SCIENTIFIC ANNALS OF "ALEXANDRU IOAN CUZA" UNIVERSITY OF IAȘI
VOLUME XVIII/1, SOCIOLOGY AND SOCIAL WORK, 2025

DOI: 10.47743/asas-2025-1-810

INTERSECTING VULNERABILITIES: BUCHAREST HOUSING AT THE NEXUS OF SEISMIC EXPOSURE, SOCIAL PRECARITY AND CULTURAL PERCEPTION OF RISK

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Abstract: The topic of earthquakes is not just about buildings; it also concerns the people who live in them. When we refer to earthquakes, we are not merely referring to buildings – we are talking about the people who live in them. Earthquakes do not affect everyone equally, even when we inhabit equally unsafe structures. In today's urban context, seismic risk cannot be reduced to technical aspects, just as vulnerability can no longer be understood solely as exposure to natural hazards. Seismic risk involves the interaction of structural, political, social, economic, and cultural factors. This article focuses on Bucharest – the European capital with the highest seismic risk (Armaș et al., 2017; Crowley et al., 2021) – marked by a long seismic history and fragile residential infrastructure. Based on qualitative research, including 32 in-depth interviews conducted between March 2022 and September 2024 with tenants and owners of high-risk buildings in Bucharest, each lasting between 1h30m and 3h, this study highlights how structural and social vulnerabilities intersect and amplify one another. It further explores symbolic representations and myths embedded in the collective memory of past seismic events. The paper reconceptualizes housing as a space of internalized danger and addresses seismic risk not as an isolated threat, but as a socially and culturally embedded reality. It concludes by underlining the need for an interdisciplinary mapping of vulnerabilities and urban policies centred on community resilience and local perceptions of risk.

Keywords: vulnerable city, structural vulnerability, seismic risk, social precarity, housing, risk perception, collective memory, community resilience.

Résumé : Le sujet des tremblements de terre ne concerne pas seulement les bâtiments ; il concerne aussi les personnes qui y vivent. Le séisme ne nous affecte pas tous de manière égale, même si nous habitons des structures également vulnérables. Dans le contexte urbain actuel, le risque sismique ne peut plus être réduit à ses aspects techniques, tout comme la vulnérabilité ne peut plus être comprise uniquement comme une exposition aux aléas naturels. Le risque sismique implique l'interaction de facteurs structurels, politiques, sociaux, économiques et culturels. Cet article analyse le cas de Bucarest – capitale européenne avec le plus haut degré de risque sismique (Armaș et al., 2017 ; Crowley et al., 2021) – marquée par une histoire sismique profonde et une infrastructure résidentielle

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fragile. S'appuyant sur une recherche qualitative comprenant 32 entretiens approfondis réalisés entre mars 2022 et septembre 2024 auprès de locataires et de propriétaires d'immeubles à risque à Bucarest, cette étude met en lumière la manière dont les vulnérabilités structurelles et sociales se croisent et se renforcent mutuellement. Elle explore également les mécanismes de gestion du risque, les symboles et les mythes ancrés dans la mémoire collective du tremblement de terre. Le travail propose une relecture de l'habitat comme espace du danger intériorisé et envisage le risque sismique non comme une menace isolée, mais comme une réalité sociale et culturelle intégrée. La conclusion souligne la nécessité d'une cartographie interdisciplinaire des vulnérabilités et de politiques urbaines centrées sur la résilience communautaire, intégrant aussi la dimension culturelle de la perception du risque par les habitants.

Mots-clés : ville vulnérable, vulnérabilité structurelle, risque sismique, précarité sociale, habitat, perception du risque, mémoire collective, résilience communautaire.

Rezumat: Tematica cutremurelor nu este doar despre clădiri; îi vizează și pe oamenii care locuiesc în ele. Cutremurul nu ne afectează în mod egal, deși locuim în structuri nesigure la cutremure. În contextul urban actual, riscul seismic nu mai poate fi redus la aspecte tehnice, cum nici vulnerabilitatea nu mai poate fi înțeleasă doar ca expunere la hazarduri naturale. Riscul seismic implică interacțiunea dintre factori structurali, politici, sociali, economici și culturali, iar acest articol analizează cazul Bucureștiului, capitală cu cel mai înalt grad de risc seismic din Europa, marcat de o istorie seismică profundă și de o infrastructură rezidențială fragilă (Armaș et al., 2017; Crowley et al., 2021). Pornind de la un demers de cercetare calitativ, care a inclus 32 de interviuri în profunzime realizate între Martie 2022 și Septembrie 2024 cu chiriași și proprietari ai imobilelor cu risc seismic, articolul evidențiază atât modul în care vulnerabilitățile structurale și sociale se intersectează și se amplifică reciproc, cât și mecanismele de gestionare a riscului, simbolurile și miturile care sunt ancorate în memoria colectivă a cutremurului. Lucrarea propune o reconceptualizare a locuirii ca spațiu al pericolului internalizat și analizează riscul seismic nu ca element distinct, ci înglobat în simboluri, precaritate, (in)acțiune instituțională și inechitate socială care contribuie la menținerea unui status quo vulnerabil. Concluzia subliniază necesitatea unei cartografieri interdisciplinare a vulnerabilităților și a unor politici urbane centrate pe reziliența comunitară în fața unui hazard, integrând și dimensiunea culturală a percepției riscului de către locuitori.

