of San Salvario do we want the users to experience?

Instead of relying on complex 3D reconstructions of historical buildings, the proposed 2D game focuses on the socio-spatial dynamics of the people who actually inhabited and shaped them. The core learning goals center on San Salvario's history as a "landing zone" for migrants, a hub of religious tolerance, and a centre of post-industrial civic resilience (Bolzoni, 2019; Bolzoni & Semi, 2023). Crucially, the primary goal of the digital platform is not only to rescue these forgotten narratives from being completely overshadowed by the area's current consumption-driven nighttime entertainment focus, but also to foster a critical awareness of San Salvario's heritage and history. By actively revealing these underlying historical layers, the gamified experience aims to strengthen local identity and encourage players to deeply engage with the neighborhood's authentic multicultural and post-industrial heritage.

4.2.2 Choose "Doing" over "Reading" (Procedural Learning)

How do we teach history through trial and error?

Standard archives often fail to engage younger demographics because they rely on passive reading. Conversely, digital games are highly successful because they offer procedural learning and engaging challenges (Champion, 2015). By utilizing 2D interactive mechanics, this methodology encourages users to navigate complex intellectual paths on their own terms, forcing them to adopt the roles, rituals, and trade practices of historical inhabitants to progress.

4.2.3 Define the Feedback and Rewards

How do students know they are succeeding?

In digital heritage, the reward should not just be arbitrary "points." The reward should be gaining access to the "usable past" and unlocking hidden layers of the city (Champion, 2015). In this game, the reward for successfully mastering a historical narrative is unlocking the geographic location of a contemporary site of socio-cultural value, or curated local offers. This creates a Value-Exchange Loop where the history is re-integrated into the everyday urban experience.

4.3 Game Strategy and Mechanics: Modular Gameplay and the Value-Exchange Loop

To effectively translate the Historic Urban Landscape (HUL) into a digital experience, the platform must acknowledge the inherent complexity of the built environment. As digital heritage scholars argue, there is no single, universal game mechanic capable of teaching the

entirety of a neighborhood's tangible and intangible heritage (Champion, 2015). The specificity of historical interaction prevents the creation of homogenous design guidelines; the procedural logic required to understand the socio-cultural dynamics of a 17th-century royal residence, such as the Valentino Castle, differs fundamentally from the interaction required to understand the rote labor of a post-Fordist industrial workshop or the social etiquette of a multicultural street market (Champion, 2015). Therefore, attempting to force a single, monolithic gameplay style across the entire neighborhood would result in a superficial and highly reductive learning experience.

To solve this, the application adopts a modular, node-based structure managed entirely through a responsive user interface (UI) and platform navigation system. The UI guides players sequentially through four established chronological eras (Pre-1980, 1980–1990, 1990–2006, and 2006–Present), allowing them to directly select and engage with localized architectural nodes on the digital map. Upon selecting a node, the platform launches a bespoke mini-game format uniquely tailored to the specific *genius loci* and historical data of that site. For instance, one node might transition the player into an immersive Digital Storybook to explore personal testimonies, while an adjacent node might challenge them with Cultural and Historical Puzzle Games to reconstruct architectural features or urban layouts. The overarching game strategy follows a three-step Value-Exchange Loop[9]:

4.3.1 The Hook and Educational Transparency

Within the methodological framework of the proposed platform, the "Hook" is defined as the initial engagement mechanism—an explicit, upfront challenge designed to immediately connect the contemporary neighborhood with its history. Drawing on established digital heritage theories, the platform deliberately avoids "games by stealth"—the practice of hiding educational objectives behind pure entertainment (Papert, 1998; Champion, 2015). Therefore, this Hook operates with complete transparency: it clearly informs the user from the outset that they are embarking on a chronological educational journey regarding San Salvario's heritage to foster civic participation. By embracing this transparent initial challenge, the game motivates players through the intrinsic appeal of "hard fun"—the desire to master complex, engaging historical tasks rather than simply completing simplistic recreational objectives (Champion, 2015).

4.3.2 The Situated Challenge: Culturally Significant Presence and Node-Specific Mini-Games

Because no single mechanic can represent the entirety of San Salvario, the "Challenge" phase relies on localized modularity. Shifting between different gameplay styles across the

[9] Within the context of this research, the Value-Exchange Loop is a strategic gamification mechanic that operates as a reciprocal socio-spatial contract between the user, the historical environment, and local governance. It structures user engagement into three interconnected phases: the Input of cognitive effort and procedural learning by the player; the Output of symbolic status and functional urban rewards; and the Outcome of generating qualitative, location-based data to foster civic participation and bottom-up urban stewardship.

chronological eras keeps the experience engaging, actively reducing player boredom while optimizing learning retention. To progress, the player must virtually visit specific geographical nodes and master localized mini-games designed to test their Culturally Significant Presence (Champion, 2020). This concept dictates that players must demonstrate an awareness of the specific cultural framework, values, and practices tied to the artifacts and behaviors of the exact site they are interacting with (Champion, 2020).

To operationalize this, the platform utilizes two distinct types of procedural learning mechanics, tailored specifically to the nature of each heritage node:

- **Micro-interactions (Everyday Life and Labor):** For nodes tied to industrial archaeology or artisanal heritage, the mini-games focus on "micro-interactions"—meaning small-scale, highly specific physical or tactical actions handled directly through the interface (Hiriart, 2019). Historical games are remarkably effective when they simulate the rote chores, tool usage, and busywork of everyday life. At these nodes, the player interacts directly with the screen to solve logic-based crafting puzzles or manually manage raw materials (e.g., virtually assembling a product, operating a workshop machine, or sorting raw materials). This hands-on gameplay forces the player to intimately mirror the physical labor and daily routines of past working-class inhabitants.
- **Macro-interactions (Social Tensions and Dialogue):** For institutional or monumental nodes—such as the Valentino Castle or the neighborhood's multi-religious centers—the mini-games shift to "macro-interactions" (Hiriart, 2019). Instead of focusing on physical tools, macro-interactions deal with the broader social, political, and cultural dynamics of the community. Here, the interface transitions to branching dialogue trees and socio-cultural negotiation. The player must choose historically appropriate conversational paths to debate or converse directly with digital Non-Playing Characters (NPCs), uncovering abstract historical changes, religious tolerance, and political shifts.

By varying the mechanics—switching from hands-on trade simulations to conversational dialogue puzzles—the game prevents gameplay fatigue and forces the player to adopt a distinct, historically situated role at each stop. If the user attempts to apply modern logic or acts like an uninformed contemporary consumer, they fail to achieve Culturally Significant Presence and cannot unlock the next chronological era. This design actively prevents the homogenization of the historic environment, ensuring each layer of San Salvario's identity is respected on its own terms (Champion, 2020).

4.3.3 The Reward and Reflection (Data Collection for Civic Participation)

Once a node-specific historical challenge is mastered, the application reveals the real-world location of the cultural anchor and permits the user to advance along the chronological timeline. However, the participatory process does not end with mere consumption. To actively bridge the awareness deficit, the platform encourages users to leave their own modern photos, analytical comments, and suggestions at these sites. This interactivity allows them to

personalize the digital environment and leave digital "traces" for future users (Champion, 2015). From an urban planning perspective, this final step transforms the user from a passive player into an active agent of civic participation. The qualitative data generated through these user reflections establishes a clear, community-driven database, mapping exactly how residents and temporary users perceive and value the public spaces of San Salvario today (Cerreta & Daldanise, 2017; Gerosa & Tartari, 2021).

4.4 Data Integration: Translating Urban Heritage into Game Logic

The process of converting archival research into an interactive educational platform requires a rigorous methodological translation. As scholars of digital historical games argue, designing historical gameplay must be understood as a complex semiotic translation: moving from traditional written documents and non-written archaeological sources into the procedural rules of a digital environment (Cassone & Thibault, 2016; Hiriart, 2016). Because no adaptation between two different mediums can preserve the original meaning flawlessly, the design must carefully avoid creating a reductive or deterministic version of the past (Chapman, 2016). Therefore, following the Digital Urban History approach, this platform utilizes Geographic Information Systems (GIS) to accurately spatialize historical data onto the contemporary urban layout of Turin (Tamborrino & Rinaudo, 2015). By systematically coding San Salvario's tangible built environment and intangible cultural practices into 2D spatial nodes and procedural rules, the platform invites the user to actively uncover and navigate the district's shifting historical layers.

4.4.1 Structuring the Experience: The Four Chronological Levels

To accurately represent the fluidity of the built environment and track how the exact same contemporary streets changed over time, the underlying game logic is structurally divided into four distinct chronological levels. These levels mirror the urban evolution established in Chapter 3, translating demographic shifts into progressive digital constraints:

- **Level 1: Pre-1980s (19th-Century Foundation and the Fordist Boom)**

  The logic translates the district's structural roots into foundational spatial mechanics. The system requires users to process the macro-scale logistical connectivity and the demographic shockwaves of internal migration that established the neighborhood.

- **Level 2: 1980–1990 (The Industrial Crisis and Migrant Landing Zone)**

  The socio-economic phenomenon of "urban vacancy" is translated into resource-management logic. The algorithm codes the sudden emptying of the old industrial grid as spatial voids, defining the neighborhood's transition into a primary landing zone (Cotella, 2011; Bolzoni, 2022).

- **Level 3: 1990–2006 (Institutional Transition and Multicultural Recovery)**

The demographic transition is coded into procedural matching rules. The system requires users to comprehend how spontaneous, grassroots multicultural integration redefined the local economy prior to the 2006 Winter Olympics (Vanolo, 2015).

- **Level 4: 2006–Present (Commercialization and the Student Movida)**

  The logic brings the historical layers into the present day by translating the aggressive commercial gentrification and "studentification" into strict spatial and temporal constraints, reflecting the highly contested nature of the contemporary public space (Bolzoni & Semi, 2023; Petrilli & Vanolo, 2025).

4.4.2 Selecting and Coding Tangible Heritage as Spatial Nodes

As established in Chapter 3, San Salvario possesses a dense, overlapping network of historical assets. However, to maintain a focused educational experience, the methodology isolates specific structures not merely for their historical impact, but precisely because they represent heritage assets identified as being at risk. Within the highly pressurized post-industrial context of San Salvario, "heritage at risk" does not merely refer to the isolated physical decay of individual monuments, but rather to the comprehensive erosion of the interconnected physical, functional, and social layers that constitute the district’s local character.

This methodology identifies several interconnected forces—detailed extensively in previous chapters—that currently place these heritage nodes at risk, justifying the urgent need for digital intervention. For instance, the district faces a functional risk driven by the rapid "eveningification" and expansion of the night-time economy, which systematically displaces traditional daytime commercial and artisanal spaces. Concurrently, the neighborhood is experiencing a profound demographic risk characterized by rapid gentrification and studentification, leading to the spatial displacement of the established migrant communities that originally forged the area's identity. Furthermore, these physical and social transformations culminate in a critical cultural risk, threatening to reduce the district's complex, multi-layered history to an "unuseable past," where local memory risks being completely overwritten by a superficial landscape of nocturnal consumption.

This identification of "heritage at risk" directly dictates the platform's node selection, level design, and game mechanics. Spatial nodes are explicitly selected to highlight the vulnerable socio-spatial dynamics of the neighborhood—most notably, the continuous but fragile narrative of migration. Migration serves as the central thematic thread of the prototyped games because it perfectly mirrors the district's chronological evolution. The digital experience deliberately traces this progression: Level 1 begins with the historical arrival of internal Southern Italian workers; Level 2 transitions to the influx of international migrants; Level 3 explores how these transnational communities lived and economically integrated, such as through the Madama Cristina market; and finally, Level 4 confronts the contemporary nightlife crisis, which is primarily driven by a modern wave of transient "migrants"—international and out-of-town university students.

Consequently, the level design chronologically traces these vulnerable spaces before their historical meaning was overwritten by the modern leisure economy. Finally, the game mechanics procedurally force the player to actively rebuild, navigate, and sustain these at-risk social histories through trial-and-error interaction, rather than passively observing them. These landmarks are coded as interactive geometric points on the 2D map, where era-specific procedural logic is triggered:

- **Pre-1980 Era (20th-Century Foundations): The Gateway Node (Porta Nuova)**

  Functioning as the literal architectural gateway for new arrivals, this transit hub is coded as a logistical routing node. The player must synthesize geographical data to reconstruct the macro-scale infrastructural links that originally populated the local street grid.

