

## Article

# Exploring the Evolution Mechanisms of Social Risks Associated with Urban Renewal from the Perspective of Stakeholders

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**Abstract:** The urban renewal (UR) process involves various stakeholders and related activities, and the various risks arising from this endeavor can affect these stakeholders. Additionally, the impact of adverse factors such as policy discontinuity and inequitable distribution of benefits among stakeholders can easily result in collective tensions or conflicts, as well as the gradual emergence of potential social frictions and confrontations. These social risks (SRs) not only impede the smooth execution of urban renewal projects but also pose challenges to social harmony and stability. Hence, to mitigate and control the SRs in the UR process (URSRs) and ensure the successful implementation of effective and sustainable UR projects, it is of paramount importance to gain a comprehensive understanding of the occurrence and evolution mechanisms of these SRs. Although existing studies have touched upon the influence of stakeholder conflicts on URSRs, there remains a lack of systematic examination of the evolution mechanisms of these risks from the perspective of stakeholder theory. The resulting fragmented and specialized comprehension of URSRs has hindered the effectiveness of risk governance strategies. This study adopts stakeholder theory to analyze the potential sources of risk throughout the entire UR process. By considering the conflicts of interests among stakeholders, a systematic analysis of the evolution mechanisms of URSRs is explored and targeted governance recommendations for URSRs are proposed.

**Keywords:** urban renewal; stakeholders; social risks; structural equation modelling; evolution mechanism



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## 1. Introduction

Urban renewal (UR) involves the transformation of urban regions, particularly those grappling with urban decay, achieved through measures such as functional alterations, demolition, reconstruction, and comprehensive management [1,2]. This process serves as a vital undertaking to equip cities to cope with emerging development trends and address the challenges posed by modernization and multifaceted disasters [3]. As a pivotal instrument of government in urban development, UR appreciably impacts the socioeconomic, cultural, and ecological fabric of specific regions, thereby bearing direct relevance to the well-being of the general populace [4,5]. By the end of 2022, China's urbanization rate soared to an impressive 65.22%, signifying the commencement of the stock development phase [6]. During this period, megacities and megalopolises continued to exert a persistent allure for residence and employment, becoming focal points of intensive construction activities [7]. As the urbanization journey enters its middle and later stages in China, numerous cities are expected to embrace a dual approach, equally prioritizing new construction and renovation of existing buildings, thus intertwining the processes of urbanization and UR [8]. UR not only constitutes a crucial mechanism for transforming urban development and construction patterns, as well as innovating land utilization methods, but also represents a key driver for advancing urban governance and elevating urban vitality [9].

UR goes beyond the mere construction and sale stages of real estate projects; it entails processes such as relocation, repurchasing, transformation, reconstruction, and resettlement of residents [5]. As secondary development projects with established residential neighborhoods nearby, areas earmarked for renewal often suffer from disarrayed layouts, inadequate supporting infrastructure, deterioration of sanitation conditions, disaster preparedness, and environmental quality, and a high-density population—comprising a significant number of migrants—with low educational attainment, limited adaptability to change, and a reduced capacity to cope with environmental shifts [9,10]. These unfavorable conditions could easily ignite dissatisfaction among neighboring residents. Mishandling such issues can act as catalysts for social risks (SRs), potentially escalating into significant social disruptions, thereby posing a substantial threat to both the progress of UR projects and the social stability within affected areas [11]. Uncertainties raised by SRs stemming from human practices or social factors (such as uneven distribution of benefits, discontent with government policies, and a rising population of unemployed individuals) can jeopardize social stability and order, further leading to social conflicts [12]. When the uncertainties accumulate to a critical point, SRs can transform into full-fledged social crises, threatening social stability, balance, and sustainable development [13,14].

The UR process involves various stakeholders and related activities, and the various risks arising from this endeavor can influence these stakeholders. The key stakeholders in UR are the public, government, and developers [15]. The public constitutes the most direct stakeholders, whereas the government assumes a pivotal role as the primary public entity and leader [16,17]. On the other hand, developers function as entities driven by commercial interests [8]. Throughout the UR process, the dynamics among these three major stakeholders impact social stability. Although UR brings forth substantial economic and societal benefits, it also gives rise to a range of social problems that directly influence public interests and rights [8,15]. These issues encompass land expropriation, relocation, and the transformation of living and ecological environments, leading certain stakeholders to experience objective or subjective repercussions from their interests being adversely impacted, prompting them to take action [2,18]. Particularly noteworthy is the potential lack of public involvement in decision-making mechanisms during the renewal process, which can result in the genuine demands of the majority not being adequately reflected in the planning stages and their exclusion from active participation in the actual decision-making process [15,19]. These consequences may, in turn, foster or even exacerbate social alienation [20]. Additionally, the impact of adverse factors such as policy discontinuity and inequitable distribution of benefits among stakeholders can easily result in collective tensions or conflicts, as well as the gradual emergence of potential social frictions and confrontations [8,21]. These SRs not only impede the smooth execution of UR projects but also pose challenges to social harmony and stability [22]. As large-scale UR persists in the future, it is inevitable that various social issues will arise, with those affecting social stability or leading to collective incidents of resistance taking center stage [2,22].

Hence, to mitigate and control the SRs in the UR process (hereinafter referred to as URSRs) and ensure the successful implementation of effective and sustainable UR projects, it is of paramount importance to gain a comprehensive understanding of the occurrence and evolution mechanisms of these SRs [23]. To date, prior studies have examined URSRs. For example, Liu et al. [20] employed inclusive development theory to elucidate the extent to which various social exclusion risks arising from UR impacted the original residents. Bai et al. [15] proposed that the success of UR projects depends on the effective mediation of conflicts among stakeholders. Mai et al. [11] investigated different stakeholders involved in UR projects and their interactions, offering management strategies for addressing SRs based on stakeholders' actions. Although existing research has touched upon the influence of stakeholder conflicts on URSRs, a systematic examination of the evolution mechanisms of these risks from the perspective of stakeholder theory is still necessary. The fragmented and specialized comprehension of URSRs needs to be overcome to improve the effectiveness of risk governance strategies.

To address these shortcomings, this study adopts stakeholder theory to analyze the potential sources of risk throughout the entire UR process. By considering the conflicts of interest among stakeholders, a systematic analysis of the evolution mechanisms of URSRs is conducted. Moreover, the study employs structural equation modeling (SEM) to validate the URSR evolution paths, ultimately leading to the establishment of a model depicting the evolution and evolution of these risks. Based on this model, critical SR factors are identified and targeted governance strategies for URSRs are proposed. This study not only strengthens stakeholders' understanding and awareness of URSRs but also optimizes the knowledge framework concerning the evolution of SRs at the urban level. Furthermore, it provides stakeholders with a scientific and rational basis for setting risk monitoring points throughout the entire UR process, thus facilitating resource allocation.

## 2. Literature Review

### 2.1. URSR Factor Identification

URSRs, similar to general risks, encompass SR factors, SR events, and SR consequences [21,24]. SR factors represent the underlying sources of URSRs, such as issues related to expropriation and demolition [1], management [8], the environment [25], policy [1,25], and cultural heritage preservation [1,8]. SR events are typically classified into two categories: individual extreme events and collective events [26]. Collective events refer to scenarios where a specific number of individuals, forming a coincidental group with shared interests, gather together, either legally or illegally, to express demands or claims, which can have a profound impact on social order and stability [26]. Based on the three dimensions of UR, namely, the project, the public, and the government, the consequences of URSRs can be categorized into several outcomes: the UR project may either continue, be delayed or suspended, or be terminated following coordination efforts; the scale and casualties of public incidents; and whether the local government is held accountable by higher authorities [11,26]. URSRs originate from SR factors, facilitated by various risk carriers such as human resources, finances, and the environment. They propagate to different risk trigger points, where risks continuously interpenetrate, intertwine, and accumulate with both internal and external risk flows, leading to a continuous buildup of risk energy [11,26]. Upon reaching a critical threshold, the risk energy can be triggered by specific conditions and surpass the critical threshold, leading to the emergence of individual risk events [26,27]. If individual risk events are not effectively addressed, they may escalate, culminating in individual risk events or collective risk events, ultimately causing losses at project, public, and governmental levels [28].

URSR factors can be divided into internal and external SR factors [2]. Internal SRs correspond to internal stakeholders and encompass a collection of uncertain factors that are directly related to the project during the site selection, land expropriation, and demolition phases, and they have the potential to trigger social instability and disorder [11,27]. On the other hand, external SRs are linked to external stakeholders and pertain to the social instabilities that emerge as a result of internal risk factors, such as potential environmental pollution in the area during the operational phase of the project [11,29]. Considering the implementation period of UR projects, the SR factors encompass land expropriation, building demolition, financial compensation, environmental impacts, relocation arrangements, and government policies concerning public infrastructure [2,28].

UR typically takes place in inner-city areas with high land and property prices in the vicinity [1,2]. Additionally, the involvement of developers in UR projects often leads to compensation and demolition approaches that differ from those used in traditional government-led initiatives [3,5]. Consequently, property owners' expectations regarding compensation for their properties tend to be higher [6,9]. Throughout the expropriation and demolition process, many issues, including inadequate compensation packages, forced evictions, insufficient resettlement arrangements, and rising rents, can evoke feelings of discontent among property owners and trigger collective events [11]. Thus, there

is an inherent risk associated with expropriation and demolition (EDR) during the UR process [11].

