

Research Article

Crime Prevention through Environmental Design — Enhancing Safety and Livability in Maqboolpura, Amritsar: An Adaptive Approach to Crime Prevention in Informal Settlements

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Crime is a complex issue that impacts the livability of communities worldwide. Indian cities' informal settlements are also becoming unsafe, which has a negative psychological impact on residents. In rapid urbanization, crime prevention is being neglected during the process of physical transformation. Informal settlements are characterized by an unplanned built environment, high densities of houses, unhealthy and barren open spaces, and streets, among other livability issues. Maqboolpura, located in Punjab, India, has faced significant challenges related to crime, including gang violence, drug trafficking and substance abuse, theft and burglary, prostitution, and human trafficking. These issues have not only threatened the safety and security of people but have also adversely affected the livability of the informal settlements. The crime rate in this area has been persistently high. Locals' sense of safety is negatively affected by these rates, along with their ability to enjoy the surroundings. A better understanding of these issues is necessary for addressing the community's livability challenges and implementing effective solutions to improve security and safety. Inhabitants also face livability challenges such as inadequate infrastructure, a lack of community spaces, and transitional spaces. Adaptive livability measures increase the livability of informal settlements and prevent crime. This reduces crime and increases the safety, life, and interconnectedness of Maqboolpura. This study reveals how livability initiatives can decrease crime in informal settlements. It enhances the physical and mental health of the community and its inhabitants.

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1. Introduction

Background and Context

The complex interactions between crime, livability, and rapid population have become an important concern in today's urban environment and all over the world. Urban population has grown significantly over the past century. As per the 2011 Census of India, India's urban population has increased steadily from 78.9 million in 1961 to 377 million, accounting for almost one-third of the total population. Rural population growth has slowed from 18% during 1991–2001 to 12% between 2001 and 2011, with an average annual growth rate of 2%, compared to 0.5% in more developed regions. (Urban, 2013). This complex process has connected the informal settlements that make up Indian cities, which are frequently ignored throughout urban development. Urbanization has led to more people living in informal settlements, or slums, globally. In India, for example, 17.34% of urban households, or about 13.70 million households, live in slums, with over a third of the country's slum population residing in 46 million-plus cities. (Kaibarta, Mandal, Bhattacharya, & Paul, 2022), (IJCRT, 2018). Maqboolpura, an informal settlement in Punjab's Amritsar district, has 10370 residents. The area is 1.29 square kilometres in size. The population density for the category of informal settlements is 4245 per km² or 100 ha. Maqboolpura, are often excluded from formal planning processes, resulting in spatial exclusion from basic services and benefits. The need of addressing safety and livability issues in these settlements is made clear by the increasing challenges caused by crime and the impact that it takes on people.

Unfortunately, crime prevention has suffered due to the rapidity of urban development, leaving informal settlements open to a wide range of criminal activities. These communities suffer from a wide range of livability issues as a result of their unplanned built environments, crowded housing clusters, neglected open areas, and curving streets.

This study focuses on Maqboolpura, a community in Punjab that represents the struggle against crime's influence. Gang violence, drug trafficking, theft, prostitution, and human trafficking have built themselves into society's fabric, risking the safety of its citizens. Beyond current dangers, these problems have damaged the idea of what it means to be livable, weakening people's sense of security and ability to appreciate their surroundings.

It is necessary to have an in-depth understanding of these issues so as to unlock options for feasible solutions. The occupants' position is further made worse by poor building quality, a lack of public places, and a lack of transitional areas. In context with this, the idea of adaptive livability interventions stands as an example of creation, providing a mutually beneficial connection between the reduction of crime and the improvement of living situations in informal settlements.

This article aims to assess the crime-based issues w.r.t to livability in the context of Maqboolpura, a case study in India. It presents three main sections: (i) a literature review of informal settlements and crime, crime prevention approaches in India, (ii) a demonstration of the concept of livability and connection between crime prevention and livability for Maqboolpura, and (iii) a discussion of the studies and findings.