- **1980–1990 Era: The Residential Voids (The Landing Zone)**

  The physical collapse of the Fordist industrial economy is translated into a spatial-allocation framework. The abandoned 19th-century housing stock and empty factories are coded as "utilitarian voids," functioning as manageable spatial capacities that must be aligned with incoming demographic data.

- **1990–2006 Era: The Multicultural Integration Node (Madama Cristina Market)**

  Representing the neighborhood's socio-economic recovery, the physical market square is coded as a category-matching node. The architecture of the market stall serves as the digital framework where users must correctly assign commercial specializations to distinct demographic attributes.

- **2006–Present Era: The Contested Street Grid (Via Baretti / Saluzzo Square)**

  The contemporary leisure landscape is coded directly into the historic orthogonal street grid. Pedestrianized corridors and public squares function not as open spaces, but as a restrictive spatial framework where physical urban features (like sprawling bar tables and nightlife crowds) act as dynamic, impassable digital obstacles. This arcade-style mechanic forces the player to experience the spatial alienation of local residents highlighting how the aggressive *movida* currently places the neighborhood's livability and historical identity at risk.

4.4.3 Grounding Intangible Heritage into Playable Mechanics

While tangible architectural nodes provide the geographical setting, the intangible heritage of San Salvario—its civic frictions, daily routines, and cultural shifts—must also be translated into playable mechanics. Because purely abstract social dynamics are difficult to gamify, the methodology maps intangible heritage strictly onto physical interface constraints (Hiriart, 2016):

- **Pre-1980 Era (20th-Century Foundations): The Trauma of Migration**

The intangible exhaustion and grueling duration of the post-war internal migration are translated into strict temporal constraints. By artificially compressing time through a dynamic timer, the system forces procedural empathy, requiring the user to execute spatial decisions under simulated temporal duress.

- **1980–1990 Era: Ecological Succession**

  The sociological process of new transnational migrants settling into a foreign urban fabric is converted into a pathfinding and allocation mechanic. The tacit knowledge required to navigate a new neighborhood is represented through procedural rules that demand the correct matching of family units to specific architectural capacities.

- **1990–2006 Era: Multicultural Sociability**

  The intangible rhythms of everyday multicultural trade and generational commercial shifts are converted into a procedural sorting logic. This interface challenge transfers tacit knowledge regarding how specific ethnic networks shaped local commercial specializations through trial-and-error play rather than heavy textual exposition.

- **2006–Present Era: The Right to the City (Resident Resistance)**

  To critically examine the contemporary era, the sociological conflict over nighttime space is translated into a spatial-timing mechanic. The sensory overload, noise, and spatial segregation experienced by long-term residents facing the *movida* are coded as sudden, time-sensitive obstacles, transforming the abstract "right to rest" into a tangible, playable constraint (Petrilli & Vanolo, 2025).

4.4.4 The Technological Framework: GIS Spatialization and Interactive 2D UI Design

To operationalize this complex historical data, the platform is conceptualized as an accessible digital tool designed explicitly through an urban planning lens. The macro-navigation relies on standard Geographic Information Systems (GIS) to spatialize historical data, seamlessly anchoring digitized archival cartography and socio-economic data points to exact X/Y coordinates on the local San Salvario street grid.

At the micro-level, the methodology deliberately bypasses resource-heavy 3D augmented reality, instead leveraging highly interactive 2D Graphical User Interfaces (GUI) designed via Figma. From a heritage perspective, this 2D approach is fundamentally advantageous: it translates complex sociological data into highly legible puzzles without the cognitive overload or spatial disorientation often associated with fully simulated 3D spaces (Münster et al., 2019). Ultimately, this streamlined technological framework serves a critical dual purpose. It ensures that the player's focus remains entirely on bridging the awareness deficit, while simultaneously preparing the interface to function as a participatory digital platform for collaborative mapping. This streamlined approach allows users to easily anchor their contemporary civic feedback back into the digital map, effectively supporting community-driven data collection.

4.4.5 Visual Identity and Interface Aesthetics: The Importance of UI Design

To ensure the digital platform effectively bridges the awareness deficit and is accessible to the target demographic, rigorous attention must be given to the application's overall visual identity. As contemporary urban studies highlight, graphic design operates as a crucial form of intentional communication, capable of conveying the core values of an urban project directly to the user without acting as a superficial commercial tool (Rehan, 2013; Kavaratzis & Kalandides, 2015). Rather than serving as mere digital decoration, the visual aesthetics of the 2D platform act as a foundational educational device designed to reconnect the transient user with the physical city (Champion, 2015).

The visual identity materializes first in the platform's logo, which must directly translate the abstract concepts of historical discovery and civic participation into a unified graphic mark. In digital heritage applications, a well-designed logo serves as a critical semiotic anchor (El Hakeh, 2018). It synthesizes recognizable architectural silhouettes and local geography with clean, minimalist geometry to become a localized visual narrative. By carefully orchestrating these design factors, the logo transcends simple aesthetics to ground the player's experience in the identity of the territory, reducing user friction and fostering a sense of shared community ownership (Daldanise, 2016; Mugnano, Tepeli Türel, & Terenzi, 2022).

Furthermore, the aesthetic impact and the "look and feel" of the 2D text-navigated interface play a highly significant role in the total User Experience (UX), directly influencing how users emotionally connect with the digital content (Bernhaupt, 2010; Blythe, Hassenzahl, & Wright, 2004). Importantly, the application must actively consider the extreme demographic diversity of its target audience. The contemporary reality of San Salvario is defined by a complex social mix: it is inhabited by both a rapidly aging population of long-term residents who hold the deep-seated historical memory of the district, and a massive influx of international university students and transient youth (Bolzoni, 2022). Therefore, the interface design must bridge this demographic divide by satisfying multiple, often contrasting, user needs (Mugnano, Tepeli Türel, & Terenzi, 2022). On one hand, research demonstrates that younger demographics are heavily influenced by modern, sophisticated media; consequently, the interface must feel visually "new" and aligned with current aesthetic trends to successfully capture the attention of young city users (Jones & Shao, 2011; Johnson, 2005). On the other hand, the platform must remain highly intuitive, legible, and easy to navigate for older citizens, avoiding overly complex interactive mechanics that could exclude them from the digital experience. To successfully attract and engage this broad audience, the visual identity employs a clean, inclusive design language that balances contemporary visual appeal with strict digital accessibility and readability (Deterding et al., 2011).

However, this need for cross-generational usability and modern visual appeal must be carefully balanced with the *genius loci* of the San Salvario district (Pileri & Granata, 2012). As historical educational methodologies suggest, the deliberate training of the "chromatic sense" serves to stimulate spontaneous attention, ultimately transforming any user—whether a senior citizen or a newly arrived international student—into an active "observer of his

surroundings". By aligning trendy, high-contrast digital interfaces with the physical materiality of the neighborhood—reflecting its historic brickwork, industrial infrastructure, or local biodiversity—the application subconsciously trains the player to notice the authentic architectural details of the built environment rather than simply staring at their smartphone screen (Malcovati, 2012). Ultimately, a cohesive and intentionally designed color palette ensures that the digital interface feels fresh and exciting to the youth, accessible and clear to older residents, and profoundly authentic to the history of the district, guiding the entire community through the chronological eras with clarity and visual harmony.

4.5 Game Strategy and Mechanics: The Value-Exchange Loop

To ensure sustained engagement from the target demographic—specifically the transient university student population—the digital platform utilizes a comprehensive Value-Exchange Loop. In the realm of interactive digital heritage and serious games, relying solely on the user's intrinsic desire to learn history is rarely sufficient to guarantee widespread participation. As gamification theories highlight, engaging a broader public requires the strategic implementation of game design elements that balance demanding challenges with meaningful, contextually appropriate rewards (Deterding et al., 2011). Therefore, this platform operates not as a passive digital archive, but as a reciprocal socio-spatial contract between the user, the historical environment, and the local governance structure. This continuous cycle is rigorously structured into three interconnected phases: the Input, the Output, and the Outcome.

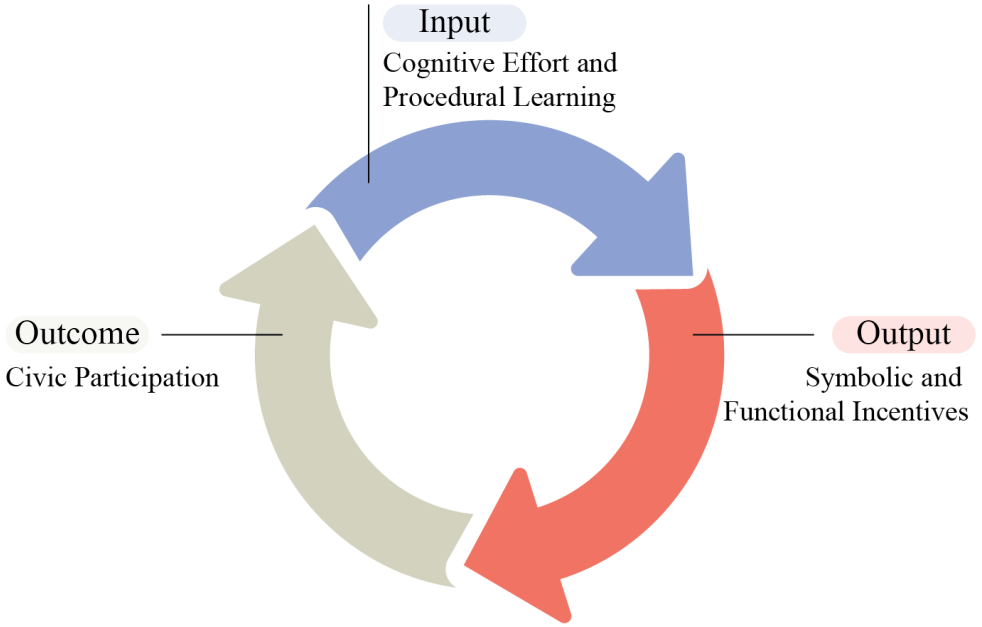


Figure 4.1: The Value-Exchange Loop illustrating the workflow of Input (Procedural Learning), Output (Functional Incentives), and Outcome (Civic Participation). Created by the author using Adobe Illustrator.

4.5.1 The Input: Cognitive Effort and Procedural Learning

The cycle initiates by requiring a substantial input of cognitive effort, spatial exploration, and time from the user. Rather than passively consuming textual information, the player interacts directly with the digital map, navigating the contemporary streets of San Salvario to unlock and engage with localized mini-games. Through this process, the user is invited to decode the district's complex socio-spatial layers across its four distinct chronological eras (the pre-1980s foundation, the 1980–1990 industrial crisis, the 1990–2006 institutional transition, and the post-2006 commercialization). This effort prompts the user to temporarily step outside their modern perspective to understand the everyday routines, labor dynamics, and migrant settlement patterns of the past (Champion, 2015). By challenging the user to actively master these diverse, node-specific mechanics, the platform ensures they invest genuine intellectual labor into understanding the authentic neighborhood, rather than treating the historic street grid as a mere passive backdrop for the modern *movida* (Bolzoni, 2022; Mugnano, Tepeli Türel, & Terenzi, 2022).

4.5.2 The Output: Symbolic Status and Functional Integration

In direct exchange for this cognitive and spatial investment, the platform provides a dual Output designed to fundamentally alter how the citizen and student interact with the contemporary city. In digital heritage applications, rewards must transcend superficial point

systems; they must reintegrate the historical knowledge back into the user's everyday urban experience (Champion, 2015).

- Symbolic Output: By successfully mastering the localized historical challenges, the user experiences an increase in social status within the platform, earning a digital 'Expert Card'. This designation symbolically transitions them from an uninformed, temporary city user into an acknowledged guardian of local memory.
- Functional Output: This symbolic status translates directly into tangible urban benefits. The application unlocks curated local offers, access to hidden study spaces, and civic amenities specifically tied to the historical nodes they have just learned about (such as the *Casa del Quartiere* or adaptive reuse hubs like Toolbox Coworking). Crucially, these functional rewards are deliberately curated to guide the student toward everyday, sustainable local services rather than the homogenized, consumption-driven evening economy, actively counteracting the commodification of the district's diversity (Bolzoni, 2022).