The well-being of residents is closely interlinked with environmental factors, which primarily comprise the natural and cultural environments [30,31]. Within the natural environment, pollution arises from various sources in the project's environment, such as potential noise, water, dust, and radiation hazards, as well as the generation of construction waste [15]. Additionally, these projects can lead to disruptions in the existing road and transportation networks, resulting in traffic congestion [5]. On the other hand, older city areas have a long-standing presence, embodying the city's historical development and holding sentimental value for its inhabitants [3,22]. Therefore, it is crucial to approach the transformation of these areas with due respect for local culture and the viewpoints of residents, while also considering the uncertainties that cultural differences may bring [5]. The risk factors associated with the cultural environment involve the potential removal of or damage to cultural landmarks within the renewal area [32]. Moreover, these projects may conflict with the cultural beliefs and values of ethnic minorities residing in the area, as well as pose threats to the area's original geomancy [5,32].

UR projects encompass not only reinforcing and preserving existing buildings and historical relics but also strengthening municipal infrastructure to cater to residents' basic needs and enhance urban aesthetics [6]. However, this approach may introduce technical uncertainties during the UR process, thereby giving rise to potential technical risk (TR). For example, UR projects may encounter risks arising from challenging construction conditions due to unfavorable natural circumstances [33]. Additionally, there is potential technical specification risk linked to the absence of guidelines for novel technologies or instances where construction practices fail to meet established standards [15,25]. Furthermore, insufficient safety measures can give rise to the risk of construction-related accidents [33]. The occurrence of TR during the UR process can engender highly adverse social consequences [4,32].

Despite the ongoing development of UR models, the government's prominent position among numerous stakeholders remains unaltered, which continues to hold the reins in policy formulation, safeguarding public interests, and driving the overall process [1,4]. Given the government's special role, it is imperative to ensure an unhindered channel for public expression throughout the UR process, adhere to standardized workflows, and maintain complete transparency in sharing information [34,35]. Such measures are vital to prevent public skepticism stemming from any work-related errors [36]. UR projects often entail intricate ownership structures, necessitating a delicate balance between the interests of property owners, developers, local governments, and the public [8,15]. Erroneous decision making in this context can lead to improper distribution of benefits and project setbacks and even trigger social conflicts or tensions, leading to social unrest or instability [29,37]. As a consequence, UR endeavors are susceptible to organizational management risk (OMR) [38].

The government's ideology regarding UR is undergoing a shift from the conventional practices of "large-scale demolition and construction", "renovation and restoration", and "government-led initiatives" to more diversified approaches such as "comprehensive renovation", "functional replacement", and "incremental renewal" [4,18,36]. However, on the one hand, due to the prolonged timelines of UR projects, the change in overall policy direction may bring challenges during implementation [3,36]. Some initiatives may experience delays or even come to a halt [3,38]. On the other hand, as UR transitions from traditional extensive development to a more refined and meticulous mode, there may be a delay in the development of policy frameworks, hindering the smooth progress of UR efforts [38,39]. Consequently, policy change risk (PCR) that emerges during UR is evident in areas such as ambiguous responsibility allocation, insufficient safeguard measures, policy environment instability, and a lack of alignment with urban planning [3,36].

Based on the existing research, the UR process entails several potential sources of risk, primarily revolving around social factors. These include expropriation and demolition risk (EDR), external environmental risk (EER), TR, OMR, and PCR.

## 2.2. Stakeholders and Their Actions in UR

An organization's stakeholders comprise not only those directly impacted by its objectives but also external groups with direct or indirect affiliations to the organization, which means any organization or individual with a vested interest in the organization can potentially influence the realization of its objectives [40]. UR is primarily developed by the government, which acquires land through methods such as purchase, repurchase, exchange, and expropriation based on urban planning [8,15]. After ensuring the proper resettlement of the original property owners, the government then proceeds to publicly auction the land and invites third-party investors for development [6]. In UR, developers typically communicate with the original property owners, obtain consent from the majority of them, and then apply to the government for project approval. Once the project is approved, developers sign contracts with the original property owners to complete property transfers and advance UR projects. Throughout the entire process, the government only assumes a role of macro-guidance and coordination [6,41]. Additionally, the representatives of the original property owners, often led by village committees or neighborhood committees, play a vital role in maximizing collective interests and ensuring social stability, in which the interests of affected groups, such as tenants, also should not be disregarded [3,6]. As a result, the primary stakeholders in UR encompass the government, which holds management rights over the projects; investors responsible for funding the UR efforts; the original property owners; and the affected original residents [8,15].

During the UR process, several adverse factors, such as environmental pollution and disruptions in geomancy due to land expropriation and demolition, can impair stakeholders' interests [42]. This specifically refers to situations where the interests of stakeholders cannot be adequately reconciled during the project, leading to losses [43,44]. The convergence of multiple potential risk factors in UR contributes to the emergence of URSRs, increasing the likelihood of SR events that lead to social instability and disorder [11,26]. In the planning and execution of UR projects, the anticipated or actual impacts on the surrounding environment and economy are acquired and perceived by stakeholders through various communication channels [27]. Subsequently, different parties become involved in the UR process, heightening the risk of conflict escalation [15,29].

In UR activities, when the interests of stakeholders suffer detrimental impacts, they often engage in what is known as "expression of demands" to defend their interests [11,27]. However, relationships among stakeholders are intricate, with distinct differences in their interests and channels of expression. Government, developers, and the public encounter numerous obstacles in communication and coordination, such as information asymmetry and uneven distribution of interests, which may exacerbate conflicts of interest and affect the ultimate realization of societal value [11,34,35]. For instance, when residents in old urban areas face the possibility of their homes being demolished, they may organize delegations to attend planning meetings, presenting their needs and concerns and hoping to be adequately considered in the demolition plans [8,11]. However, if these conventional channels of expression are not effective or if stakeholders feel their appeals are not being adequately addressed, they may resort to unconventional means of expression [21]. For example, some residents may organize protest marches, hold public gatherings, or engage in petition-signing activities to draw attention from the public and media, thereby increasing the effectiveness of pressure exertion [21,29].

At this juncture, the government's response becomes particularly crucial [24]. If the government can promptly and effectively address these demands, such as through engaging in dialog with displaced residents, adjusting relocation plans, or providing more detailed information on the progress of UR projects, public trust will be bolstered, and project advancement will proceed more smoothly [24,45]. However, if the government lacks timely responsiveness or takes inappropriate actions that lead to dissatisfaction among displaced residents, it may trigger public distrust and dissatisfaction. Such sentiments of distrust often spread through the media, fueling further resistance actions by more stakeholders and potentially even culminating in large-scale SR events [24,46].

Government trust is a crucial reflection of the interaction between the public and the government, representing the public's confidence in government actions and institutions [24,45]. However, in the UR process, information asymmetry can lead to uncertainty in public trust in the government [11,32]. For instance, the lack of transparency or information regarding demolition and resettlement policies, compensation standards, and other critical aspects may leave the public feeling confused and anxious. In such cases, the public often seeks information through various channels [47,48]. If the information gathered fails to meet their expectations, it can lead to suspicions about the fairness of UR projects [49,50], resulting in a crisis of trust in government institutions and activities, ultimately leading to SRs [47,51].

Protest actions are actions undertaken by stakeholders to actively or passively defend their rights and interests when they perceive violations [21,24]. The type of protest action is closely related to the characteristics of the stakeholder groups [11,26]. In line with stakeholder theory, internal stakeholders are often individuals or groups whose interests are directly impaired [52,53]. Internal stakeholders are the primary initiators of protest actions, although they may not always take on a leading position [15,21]. This group's protest actions are characterized by their involvement when their interests suffer harm, their benefits outweighing the costs of participation, and having a strong motivation to participate [8,54]. On the other hand, external stakeholders are individuals or groups whose interests are indirectly affected as a result of their cooperative or trust-based relationships with the directly affected parties [40,44]. The protest actions of external stakeholders are characterized by the benefits being smaller than the costs of participation, and their actions may exhibit short-term irrational traits [37,55].

### 3. Hypotheses

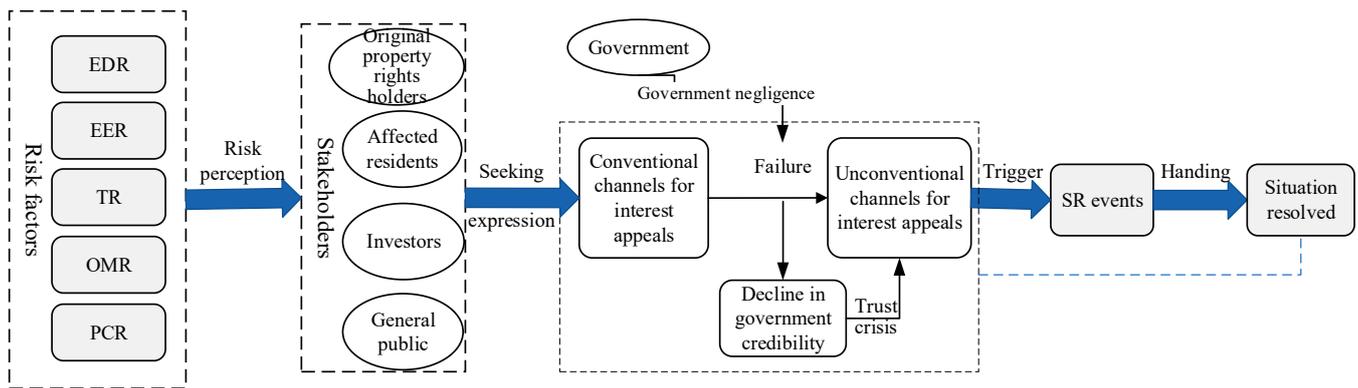
As mentioned in Section 2.1, this study identified the primary SR factors based on the potential sources of risk in the entire UR process, as follows: EDR (expropriation and demolition risk), EER (external environmental risk), TR (technical risk), OMR (organizational management risk), and PCR (policy change risk). These five categories of SR factors are interconnected and can influence each other. The interplay of these potential risk factors in UR leads to the occurrence of URSRs, which in turn can give rise to SR events that lead to social instability and disorder [29]. Throughout the planning and implementation of UR projects, the anticipated or actual impacts on the surrounding environment and economy are acquired and perceived by stakeholders through various communication channels [11,15]. As different stakeholders become involved in the UR process, the risk of intensified conflict emerges.