2. Literature Review

2.1. Scenario of Old Informal Settlements in India

Old informal settlements including slums, jhuggi-jhompri clusters, and resettlement colonies have a big crime problem due to their presence in India. Due to their status as informal settlements, Jhuggi-Jhompri clusters are particularly vulnerable to criminal groups. Due to a lack of adequate housing and social services, they draw hostile migrants from rural areas looking for opportunities in urban areas. This makes them susceptible to criminal influences. Criminal activity can flourish in areas with low ventilation, inadequate lighting, and poorly designed streets. Despite the government's efforts to address these difficulties, dealing with crime-related problems in former informal settlements is still a difficult task. The necessary infrastructure and services that enhance overall living circumstances and security, and upgrading programs for informal settlements could significantly contribute to the reduction of criminal activity.

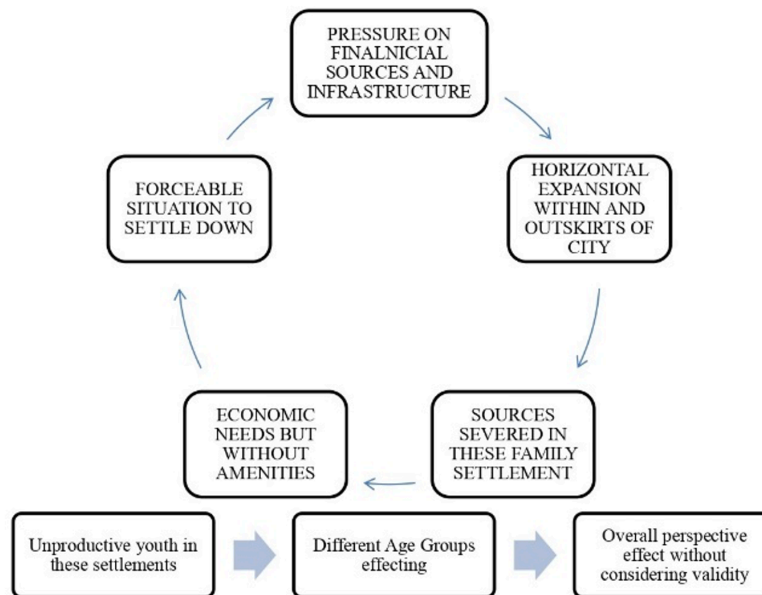


Figure 1. diagram showing lack of integration with socio-economic, physical and environmental context of informal settlements

(Source: Author)

The low-income group and below-poverty-line population living conditions would be improved through the implementation of social policies like housing plans, social security programs, and opportunities for education, employment to fight poverty and economic policies like job creation, skill development, and microfinance. The healthcare services must be made more accessible in the informal settlements. (Patnaik & Narain, 2016, p. 333-350), (Bhagat, 2010, p. 147-161).

The characteristics of underprivileged populations fighting against social barriers for survival. Gangs and other unofficial power structures frequently emerge in an informal settlement when social marginalization, resource scarcity, and economic problems combine. The author examines the lives of those who live on the periphery to show the urgent need for comprehensive social interventions to address the underlying causes of crime and inequity in such areas while also exposing the brutal realities of urban poverty. (Venkatesh, 2008).

The effects of crime in these marginalized communities, provide a nuanced examination of how socioeconomic and historical influences interact to influence criminal behavior. How crime in old informal settlements isn't an isolated problem but rather a symptom of more fundamental structural problems like poverty, a lack of infrastructure, and restricted access to healthcare and education.

Indicated by strained social ties and ongoing cycles of disadvantage, The investigation shows that the effects of crime go beyond the immediate individuals and communities. The reconsideration of traditional methods for addressing the effects of crime in informal settlements by illuminating the complex web of causes and effects promotes a more comprehensive understanding that addresses both the symptoms and underlying systemic disparities. (Kumar, 2007).

Dwelling conditions in India's informal settlements are poor, infrastructure is insufficient, and the surroundings are degraded. The informal settlements cannot be ignored in the improvement process due to the fact they are part of the city's surroundings. The well-being of people residing in informal settlements has to be ensured through a sustainable approach to urban improvement. (Sengupta & Sarkar, 2019, 1401-1412).