4.5.3 The Outcome: Civic Participation and Data-Driven Governance

The ultimate culmination of this cycle is the Outcome, which operates on both the scale of individual civic awareness and broader urban governance. At the community level, the platform successfully bridges the pervasive "awareness deficit" that typically disconnects temporary users from the neighborhoods they consume. By actively engaging with the district's layered history, transient groups—such as university students and nightlife patrons—become firmly embedded in the local context. This educational process transforms them into informed citizens who can recognize contemporary spatial conflicts, understand the grassroots resistance of long-term residents, and ultimately navigate the shared urban environment with greater respect and empathy (Petrilli & Vanolo, 2025).

However, the methodological design of this platform recognizes that fully unregulated, open-access crowdsourcing in digital heritage poses significant risks, including the propagation of inappropriate content, data vandalism, and the loss of historical focus. To counteract these vulnerabilities, the Value-Exchange Loop is structurally underpinned by a moderated participatory framework[10]. Within this methodological approach, it is established that any user-generated 'digital traces' must be subjected to strict curation protocols by trusted local administrators. This ensures that the qualitative spatial data harvested from the community remains ethically curated, reliable, and scientifically viable before it is utilized as a diagnostic repository for urban planning.

As contemporary urban studies indicate, top-down regeneration strategies often lead to the "selective empowerment" of privileged groups, which inevitably results in spatial exclusion and the loss of authentic place identity (Gerosa & Tartari, 2021). To counteract this, the qualitative and geographic data harvested through the platform's Value-Exchange Loop

[10] A digital management system where user-generated content is subjected to curation, authorization, and moderation by administrators prior to public display, actively mitigating the risks of data misuse often associated with fully unregulated open-access models.

provides municipal authorities and urban planners with a direct, community-driven repository of feedback. It maps exactly how residents and users currently perceive, value, and utilize the public spaces of San Salvario. By facilitating this dialectical cooperation and trust-building between the citizens and the municipality (Gerosa & Tartari, 2021), the digital platform allows for adaptive evaluations in highly complex contexts (Cerreta & Diappi, 2014). Ultimately, this ensures that future urban planning policies are not imposed from above, but are co-created to reflect the genuine needs, historical values, and spatial reappropriations of the entire community.

Chapter 5, The Final Output: An Interactive Gamified Platform

5.1 Introduction: Translating Archival Data into Digital Edutainment

Building upon the methodological blueprints established in the previous chapter, this section transitions from theoretical game logic to practical execution by presenting the finalized interactive digital prototype. While the preceding analysis defined the pedagogical rules and the spatial data necessary to highlight San Salvario's heritage, this chapter focuses entirely on the concrete output: the visual design, functionality, and user experience of the completed digital game platform.

In this chapter, the abstract concepts of the Historic Urban Landscape (HUL) and procedural learning are materialized into a highly accessible, 2D Graphical User Interface (GUI). This section details how rigorous historical archives were translated into an intuitive and visually engaging digital geography using tools such as WebGIS and Figma.

As explained in Chapter 3, San Salvario possesses a dense, multi-layered heritage, consisting of various tangible landmarks—such as its 19th-century orthogonal street network, industrial artifacts, and historic monuments—as well as intangible social practices that have defined the area across decades. However, the rapid expansion of the contemporary leisure economy has placed this local identity in severe jeopardy, transforming these physical and social layers into heritage at risk. To effectively bridge the resulting awareness deficit, this study identifies a series of "historical nodes" that characterize the neighborhood's evolution. Recognizing that a digital heritage platform must balance historical depth with user engagement, this research does not attempt to gamify every existing node simultaneously. Instead, this chapter presents four representative game levels, each corresponding to a distinct historical era. As established in Chapter 4, the selection of these specific "core nodes" is deliberately driven by the continuous but fragile narrative of migration. These games serve as a procedural learning strategy, designed to transform complex urban transformations into interactive, manageable experiences. While each era contains multiple heritage nodes, the prototyped levels focus specifically on those vulnerable anchors that best illustrate the demographic and socio-economic shifts of their respective periods, tracing the district's evolution from a destination for Southern Italian workers to a transnational hub, and finally to a contested landscape of transient students. (See Table 5.1)

Game Level	Period	All Key Heritage Nodes	Prototyped Games
Level 1	Pre-1980 (20th-Century Foundations: Industry, War, and Migration)	Porta Nuova Station, The "Architecture of Tolerance", *Fabbrica Italiana Automobili Torino* (FIAT), The Second World War	**Porta Nuova Station (Train of the Sun Game)**
Level 2	1980–1990	Residential Voids Near Porta Nuova, Ex Fabbrica Schiapparelli , Torino Esposizioni Complex, University of Turin Scientific Hubs	**Residential Voids (Landing Zone Game)**
Level 3	1990–2006	Piazza Madama Cristina Market, Casa del Quartiere San Salvario, Churches & Community Hubs	**Piazza Madama Cristina (Multicultural Marketplace Game)**
Level 4	2006–Present	Saluzzo Square, Via Baretti, Student Hubs, Bars related to Nightlife	**Via Baretti (The Nightlife Playscape Game)**

Table 5.1 - Historical Periods, identified heritage nodes, and Prototyped Games.

The following pages provide a comprehensive visual walkthrough of the platform, specifically highlighting three core elements. First, it examines the Visual Identity and Interface Aesthetics, demonstrating how the deliberate combination of modern digital trends and authentic, localized color palettes creates an interface that appeals to transient student populations while remaining highly accessible to older, long-term residents. Second, it presents a tangible Gameplay Walkthrough, offering a screen-by-screen navigation of the map as the user progresses through the district's four defining chronological epochs, interacting directly with specific tangible and intangible heritage nodes. Finally, it outlines the In-Game Evaluation and the Value-Exchange Loop, explaining the exact digital mechanics used to reward procedural learning, secure student incentives, and capture the user-generated "digital traces" that fuel the platform's community-driven data engine.

Ultimately, this chapter illustrates how the finalized aesthetic and interactive design successfully activates the "usable past," proving that a well-crafted digital tool can seamlessly bridge the gap between static historical preservation and contemporary, bottom-up civic participation.

5.2 The Digital Geography and User Interface

As an urban planner, constructing the digital architecture of this platform requires bridging physical spatial realities with digital accessibility. The macro-navigation of the application is built upon a Web-based Geographic Information System (WebGIS) framework. Through this approach, the concept of Georeferenced Data is fundamental: every historical node, archival photograph, and interactive puzzle designed within the application is tied directly to exact, real-world X/Y coordinates on the Turin street grid. Because the platform functions as a virtual spatial interface rather than relying on restrictive physical GPS geofencing, it ensures that this historical geography remains entirely accessible to all demographics, allowing users to navigate the physical street grid virtually from any location.

To translate this complex spatial data into an intuitive user experience, Figma was utilized to design the highly interactive, 2D Graphical User Interface (GUI), while the Adobe Creative Suite was employed to develop the application's logo and cohesive visual identity. This streamlined 2D approach deliberately avoids the cognitive overload and spatial disorientation often associated with fully simulated 3D spaces, prioritizing the legibility of the urban information.

Ultimately, this integration of GIS and UI design enables precise Spatial Data Collection as part of the platform's Value-Exchange Loop. When users interact with the virtual map and submit their own "digital traces," the GIS framework automatically anchors this qualitative community feedback to specific geographic coordinates. This transforms the gamified interface into a dynamic Public Participation GIS (PPGIS) tool, generating a valuable, georeferenced database of contemporary civic perception that can directly inform sustainable local governance and urban planning policies.

5.2.1 Visual Identity and Interface Aesthetics

The application's logo functions as a critical form of intentional communication rather than a mere commercial ornament, synthesizing the spatial identity of the territory into a unified graphic mark. As executed in the interface design, the logo incorporates a clean, minimalist icon of the 1851 orthogonal grid to represent the physical layout of San Salvario alongside clean typography. By anchoring the primary visual mark directly in local geography, the logo establishes a localized visual narrative right from the welcome screen, reducing user friction and fostering an immediate sense of community ownership over the digital space.

Figure 5.1 - The San Salvario Game logo. Designed by the author using Adobe Illustrator, the logo incorporates a minimalist icon of the 1851 orthogonal street grid to synthesize the district's spatial identity and foster community ownership.

Justified by the concept of the *genius loci* , the primary color palette leverages a strategic blend of local heritage and modern interface trends. The foundational branding elements utilize two distinct shades of slate-indigo extracted directly from the historic roof architecture of the Valentino Castle. To contrast with these historical anchors, the interface introduces a vibrant and trendy secondary palette featuring energetic coral-orange and bright blue accents. This juxtaposition serves an explicit pedagogical purpose: the high-contrast, trendy tones successfully capture the attention of transient university students, while the integration of authentic architectural hues trains the user's chromatic sense, subconsciously encouraging them to look up from their screens and notice the physical assets of the surrounding street grid.

Finally, the user experience and interface legibility are tailored to accommodate the extreme demographic diversity of San Salvario, balancing the habits of a massive influx of international university students with the requirements of a rapidly aging permanent population. To satisfy these contrasting needs, the digital environment ensures that the platform remains easy to understand and read for everyone. The application bypasses unnecessary decorative complexity, structuring its menus around large, clear fonts and high-contrast, clickable button blocks. This layout maintains a clean, modern aesthetic that satisfies the digital fluency of younger users while ensuring that older citizens face no accessibility barriers when navigating the chronological map layers.

5.2.2 Onboarding, Main Menu, and Epoch Navigation

The user experience begins with a structured onboarding sequence that functions as an intentional entry portal designed in Figma and integrated into a WebGIS framework. Upon launching the application, the welcome page explicitly presents the educational goals and civic framing of the project, avoiding hidden objectives to leverage the motivational pull of "hard fun" from the first point of contact (Figure 5.1). Following this introduction, the user transitions to the main menu, where a 2D interface layers over a dynamic map of San Salvario's street grid. This primary layout introduces a linear chronological timeline tracking the neighborhood's urban evolution across four distinct post-Fordist eras.

To ensure players fully comprehend the historical compounding of the district, the core interface restricts open exploration by locking all levels succeeding the foundational Pre-1980s era (Figure 5.2). The user must navigate the four chronological epochs in strict historical order, mastering the specific challenges of one period to systematically unlock Level 2 (1980–1990), Level 3 (1990–2006), and finally Level 4 (2006–Present). By enforcing this progression through locked menu mechanics, the gameplay loop prevents transient users from skipping directly to the contemporary landscape without first experiencing the deep industrial, migrant, and socio-political developments that generated San Salvario's authentic identity. (Figure 5.3)

Figure 5.2 - Designed Homepage Of the Platform. Source of the image: https://mywowo.net/media/images/cache/torino_valentino_02_castello_jpg_1200_630_cover_85.jpg

Figure 5.3 - Second page, Informing the player the learning expectations and introducing the edutainment experience before gameplay begins.

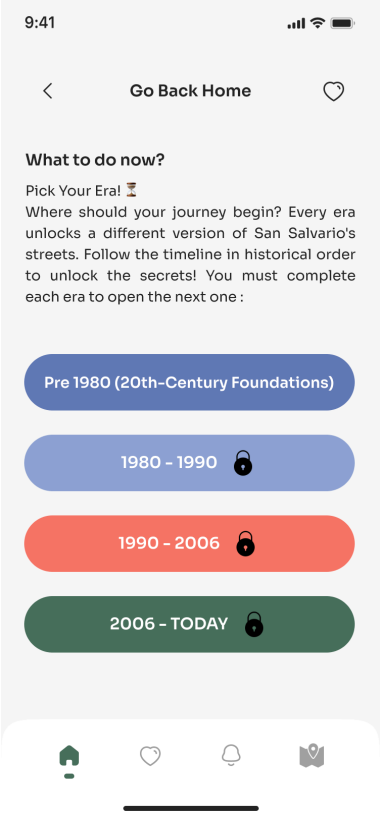


Figure 5.4 - Four chronological epochs.