Given their subjective agency, stakeholders often seek channels to express their demands and advocate for their rights when they experience discontent [29,37]. In most cases, stakeholders first utilize conventional channels to voice their concerns and make appeals [8,44]. However, if these channels are obstructed or their expressed demands are not addressed or are met with dissatisfaction, stakeholders may resort to unconventional channels for expressing demands, leading to individual or localized acts of rebellion [56].

However, if the government fails to fulfill its responsibilities, it can lead to a crisis of public trust [28,51]. The spread of mistrust through the media can encourage more groups of stakeholders to take action, potentially culminating in large-scale SR events [29,45].

Therefore, through the theoretical analysis above, the evolution of SRs in the UR process can be conceptualized within the framework illustrated in Figure 1. This framework highlights the interplay among the five categories of SR factors: EDR, EER, TR, OMR, and PCR. As these factors interact and intertwine, they can trigger negative impacts on stakeholders' interests. In response, stakeholders may resort to expression and protest while the government intervenes and adjusts its approach, leading to URSRs.

Based on the above analysis, hypothesized relationships among the five categories of SR factors, adverse impacts on stakeholders' interests, stakeholders' protest actions, government actions, and SRs can be proposed.



**Figure 1.** Theoretical framework for the evolution of URSRs.

### 3.1. Hypotheses Regarding the Interrelationships among the Five Categories of SR Factors

#### 3.1.1. Interrelationship between PCR and EDR, EER, and OMR

In China, there are appreciable disparities among different regions regarding key policies related to overall planning, land, funding, fiscal matters, and demolition [21]. Specific policies tailored to various types of UR projects are lacking (PCR) [57]. The uncertainty of policies creates a fragmented and localized nature of UR regulations, limiting their applicability [58]. Consequently, issues such as inadequate compensation schemes, forced demolition, and insufficient resettlement of residents emerge during the expropriation and demolition process, giving rise to EDR in the UR process [57,58].

Moreover, the practical outcomes of UR have shown that its implementation can bring about significant positive externalities, leading to improved convenience facilities in surrounding areas [2]. However, as UR transitions from traditional extensive development to more refined and focused approaches, there is a lag in policy system construction [1,2]. The urban ecological and environmental issues arising from UR activities have garnered widespread attention [5,9]. For example, some of the environmental concerns surrounding UR include congestion in the existing road transportation network, as well as the removal of or damage to culturally significant sites, cultural conflicts among ethnic minorities, and disruption of the original geomancy in the area [11,32]. It is evident that PCR can trigger environmental challenges during the UR process.

The government's dominant position among various stakeholders remains unchanged as it continues to wield prevailing influence in policy formulation, safeguarding public interests, and driving the process [11,36]. However, the allocation of interests has emerged as a core challenge in UR. Balancing the interests of property rights owners, developers, management operators, and laborers, safeguarding the often-neglected public interests, and formulating UR policies that carefully consider the rights of landowners and market interests while also addressing public concerns and ensuring social equity present a critical test for the government's governance capabilities [8,15]. Hence, it can be concluded that PR can lead to the corresponding OMR.

Therefore, this study proposes the following hypotheses:

**Hypotheses 1 (H1).** PCR (policy change risk) leads to EDR (expropriation and demolition risk).

**Hypotheses 2 (H2).** PCR (policy change risk) leads to EER (external environmental risk).

**Hypotheses 3 (H3).** PCR (policy change risk) leads to OMR (organizational management risk).

#### 3.1.2. Interrelationship between OMR and EDR, EER

Land expropriation and demolition inherently involve a complex interplay of interests, wherein the government often assumes the roles of both "player" and "referee", necessitating a balance between efficiency and fairness [42,59]. An imbalance between these factors

can easily trigger conflicts, leading to OMR. The experience in Shenzhen highlights the significance of establishing a well-structured compensation policy system and a supervisory incentive mechanism, all within a stable organizational and institutional framework [57,58]. Complete transparency at the institutional and societal levels is crucial, enabling open dialog and negotiation between the government and the affected parties under the rule of law [50,60]. Such an approach effectively regulates the government's exercise of administrative power and safeguards the rights of affected parties, allowing them to be informed and exercise their oversight over administrative actions [45,49]. Consequently, it is evident that OMR associated with UR significantly impacts EDR.

During the UR process, the government and developers often prioritize investment returns, leading to excessive development in economically promising areas [8,21]. This concentration of population and industries results in increased industrial and domestic waste, reduced green spaces, and deterioration of the city's natural environment [5,42]. Furthermore, improper expropriation and demolition can lead to the destruction of architectural and cultural heritage and loss of the city's traditional character, causing a decline in the overall cultural environment [5]. To address these challenges, a positive combination of government leadership and public participation is crucial, particularly in the process of identifying and protecting cultural relics. Ensuring public participation rights and the right to seek accountability for the results of the identification and protection of cultural relics are essential steps [27]. Consequently, it becomes evident that OMR factors, such as unregulated workflow and inadequate project planning, can further exacerbate EER in the UR process [5,22]. Conversely, fostering a collaborative relationship based on negotiation can protect the cultural environment of local residents during UR.

Therefore, the following hypotheses are proposed:

**Hypotheses 4 (H4).** *OMR (organizational management risk) leads to EDR (expropriation and demolition risk).*

**Hypotheses 5 (H5).** *OMR (organizational management risk) leads to EER (external environmental risk).*

### 3.1.3. Interrelationships between TR and EER

Technical issues in UR can influence the city's environment. For example, the repeated construction of deep pile foundations may lead to the compression of urban underground spaces, whereas the implementation of rainwater harvesting techniques can address urban waterlogging problems in older city areas [5,9]. Consequently, this study posits the following hypothesis:

**Hypotheses 6 (H6).** *TR (technical risk) leads to EER (external environmental risk).*

### 3.1.4. Interrelationship between the Five Categories of SR Factors and Adversely Impacted Stakeholders' Interests

Since the initiation of reform and opening-up, China has undergone rapid urbanization. However, during this process, certain issues have arisen concerning the management system, local governance, and distribution mechanisms [22,25]. As a result, some segments of society (such as low-income individuals, residents of old urban areas, the elderly, etc.) have been adversely affected, becoming vulnerable groups and contributing to social instability [11,22]. Consequently, specific SR factors in the context of UR can endanger the interests of stakeholders. Urbanization has facilitated the construction of numerous new buildings, expanding the geographical boundaries of cities [4]. Simultaneously, it has triggered large-scale transformation, demolition, and reconstruction, exemplified by UR initiatives. The stakeholders in UR are highly diverse, each holding different interest preferences, and interest compromises among specific groups are unavoidable [15,61]. Based on the definition of URSRs in this study, these risk factors are closely tied to negative impacts on stakeholders' interests. This study approaches these potential SR factors from

the perspectives of land expropriation and demolition, the environment, technical aspects, organization, and policy. All of these risk factors have the potential to significantly impact the interests of the diverse stakeholders involved in UR. The corresponding hypotheses are as follows:

**Hypotheses 7 (H7).** *EDR (expropriation and demolition risk) has an adverse impact on stakeholders' interests.*

**Hypotheses 8 (H8).** *EER (external environmental risk) has an adverse impact on stakeholders' interests.*

**Hypotheses 9 (H9).** *TR (technical risk) has an adverse impact on stakeholders' interests.*

**Hypotheses 10 (H10).** *OMR (organizational management risk) has an adverse impact on stakeholders' interests.*

**Hypotheses 11 (H11).** *PCR (policy change risk) has an adverse impact on stakeholders' interests.*

### *3.2. Interrelationships between Adversely Impacted Stakeholders' Interests and Stakeholders' Protest Actions, Government Actions, and SRs*

During the process of UR, grievances over damaged interests often become the core expression of demands [62]. When stakeholders, especially vulnerable groups such as displaced families, affected residents, and tenants, perceive social inequality or negative impacts on their interests, they commonly resort to actions expressing their interests [10]. For instance, if families displaced by UR activities do not receive adequate compensation, they may file lawsuits against the government to voice their demands [63]. Subsequently, if these demands remain unmet, it signifies a certain degree of failure in the institutionalized channels for expressing grievances [64]. In such situations, some stakeholders may resort to more confrontational, violent, or disruptive irrational methods of protest, such as blocking traffic or damaging public property [26]. Therefore, the present study puts forth the following hypotheses:

**Hypotheses 12 (H12).** *Adverse impacts on stakeholders' interests drive them to actively seek channels to express their demands.*

**Hypotheses 13 (H13).** *The expression of demands by stakeholders further motivates them to engage in protest actions.*

In the process of the development and diffusion of SRs associated with UR, the public's expression of demands can influence their attitudes toward the government. The specific impact and direction of this influence may vary depending on the particular situation [47,51]. Prior studies indicate that when stakeholders take action to express their demands and directly engage with the government, they form subjective judgments about the government's administrative capabilities, credibility, and level of concern in the UR process [34,49]. Such interactions can play a role in elevating the level of trust in government. Thus, this paper posits the following hypothesis:

**Hypotheses 14 (H14).** *Stakeholders' expression of demands positively correlates with an increase in their trust in the government.*

Public trust in various levels of government exhibits a differentiated pattern, commonly characterized as high trust in the central government and low trust in local governments [45]. The level of trust that the public has in the government can influence their consciousness and actions of protest [45,65]. For example, when rural migrant workers display lower trust in local governments but higher trust in the central government (thus

creating a considerable trust disparity between the two levels), their inclination toward collective protest consciousness might become more pronounced [45]. In this paper, the term “government” primarily refers to the local level, as local governments are the ones initiating and implementing UR projects [49,60]. As the government’s public credibility strengthens, residents demonstrate higher levels of cooperation driven by their trust in the government [65,66]. They actively respond to government appeals and willingly reduce protest actions [45,67]. Thus, the following hypothesis is proposed:

**Hypotheses 15 (H15).** *The trust of stakeholders in the government mitigates the occurrence of protest actions.*

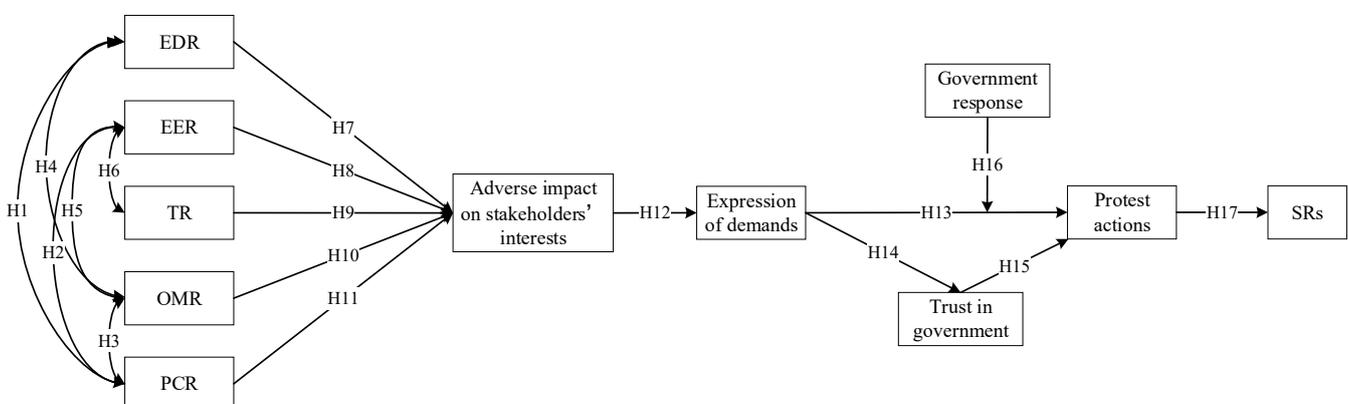
The expression of demands by stakeholders and the government response are closely interconnected [65,67]. Improving the government’s responsiveness to demands can yield two significant outcomes. Firstly, it helps to prevent a shift in the channels used by the public to express their interests; secondly, it fosters higher levels of trust in the government’s governance capabilities, thereby elevating the government’s authority [24,45]. As a result, this study proposes the following hypothesis:

**Hypotheses 16 (H16).** *Government response plays a moderating role in the path from the expression of demands by stakeholders to their adoption of protest actions.*

The social combustion theory posits that SR factors, under the influence of accelerants, continuously intensify, resulting in negative effects on society [68]. Once these negative impacts reach a critical threshold, they become the “ignition temperature” that triggers social unrest [26,68]. During the development of URSRs, vulnerable groups whose interests are impaired and who face barriers in expressing their concerns are motivated by their interests to gradually unite into negative groups of a certain scale [64]. Subsequently, they engage in a series of destructive protest actions, leading to adverse consequences across the entire social system [69]. As the cumulative negative impact of stakeholders’ protest actions reaches a certain level, it may surpass the ignition temperature threshold of SRs, ultimately leading to a comprehensive outbreak of URSRs [27,68]. Hence, this study proposes the following hypothesis:

**Hypotheses 17 (H17).** *Protest actions lead to SRs.*

By integrating the aforementioned hypothesized relationships, this paper constructed a theoretical model for URSR evolution paths, as illustrated in Figure 2. This model encompassed a total of 17 theoretical hypotheses.

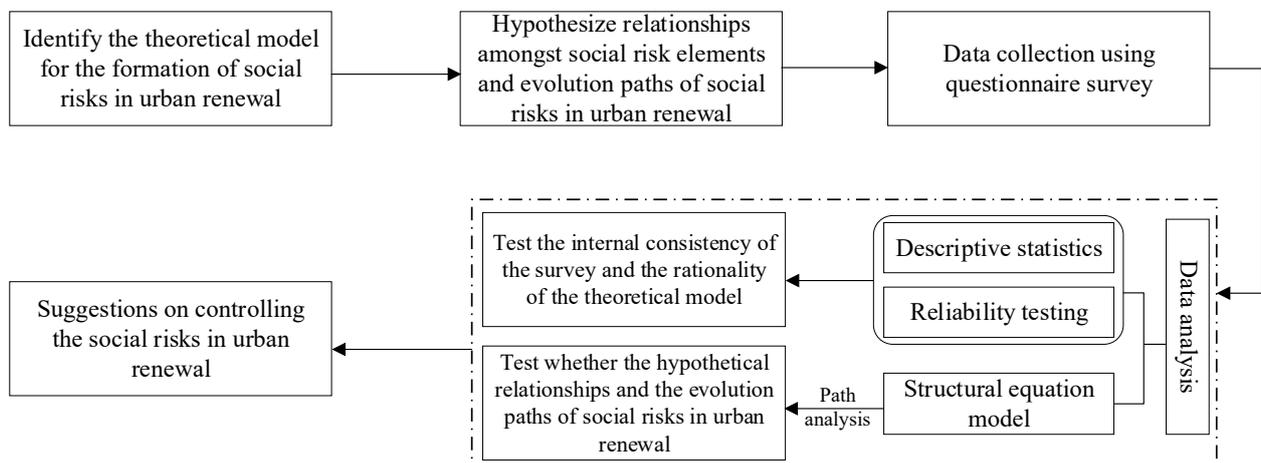


**Figure 2.** Theoretical model of URSR evolution paths.

## 4. Research Methodology

### 4.1. Research Framework

According to the literature review, this paper analyzes key stakeholders and SRs and proposes a theoretical framework for the evolution of URSRs. On this basis, hypotheses were made about the interrelationships among the five categories of SRs (i.e., EDR, EER, TR, OMR, and PCR) and the interrelationships between negatively impacted stakeholders' interests and stakeholders' protest actions, government actions, and SRs. Then, a theoretical model for URSR evolution paths was hypothesized and constructed. The stratified sampling method for the questionnaire survey was used to test the internal consistency of the survey and the rationality of the theoretical model, and then reliability and validity tests were conducted on this basis. The structural equation model (SEM) was employed to examine the above hypotheses and the theoretical model for URSR evolution paths using questionnaire survey data to obtain the evolution mechanisms of URSRs. Through modeling analysis and validation of SEM, the final model for the evolution mechanisms of URSRs was established. Then, the key SRs in the evolution mechanisms of URSRs were identified. Finally, suggestions on controlling URSRs were made. The research framework is organized as shown in Figure 3.



**Figure 3.** Research framework.

### 4.2. Questionnaire Design and Data Collection

The theoretical hypothesis model of URSR evolution paths depicted in Figure 2 was validated through a questionnaire survey. The questionnaire was divided into two parts. The initial section pertained to basic information from respondents, including their professional affiliations, years of work experience, and educational qualifications. The second part involved a survey on potential SR factors and stakeholder actions concerning UR projects. This section comprised a checklist of 36 items, with specific observation variables and measurement questions, as shown in Appendix A. Using a five-point Likert scale (1 for strongly disagree, 5 for strongly agree), respondents were required to evaluate the potential SR factors objectively, the levels of SR, the types of negative impacts on their interests, the forms through which their demands are expressed, the extent of government response, the level of trust that stakeholders have in the government, and the types of protest actions undertaken by stakeholders.

This study identified four categories of research subjects: academic scholars who have conducted research on topics such as UR and SRs, practitioners in the field of UR, government officials, and residents affected by UR activities. They were chosen as potential interviewees due to their stakeholder status in UR projects or their understanding of them. The questionnaire was distributed through various channels in cities such as Nanjing, Guangzhou, Beijing, and Hangzhou, China, from December 2022 to March 2023. By combining offline and online questionnaires, a total of 215 questionnaires were collected,

out of which 205 were deemed valid, yielding a response rate of 95%. In accordance with the general guidelines of SEM, the dataset size should ideally exceed 100, preferably surpassing 200 [70,71]. Additionally, the sample size used for SEM should be 5 to 10 times the number of observed variables [72]. With 36 observed variables in this paper, the number of collected questionnaires met this criterion. Table 1 illustrates the distribution of the survey questionnaires. Among respondents, 89.27% held a college degree or above, and 88.29% had more than 3 years of work experience. Thus, the data quality was assured, given that the majority of respondents possessed a good understanding and sufficient experience.