Cuvinte cheie: oraș vulnerabil, vulnerabilitate structurală, risc seismic, precaritate socială, locuire, percepția riscului, memorie colectivă, reziliență comunitară.

1. Introduction: A *Fragile* Bucharest

Contemporary cities are spaces of paradox – marked by accelerated development and technological progress, yet also by deep fragility. Bucharest, facing one of the highest seismic risks in Europe, stands not only as the European capital most exposed to earthquakes but also among the continent's five most vulnerable cities (Armaș et al., 2017; Crowley et al., 2021). This reality is rooted not only in natural factors (such as the proximity to the Vrancea seismic zone) but also layered in socio-urban dynamics. Within this landscape, Bucharest emerges as a paradigmatic case of intersecting vulnerabilities – biophysical, social, and structural – that converge most acutely in the city's historic core, where seismic

history, cultural heritage, precarious housing, and urban inequalities coexist. Earthquakes, as recurrent and devastating hazards, shape not only the physical landscape but also the contours of urban vulnerability, disproportionately affecting those who are structurally and socially fragile. In Bucharest, vulnerability is not merely about unsafe buildings, it is about the lives precariously sheltered within them. Here, the overlapping of structural fragility and social instability transforms housing into more than a basic need – it becomes a contested space of insecurity, negotiation, and quiet, persistent anxiety.

Starting from the fact that over 2,500 buildings in Bucharest are classified in seismic risk categories, this research aims to explore how structural vulnerability is mirrored in social vulnerability and how individual experiences and collective perceptions shape the relationship to risk. Earthquakes do not affect us equally. We are not equally exposed to seismic risk, nor do we have access to the same resources to be resilient in the face of disaster. For this reason, as I will argue throughout this paper, seismic risk must be approached not solely as a geophysical phenomenon but as a profoundly social issue that must be understood in a broader context. Earthquakes are not just about buildings – they are about the people who inhabit them and the danger they live with. Housing precarity and the poor quality of dwellings in Romania – and particularly in Bucharest – add an additional layer of vulnerability for those exposed to seismic risk. More than one-third of homes are in a state of disrepair, suffering from structural deterioration, poor insulation, limited access to energy, and minimal earthquake protection, largely due to unaffordable repair costs or a lack of perceived necessity (Văcăreanu et al., 2019; Moldovan, 2018; Armaş, 2012).

Bucharest can thus be described as a "fragile city" – not only through the visible decay of its infrastructure but through the broader failure to institutionalize a culture of risk awareness and preparedness. The term *fragile* is used here to emphasize the multiple intersecting vulnerabilities, from social inequality, infrastructural fragility, and limited intervention capacity of the state to low public risk awareness and poor preparedness. This article therefore focuses on urban vulnerability to seismic risk, with particular emphasis on the lived experience of housing insecurity in Bucharest.

2. Theoretical Framework

In this study, vulnerability is understood as the result of a complex interplay between physical exposure to risk, economic precarity, lack of access to resources, social exclusion, and pervasive distrust in the state's capacity to manage seismic threats. Likewise, seismic risk cannot be reduced to a mere probabilistic calculation or engineering assessment. Risk is socially constructed, politically negotiated, and culturally reconfigured within spaces that individuals call (a)home. As Cutter (1996) emphasizes, vulnerability stems from both hazard exposure and adaptive capacity, reflecting the intersection of structural (biophysical) and social conditions. In this sense, Cutter (2003, pp. 1-2) introduces the notion of a "science of vulnerability," one that merges engineering data about infrastructure with social

indicators such as social capital and institutional support. This approach seeks not only to measure risk but also to map the structural inequalities that amplify the effects of hazards. Beck (2009) refers to this emerging field as a "reflexive science," oriented toward anticipating and managing vulnerability in its dynamic manifestations.