5.3: In-Game Evaluation and Gameplay Walkthroughs

5.3.1 Introduction to the Gamified Evaluation Framework

The evaluation framework of the digital platform rejects passive memorization in favor of "procedural learning". Standard archives often fail to effectively engage younger demographics because they rely on passive reading. Conversely, this platform utilizes digital gamification to offer procedural knowledge, allowing users to learn urban history by actively exploring, testing hypotheses, and navigating consequences within a digital environment.

Built around the pedagogical concept of "hard fun," the platform motivates players through engaging intellectual challenges rather than simplistic tasks. The digital environment enforces a rigorous logic where the acquisition of tacit cultural knowledge—specifically understanding the "how" and "why" a historical space was used—functions as the primary mechanism for interaction and progression.

To successfully pass the in-game evaluations, players cannot rely on modern perspectives; instead, each localized mini-game uses specific interactive rules that force the user to observe, understand, and authentically mimic the historically situated behaviors, trade practices, and

social routines of past inhabitants. Ultimately, this ensures that the acquisition of cultural knowledge is the core mechanic of success, testing the user's deep comprehension of the historical context through direct, trial-and-error interaction.

5.3.2 Level 1: Pre-1980 Era (20th-Century Foundations: Industry, War, and Migration) — The Porta Nuova Logistical Genesis, “The Industrial Roots” Game

This level operates as a streamlined procedural puzzle that simulates the spatial and temporal realities of the *Treno del Sole* (Train of the Sun) migration route, effectively translating the demographic shockwave of the Fordist boom into playable mechanics. Utilizing a highly visual 2D Graphical User Interface (GUI), the gameplay relies on active touch-screen manipulation rather than passive reading. As illustrated in Figure 5.5, the experience opens with an introductory interface that pinpoints the Porta Nuova node, immediately grounding the player in the spatial context required to fully engage with the site's heritage. The gameplay is divided into two phases:

- **Phase 1: The Visual Node-Connection Puzzle (The Route):** The user is presented with a 2D interactive visual map of Italy, where major historical cities and transit bottlenecks are represented as selectable geometric points. To establish the route, the player cannot simply draw a direct, anachronistic straight line to the North. Instead, they must physically interact with the screen to correctly choose and sequentially connect the historical transit nodes, drawing the links from the origin points in the deep South (e.g., Sicily and Calabria) up the peninsula, ultimately terminating at the Turin Porta Nuova node.
- **Phase 2: The Temporal Abstraction (The Timer):** Once the correct visual connection of points is established and the digital route activates, a dynamic on-screen clock appears. This mechanic compresses time, translating a brief 30-second real-time gameplay sequence into a rapid progression of 17 to 24 historical hours. This forces the player to procedurally process and witness the grueling duration of the cross-country migration, demanding a level of historical empathy that passive observation cannot achieve.

The platform evaluates the user's spatial comprehension of the migration trajectory. Attempting to bypass mandatory historical junctions or failing the temporal constraints results in a loop reset. The player only passes the level by successfully manipulating the 2D interface to map the exact historical path of mid-20th-century internal migration. By enforcing these strict spatial and temporal rules, the game ensures the player achieves Culturally Significant Presence, understanding the historical struggle required to reach the city.

Crucially, the educational loop does not end the moment the train visually arrives at the station. To successfully conclude the level and actively bridge the awareness deficit, the interface presents the player with a final interactive prompt: they have the option to either

read the full historical story of the *Treno del Sole* via a digital journal or listen to it as an audio narration.

This multimedia storytelling is designed specifically to raise the player's awareness and explain exactly *why* they need to know this information. It clarifies the direct relationship between the visual game they just played and the physical streets of San Salvario. The narrative reveals how, upon arriving at the Porta Nuova station, these Southern workers initially slept on station benches or in the adjacent Valentino Park before rapidly settling into the 1851 orthogonal street grid of the district. By offering this option to read or listen to the full historical context, the platform seamlessly connects the macro-scale migration puzzle to the micro-scale reality of the neighborhood, proving to the user exactly how San Salvario first established its identity as a critical "landing zone". (See figure 5.5)

Furthermore, to ensure the highest level of academic rigor and transparency, the platform integrates a dedicated feature for historical clarity. When the player chooses to read or listen to the expanded historical narrative[11], they are simultaneously provided with the option to access the primary archival references, photographs, and bibliographic sources used to construct the level. As a final step in this educational game, the references interface features a dedicated button that directly links the user to official digital archives, such as the *Museo Torino* website. This seamless integration allows players to instantly explore the city's verified collections, firmly anchoring the game's narrative within Turin's broader institutional heritage framework. In the field of digital humanities, providing transparent access to this underlying evidence—often referred to as 'paradata'—is essential for maintaining scientific integrity and trust (Bentkowska-Kafel, Denard, & Baker, 2012). By explicitly exposing the archival roots of the gameplay, the application does not impose a singular, dogmatic historical truth; rather, it empowers the citizen to critically verify the historical claims, fulfilling the pedagogical requirement that users must understand exactly how local historical knowledge is constructed (Champion, 2015). (See Figure 5.5)

[11]The *Treno del Sole* (Train of the Sun) was a vital national railway service that facilitated Italy's massive internal migration during its post-WWII economic "Golden Age," making long-distance travel significantly cheaper and easier (Croce et al. 2025). The train carried an overwhelming influx of Southern Italians—primarily unskilled agricultural workers and rural families seeking employment and better opportunities in the booming industrial center of the North (Prat and Wicke 2024; Croce et al. 2025). This daily generational exodus traveled up the entire Italian peninsula and culminated at Turin's Porta Nuova station, where the train arrived every morning to deposit its passengers into a new urban reality (Basile 2014; Fofi 1964).
The arrival of the *Treno del Sole* and the massive population it brought to Turin triggered a severe urban crisis, exposing the city's deeply inadequate public housing and infrastructure (Prat and Wicke 2024). As these Southern migrants sought places to live, they drastically reshaped the demographic and spatial landscape of the city (Prat and Wicke 2024). Crucially, the train and the waves of people it transported had a profound and lasting effect on the San Salvario district (then referred to as Borgo San Salvario), which absorbed a significant influx of these new arrivals and was transformed into a primary residential hub for the immigrant population (Fofi 1964).

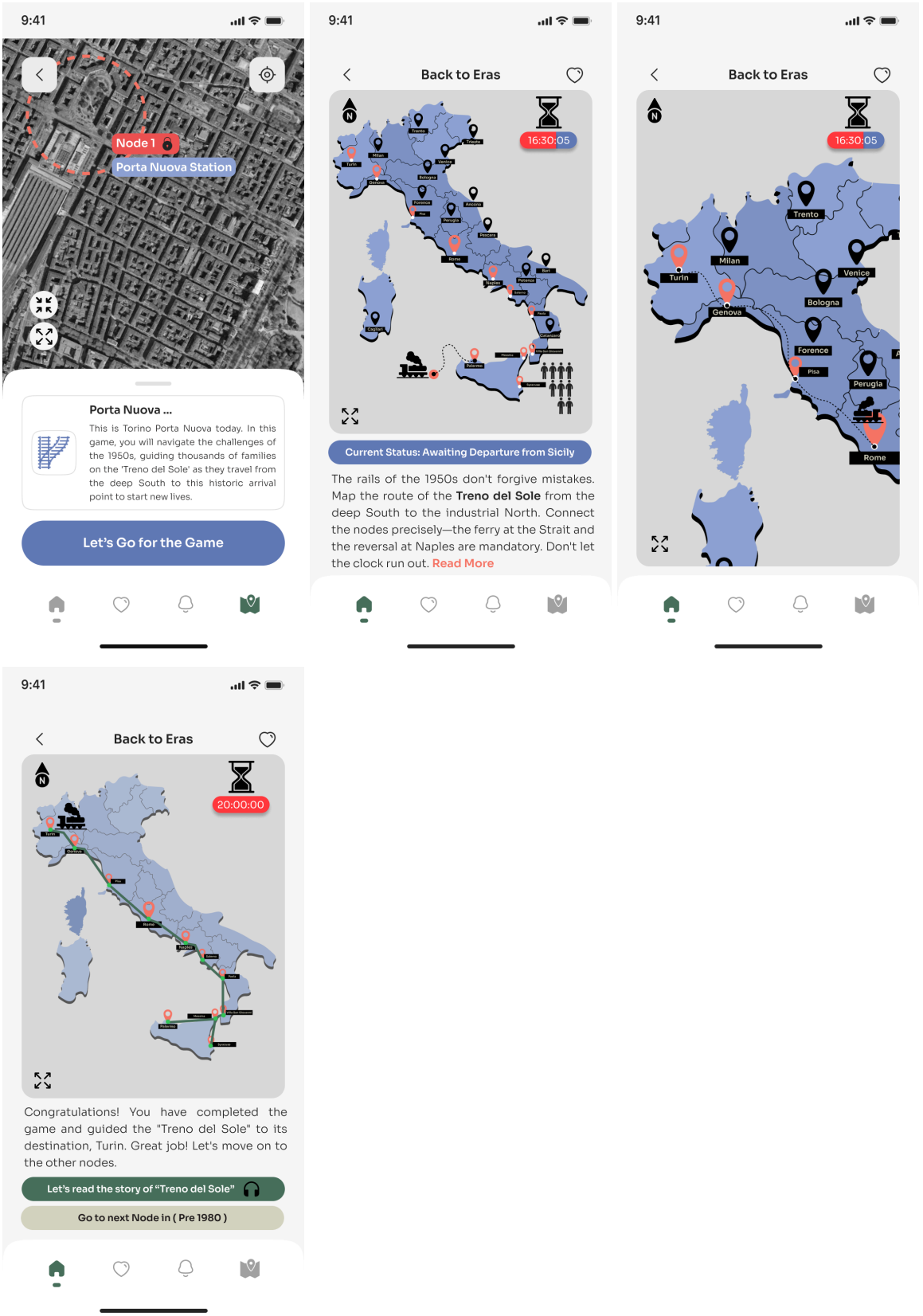


Figure 5.5 - The game of node one for (pre 1980 Era - 20th-Century Foundations) , "The Industrial Roots"

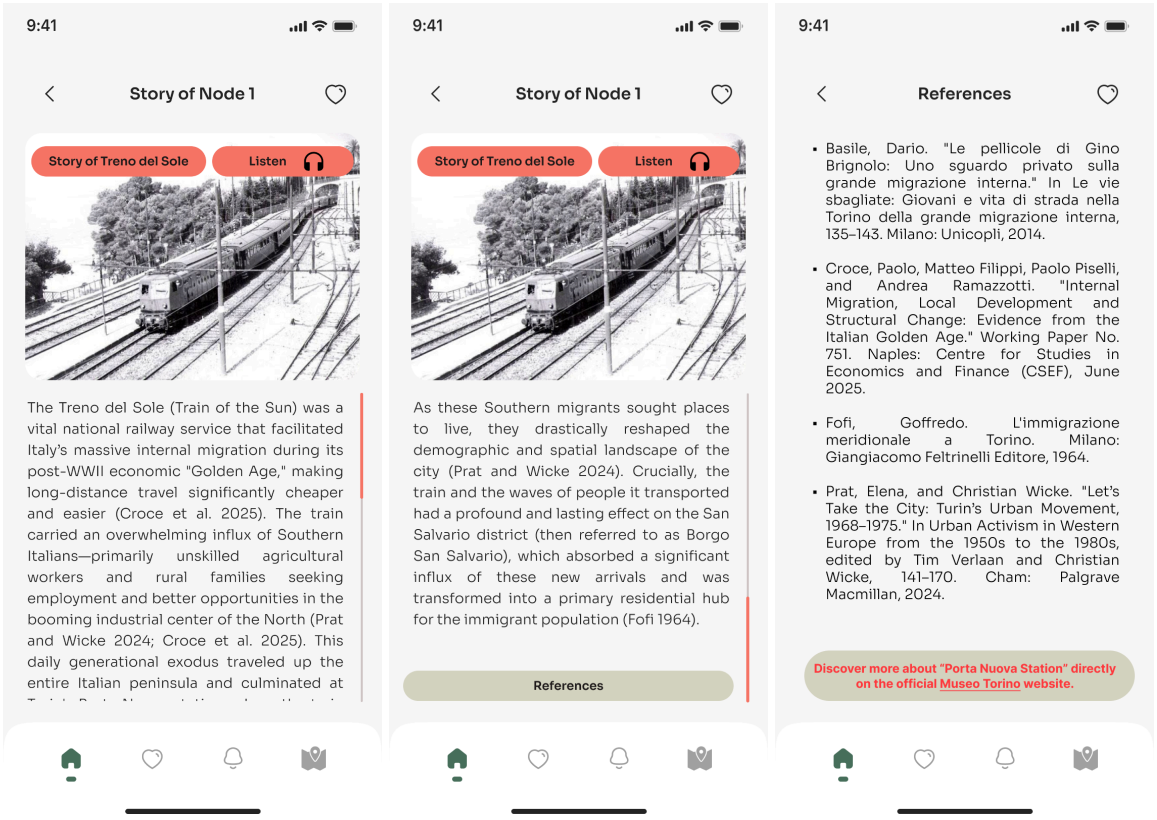


Figure 5.6 - Historical Clarity and Multimedia Integration For "Treno del Sole" Game, Source of the image: https://pintacuda.it/files/2023/07/treno-del-sole-bn-1.jpg