**Table 1.** Basic information of the respondents.

Role	Scholars	Practitioners	Government Staff	Residents	N/A	Total
Number	45	44	41	75	--	205
percentage	21.95	21.46	20	36.59	--	100.0
Working experience	3 years or under	3–5 years	6–10 years	11–20 years	Over 20 years	Total
Number	24	28	79	54	20	205
percentage	11.71	13.65	38.54	26.34	9.76	100.0
Degree of education	High school degree	Junior college degree	Bachelor's degree	Master's degree	Doctorate degree	Total
Number	21	22	42	86	34	205
Percentage	10.24	10.73	20.49	41.95	16.59	100.0

#### 4.3. Validation of the URSR Evolution Model through SEM

Utilizing a combination of both offline and online questionnaires, a total of 215 responses were collected, with 205 of them being valid. Therefore, the questionnaire validity rate was 95%. Subsequently, this research used SPSS 25.0 software to conduct descriptive and reliability analysis of the data. Additionally, the SEM approach was employed to validate the hypothesized paths within the URSR evolution model.

##### 4.3.1. Data Analysis

Statistical analysis was conducted on the sample data using SPSS software to calculate the mean value, standard deviation, skewness, and kurtosis of each measurement question for SRs, as well as stakeholders' risk perception and protest actions, as presented in Table 2.

**Table 2.** Results of descriptive statistics and reliability.

Latent Variable	Observed Variable	Mean Value	Standard Deviation	Skewness	Kurtosis	Cronbach's Alpha If Item Deleted	Cronbach's Alpha
EDR	X11	3.79	1.265	−0.909	−0.211	0.738	0.880
	X12	3.74	1.248	−0.848	−0.241	0.704	
	X13	3.72	1.224	−0.788	−0.238	0.685	
	X14	3.75	1.160	−0.797	−0.078	0.651	
EER	X21	3.73	1.289	−0.894	−0.285	0.765	0.920
	X22	3.75	1.253	−0.923	−0.136	0.748	
	X23	3.80	1.226	−0.852	−0.314	0.748	
	X24	3.86	1.219	−0.908	−0.162	0.707	
	X25	3.80	1.263	−0.890	−0.253	0.719	
TR	X31	3.88	1.293	−1.016	−0.078	0.708	0.843
	X32	3.74	1.251	−0.834	−0.360	0.747	

Table 2. Cont.

Latent Variable	Observed Variable	Mean Value	Standard Deviation	Skewness	Kurtosis	Cronbach's Alpha If Item Deleted	Cronbach's Alpha
OMR	X41	3.82	1.279	−0.916	−0.225	0.701	0.922
	X42	3.77	1.253	−0.766	−0.491	0.702	
	X43	3.66	1.294	−0.790	−0.390	0.720	
	X44	3.64	1.293	−0.716	−0.545	0.749	
	X45	3.70	1.202	−0.708	−0.427	0.691	
PCR	X51	3.77	1.245	−0.864	−0.218	0.754	0.851
	X52	3.76	1.301	−0.829	−0.434	0.760	
	X53	3.79	1.198	−0.841	−0.260	0.737	
SR levels	Y11	3.77	1.314	−0.930	−0.273	/	/
Adverse impacts on interests	S11	3.71	1.311	−0.842	−0.373	0.705	0.821
	S12	3.72	1.259	−0.877	−0.197	0.727	
Expression of demands	S21	3.78	1.220	−0.788	−0.370	0.781	0.916
	S22	3.72	1.289	−0.826	−0.388	0.699	
	S23	3.72	1.301	−0.901	−0.304	0.737	
	S24	3.81	1.215	−0.899	−0.139	0.738	
	S25	3.82	1.237	−0.922	−0.169	0.704	
Government response	S31	3.65	1.245	−0.778	−0.347	0.701	0.807
	S32	3.64	1.293	−0.810	−0.405	0.759	
Trust in the government	S41	3.82	1.305	−0.912	−0.310	0.739	0.860
	S42	3.80	1.255	−0.823	−0.378	0.697	
Stakeholders' protest actions	S51	3.76	1.313	−0.799	−0.476	0.708	0.910
	S52	3.74	1.275	−0.826	−0.345	0.703	
	S53	3.79	1.261	−0.816	−0.421	0.735	
	S54	3.77	1.253	−0.856	−0.264	0.736	
	S55	3.82	1.229	−0.849	−0.312	0.729	

It can be noted that the absolute skewness and kurtosis values of 36 measurement questions were both less than 1, indicating that the survey data followed a normal distribution [73]. The mean value of each measurement question set ranged from the lowest at 3.64 to the highest at 3.88, with no mean value score less than 1.5 (“not important”). Therefore, all of these 36 SR variables and the SR elements (latent variables) were important to construct the evolution model for URSRs.

Moreover, a reliability analysis was conducted to check the consistency of the survey results. Cronbach's alpha, a widely-used method for assessing the internal consistency of questionnaires, was utilized for this purpose [74]. As depicted in Table 2, all Cronbach's alpha coefficients (i.e., 0.880, 0.920, 0.843, 0.922, 0.851, 0.821, 0.916, 0.807, 0.860, and 0.910) were greater than 0.70, which was deemed acceptable, and none exceeded the maximum alpha value of 0.95 [75]. This indicated that the measurement questions of the scale met the reliability requirements, and the measurement scale of the URSR evolution model had good internal consistency [75].

Then, the Kaiser–Meyer–Olkin (KMO) test and Bartlett's sphericity test were adopted to check the construct validity of the measurement scale of the URSR evolution model. From Table 3, it can be seen that the KMO result was 0.901 (>0.8), and the significance result

of Bartlett’s Sphericity test was 0.000 (<0.01), both of which were considered suitable for SEM [76].

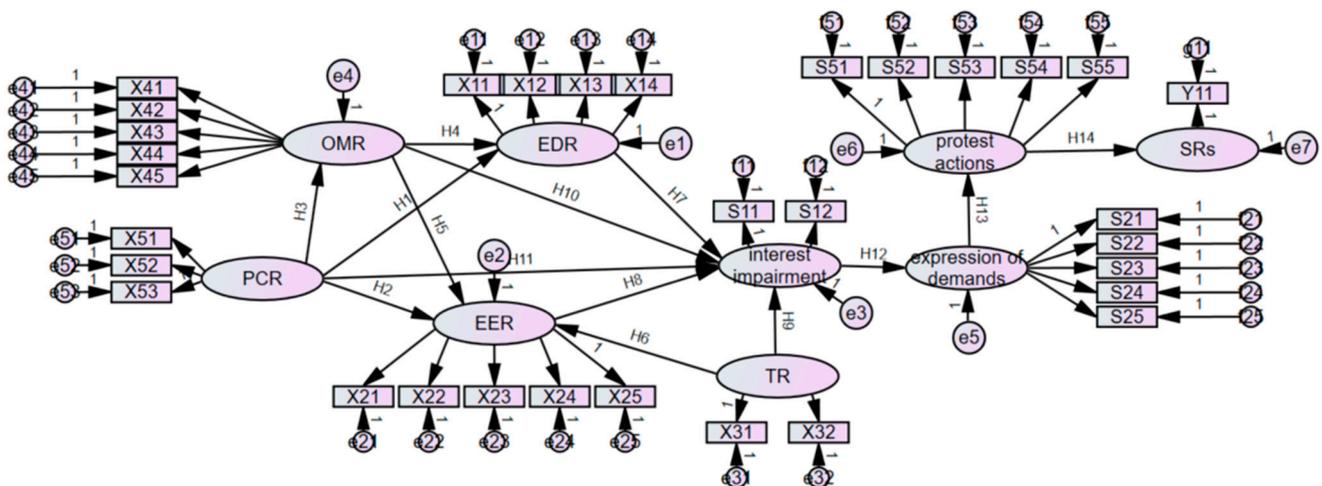
**Table 3.** Results of the KMO test and Bartlett’s sphericity test.

Indicator	KMO Measure of Sampling Adequacy	Bartlett’s Test of Sphericity		
		Approx. Chi-Square	Df	Sig.
Values	0.901	3587.430	561	0.000

4.3.2. SEM

Since Bentler advocated for the use of SEM in addressing latent variables within psychological science, it has evolved into a commonplace statistical analysis technique utilized in both theoretical investigations and empirical validations across various disciplines [77]. Because latent variables possess an abstract nature, they can be represented by multiple observed variables, which are comparatively simpler to measure [78]. SEM is capable of confirming relationships within the model structure, encompassing connections between observed variables and latent variables, as well as relationships among latent variables themselves. There is widespread recognition that SEM can yield reasonably accurate results in structural analysis [79]. Therefore, the adoption of SEM to construct the URSR evolution paths involved presenting the objective state of matters through causal hypotheses, followed by validation with quantitative data [80]. Based on the hypothesized relationships between latent variables, as well as between latent variables and observed variables, this study employed SEM to analyze the sample data obtained from the questionnaire survey, as shown in Figure 1. This analysis aimed to validate and refine the fit of the assumed URSR evolution model, ultimately establishing the most suitable evolution model. The SEM consists of two components: the measurement model and the structural model [23]. The measurement model, also known as confirmatory factor analysis, elucidates the connections between observed variables and latent variables. Meanwhile, the structural model, often referred to as the causal model, delineates the causal relationships between latent variables.