In the urban context of Bucharest, integrating such an interdisciplinary framework is crucial for understanding seismic risk and for building a truly resilient city. Despite the existence of official lists identifying structurally vulnerable buildings, many territorial vulnerabilities and fragile structures remain unmapped, contributing to a systemic underestimation or outright minimization of risk at the institutional level. Reducing casualties and material damage thus depends on the comprehensive recognition and mapping of all forms of vulnerability present in the capital – before a new hazard transforms fragilities into catastrophe.

Mapping Urban Vulnerabilities

The paradigm shifts from "hazard" to "vulnerability," proposed by Gaillard and Mercer (2013) and Donovan (2016), highlights that disasters are not merely the result of extreme natural events, but of pre-existing, deeply rooted social vulnerabilities and uneven resource distributions. Along these lines, Cannon (1994, pp. 19-20) proposes an analytical typology based on five interconnected dimensions: political and infrastructural context, housing conditions, economic capacity, community security, and social structure. Similarly, Granger (2000) develops a model of vulnerability indicators—both physical and social—designed to enhance disaster management and emergency response by prioritizing accessible, actionable data. The failure to integrate these dimensions into prevention policies only exacerbates the impact of hazards and complicates recovery efforts (Cannon, 1994, p. 13).

In Bucharest, recent studies outline a fragmented but alarming portrait of seismic risk exposure (e.g., Armaş et al., 2017a; Armaş et al., 2017b; Toma-Dănilă, 2018; Văcăreanu et al., 2018; Calotescu et al., 2018; Crowley et al., 2021; Pavel et al., 2021). A fragile residential infrastructure, coupled with a densely populated urban core, exacerbates a chronic and systematically ignored vulnerability. In this context, Collier and Lakoff (2008, pp. 8-9) advocate for concepts like "emergency federalism" and "mapping vulnerabilities," emphasizing that disaster preparedness must be distributed across state institutions, communities, and individuals alike. Mapping vulnerabilities thus entails identifying not only areas of physical risk but also social and institutional fragilities, constructing a complex interpretive model of the urban fabric. Today, Bucharest continues to suffer from an incoherent system for structural assessments, incomplete risk data, and a broader absence of a risk anticipation culture. Although hazard modelling has improved, vulnerability remains difficult to quantify officially. Many fragile buildings are missing from public registers, and the lack of targeted public awareness campaigns and data-driven urban planning only amplifies the latent risk.

Urban vulnerability in Bucharest, therefore, has a dual dimension: a visible one – manifested in the red-bulleted buildings and decaying infrastructure – and an invisible one – reflected in institutional neglect, incomplete assessments, and pervasive social precarity. A truly effective mapping of vulnerability must integrate physical, social, and symbolic dimensions to reimagine a safer and more equitable urban environment in the face of seismic threats.

Vulnerability and Seismic Risk

Today, vulnerability stands as a central concept not only in the specialized literature but also in public discourse. Broadly, it denotes a condition of susceptibility to harm, shaped by exposure to environmental or social stressors and constrained adaptive capacity (Adger, 2006). Over time, vulnerability frameworks have evolved from a singular focus on natural hazards toward an appreciation of the critical role of social, political, and cultural factors (Cutter et al., 2003). Thus, vulnerability is increasingly conceptualized as the product of the interaction between hazard exposure and the capacity to anticipate, withstand, and recover from disruptive events (Dwyer, 2004; Blaikie et al., 1994).

In Bucharest, vulnerability manifests at the intersection of structural frailty and deep socio-territorial inequalities (Popescu, 2017). Effective vulnerability assessment must address not only physical risk (biophysical vulnerability) but also institutional capacity, access to resources, and the presence of social solidarity networks. Aging buildings and fragile administrative systems compound this vulnerability, exposing the city to cascading risks. For instance, in a post-earthquake scenario, the inability of hospitals to absorb patient overflow – due to both structural damage and resource scarcity – would illustrate a critical convergence of territorial and social vulnerability.

The literature also highlights the disjunction between technical risk assessments and popular risk perceptions. As Cutter (2003, p. 2) notes, the gap between "expert judgments" and "lay judgments" critically affects decision-making around consolidation and relocation. While engineers may identify clear structural risks, residents often respond based on personal memories, emotions, and local narratives. Slovic's (1987, 1992, 2002) theories on the "availability heuristic" and the "affect heuristic" further explain the human tendency to underestimate unseen or recent hazards and to react emotionally to abstract threats. In Bucharest, the absence of a major recent earthquake fosters a "cognitive de-escalation" of risk, wherein old buildings that have "survived two earthquakes" become perceived symbols of stability – even when technical reports categorize them as dangerous. This dynamic contributes to a collective "cosmeticization" of risk, from which some urban actors' benefit, while others pay the ultimate price.