5.3.3 Level 2: 1980–1990 Era - " The Landing Zone " Game

This level operates as a procedural spatial-allocation mechanic that simulates the socio-economic phenomenon of "urban vacancy" and the subsequent demographic "landing zone" within San Salvario's residential and commercial fabric. It translates the transition from a Fordist industrial crisis to a new, diverse social reality into playable mechanics.
Utilizing the same interactive 2D interface established in the previous level, the gameplay focuses on active touch-screen manipulation to teach the demographic shifts of the 1980–1990 transition period. The gameplay is divided into two phases:

Phase 1: The Demographic Influx
In this phase, the player observes the arrival of new transnational waves into the neighborhood. This phase establishes the historical context: as the industrial crisis hit, the outmigration of the traditional workforce led to a sharp decrease in property and rental values. This visual cue teaches the player that the neighborhood became accessible to new populations precisely because of this economic abandonment. (See Figure 5.7)

Figure 5.7 - Representing the arrival of new migrant waves and the demographic influx into the neighborhood.

Phase 2: Filling the "Utilitarian Voids" Once the economic context is established, the player interacts with the labyrinthine layout where residential units have been left vacant. The player must identify these "utilitarian voids"—empty housing stock left behind by the industrial crisis—and guide the arriving family groups into these units. The objective is to match the family size to the vacant housing capacity. This navigational challenge is designed to be engaging and slightly challenging, simulating the complexity of settling into a new city and the process of "ecological succession" where new inhabitants reclaim vacant architectural spaces.

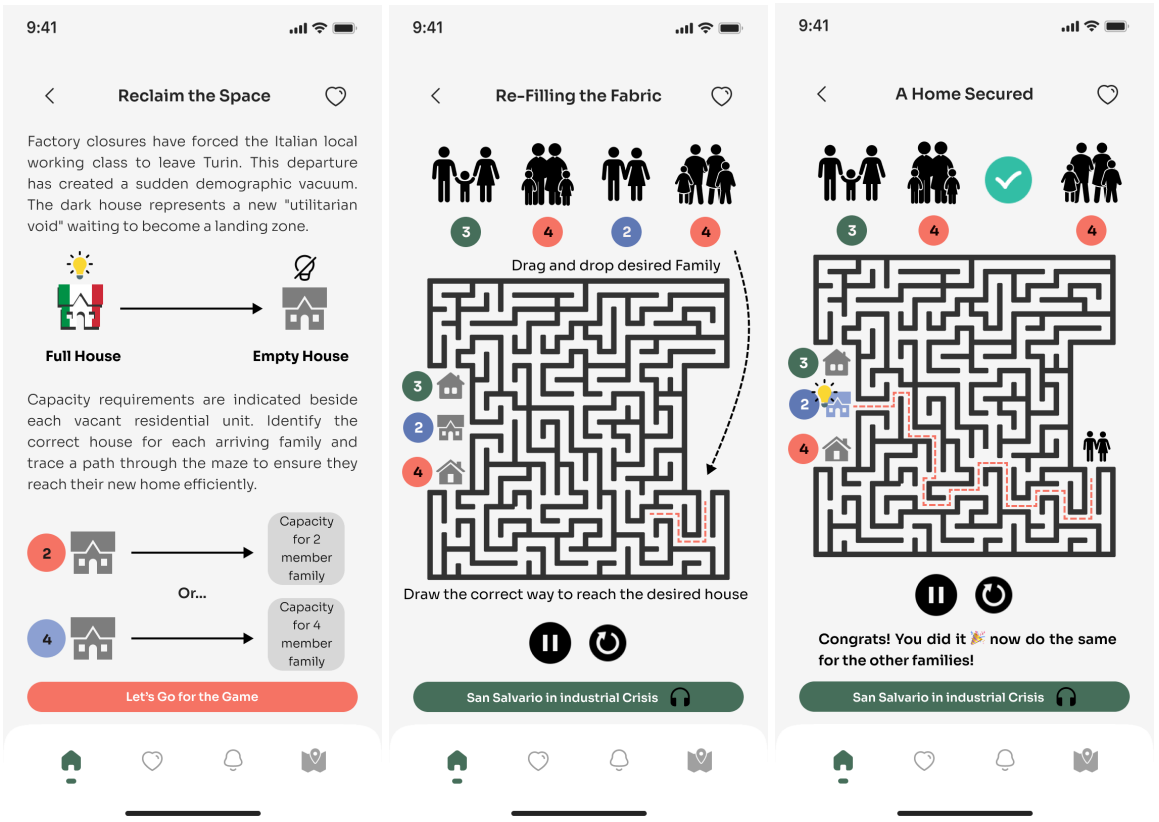


Figure 5.8 - Socio-spatial reallocation, where players guide arriving international families to occupy residential units vacant by outmigrating Italian households following the industrial crisis.

Upon successfully matching all families to their new residences the player has the option to access a historical briefing—the "Historical Narrative Module" —which explains why these houses were empty and the broader socio-economic context of the industrial crisis in San Salvario.[12] To maintain academic transparency, this module includes a comprehensive references page citing the foundational sociological studies of the era. Furthermore, as the final step in this educational game, a dedicated button links players directly to the official *Museo Torino* website. This seamless connection encourages users to step beyond the game, verify the historical claims, and independently explore the city's digital archives to learn more about the neighborhood's multicultural genesis. (Figure 5.9)

[12] During the 1980s and 1990s—following the crisis of FIAT's manufacturing dominance that triggered a profound, city-wide industrial decline (Bolzoni 2016; Bolzoni and Semi 2023)—the centrally located district of San Salvario experienced a significant period of urban decay. This era was characterized by severe building deterioration, a small retail crisis, and the emergence of empty commercial spaces (Bolzoni 2016). However, this widespread decay and the resulting accessibility of the area's real estate allowed the neighborhood to function as the crucial "first beachhead for subsequent waves of migration" arriving in Turin (Bolzoni and Semi 2023).
Taking advantage of the neighborhood's transitional state and the availability of deteriorated or empty spaces, international migrants moved into the district to settle. Rather than remaining a purely abandoned void, San Salvario's accessible buildings and storefronts were repurposed by these new populations, leading to a highly concentrated and visible foreign presence within the neighborhood (Allasino, Bobbio, and Neri 2000; Bolzoni 2016). By utilizing this declining district as a primary landing zone, transnational migrants physically and socially reclaimed the available spaces, laying the groundwork for the area's subsequent multicultural transformation.

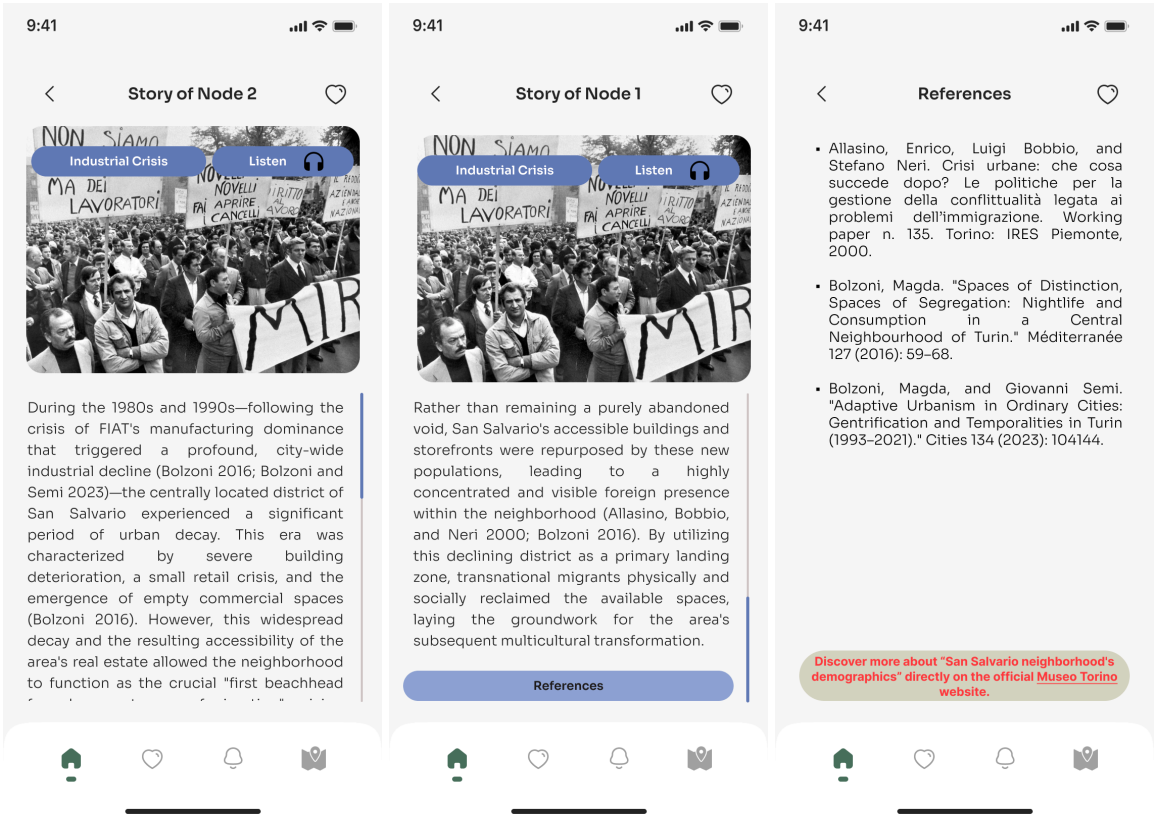


Figure 5.9 - Historical Clarity and Multimedia Integration For " The Landing Zone ", Source of the image: https://ilmanifesto.it/cdn-cgi/image/format=auto,width=1400/https://static.ilmanifesto.it/2020/10/revelli-ottobre-14-1980-marcia-dei-quarantamila.jpg

5.3.4 Level 3: 1990–2006 Era — The Madama Cristina Market Dynamics, " The Multicultural Model " Game

This level operates as a procedural matching puzzle that simulates the socio-economic phenomenon of "ecological succession" within the neighborhood's commercial fabric. It translates the transition from a post-Fordist industrial crisis to a multicultural integration hub into playable mechanics.

Utilizing the same interactive 2D interface established in Level 1, the gameplay focuses on active touch-screen manipulation to teach the demographic shifts of the 1990–2006 transition period. To establish the physical setting before the puzzle begins, the interface first presents a localized map UI, pinpointing Piazza Madama Cristina to ground the player in the exact historical space where this multicultural integration occurred. The gameplay is divided into two phases:

Phase 1: The Interactive Category-Matching Puzzle (The Market Trade):

The user is presented with a 2D interface displaying a grid of consumer product icons (e.g., knitwear, fresh pasta, electronics, household goods) and a corresponding row of national flags

representing the diverse vendor communities present in the Madama Cristina Market during this era. To succeed, the player must physically drag and drop the product icons onto the correct vendor flag based on historical commercial specializations. For instance, the player must accurately associate the Chinese flag with knitwear and clothing, the Moroccan flag with textiles and household goods, and the Italian flag with the foundational sector of fresh food and pasta.