According to the hypothesized model shown in Figure 1, a total of 11 latent variables were identified, namely, EDR, EER, TR, OMR, PCR, SR, negative impacts on interests, expression of demands, government response, trust in government, and protest actions. Additionally, 36 observed variables were associated with these latent variables, as shown in Table 2. The interrelationships between the observed and latent variables were elucidated by SEM. A structural model, as depicted in Figure 4, was constructed using AMOS 26 software.



**Figure 4.** SEM-based URSR evolution model.

## 5. Result Analysis

To assess the adequacy of the model's fit, it is necessary to evaluate various fit indices, which address different aspects such as sample size effects, parsimony, and comparisons to null models [81]. In this study, eight different indices were chosen to assess the model's fit and its appropriateness. They included the Chi-Square to Degrees of Freedom ratio (CMIN/DF), the Goodness-of-Fit Index (GFI), the Adjusted Goodness-of-Fit Index (AGFI), the Root Mean Square Error of Approximation (RMSEA), the Normed Fit Index (NFI), the Incremental Fit Index (IFI), the Non-Normed Fit Index (NNFI), and the Comparative Fit Index (CFI). The model fitting results are presented in Table 4. It is evident that all fit indices of the model met the recommended standard values, indicating a good fit of the model [82].

**Table 4.** Model fitting results.

Fit Index	CMIN/DF	GFI	AGFI	RMSEA	NFI	IFI	NNFI	CFI
Recommended benchmarks	≤3	>0.9	>0.9	<0.05	>0.9	>0.9	>0.9	>0.9
Measured values	2.138	0.936	0.914	0.021	0.953	0.994	0.931	0.986
Judgment results	accept	accept	accept	accept	accept	accept	accept	accept

Due to the numerous factors and variables involved in this study, as well as the complexity of the evolution path, the 17 theoretical hypotheses depicted in Figure 1 were divided into three parts for analysis. These parts were the evolution paths of negatively impacted interests, the risk–action evolution paths, and the government regulation evolution paths.

### 5.1. SEM Results for Negatively Impacted Stakeholders' Interests Evolution Paths

The negatively impacted interests evolution paths consisted of 11 theoretical hypotheses. Table 5 provides the standardized path coefficients (SPCs) and significance test results for the relationships between variables.

**Table 5.** Path coefficients and significance test results for negatively impacted stakeholders' interests evolution paths.

Hypothesis	Model Path	SPC	S.E.	C.R.	<i>p</i>
H1	EDR←PCR	0.304	0.435	2.488	***
H2	EER←PCR	0.2545	0.356	2.53	***
H3	OMR←PCR	0.516	0.075	14.659	***
H4	EDR←OMR	0.187	0.409	2.912	***
H5	EER←OMR	0.24	0.334	2.439	***
H6	EER←TR	0.483	0.070	12.916	***
H7	adverse impacts on interests←EDR	0.8885	1.826	2.011	***
H8	adverse impacts on interests←EER	0.363	0.343	2.338	***
H9	adverse impacts on interests←TR	0.14	0.215	2.338	***
H10	adverse impacts on interests←OMR	0.479	2.906	2.342	***
H11	adverse impacts on interests←PCR	0.225	3.164	2.157	***

Note: \*\*\* indicates that  $p < 0.001$ .

The path coefficient analysis from Table 5 indicated that PCR significantly influenced EDR (SPC = 0.304), EER (SPC = 0.2545), and OMR (SPC = 0.516), all at the 0.001 significance level, validating hypotheses H1, H2, and H3. Similarly, OMR significantly influenced EDR (SPC = 0.187) and EER (SPC = 0.24), both at the 0.001 significance level, validating hypotheses H4 and H5. TR had a significant influence on EDR, with a coefficient of 0.483 at the 0.001 significance level, validating hypothesis H6.

Moreover, the analysis of the path coefficients for the five categories of SR factors on adversely impacted stakeholders' interests revealed that EDR, EER, TR, OMR, and PCR had SPCs of 0.8885, 0.363, 0.14, 0.479, and 0.225, respectively. All of these influence paths

were significant at the 0.001 level, confirming the validity of hypotheses H7, H8, H9, H10, and H11. Hence, it could be concluded that all five categories of URSR factors impaired stakeholders’ interests.

The impact of each category of factors could be categorized into three tiers, as depicted in Figure 5. The first tier comprised EDR (0.8885). Events such as forced demolition, inadequate compensation, and poor resettlement measures undermine the property rights of original owners, resulting in significant interest impairment [11]. The second tier consisted of EER (0.363) and OMR (0.479). Improper management by the leading authority in UR may affect the interests of vulnerable stakeholder groups [29,37]. For example, the deterioration of the urban environment during project construction can harm the interests of nearby residents and the general public [15]. The third tier encompassed PCR (0.225) and TR (0.14), with relatively smaller direct impacts on stakeholder groups’ interests. It is essential to prioritize addressing factors that profoundly influence the interests of relevant stakeholder groups to safeguard stakeholders’ interests.

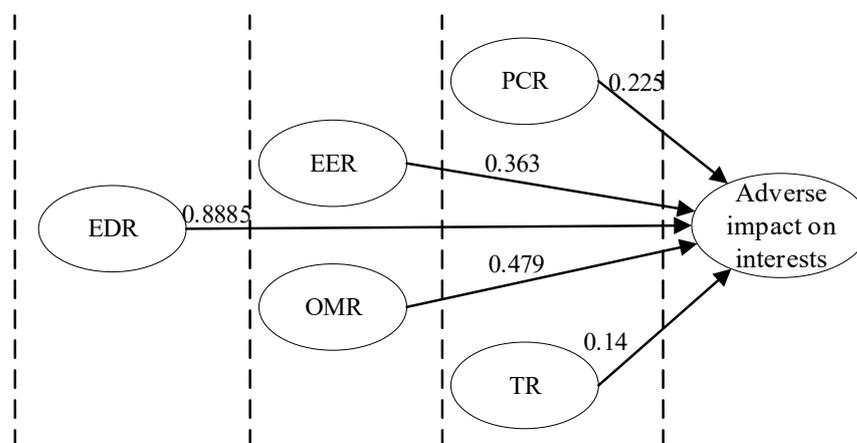


Figure 5. Risk factor–adverse impacts on interest evolution paths.

5.2. SEM Results for Risk–Action Evolution Paths

These paths encompassed five theoretical hypotheses. Table 6 provides the SPCs and significance test results for the relationships between variables.

Table 6. Path coefficients and significance test results for risk–action evolution paths.

Hypothesis	Model Path	SPCs	S.E.	C.R.	p
H12	expression of demands←adverse impacts on interests	0.5025	0.066	13.949	***
H13	protest actions←expression of demands	0.209	0.079	13.798	***
H14	trust in the government←expression of demands	0.4965	0.078	14.212	***
H15	protest actions←trust in government	−0.289	1.084	0.526	***
H17	SRs←protest actions	0.488	0.069	15.036	***

Note: \*\*\* indicates that  $p < 0.001$ .

According to Table 6, the SPC between adversely impacted stakeholders’ interests and expression of demands was 0.5025, and the path was significant at the 0.001 level, validating hypothesis H12. The SPC between the expression of demands and protest actions was 0.209, and the path was significant at the 0.001 level, validating hypothesis H13. The SPC between expression of demands and trust in the government was 0.4965, and the path was significant at the 0.001 level, validating hypothesis H14. Trust in the government had an SPC of −0.289 on protest actions, and the path was significant at the 0.001 level, validating hypothesis H15. Finally, protest actions had an SPC of 0.488 on SRs, and the path was significant at the 0.001 level, validating hypothesis H17.

### 5.3. SEM Results for Government Regulation Evolution Paths

Government regulation corresponded to hypothesis H16: “government response plays a moderating role in the path from the expression of demands by stakeholders to their adoption of protest actions.” In this context, the expression of demands and protest actions are the independent and the dependent variables, respectively, whereas government response serves as the moderating variable. The criteria to determine the presence of moderating effects are twofold: firstly, both the independent and moderating variables must have a significant direct impact on the dependent variable [83]; secondly, the independent variable and the interaction effect (independent effect  $\times$  moderating effect) must have a significant indirect impact on the dependent variable [83].

From Table 7, it can be observed that the SPC between expression of demands and protest actions was 0.234, that the SPC between government response and protest actions was 0.384, and that the SPC between expression of demands  $\times$  government response and protest actions was  $-0.081$ . All of these paths were significant at the 0.001 level. These results supported the moderating role of government response in the path from stakeholders’ expression of demands to their adoption of protest actions, confirming the validity of hypothesis H16.

**Table 7.** Path coefficients and significance test results for government regulation.

Hypothesis	Model Path	SPC	S.E.	C.R.	<i>p</i>
H13	protest actions $\leftarrow$ expression of demands	0.234	1.667	13.3	***
H16	protest actions $\leftarrow$ government response	0.384	1.724	0.736	***
/	protest actions $\leftarrow$ expression of demands $\times$ government response	$-0.081$	0.275	$-12.3$	***

Note: \*\*\* indicates that  $p < 0.001$ .