The 2018 World Cities Report examines the issues that informal settlements face and the pressing need for all-encompassing social interventions to address the underlying causes of crime and injustice in these areas. the complexity of decisions people makes and the coping mechanisms they use in these circumstances. It reveals the harsh realities of urban poverty and sheds light on the lives of those who live on the periphery. The significance of comprehending how marginalized communities cope with systemic obstacles as they fight for survival. Gangs and other forms of unofficial power often emerge in informal settlements as a result of social exclusion, resource scarcity, and economic hardship.

Dharavi Slums: Historical Overview

One of the old informal settlements, Dharavi Slums, in India, has been facing various issues for many decades, which directly or indirectly affect the urban poor as well as the surroundings of the urban area.

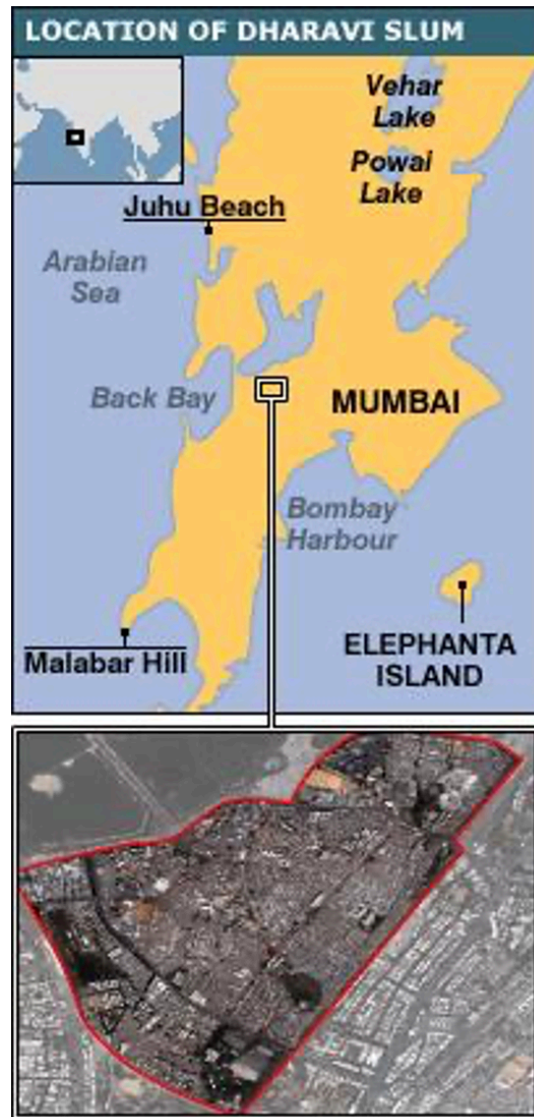


Figure 2. (Source:

http://affordablehousinginstitute.org/blogs/us/2007/07/dharavi_the_fix.html)

Dharavi, situated in Mumbai, India, stands as an emblematic example of an age-old informal settlement that has grappled with multifaceted challenges, including crime-related issues. With a history dating back to its establishment in 1884 during the British colonial era, Dharavi has evolved into one of the most densely populated areas in the world, accommodating a population of about 1,000,000 within an area of just over 2.39 square kilometers (Wikipedia, 2023). Its historical roots trace back to the expulsion of factories and residents from Mumbai's city center, coupled with rural-to-urban migration, contributing to its current diversity in terms of religion and ethnicity. (Wikipedia, 2023).