Building on this line of interpretation, Douglas and Wildavsky's (1982) cultural theory of risk provides an important framework for understanding divergent attitudes toward seismic danger. Hierarchical individuals trust authorities; egalitarians emphasize community solidarity; individualists downplay risks in pursuit of personal advantage; and fatalists resign themselves to hazard as

unavoidable fate. These typologies align closely with the diverse housing strategies and risk adaptations observed in Bucharest – from resistance to structural retrofitting to acceptance of seismic risk in exchange for affordable central housing.

Seismic risk, then, is not simply a matter of structural physics – it is a deeply social and cultural phenomenon, shaped by perceptions, narratives, and political decisions. As Wisner (2005) and Birkmann (2006) argue, vulnerability must be understood not just as a natural hazard outcome, but as a reflection of entrenched social inequalities and unequal access to protection and resources. While existing, models offer valuable frameworks for analysing vulnerability, they often overlook the subjective, experiential dimensions of risk: the ways in which individuals live, internalize, and negotiate danger. For this reason, I propose a conceptual model – the CERC Framework (Calculation, Experience, Recognition, and Consciousness) – to offer a more nuanced understanding of seismic vulnerability and the persistent failures of risk management in Bucharest.

3. Methodology

Departing from the predominantly quantitative approaches that have characterized much of the seismic risk research in Romania (Armaș, 2006, 2017; Văcăreanu et al., 2019), this study adopts a qualitative, ethnographic, and interpretative framework. I am interested not solely in why seismic risk persists despite its technical documentation, but in how it is lived, internalized, negotiated, and sometimes normalized by those who inhabit vulnerable spaces. Risk, in this sense, is not just a statistical probability – it is a lived and culturally mediated experience. To explore this, I employed sensory ethnography (Pink, 2015), which foregrounds the role of sensory perceptions and affective engagements in shaping everyday spatial practices. Seismic risk is thus approached not only as a technical and physical phenomenon, but as a complex socio-cultural reality, constituted through memory, affect, narratives, and ambivalent relationships with institutional structures. At the core of this investigation lies an inquiry into the intersection between structural vulnerability and social precarity – a convergence that manifests in the everyday lives of residents inhabiting buildings officially classified as seismically at-risk. The research seeks to conceptualize this dynamic as a form of intersecting vulnerability, wherein physical exposure to hazard interacts with dimensions of economic instability, governance failure, and symbolic framings of danger.

This inquiry was guided by a set of objectives aimed at capturing the lived dimension of seismic risk in Bucharest. Specifically, I sought to explore how seismic risk is perceived, negotiated, or denied by residents of structurally vulnerable buildings; to identify social categories of vulnerability and the cultural representations that shape attitudes towards seismic danger; and to analyze how narratives, myths, and sensory experiences contribute to the symbolic rationalization and normalization of risk. These goals were further refined into two primary research questions: a) How do residents of structurally unsafe buildings

understand and internalize seismic risk in their everyday lives? and b) What are the socio-cultural and affective mechanisms through which vulnerability is rationalized, resisted, or reinterpreted?

The fieldwork consisted of 32 in-depth interviews conducted between March 2022 and September 2024 with residents of Bucharest's high-risk buildings, all constructed prior to 1977 and officially classified as seismically vulnerable. Participants were recruited through snowball sampling, allowing for the inclusion of both owners and tenants across a diverse socio-demographic spectrum: young professionals, artists, students, elderly individuals, and low-income residents. Each interview lasted between 1 hour and 30 minutes and 3 hours, enabling the collection of rich, nuanced narratives. All interviews were audio-recorded and fully transcribed. Data analysis was conducted between October 2024 and February 2025 through iterative readings and thematic organization, following an interpretive qualitative approach.

The approach combined semi-structured and unstructured interview formats (Jupp, 2010; Rotariu & Iluț, 2001), and the interview guide included prompts on seismic risk perception, affective and material relationships with one's home and neighborhood, access to structural information, and interactions with local authorities. By foregrounding the voices and experiences of those who live with risk, this research moves beyond abstract assessments and engages with the textured, embodied realities through which seismic vulnerability is both produced and endured.

In addition, the research incorporated an analysis of digital discourses – from Facebook groups to real estate advertisements – collected between October 2021 and the end of 2024, where public narratives around risk, cracks, and consolidation were actively constructed and debated. The methodological emphasis was not on statistical representativeness, but on capturing the embodied, affective, and symbolic experiences through which seismic vulnerability is understood and lived.