Phase 2: The Procedural Feedback (Ecological Succession):

Once the player correctly maps the products to the vendors, the interface activates a visual "transition" effect. A dynamic infographic overlays the market stalls, demonstrating that as the older generation of Italian merchants reached retirement age, the transnational migrants purchased their commercial licenses. This procedural feedback visualizes how the specific commercial specializations were shaped by the availability of licenses and the specific ethnic networks of the newcomers, rather than by random choice.

The platform evaluates the user's comprehension of this demographic and commercial transition. Incorrect associations trigger a "trade mismatch" alert, forcing the player to reconsider the economic constraints of the era. The player only passes the level by successfully manipulating the 2D interface to reconstruct the multicultural trade landscape of the early 2000s. By enforcing these spatial and logical rules, the game ensures the player achieves *Culturally Significant Presence*, understanding how the neighborhood's "lively spirit" was rescued by spontaneous, bottom-up multicultural integration.

Like the previous level, the educational loop concludes with an active engagement prompt. The interface offers the player the choice to read the full story[13] of the Madama Cristina Market's transformation or listen to an audio narration. This narrative reveals that the market was not just a place of trade, but a vital hub of daily multicultural mediation that anchored the district's resilience in the face of the 1990s urban crisis. By providing access to the primary archival sources—such as the 2010 Chamber of Commerce report on urban markets—the platform empowers the user to verify the historical basis of these demographic shifts,

[13] Following Turin's post-Fordist industrial decline, the San Salvario neighborhood's affordable housing transformed the district into a landing zone for new transnational migrants, mirroring the earlier arrival of Southern Italians (Vanolo, 2015; Cingolani, 2016).
At the heart of the neighborhood, the historic Madama Cristina Market underwent a similar transition. As the older generation of Italian merchants reached retirement age, newly arrived foreign migrants stepped in to fill the empty stalls. Through a natural shift known as "ecological succession," these migrants purchased commercial licenses and took over the market's non-food sectors, which utilized more accessible daily permits rather than the expensive fixed licenses required for food sales (Villosio & Coccimiglio, 2010; Blanchard, 2010).
The market was soon bustling with a vibrant new energy and became highly multicultural, characterized by a distinct division of labor where specific products were predominantly sold by specific migrant groups. Chinese vendors filled their stalls with knitwear, clothing, and shoes. Moroccan merchants supplied the neighborhood with housewares, small electronics, and textiles. Senegalese sellers offered colorful accessories like bags, belts, sunglasses, and hats, while Bangladeshi vendors specialized in costume jewelry (Blanchard, 2010).
Over time, these new merchants completely changed the rhythm of the square. Working side-by-side with the remaining Italian vendors and interacting daily with diverse local customers, they breathed new life into the area. What had previously been an area marked by urban decay and severe social tension was successfully transformed into a celebrated hub of spontaneous, everyday multicultural integration, ultimately rescuing San Salvario's lively spirit (Allasino, Bobbio, & Neri, 2000; Blanchard, 2010).

reinforcing the scientific integrity of the digital heritage experience.To further support this academic transparency, the reference module features a dedicated button that links the player directly to the official *Museo Torino* website. This seamless digital integration encourages users to explore the city's verified historical archives, firmly anchoring the game's multicultural narrative within Turin's broader institutional heritage framework. (Figure 5.11)

Figure 5.10 - The process of the game

Figure 5.11 - Historical Clarity and Multimedia Integration, " The Multicultural Model " Game, Source of the image: Madama Cristina Street Market © Historical Archives of the City of Turin (ASCT, Photo Library, 12B16_096), https://www.museotorino.it/images/16/a7/01/7c/16a7017cc5274ea7a236d4b9b112e9ce-1.jpg

5.3.5 Level 4: 2006–Present Era — “ The Movida ” Game

This final level operates as a fast-paced 2D arcade game that translates the contemporary socio-spatial conflict over the night-time economy into playable mechanics. Following the post-Olympic push toward a leisure economy, the neighborhood experienced rapid commercial gentrification, transforming the historic streets into a highly contested landscape of nocturnal consumption, locally known as the *movida* (Bolzoni & Semi, 2023; Petrilli & Vanolo, 2025). Utilizing the same interactive 2D interface established in the previous levels, the gameplay forces the user to shift their perspective: rather than acting as a transient student or consumer seeking entertainment, the player takes on the role of an exhausted local resident whose workday is over, navigating the physical street grid simply to reach their front door and sleep. To establish the physical setting before the gameplay begins, the interface first presents a localized map UI, pinpointing Via Baretti and Piazza Saluzzo to ground the player in the precise historical space where this night-time conflict occurs. The gameplay is divided into two phases:

- Phase 1: The Grid-Based Arcade Puzzle (Navigating the Nightlife): Rather than interacting with a traditional top-down map, the user faces a dynamic 2D arcade interface built directly upon a hypothetical grid. To progress through this grid, the player must actively maneuver their resident character through a series of dynamic, pop-up obstacles that represent the actual daily challenges of the contemporary *malamovida*: loud noise, crowds of students, sprawling bar tables, and urban waste. The player must physically manipulate the touch-screen interface to actively confront or bypass these hindrances, block by block, to clear their path home.
- Phase 2: The Temporal Constraint (The Timer): To accurately simulate the anxiety of this environment, the interface introduces a strict temporal mechanic. When a nightlife obstacle suddenly appears on the street grid, the player has only four seconds to move their resident and resolve the confrontation before the obstacle shifts and blocks the route. This fast-paced mechanic procedurally simulates the stress, spatial segregation, and sensory overload experienced by long-term inhabitants who are pushed out of their own public spaces by aggressive leisure patterns, demanding a level of empathy that passive reading cannot achieve (Petrilli & Vanolo, 2025).

The platform evaluates the user's ability to navigate this highly contested modern landscape. Failing to react within the strict four-second time limit or being completely overwhelmed by the noise and crowds results in a loop reset, preventing the resident from reaching home. To successfully survive the chaos, collect the required four progression points, and finally reach the front door, the player must actively confront all four challenges along the grid. By enforcing these stressful constraints, the game demands a high level of cognitive effort, ensuring the player achieves Culturally Significant Presence by intimately understanding the residents' fight for their "right to the city" and their fundamental right to rest (Bolzoni, 2022; Champion, 2020).

Crucially, the educational loop does not end when the player finally reaches their digital front door. To successfully conclude the final epoch and actively bridge the awareness deficit, the

interface presents the user with a final interactive prompt: they have the option to either read the full story of the *movida* via a digital journal or listen to it as an audio narration.
This multimedia storytelling[14] reveals the direct relationship between the stressful arcade game they just played and the physical streets of San Salvario. The narrative explains how the strategic reinvention of Turin after the 2006 Winter Olympics flooded the district with a new cosmopolitan middle class, transforming the authentic neighborhood into an intense conflict zone between a booming night-time economy and the civic resistance of local committees (Bolzoni, 2019; Vanolo, 2015). By offering this final reflection, the platform ensures that transient users look past the vibrant storefronts to recognize the district not just as an economic playground, but as a complex, lived environment.

Furthermore, to ensure the highest level of academic rigor, the platform maintains its dedicated feature for historical clarity in this final level. When the player chooses to read or listen to the modern history of the *movida* , they are provided with the option to access the primary bibliographic sources and sociological studies used to construct the narrative (such as the contemporary research by Bolzoni, Semi, and Vanolo). To further support this transparency, the reference module features a dedicated button that links players directly to the official *Museo Torino* website. This seamless digital integration allows users to independently explore the city's verified collections, firmly anchoring the game's contemporary narrative within Turin's broader institutional heritage framework. By explicitly exposing the academic roots of the gameplay, the application empowers the citizen to critically verify the socio-economic claims, fulfilling the pedagogical requirement that users must understand exactly how contemporary urban knowledge is constructed. (See Figure 5.12).

[14] The story of today's San Salvario truly begins in 2006. Following the Winter Olympics, Turin made a strategic decision to step away from its heavy, industrial past and reinvent itself as a modern city of culture and leisure (Cotella, 2011; Vanolo, 2015). Because of its authentic, gritty charm and historic architecture, the neighborhood of San Salvario quickly became the beating heart of this post-industrial rebirth (Bolzoni, 2022). Anchored by the expansion of the nearby Molecular Biotechnology Center, a massive wave of university students and a new cosmopolitan middle class flooded the district (Bolzoni & Semi, 2023).
As these new residents arrived, the physical streets began to rapidly change (Bolzoni, 2016). Instead of tearing down the old industrial warehouses, historic printing houses, and wool mills, developers creatively repurposed them through adaptive reuse (Bolzoni & Semi, 2023). They transformed these massive spaces into trendy "ruin bars," expansive pubs, and modern creative hubs (Bolzoni & Semi, 2023). However, this rapid commercial gentrification came at a cost to the everyday neighborhood (Bolzoni & Semi, 2023). Traditional grocers, local artisans, and bakeries were progressively pushed out to make room for cocktail lounges and sprawling outdoor seating platforms, a rapid transition that researchers call the "eveningification" of the district (Petrilli & Vanolo, 2025).
This profound transformation gave birth to the movida—an intense, nightly phenomenon of nocturnal socialization (Bolzoni, 2019). Every evening, massive crowds of young revelers, students, and tourists essentially colonize the pedestrianized streets and public squares for leisure and consumption (Petrilli & Vanolo, 2025). While this transformed San Salvario into the city's most vibrant economic playground, it also turned the historic streets into a highly contested landscape (Bolzoni, 2022). Today, the neighborhood is defined by an intense, ongoing conflict: the unstoppable, loud energy of a booming night-time economy clashing directly with the long-term residents who are simply fighting for their "right to the city" and their fundamental right to a peaceful night's sleep (Bolzoni, 2019; Petrilli & Vanolo, 2025).