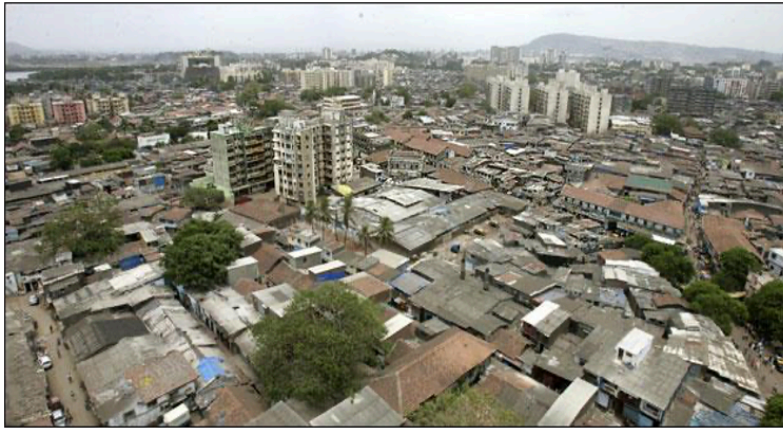


Figure 3. (Source:

http://news.bbc.co.uk/2/shared/spl/hi/world/06/dharavi_slum/html/dharavi_slum_intro.stm)

The slums in Dharavi face complicated social and financial dynamics, and redeveloping those settlements poses significant challenges. Problems including migration, industrialization, and government regulations have contributed to the dense populace within the slums. Moreover, Mumbai's fragmented methods and shortage of comprehensive expertise on the strengths and challenges of informal settlements further compound the troubles. To promote greater equity and sustainable city development in Dharavi, it is essential to recognize the resilience and contributions of the informal settlements and take a holistic approach that addresses their specific needs and demanding situations. (Patel and Masselos, 2003).

2.1.1. Crime and its impact on Livability

The different kinds of crime can influence how good people's lives are and how happy they feel in their communities. "Livability" means how comfortable and friendly a place is to live. It involves things like how safe people feel, how well they get along with others, if the environment is healthy if housing is affordable, and if there are good things like schools and jobs. Crime can make livability worse by making people feel less safe and happy, and it can also damage the places where they live.

There are several ways in which crime can impact the quality of livability:

1. Decreased sense of safety: When crime rates are high, people may feel less safe in their communities. This can lead to fear, anxiety, and reduced quality of life.

2. Strained community relationships: Crime can create a sense of mistrust and tension among community members. It can weaken social bonds and make it harder for people to connect and build positive relationships with their neighbours.
3. Physical and environmental damage: Criminal activities such as vandalism, graffiti, and property damage can make neighbourhoods appear run-down and neglected. This can contribute to a decline in the overall appearance and attractiveness of the area.
4. Limited access to resources: High-crime areas may face challenges in attracting businesses, schools, and other essential services. This can result in limited job opportunities, educational options, and amenities, making it harder for residents to meet their basic needs and improve their quality of life.
5. Financial burden: Crime can lead to increased costs for individuals and communities. This includes expenses related to security measures, insurance premiums, and the repair or replacement of stolen or damaged property. These financial burdens can further strain the livability of an area. (Baobeid et al., 2021), (McCormack et al., 2020), (Paula Meth, 2017), (Kachenje, 2020)

One of the elements that influence a city's stability, which in turn affects the livability score, is crime. The authors rate the livability of 140 cities worldwide using the Economist Intelligence Unit's (EIU) Global Livability Index. The index is based on five factors: infrastructure, stability, healthcare, culture and environment, and education. The stability indicator takes into account crime rates as well as the risk of terrorism, armed conflict, and civil unrest. The stability category is weighted at 25% of the total score and is composed of indicators such as the prevalence of petty crime, the prevalence of violent crime, the threat of terrorism, the threat of military conflict, and the threat of civil unrest or other major social unrest or conflict". A proposed table that lists the cities' rankings and livability scores based on the EIU Index. (Tita et al. 2006)

One of the most important factors is how safe we feel from crime. Crime can affect our quality of life and well-being in many ways, which means how well it supports the well-being of its residents. There are different ways to measure livability, such as asking people how they feel about their place or using data and statistics to compare different aspects of a place. Some of these aspects are specific to crime, such as how often it happens, how many people are affected by it, how afraid people are of it, and how safe people feel in their place. (Office for National Statistics, 2022)

The above statements conclude that crime can affect the livability of a place, which means how well it supports the quality of life of people in informal settlements. Crime can make people feel unsafe and unhappy, damage the physical and social environment, limit access to resources and opportunities, and

increase the financial costs for individuals and communities. These factors can reduce the livability in high-crime areas.