4. Social Typologies and Cultural Representations of Vulnerability and Seismic Risk

Through this ethnographic research, I have identified a series of key findings regarding seismic risk and its (often difficult) management, which I will present in this section – from the intersection of social vulnerabilities and the rationalization and *cosmeticization of risk*, to the cultural meanings attached to these experiences.

a) Vulnerable Categories

In the analysis of urban seismic risk, a crucial dimension lies in identifying and understanding the social groups most exposed to hazard. In Bucharest, vulnerability is not evenly distributed but stratified, reflecting the social, economic, and cultural tensions that structure the contemporary city and its relationship to seismic risk. Based on interviews conducted with residents of buildings officially

classified at seismic risk, I identified four categories of vulnerable inhabitants. Each of these categories is characterized by a specific type of exposure and a distinct way of managing – or denying – the seismic threat. Owners, tenants, the elderly, and marginalized groups are not only affected by the hazard, but they also actively and passively shape the city's and institutions' approaches to risk management.

Owners

A primary social category relevant to urban vulnerability is that of property owners. Often perceived as powerful actors in the urban space – benefiting from decision-making power and resource access – their attitude toward seismic risk is marked by ambivalence and mistrust. Many tend to minimize the danger, invoking the age of the building and its survival through previous earthquakes, fostering a non-engagement attitude where structural strengthening is not seen as an immediate priority. Mistrust in state institutions, suspicion about the quality of public consolidation works, excessive bureaucracy, high costs, and lack of transparency fuel a deep reluctance toward any structural intervention. This stance can be interpreted through the lens of the "affective heuristic" described by Slovic et al. (2002), where risk is processed emotionally and anchored in personal experiences rather than in objective evaluations, with past experiences dominating future expectations.

An important distinction must be made between two subcategories of owners*: a)* those who live in the vulnerable buildings themselves, directly assuming the risk, and *b)* absentee owners who shift the risk onto others, especially tenants. The latter economically exploit their properties – through rental or sale – without being directly exposed to seismic risk. Thus, owners become not only beneficiaries of precarious housing conditions but also vectors of a systematic transfer of risk onto more vulnerable social groups.

Tenants

A second vulnerable group comprises tenants. Unlike owners, tenants experience a distinct form of vulnerability, indirect but with potentially more severe consequences. Although many tenants are not socio-economically vulnerable in the traditional sense – having access to information, resources, and social or economic capital – they are profoundly vulnerable in terms of decision-making power. Without the authority to initiate consolidation or even minor structural interventions – which always require owners' consent – tenants are "constrained" to accept seismic risk as an intrinsic part of urban living. I use "constrained" in quotation marks because this acceptance is often a conscious and negotiated decision rather than a passive one.

Living in a structurally vulnerable building reflects an ongoing calculated negotiation between perceived risks and immediate benefits. Many interviewees described it vividly: *"I'm paying 350 euros, and look at this space – four rooms, maybe five if you count the hallway – for the price of two in one of those cramped communist blocks"* (S1, 31, musician and professor) or *"I really scored with this place. Of course,*

because of the risk, the rent was lower than the market price [...] If they reinforce the building, I wouldn't be able to afford to live here anymore" (S2, 27, film director). In other words, tenants are willing to accept a high seismic risk in exchange for a low rent. The *benefit* of accessing a central location – close to work, cultural venues, or social networks – often outweighs the *cost* of the seismic risk, which is often perceived as abstract or remote. In addition to these practical benefits, central-city living also carries symbolic value, especially if we understand housing as a form of social distinction in Bourdieu's terms (1984). As many respondents emphasized, older interwar buildings, even if labelled as seismically risky or marked with the "red dot," are seen as prestigious, aesthetically and culturally superior to communist-era or newer buildings, which are perceived as impersonal. Features such as solid wood flooring, stained glass doors, mosaic tiles, and high ceilings are perceived as signs of cultural or symbolic capital, associated with a bohemian or bourgeois lifestyle. Thus, this choice reflects a "risk-benefit trade-off," illustrating how social vulnerability is shaped by everyday pragmatic and economic priorities (Adger, 2006).

At the same time, as many tenants pointed out, *"Why would the owner be interested in seismic retrofitting if he's not even living here and the rent money keeps coming in anyway?"* (S1, 31, musician and professor). They are also fully aware that if the building were to be reinforced, the rent would likely increase, making it unaffordable for them – thus adding another reason to accept the compromise. This dynamic reflects what may be described as a form of accepted vulnerability, which aligns with the cultural theory of risk proposed by Douglas and Wildavsky (1982). According to their framework, some groups come to normalize danger as an inherent part of their environment, shaped by societal perceptions of risk. In this light, tenant vulnerability is not only a structural constraint but also the outcome of a cultural and social process of internalizing risk, within a fragmented urban landscape marked by housing inequality and intense competition for well-located homes.