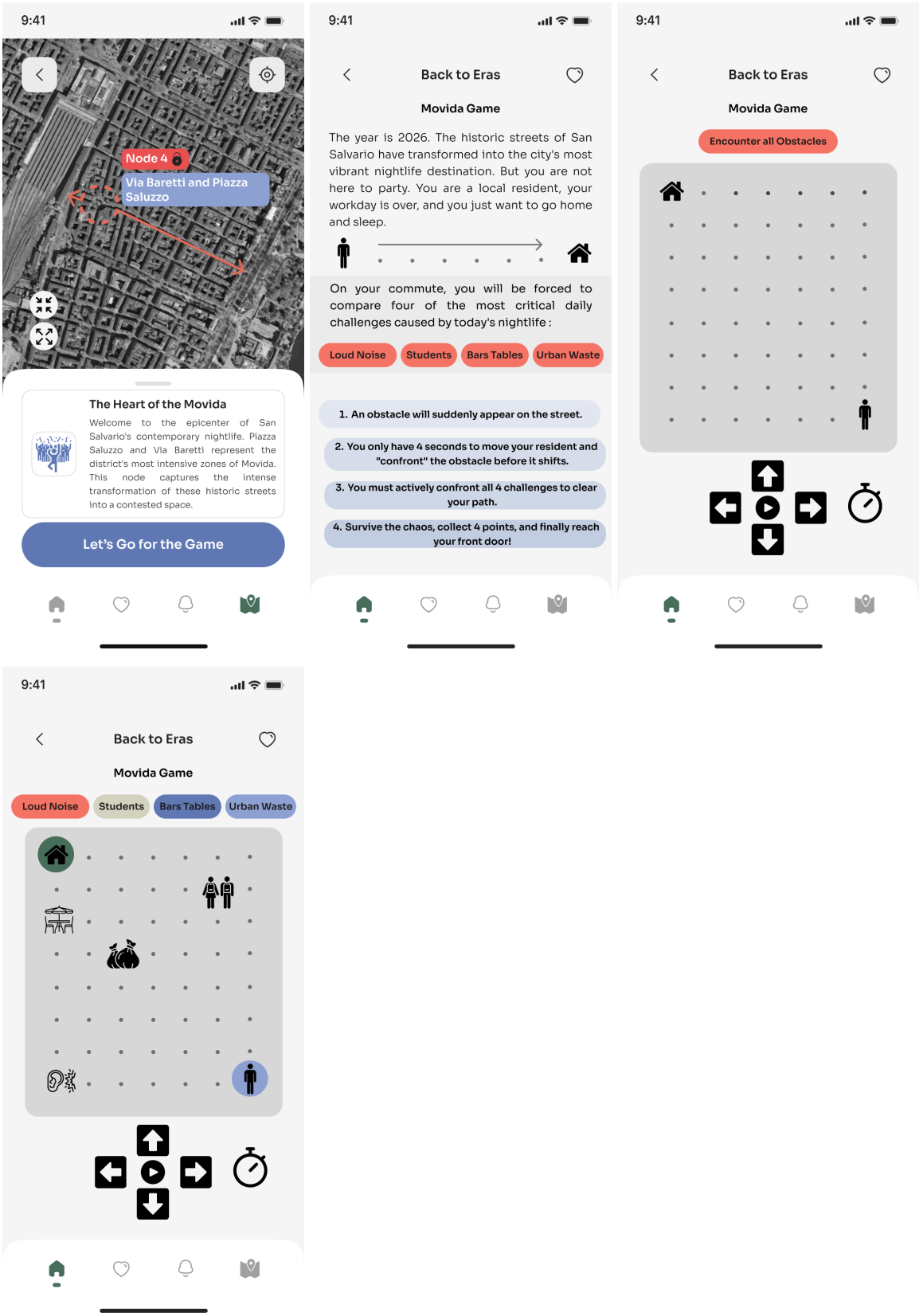
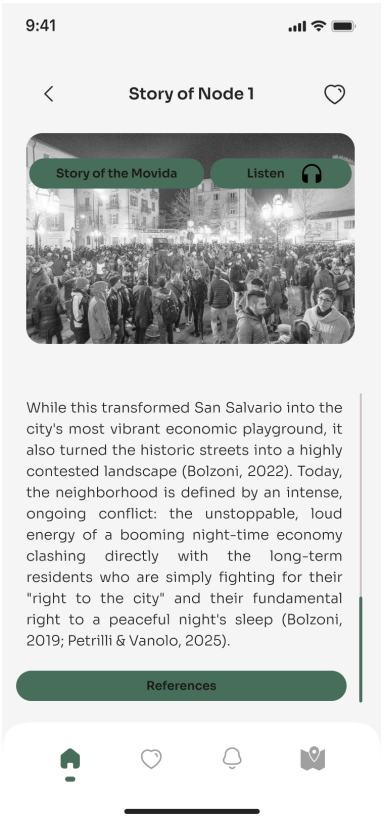


Figure 5.12 - Translating Urban Problems into Game Mechanics for San Salvario: The Movida Game

9:41
Back to Eras
Loud Noise
Students
Bars Tables
Urban Waste
🎉You Made It! You successfully navigated the chaos and got the resident safely to their front door.🎉
take a moment to look past the vibrant storefronts. This neighborhood is not just a playground—it is a contested landscape.
Want to uncover the true history behind the modern gentrification of San Salvario?
Story of the Movida
Listen

9:41
Story of Node 1
Story of the Movida
Listen
The story of today's San Salvario truly begins in 2006. Following the Winter Olympics, Turin made a strategic decision to step away from its heavy, industrial past and reinvent itself as a modern city of culture and leisure (Cotella, 2011; Vanolo, 2015). Because of its authentic, gritty charm and historic architecture, the neighborhood of San Salvario quickly became the beating heart of this post-industrial rebirth (Bolzoni, 2022). Anchored by the expansion of the nearby Molecular Biotechnology Center, a massive wave of university students and a new cosmopolitan middle class flooded the


9:41
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Story of the Movida
Listen
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Petrilli, Enrico, and Alberto Vanolo. 2025. "What Is Nocturnal About Night Studies? Insights from Turin, Italy." City, Culture and Society 40: 100617. https://doi.org/10.1016/j.ccs.2024.100617.
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Cotella, Giancarlo. 2011. "Turin Reloaded: The New, Many Souls of a City." In Urban Change: The Prospect of Transformation: 98-105. (Note: Because this is a chapter in a publication, I added the word "In" before the italicized title, which is standard for Chicago).
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Discover more about "Piazza Saluzzo" directly on the official Museo Torino website.

Figure 5.13 - Historical Clarity and Multimedia Integration for "The Movida Game", Source of the image: https://www.repstatic.it/content/localirep/img/rep-torino/2025/01/16/084110871-e059d3cf-5ccc-4a35-ba2f-763bcea72402.jpg?webp

5.3.6 The Student Reward and Incentive Mechanism

To ensure the digital platform effectively bridges the awareness deficit, it is essential to provide players with meaningful incentives to enjoy after they have successfully played, passed the historical levels, and become educated about the district. In the design of serious games, rewards must transcend superficial point systems; they must actively reintegrate the newly acquired historical knowledge back into the user's everyday urban experience (Champion, 2015). Therefore, upon completing the final epoch, the user is awarded a digital "San Salvario Master Card" (See Figure 5.14).

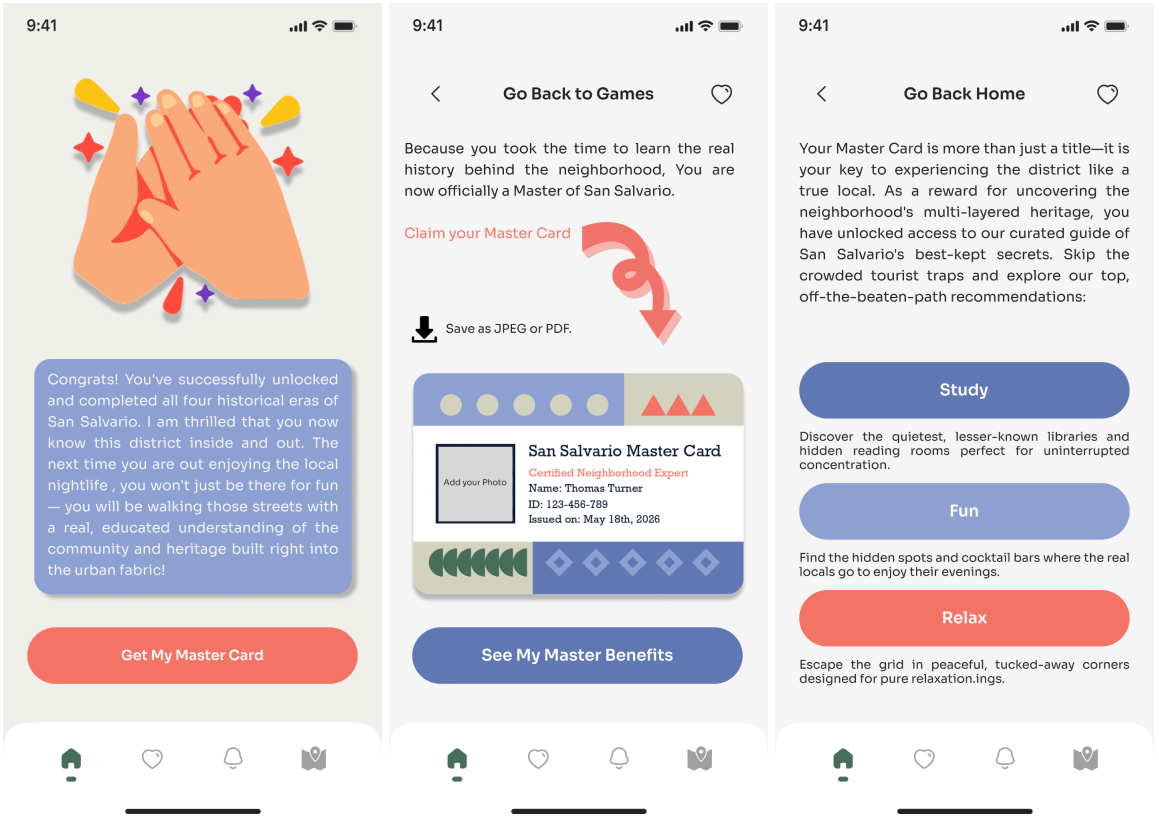

Figure 5.14 - Prototyped incentives for players of the game.

This Master Card operates as a symbolic reward, acknowledging the player's transition from a passive, temporary consumer into an informed guardian of local memory. Crucially, it also can serve some functional purposes. For example, by establishing collaborative networks with local stakeholders, the application allows users to present this digital card at participating community venues, cafes, or artisan shops to receive benefits and discounts.

Furthermore, the platform uses this reward phase to reveal a curated guide of the neighborhood's "hidden gems," directing users toward quiet study rooms, lesser-known libraries, and peaceful relaxation spots (See Figure 5.14). This specific incentive is exceptionally appealing to temporary city users, particularly international foreign students who are less familiar with the authentic geography of the area and wish to find local spaces away from the crowded night-time economy.

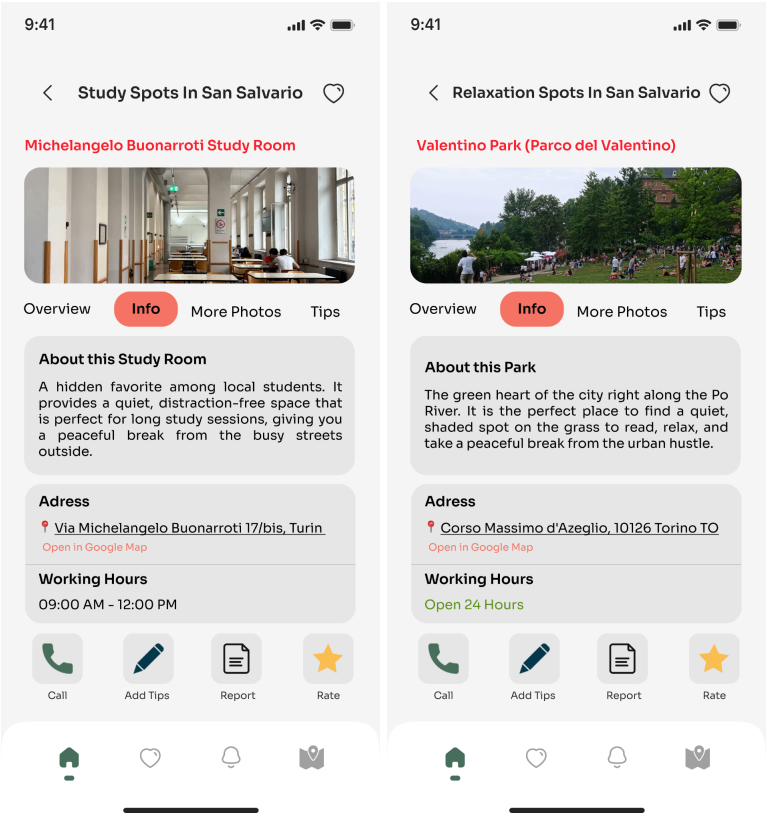

Figure 5.15 - Prototyped Functional Incentives in three different categories. Source of the image of Michelangelo Buonarroti Study Room: https://www.edisu.piemonte.it/sites/default/files/styles/subheader_image/public/sedi-sale-studio-immagini/michelangelo/michelangelo1.jpg.webp?itok=dHsRf8wk , Source of the image of Valentino park: https://www.tolove.it/blog/wp-content/parco-del-valentino-3.jpg

Ultimately, providing these highly desirable functional rewards naturally motivates players to introduce and recommend the game to their friends and classmates. Through this organic, word-of-mouth promotion, the application gains widespread popularity, ensuring that a much larger and more diverse demographic becomes actively aware of the authentic cultural heritage of San Salvario.