From the comprehensive analysis of the fitting indices from the entire model and the path coefficients from the three evolution paths (negatively impacted stakeholders’ interests, risk–action, and government regulation), a high degree of fit could be derived between the hypothesized URSR evolution path model and the actual data. All 17 hypotheses of the model were validated by the actual data. As a result, the ultimate URSR evolution path model (evolution mechanisms) could be established as follows: interactions between SR factors  $\rightarrow$  negatively impacted stakeholders’ interests  $\rightarrow$  expression and protest by stakeholders  $\rightarrow$  government intervention and adjustment  $\rightarrow$  URSRs.

## 6. Discussion

Based on the validation results obtained from SEM, the ultimate URSR evolution path model was established. However, the path coefficients in the URSR evolution model not only reflected the direct effects between variables but also provided insight into the indirect effects of various SR factors [84]. Therefore, to measure the influence of each variable, this study considered the total effects, which encompassed both direct and indirect effects. The indirect effect refers to the influence of the independent variable on the dependent variable through the mediation of intermediary variables. The magnitude of an indirect effect is calculated as the product of the coefficients along the paths from the independent variable to the dependent variable [85]. In cases where multiple paths exist from the independent variable to the dependent variable, the indirect effects are computed for each path and then aggregated.

Therefore, this study identified key factors in the adversely impacted interests and risk–action evolution paths through an examination of the total effects of SR factors, with a view to proposing targeted governance strategies for addressing URSRs.

### 6.1. Identification of Key Risks in the Negatively Impacted Stakeholders' Interests Evolution Paths

The total, direct, and indirect effects of the negatively impacted stakeholders' interests evolution path system are detailed in Table 8. The various risks that contribute to the impairment of stakeholders' interests are analyzed.

**Table 8.** The total, direct, and indirect effect analysis of the adversely impacted stakeholders' interests evolution path system.

SR Element	Effect	PCR	OMR	TR	EDR	EER	Adverse Impacts on Interests
PR	Total effect	---	---	---	---	---	---
	Direct effect	---	---	---	---	---	---
	Indirect effect	---	---	---	---	---	---
OMR	Total effect	0.516	---	---	---	---	---
	Direct effect	0.516	---	---	---	---	---
	Indirect effect	0	---	---	---	---	---
EDR	Total effect	0.497	0.187	---	---	---	---
	Direct effect	0.304	0.187	---	---	---	---
	Indirect effect	0.193	0	---	---	---	---
EER	Total effect	0.502	0.24	0.483	---	---	---
	Direct effect	0.2545	0.24	0.483	---	---	---
	Indirect effect	0.2475	0	0	---	---	---
Adverse impacts on interests	Total effect	0.5	0.6735	0.4905	0.8885	0.363	---
	Direct effect	0.225	0.479	0.14	0.8885	0.363	---
	Indirect effect	0.2755	0.1945	0.3505	0	0	---

The most significant adverse impact on interests was attributed to EDR, with a coefficient of total effects of 0.8885 [21]. These effects were exclusively direct, underscoring the direct influence of EDR on stakeholder groups' interests. This highlighted that challenges such as compensation plans for expropriation and demolition, forced demolition, and resident resettlement, as well as conflicts arising from UR endeavors, notably the surge in rent due to extensive demolition and construction, can appreciably affect vulnerable urban populations, often leading to compromised interests [21,31]. To mitigate SRs arising from UR, it is crucial to establish robust preventive and control measures specifically targeting EDR [86].

OMR was closely followed as the second most impactful factor contributing to adversely impacted interest, registering a coefficient of total effects of 0.6735. These effects primarily materialized through direct means, accompanied by a coefficient of indirect effects of 0.1945. This indicated that the influence of OMR stems from the inadequate management practices of authoritative entities such as governmental bodies and developers [29,37]. Furthermore, OMR demonstrated a positive correlation with both EDR and EER, with coefficients of direct effects of 0.187 and 0.24, respectively, highlighting the essential role of effectively managing OMR in controlling URSRs. This aspect should be given special attention when establishing preventive and control measures [86]. To this end, government bodies should seek to enhance administrative efficiency while also considering organizational capacity as a criterion when selecting UR developers [24,34]. In tandem, vigilant regulatory measures should be implemented throughout the project's lifecycle to mitigate the emergence of OMR [87].

PCR and TR exerted a nearly equal influence on adversely impacted interests, with respective coefficients of total effects of 0.5 and 0.4905. In terms of the composition of the total effects, both PR and TR demonstrated notable indirect effects, reaching coefficients of 0.2755 and 0.3505, respectively. The coefficients of direct effects stood at 0.225 for PCR and 0.14 for TR, which signified that although both PCR and TR can directly lead to adverse impacts on stakeholders' interests, their primary influence was channeled through other risks that subsequently affect stakeholders' interests [29,37]. In regard to their impacts on

other risks, PR significantly affected OMR, EDR, and EER, with coefficients of 0.516 (all directly), 0.497 (primarily directly), and 0.502 (primarily directly), respectively. TR, however, directly influenced EER, with a coefficient of 0.483. This underscored the relatively intricate paths through which PCR and TR impact stakeholder groups, with significant total effects. Consequently, measures should be taken to control their effects [86]. Maintaining a stable political environment and reinforcing oversight of construction techniques and safety is beneficial for promoting the successful implementation of UR initiatives [3,4].

The impact of EER on adversely impacted interests was comparatively modest, registering a coefficient of total effects of 0.363, with all effects being direct. As inferred from the earlier analysis, EER was subject to the combined influences of PCR, OMR, and TR. This underlined that EER control necessitates not only minimizing the negative effects of UR on both natural and cultural aspects but also entails addressing PCR, OMR, and TR [30,31].

### 6.2. Identification of Factors in the Risk–Action Evolution Paths

Table 9 illustrates the overall, direct, and indirect effects of the risk–action evolution system. The subsequent analysis provides insight into each stage within the process of transmitting SRs.

**Table 9.** The total, direct, and indirect effect analysis of risk–action evolution paths.

SR Element	Effect	Adverse Impacts on Interests	Expression of Demands	Trust in Government	Protest Actions	SRs
Adverse impacts on interests	Total effect	---	---	---	---	---
	Direct effect	---	---	---	---	---
	Indirect effect	---	---	---	---	---
Expression of demands	Total effect	0.5025	---	---	---	---
	Direct effect	0.5025	---	---	---	---
	Indirect effect	0	---	---	---	---
Trust in government	Total effect	0.499	0.4965	---	---	---
	Direct effect	0	0.4965	---	---	---
	Indirect effect	0.499	0	---	---	---
Protest actions	Total effect	0.4985	0.4965	-0.289	---	---
	Direct effect	0	0.209	-0.289	---	---
	Indirect effect	0.4985	0.2875	0	---	---
SRs	Total effect	0.4865	0.484	-0.282	0.488	---
	Direct effect	0	0	0	0.488	---
	Indirect effect	0.4865	0.484	-0.282	0	---

Negatively impacted interests, expression of demands, and protest actions all exerted significant influences on SRs, demonstrating comparable degrees of impact with coefficients of total effects measuring 0.4865, 0.484, and 0.488, respectively [21]. Regarding the composition of the coefficient of total effects, both interests were adversely impacted, and the expression of demands contributed to SRs indirectly, whereas protest actions had a direct effect on SRs. Specifically, negatively impacted interests fostered a positive influence on the expression of demands, trust in the government, and protest actions, with coefficients of 0.5025 (all directly), 0.499 (all indirectly), and 0.4985 (all indirectly), respectively. Expression of demands positively affected trust in the government and protest actions, with coefficients of 0.4965 (all directly) and 0.4965 (mainly indirectly), respectively. The foundation for managing URSRs lies in the sequential chain that begins with the expression of demands resulting from compromised interests, subsequently inciting protest actions and culminating in SRs [35,36]. Each step within this chain deserves focused attention.

Trust in the government exhibited a comparatively modest influence on SRs, resulting in a coefficient of total effects of  $-0.282$ , all through indirect means. Additionally, it directly impacted protest actions, with a coefficient of  $-0.289$ . This result highlighted the role of trust in the government in providing a buffer and facilitating influence within the process of protest action formation [51,67].

This study utilized stakeholder theory to identify potential URSR factors and employed SEM to explore the evolutionary mechanisms of URSRs. The research findings validated the interrelationships among the five categories of SRs (EDR, TR, OMR, PCR, and EER) and their impact on stakeholder interests [29]. This was consistent with the theoretical framework illustrated in Figure 1, which emphasized the interactions among these risk factors and their potential adverse effects on stakeholder interests, leading to stakeholder protests and government intervention, ultimately resulting in URSRs [28,51,56].