The Elderly

The elderly, a major segment among residents of vulnerable buildings, represent a double fragility: biological and social. Many minimize seismic risk, perceiving earthquakes more as abstract uncertainties than imminent dangers. Having survived previous earthquakes – especially the major events of 1940 and 1977 – many consider their buildings to be inherently safe. However, this belief is misleading, with each tremor, however minor, structural integrity deteriorates, particularly without interventions for reinforcement. This phenomenon resembles a cardiac analogy – surviving repeated heart attacks does not guarantee survival of the next, rather, it increases vulnerability with each occurrence. Similarly, building resilience diminishes progressively without maintenance or consolidation.

The elderly's emotional attachment to their homes, seen as personal and familial anchors, further intensifies their reluctance to relocate or accept

interventions. As one respondent lamented: *"In the corner, there's a tenant actor I hardly ever see, the neighbour next to me is wild, the one across is old, and the rest... I don't even know them. Tenants come and go... how could you form any real connection?"* (S3, 78, retired) Even though the social cohesion that once characterized these spaces has eroded, the emotional attachment to both the apartment and the building remains a vital source of identity and memory. Many residents view the official classification of their buildings under seismic risk category I (commonly marked with a "red dot") not as an objective threat, but as an exaggeration or even as the result of speculative real estate interests. This scepticism is reinforced by the everyday reality that these buildings are still inhabited, often by younger tenants, and continue to function as vibrant urban spaces. The very fact that life goes on within them undermines the narrative of imminent collapse. Refusal to temporarily relocate for seismic retrofitting is shaped not only by limited financial means but also by a profound cultural resistance to dislocation. In this context, social vulnerability overlaps with physical fragility, and economic precarity further constrains any capacity to adapt or respond proactively to seismic risk.

Marginalized Groups

Undoubtedly, the most exposed category is that of marginalized groups. Communities living informally – in retroceded or highly deteriorated buildings – face a cumulative convergence of risks. Precarious housing, extreme poverty, lack of healthcare or education access, exclusion from information networks, and absence of social protection compound their vulnerability. As Wisner et al. (2005) and Birkmann (2006) highlight, these groups experience a "structural vulnerability process" where natural hazards impact an already fragile social terrain. Structural vulnerability (poor housing conditions) is thus magnified by social vulnerability (poverty, exclusion), making seismic events disproportionately devastating for these communities. These dynamics expose not only pre-existing inequalities but also the way Bucharest's urban system externalizes seismic risk. Housing precariousness and resource scarcity are interdependent phenomena, jointly shaping the city's seismic vulnerability profile.

Importantly, these four groups are not isolated; they are interconnected through complex processes of risk transfer. Owners refusing consolidation pass the risk onto tenants, tenants internalize it as part of urban life, the elderly reinforce collective fragility by rejecting relocation, and marginalized groups bear the compounded consequences. Thus, understanding these vulnerable categories is not merely descriptive – it is essential for crafting effective, socially just, and culturally sensitive public policies. Recognizing intersecting vulnerabilities and the subtle mechanisms of risk transfer constitutes the first step toward a seismic risk governance model that is both technically effective and socially equitable. As Blaikie et al. (1994) and Cannon (1994) remind us, disasters are not natural – they are socially constructed through pre-existing inequalities. Housing, paradoxically, becomes simultaneously refuge and risk.

b) Humour as a Coping Mechanism in the Face of Risk

Another crucial element in explaining how seismic risk is internalized into everyday life is what I have termed "humour as a coping mechanism in the face of risk." This approach reflects a form of psychological adaptation to seismic vulnerability. Faced with an abstract and difficult-to-conceptualize threat – such as a major earthquake – residents interviewed for this research transform anxiety into humour, reducing cognitive tension and facilitating the integration of risk into an acceptable life narrative. This strategy is consistent with what Paul Slovic (2002) described as the affect heuristic – the process through which emotions, rather than rational analyses, guide responses to threats.