5.4 Final Stage: Digital Traces and the Value-Exchange Loop

The participatory experience culminates in the final phase of the Value-Exchange Loop, where the digital platform moves beyond historical education and actively invites users to contribute to the contemporary narrative of San Salvario. The educational loop does not

terminate when the user simply consumes their functional rewards. Instead, the interface provides users with the opportunity to leave their own "digital traces" embedded directly within the digital map (Champion, 2015). Players are encouraged to share their personal ideas, leave spatial reviews indicating whether they enjoyed the suggested local spots and hidden gems, and upload contemporary photographs to guide and suggest routes to future users. This interactive feature effectively transforms transient city users from passive consumers of the neighborhood into active co-authors of its evolving cultural identity (Kádár & Klaniczay, 2022). (Figure 5.16)

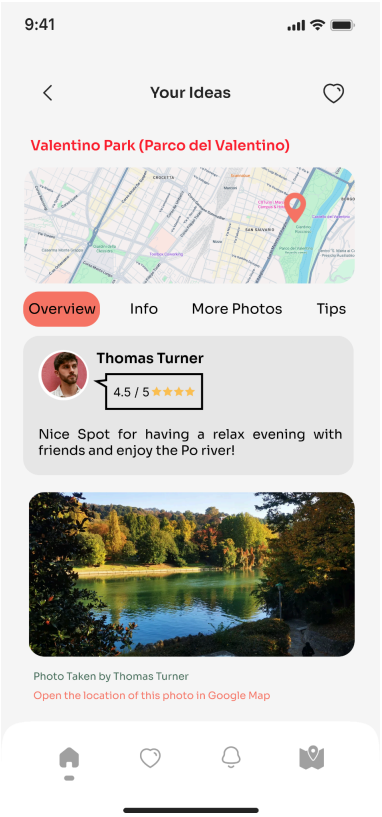

Figure 5.16 - Civic Participation and Collaborative Co-Creation, Source of the image: https://tourismmedia.italia.it/is/image/mitur/20220502160722-parco-del-valentino-torino-piemonte-shutterstock-1912847395-1?wid=1700&hei=1000&fit=constrain,1&fmt=webp

However, to ensure this participatory model functions realistically and maintains data integrity, safety, and community relevance, the platform is conceptually designed with a moderated participatory framework rather than an unregulated open-access model. Permitting unregulated public interaction in digital heritage projects poses significant ethical and operational challenges, raising critical questions about how these communications are protected from misuse (Economou, 2015; Colley, 2015). Therefore, the platform's architecture dictates that all user-submitted content—such as personal reflections, suggestions, or photographs—must be subject to strict curation protocols, user authorization, and moderation mechanisms before being published on the digital map (Koukopoulos & Koukopoulos, 2016),. Within the theoretical framework of this thesis, it is proposed that a local civic hub—such as the Casa del Quartiere—could ideally serve as the platform's administrator. By conceptually entrusting a trusted neighbourhood association to review the submissions, the

designed system envisions a collaborative environment where shared content remains respectful, relevant to the project's educational goals, and completely free from inappropriate material or data misuse.

Crucially, within this safe, moderated digital environment, these shared ideas and neighborhood comments serve a profound purpose beyond simple social interaction. Because the platform operates on an integrated GIS framework, every user-submitted reflection and photograph is automatically anchored to exact geographic coordinates, enabling precise Spatial Data Collection. This technological capability effectively transforms the digital platform into a dynamic tool for collaborative mapping[15], functioning as a powerful, community-driven urban planning tool. The qualitative data harvested through this Value-Exchange Loop provides municipal authorities and urban planners with a direct, bottom-up diagnostic repository, mapping exactly how residents and temporary users currently perceive, value, and utilize the public spaces of the district (Gerosa & Tartari, 2021). Ultimately, this ensures that future urban planning policies are not imposed from the top down, but are guided by authentic civic participation, bridging the awareness deficit and fostering sustainable, data-driven local governance (Cerreta & Daldanise, 2017).

[15] Also referred to as crowdsourced mapping, this represents a participatory approach where citizens and users actively contribute spatial data and local knowledge to a shared digital map, serving as an accessible, community-driven alternative to highly institutionalized Public Participation GIS (PPGIS).

Conclusion

The neighborhood of San Salvario functions as a paradigmatic laboratory of post-Fordist urban change, where the rigid nineteenth-century street grid has continuously absorbed the profound demographic shocks of the industrial, migrant, and student eras. Addressing the first research question regarding the history of the physical space, this thesis has demonstrated that the architecture of San Salvario reveals a complex transformation from a working-class and migrant "landing zone" to its current status as a site of intensive leisure consumption. However, the strategic municipal shift toward a post-industrial visitor economy has generated a severe awareness deficit, obscuring the district's multi-layered, ordinary reality behind a monolithic landscape of nocturnal consumption. Consequently, the identity of San Salvario has fundamentally become heritage at risk. This rapid intensification presents a dual threat: the historic built environment is physically stressed and prioritized for consumption rather than preservation, and the social fabric of the local residents is increasingly disrupted. For a living, continuously inhabited district like San Salvario, resilience cannot be achieved by allowing the area's authentic history to be forgotten and replaced by a highly commercialized tourist landscape. Instead, to truly protect the area under the Historic Urban Landscape (HUL) paradigm, resilience must be cultivated by actively remembering, mediating, and performing the district's multi-layered history to prevent this heritage from facing irreversible cultural erasure.

To actively rescue this obscured history, this research answers its second question by developing a digital platform to serve as a rigorous, practical pedagogical tool. By successfully establishing this foundational design framework, the project addresses an exceptionally difficult design challenge: converting complex, nuanced historical narratives into simple, interactive game mechanics. Within the field of digital heritage, there is a frequent tendency to rely on heavy, resource-intensive three-dimensional reconstructions; however, these complex virtual environments are often cumbersome, difficult to navigate, and frequently fail to genuinely entertain or engage the general public. To overcome this barrier, the methodology of this project deliberately utilizes popular, familiar, and nostalgic two-dimensional arcade and puzzle formats. By offering an intrinsically enjoyable and recognizable gaming experience, the platform motivates users to finish the levels simply for the "hard fun" of the challenge. Crucially, it is exactly this engaging, nostalgic experience that subsequently sparks a sense of curiosity in the user's mind. After successfully completing a level and enjoying the gameplay, players are naturally prompted to ask what the real story behind these mechanics was, smoothly leading them to voluntarily read or listen to the integrated historical archives. Through this procedural learning, the designed digital game aims to successfully transform transient university students and other consumers of the district from passive observers into active, informed protagonists who uncover the local history of the streets they inhabit or traverse.

Beyond historical education, this engaging digital approach functions as a vital instrument for social sustainability and conflict mediation. The post-Olympic push toward a visitor economy has resulted in rapid commercial gentrification and the intensive expansion of the night-time economy in San Salvario. This unrelenting colonization of the night—the *malamovida* —has sparked intense spatial conflicts, as long-term residents are pushed out of their own public

spaces by the consumption patterns of young revelers. By deliberately forcing transient university students to play the final nostalgic arcade level from the perspective of an exhausted local resident attempting to navigate the chaotic nightlife, the game actively mediates this social conflict. It builds procedural empathy and demands that temporary users look past the vibrant storefronts to acknowledge the residents' "right to the city" and their fundamental right to rest, effectively mitigating the friction between consumers and inhabitants.

Building upon this conflict mediation, the gamified educational process produces a powerful secondary outcome that answers the final research question: fostering civic participation and strengthening the neighborhood's community identity from the bottom up. By empowering citizens to share their ideas, upload contemporary photographs, and leave digital traces via the platform's Value-Exchange Loop, the project transcends simple entertainment to become an active tool for spatial data collection. Because these digital traces are automatically anchored to exact geographic coordinates using a collaborative mapping framework, the game functions as a bottom-up diagnostic repository. From an urban planning perspective, while municipal authorities cannot base holistic neighborhood policies exclusively on data generated by a single digital platform, this system provides a highly valuable supplementary resource. If a significant volume of young residents and transient university students participate and share their spatial evaluations of the district, their specific everyday needs, routines, and perceptions of public space become empirically visible. Crucially, because this data collection is governed by a moderated participatory framework, it avoids the risks of digital vandalism and ensures the feedback remains a safe, curated, and highly reliable resource. Consequently, if local governance chooses to utilize this georeferenced repository, it offers direct access to qualitative, community-driven data, ensuring that future urban planning policies can be guided by authentic civic feedback and collaborative stewardship rather than strictly top-down assumptions.

While this methodology provides a highly defensible and innovative framework for heritage conservation, a critical academic reflection must acknowledge the inherent limitations of utilizing digital edutainment and collaborative mapping in urban planning. First, gamifying complex social phenomena—such as the spatial conflicts of the malamovida or the historical struggles of migrant communities—carries an inherent risk of trivialization. By translating lived social distress into arcade mechanics and reward systems, there is a danger of commodifying the very authentic experiences the platform seeks to protect. Second, as a bottom-up data repository, the platform is highly vulnerable to self-selection bias. The digital traces collected will inevitably over-represent the spatial perceptions of a tech-savvy, younger demographic, while potentially obscuring the voices of marginalized, elderly, or digitally disconnected populations. If local governance treats this digital data as comprehensively representative without critical oversight, it risks reinforcing existing urban inequalities. Finally, unlike physical heritage interventions, digital platforms require continuous server maintenance and software updates; without long-term institutional backing, this digital repository risks rapid obsolescence, ironically threatening to become a digital ruin itself.

However, these systemic limitations do not invalidate the proposed methodology; rather, they define the necessary parameters for its safe and effective real-world implementation. To counteract the risk of digital exclusion and self-selection bias, future iterations of this project must not operate in isolation. The digital application must be systematically paired with physical, offline community workshops that run parallel to the game, ensuring that the elderly and digitally excluded demographics can actively contribute to the neighborhood's collective memory. Furthermore, the threat of technological obsolescence highlights the ultimate goal of this research: shifting the responsibility of digital heritage from private, temporary initiatives to official public governance. As Turin prepares its candidacy for the European Capital of Culture in 2033, there is a profound opportunity to officially integrate scalable, modular platforms like this into the city's broader strategic policies. By transforming heritage education into a dynamic, crowd-sourced dialogue, this digital approach provides an actionable, highly critical pilot model for integrating community voices into municipal planning, ultimately fostering the inclusive, community-led cultural regeneration required to meet the city's future horizons.

The methodological framework explored in this thesis extends beyond the specific geographical boundaries of San Salvario, offering an adaptable reference point for broader urban planning debates. Furthermore, the developed structure of the game, combined with the systematic collection and categorisation of historical data and the spatialisation of these places, offers a robust opportunity to replicate this logic in other urban contexts, or to expand its dimensions into a more advanced version of the platform. Across the globe, contemporary historic cities are grappling with the homogenizing forces of globalized tourism, rapid commercial gentrification, and the intensive expansion of night-time economies. In these contested spaces, traditional top-down heritage conservation—which often relies on static preservation or passive museum archives—frequently struggles to engage dynamic, fast-moving populations. By demonstrating how digital edutainment can help penetrate these barriers of indifference, this research highlights an alternative approach for heritage management. It suggests that to protect the identity of a living city, urban planners can benefit from treating heritage not merely as a fragile artifact to be frozen, but as an interactive system that is continuously navigated and performed by the public.

Furthermore, the theoretical value of this gamified approach lies in its structural adaptability. Because the conceptual architecture is rooted in the universal spatial logic of the urban grid, it is not strictly bound to Turin. The core mechanisms utilized in this study—such as procedural learning, the translation of chronological urban shifts into interactive levels, and the simulation of diverse local perspectives—can be conceptually adapted to other historic urban environments experiencing rapid demographic or functional transitions. Rather than proposing a flawless, universal software solution, this methodology provides a flexible diagnostic framework. It demonstrates how other municipalities could potentially utilize their own localized archives to design customized pedagogical tools that address their specific spatial and cultural tensions.

Ultimately, this strategy offers a mechanism for democratizing urban governance through the Value-Exchange Loop. By transforming passive city-users into active generators of georeferenced "digital traces," the platform establishes a public participatory GIS (PPGIS) framework that attempts to shift the paradigm of "smart cities" away from passive surveillance and toward active, bottom-up civic stewardship. While this thesis does not claim that gamification is a universal remedy for deep-rooted urban conflicts, it does critically challenge the traditional orthodoxies of urban conservation. It demonstrates that the future of the Historic Urban Landscape (HUL) paradigm does not rely solely on protecting the physical stones of a city, but also on utilizing accessible digital technologies to mediate social friction, foster procedural empathy, and integrate community voices into the continuous evolution of the urban environment.

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