### 6.3. International Perspectives on URSRs and Stakeholder Involvement

Although this study focuses on the Chinese context, comparing the methods of managing URSRs and stakeholder participation with practices in other countries and regions is instructive. In many countries, such as the United Kingdom, European Union countries, and Turkey, there is a stronger emphasis on active public participation and comprehensive stakeholder involvement throughout the UR process [88–90]. The existence of comprehensive legal frameworks and established mechanisms ensures transparency of information, public consultation, and consideration of the interests of different stakeholders throughout the planning and implementation stages [91,92]. For example, when addressing the EDR, some countries have enacted robust legal protections and transparent procedures to uphold property rights and ensure fair compensation for displaced residents [92]. Public consultations and hearings are typically held to solicit feedback and address concerns before final demolition and relocation plans are determined [88,90]. Similarly, the EER of UR projects is rigorously assessed through environmental impact assessments and mitigation strategies [93]. Existing comprehensive frameworks address issues emphasized in this study, such as noise pollution, construction waste, and disruptions to local transportation networks (see Section 2.1). Moreover, ongoing stakeholder dialog and collaborative decision-making mechanisms are deeply ingrained in UR policies across the European Union [94]. This is particularly relevant for managing the OMR and the PCR, ensuring transparency of information, clear communication of responsibilities, and alignment with evolving urban development goals (see Sections 2.1 and 2.2). By contrast, as emphasized in this study, China's approach to UR has traditionally been more top-down and government-led, with relatively limited stakeholder and public participation [15,19]. However, in recognizing SRs and potential conflicts resulting from insufficient stakeholder participation, there has been a gradual shift toward more inclusive and participatory approaches in recent years.

### 6.4. Recommendations for Future UR Projects

Based on the identified key SR factors and the evolutionary mechanisms of SRs, the following recommendations can be made for future UR projects by drawing on international experiences and best practices. Firstly, establish a comprehensive and inclusive policy framework to address the concerns of all stakeholders, ensuring fair compensation, relocation assistance, and environmental protection measures [8,12,21,87]. Policies play critical roles in guiding, regulating, incentivizing, and balancing various stakeholders in UR [87]. A wise and effective policy framework helps ensure that UR is sustainable and socially beneficial [95]. Moreover, improve stakeholder participation and communication channels to facilitate dialog, address grievances promptly, and foster trust among government, developers, and affected residents [15,19,88–90]. Building an information-sharing platform is crucial during the implementation of UR projects. It not only facilitates information exchange among different participants but also provides decision makers with stakeholder-related information, thereby reducing SRs caused by information asymmetry and irrational decision-making [94]. Lastly, implement robust monitoring and mitigation

strategies for SR factors, such as environmental impact assessments, cultural heritage preservation measures, and transparent organizational management practices [5,32,87,93]. By adopting these recommendations and building upon the research findings, future UR projects can better address complex social dynamics, mitigate potential risks, and ensure sustainable and socially responsible urban development.

## 7. Conclusions

This study commenced with an initial literature review to establish a clear theoretical model for understanding URSR evolution from the perspective of stakeholders. Drawing upon this theoretical model, 17 hypotheses pertinent to the evolution of URSRs were formulated. Relevant data on the evolution of SRs were gathered through the administration of survey questionnaires. Subsequently, a model corresponding to the formulated hypotheses was constructed using the SEM approach. The hypotheses were validated based on the structural equation model, leading to the identification of effective SR evolution paths. The URSR evolution data were utilized for model fitting. The results affirmed the reliability of all 17 research hypotheses. Consequently, the definitive model for URSR evolution was established: interactions among SR factors→adversely impacted stakeholders' interests→expression and protest by stakeholders→government intervention and adjustment→URSRs. Moreover, the utilization of SEM in the path validation process yielded the path coefficient corresponding to each URSR factor.

Furthermore, an in-depth examination was conducted to identify pivotal factors within the evolution paths of adversely impacted interests and risk–action. The analysis of the total effects of URSR factors unveiled a sequence of risks contributing to negative impacts on stakeholders' interests: EDR, OMR, PCR, TR, and EER. Within the risk–action evolution paths, a depiction of the stages in the transmission of SRs indicated that adversely impacted interests, expression of demands, and protest actions wield significant influence on SRs, whereas trust in the government exerts a comparably milder impact. Based on the identified key SR factors and the evolutionary mechanisms of SRs, this study proposes three recommendations for future UR projects: establishing a comprehensive and inclusive policy framework, improving stakeholder participation and communication channels, and implementing robust monitoring and mitigation strategies for SR factors.

Although this study has illuminated the paths leading to the evolution of URSRs, enhancing our comprehension of the processes unfolding behind URSRs, several limitations still warrant consideration. Further validation is required for the observed variables associated with the various risk factors along the SR evolution paths. Future research could explore the dynamics of SR in specific areas or types of UR projects by collecting and analyzing more refined data. Comparative studies of different urban environments could also provide valuable insight into the universality of the evolutionary model this study proposed. Additionally, as UR projects become increasingly complex, involving various stakeholders and overlapping interests, new methodological approaches such as agent-based modeling or social network analysis could be employed to capture the intricate interactions and feedback loops among stakeholders, thereby offering more dynamic approaches to understanding the propagation of SR.

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### Abbreviations

UR	Urban renewal
SRs	Social risks
URSRs	SRs in the UR process
SEM	Structural equation modeling
EDR	Expropriation and demolition
TR	Technical risk
OMR	Organizational management risk
PCR	Policy change risk
EER	External environmental risk
KMO	Kaiser–Meyer–Olkin
CMIN/DF	Chi-Square to Degrees of Freedom ratio
GFI	Goodness-of-Fit Index
AGFI	Adjusted Goodness-of-Fit Index
RMSEA	Root Mean Square Error of Approximation
NFI	Normed Fit Index
IFI	Incremental Fit Index
NNFI	Non-Normed Fit Index
CFI	Comparative Fit Index
SPCs	Standardized path coefficients

### Appendix A

Latent Variable	Observed Variable	Measurement Question	
EDR	X11	Unreasonable demolition compensation plan	The demolition plan for this project is unreasonable.
	X12	Forced demolition	The project involves forced demolition, land occupation, and unfair land acquisition compensation.
	X13	Resident resettlement not implemented	After the project's relocation, the promised resettlement measures were not carried out, resulting in the original property owner's original lifestyle being disrupted, the residents' social network being disrupted, and psychological problems such as a sense of deprivation.
	X14	Rent increase	This project's implementation has caused difficulties for low-income groups in renting due to the imbalance in the rental market.
EER	X21	Construction environmental pollution	This project will cause noise pollution, water pollution, dust pollution, construction waste, radiation hazards, etc., due to engineering construction.
	X22	Traffic congestion	During the construction process of this project, construction vehicles, materials, or machinery may occupy roads, causing traffic congestion.
	X23	Destruction of cultural landscapes	The implementation of this project will result in the removal or damage of the cultural landscape within the area.
	X24	Ethnic cultural conflicts	The implementation of this project involves ethnic minorities, who may have conflicting beliefs and cultures due to different religious beliefs, especially in demolition negotiations and cultural integration in resettlement areas.
	X25	Destroy geomancy	The demolition and reconstruction of this project have damaged the geomancy of houses, ancestral graves, towns, and other areas.
TR	X31	Construction safety risks	The project is located in a densely populated urban area, as insufficient safety protection measures can lead to safety problems such as falls from heights, traffic accidents, etc.
	X32	Inadequate technical specifications	Some new technologies may lack proper specifications, or the construction may fail to meet technical standards.

Latent Variable	Observed Variable	Measurement Question	
OMR	X41	Obstruction in public expression channels	This project may trigger public opinions, which may not be expressed smoothly or cannot be responded to and dealt with in a timely manner.
	X42	The workflow is not standardized	The urban renewal work program of this project has defects, or the steps in practice may be chaotic, which may lead to hidden dangers.
	X43	Information opacity	Local governments' failure to disclose information regarding urban renewal violates the public's right to know and can raise doubts about the rationality of the project.
	X44	Unreasonable project planning	Due to an insufficient understanding of factors such as the surrounding environment and project positioning by developers, project construction planning and housing price evaluation are unreasonable.
	X45	Improper construction management	Poor management by developers of costs, schedules, and relevant partners in the construction process has resulted in a loss of control over the project.
PCR	X51	Unclear subject of responsibility	Due to ambiguous responsibilities among the government, developers, and other entities, the project implementation process has encountered a "three no matter" zone.
	X52	Insufficient safeguards	The exit mechanism, mandatory implementation conditions, and mandatory implementation methods during the implementation process of the project are not complete in terms of guarantee measures.
	X53	Unstable policy environment	Due to limited guidance from local urban renewal policies on practice or changes in government leadership, project policies may be discontinuous.
SR levels	Y11	Social risk magnitude	Overall, what do you think the SR levels that this project may lead to are: ____.
Adverse impact on interests	S11	Damage to economic interests	I think my economic interests have been harmed.
	S12	Emotional interest damage	I think my emotional interests have been compromised.
Expression of demands	S21	Government hotline	I expressed my demands through the government hotline.
	S22	Leader's mailbox	I expressed my demands through the leader's Email.
	S23	Discipline inspection report	I expressed my demands through disciplinary reporting.
	S24	Complaint letter and visit	I expressed my demands through complaint letters and visits.
	S25	Media exposure	I expressed my demands through media exposure.
Government response	S31	Process response	I made a request and received a response.
	S32	Result response	My request has been fulfilled.
Trust in government	S41	Problem-solving ability	I believe in the local government's ability to resolve problems and conflicts.
	S42	Ability to arrange work	I believe that the local government's work arrangements are reasonable.
Protest actions	S51	Public Sitting and Walking	I will take public sitting and walking to resist.
	S52	Public demonstrations	I will take the form of a demonstration to protest.
	S53	Collective petitions or individual petitions	I will fight through collective petitions or individual petitions.
	S54	Monkeywrenching	I will disrupt and obstruct the actions of the government and developers.
	S55	Violent conflict	I will fight through violent conflicts with the government and developers.

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