Instead of undertaking concrete measures such as consolidation or relocation, individuals create their own emotional and symbolic frameworks within which risk is minimized – or even ridiculed. Expressions like *"We might die, but at least we'll die in luxury"* (S4, 26, UNATC student), *"Even if it collapses, at least I lived in the centre"* (S5, 25, student), *"You go up in the lift and come down by the floor"* (S6, 47, medical researcher), or *"I'd rather collapse at University Square (city centre) than in Asmita Gardens[2], though I still think this block will hold"* (S7, 27, photographer), are eloquent examples of how imminent danger is absorbed into everyday culture through defensive humour. This logic is further reinforced by a widespread distrust of new buildings, as one respondent noted *"New buildings are cancer on earth"* (S2, 28, film director). There is thus a visible rejection of new developments and an emotional attachment to older buildings despite their seismic vulnerability. These attitudes are also shaped by real estate discourses that idealize life in historical buildings, transforming housing from a practical matter into a marker of lifestyle and symbolic capital: *"Living here is like being in a toxic relationship – you know it's bad for you, but you still cling to it for all the wrong reasons"* (S8, 36, software developer).

Thus, humour becomes both a mechanism for normalizing risk and a collective cultural strategy of survival in a city permanently exposed to seismic hazards. Where institutional protection is weak or perceived as ineffective, individuals develop their own methods for managing uncertainty – humour, normalization, and denial among them.

c) The *Cosmeticization* of Seismic Risk

Symbolic rationalizations, urban myths, and public narratives play a key role in perpetuating seismic vulnerability and obscuring its dangers. Across interviews with residents, real estate marketing, YouTube videos, social media discourses, and housing advertisements, I identified a striking pattern of risk *cosmeticization*: the active rebranding of seismic danger into desirable urban qualities. Phrases like *"bohemian apartment with a view over Cişmigiu Park"*,

[2]A recently constructed residential complex, widely regarded as controversial due to perceived structural vulnerabilities and a heightened risk of collapse during a major earthquake – attributed not solely to the building's design or materials, but to the geotechnical instability of the terrain on which it was erected.

"stunning terrace overlooking the Old Town", "historic charm apartment", "building has no seismic risk, only Urgency Class 2[3] *(U2)"* or *"spacious interwar apartment, ultra central, no seismic risk"* are common refrains. Among these, the phrase *"no seismic risk"* is particularly deceptive. Rather than indicating a building that has been assessed and found safe, *"no seismic risk"* often means that the building has never undergone seismic evaluation. In other words, ignorance is sold as security. Similarly, Urgency Class (U1, U2, U3) categories are often misrepresented. Many residents assume that a building in U2 is safer than one classified at seismic risk, when in fact all emergency classes today correspond to Risk Class I – the infamous "red dot" (*bulină roșie*). As Bianca (S9, student) candidly explained: *"When I moved to Bucharest, I had a few options. I chose this apartment because it only had U2, and I thought, 'at least it's not high risk".* Such testimonies reveal how pseudo-technical explanations – often spread by real estate agents and developers – shape residents' perceptions and lead them into making poorly informed decisions. They offer a false sense of security and perpetuate residence in unsafe buildings motivated by price, location, or symbolic capital (centrality equals status). Similarly, among residents, a wide palette of myths surfaced: *"the building survived many earthquakes, so it must be safe", "it's built on ball bearings", "the building stands on tracks", "small earthquakes relieve tectonic pressure so big ones won't happen" ,"this is a Japanese-engineered building,"* or *"this building housed secret service officials (Securitate), they wouldn't have lived here if it wasn't solid", "they retrofitted the building with anti-seismic plaster after 1977."* Such beliefs are extremely dangerous because they foster collective inaction, both among individuals and among the authorities responsible for seismic risk management. The consequences of this inaction, however, will ultimately fall on the very people lulled into a false sense of safety.

5. Discussion

The findings of this research reveal that in Bucharest, seismic risk is not merely perceived as a physical characteristic of the built environment but as a lived, negotiated, and internalized experience. Vulnerability is not simply the outcome of an imminent natural hazard; it is a social construction, reflecting historical inequalities, deep-seated mistrust in public institutions, and infrastructural precarity. This network of social, psychological, and cultural factors shapes affective relationships to risk and subtly sustains a vicious cycle of inaction, leaving the city suspended in a state of chronic vulnerability.

One of the major themes emerging from this research is the deep-seated dichotomy between *perceived vulnerability* and *lived vulnerability*. Residents of

[3] Emergency categories, which in the public perception are considered less severe than official seismic risk classifications (R1, R2, R3). However, all these emergency categories are currently equivalent to Risk Category I (R1), commonly referred to in Romania as the "red dot" (bulină roșie) designation – a label used to mark buildings with high seismic vulnerability that require urgent structural reinforcement.

buildings constructed prior to 1977 inhabit spaces marked by technical fragility, yet their perceptions often differ significantly. This discrepancy helps explain why initiatives aimed at structural consolidation or relocation frequently encounter resistance. For experts, risk is measurable and objective, expressed through engineering calculations; for residents, risk is diffuse, abstract, and often minimized through mistrust of authorities and the invocation of urban myths about the reliability of older constructions. Thus, risk becomes a relative experience, filtered through cultural and social lenses. For this reason, understanding vulnerability requires acknowledging its cultural and affective dimensions as well.

The CERC framework introduced earlier in this study provides a holistic approach to understanding seismic risk by integrating all its layers – from technical phenomena to affective experiences. *Calculation* refers to the existence of technical assessments and data regarding risk; *Experience* encompasses personal and collective memories and lived encounters with risk; *Recognition* implies the explicit acknowledgment of danger as a real and present threat, by both individuals and the state; and finally, *Consciousness* entails a deeper awareness and acceptance of belonging to a vulnerable group, one that can catalyse concrete action. Without passing through all these stages, seismic risk remains marginalized in the collective imaginary, regardless of expert warnings or the visible reminders of past collapses. Public information campaigns must move beyond technical brochures to become cultural interventions – interventions capable of reshaping affective perceptions and creating a shared social consciousness of vulnerability, one rooted in the everyday lived realities of the city.

Another important dimension to emphasize is the symbolic role of housing in the construction of urban identity. Publicly acknowledging that one lives in a seismically vulnerable building is more than a technical statement – it is a reflection of social positioning. The building becomes an extension of the individual's reputation, a kind of *social marker card* or *badge of identity*. In a city where housing is a powerful marker of identity, acknowledging vulnerability is often seen as a form of social stigma.

Similarly, the enduring myth of the "good buildings" constructed before 1977 – reinforced through the very act of continuous habitation – normalizes risk. The narrative that *"these buildings have survived two major earthquakes"* becomes a mechanism for reducing anxiety and an affective justification for inaction. In a paradoxical turn, the everyday experience of living in fragile spaces strengthens the perception that "it is still safe to live here," thus feeding a counter-narrative that stands in stark contrast to engineering assessments.

Fragile buildings, urban poverty, institutional fragmentation, and cultural mechanisms of risk banalization weave together into an intricate network of overlapping vulnerabilities. Real seismic risk reduction cannot be achieved outside of the specific social and cultural context of Bucharest. Ultimately, an effective strategy for mitigating seismic risk must be simultaneously engineering-driven, socially grounded, and culturally sensitive. Its success depends on the integration

of scientific calculation with the collective and individual recognition of shared fragility.

6. Conclusions

Although earthquakes are unpredictable as natural events, they become tragically predictable as disasters when they strike a population already structurally and socially weakened. Residents live not only with the fear of an earthquake but also with economic insecurity, social isolation, and the absence of consistent public support. The perception of risk is deeply shaped by cultural and symbolic factors, while adaptive behaviours – such as denial, defensive humour, and urban myths – contribute to maintaining a chronic state of vulnerability. It is not merely the absence of structural reinforcement that explains the heightened risk, but also the way in which vulnerable domestic spaces are metamorphosed into *(a)home*, becoming simultaneously sites of safety and invisible danger.

This research has demonstrated that the perception of seismic risk is often culturally and affectively constructed, shaped by urban myths and symbolic adaptation strategies. Lived vulnerability, which transcends engineering grids and statistical models, varies according to individuals' tenure status, income, and social networks. Moreover, institutional inaction not only sustains but actively reproduces vulnerability over time, through a lack of coherent policies and an inability to foster community social capital. A critical aspect highlighted is that acknowledging one's residence in a vulnerable building is not merely a technical evaluation – it is an act of social self-definition. The building becomes an extension of the individual's social image, a veritable urban business card. Living in a building deemed solid conveys prestige, admitting to living in a fragile one risks stigma, which helps explain the reluctance to acknowledge vulnerability. Similarly, the myth of "good" pre-war buildings, reinforced through continuous habitation, embeds risk into everyday reality and normalizes it. Through such residence, the cultural narrative that "if the building survived two major earthquakes, it would survive future ones" is perpetuated, minimizing the perceived urgency of intervention. Reducing this vulnerability requires more than technical solutions; it demands the active engagement of residents in consolidation efforts, the collective responsibility of property owners, and the cultivation of local solidarity. Consolidation cannot rest solely on individual shoulders – it requires collective pressure on responsible authorities, and genuine collaboration among the state, private sector, civil society, and residents' associations.

Furthermore, this research has shown that the analysis and management of seismic risk necessitate the integration of the conceptual framework proposed here – CERC (Calculation, Experience, Recognition, Consciousness) – to better understand how risk is internalized and why collective action often fails to materialize. Thus, *lived vulnerability* and *perceived vulnerability* are not mere analytical labels, they are layered realities in which public danger symbolically dissolves into domestic space and becomes part of the urban everyday.

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