2.1.2. Urbanization and Neglect of Crime Prevention

Urbanization is the process of people moving to cities and towns. It can have many benefits, such as economic growth, better services, and more opportunities. But it can also have some drawbacks, such as increased crime due to joblessness, and shortcuts to earning money. Crime prevention is the action of stopping or reducing crime before it happens. It can include things like improving security, providing education, and creating social programs. Therefore, many urban areas do not pay enough attention to crime prevention. They face challenges such as poverty, lack of trust, and poor planning in urban areas, they are merged in high-density housing units. This makes them more vulnerable to criminal activity. Many researchers have explored this problem and its causes and effects.

- The collective efficacy, which is the shared belief and willingness of people to intervene for the common good, affects the rate of violent crime in different neighbourhoods. They found that collective efficacy was strongly associated with lower violence, even after controlling for other factors such as poverty, racial composition, and residential stability. (Sampson et al. 1997)
- The crime affects small businesses in urban areas, and how community institutions, such as churches, schools, and civic groups, can help prevent crime and support business development. He argued that community institutions can enhance social control, social support, and social capital, which are essential for reducing crime and promoting economic growth. (Taylor, 1999)
- The routine activity theory to explain how crime and everyday life are intertwined. They suggested that crime can be prevented by manipulating the three elements of crime: motivated offenders, suitable targets, and capable guardians. They also discussed how various settings, such as homes, workplaces, schools, and public spaces, can influence the opportunities for crime. (Felson and Boba, 2010)
- A systematic review of randomized controlled trials that evaluated the effectiveness of hot spots policing, which is a strategy that focuses on specific locations where crime is concentrated. They found that hot spots policing had a significant and consistent impact on reducing crime and disorder in the targeted areas, without displacing crime to nearby locations. (Weisburd and McEwen, 2017)
- The problem-oriented policing, which is a strategy that involves identifying and analyzing specific crime problems and developing tailored solutions, can be applied to crime hot spots. They reviewed

the evidence from various studies and concluded that problem-oriented policing can produce substantial and long-lasting reductions in crime and disorder in hot spots. (Braga and Weisburd, 2010)

2.1.3. Informal settlements and Crime

The relationship between informal settlements and crime has been a topic of considerable interest in the literature, as these settlements often exhibit unique features that can affect the patterns and causes of criminal behavior. The informal settlements are characterized by inadequate housing, limited availability of essential utilities such as water, sanitation, and electricity, and a high concentration of population. These areas are particularly vulnerable to various forms of criminal activities due to their lack of formal governance and economic disadvantages. The impact of crime on informal settlements is not only felt by the residents who suffer from victimization, fear, and insecurity but also by the physical environment and public spaces within these settlements, which are shaped by the spatial and social dynamics of crime. The research studies have explored the link between informal settlements and crime, shedding light on the complex nature of this relationship as well as how crime affects the built environment and open spaces of informal settlements.

- The intricate connection between urban crime, segregation, and citizenship in São Paulo, Brazil. The analysis of how crime influences the dynamics of informal settlements and urban life. The examination is a critical analysis of the social and spatial dynamics of crime, segregation, and citizenship in São Paulo, Brazil. The author uses ethnographic, statistical, and historical methods to explore how fear, violence, and inequality shape the urban landscape and affect the rights and identities of its inhabitants. This research helps to understand how crime shapes the physical layout of informal settlements, often leading to the construction of literal and metaphorical "walls" that impact open spaces and community interactions. (Caldeira, 2000).
- The sustainable urban planning and development strategies to create safer cities. It addresses the impact of crime on informal settlements and the built environment. By providing insights into effective urban planning, the guide aims to mitigate crime's negative effects on open spaces and community well-being. It emphasizes the importance of designing inclusive and safe environments that prioritize informal settlement residents' safety and security. (UN-Habitat. 2011).
- Amanda Irwin's work delves into the politics of policing and how law enforcement practices impact informal settlements. It explores the challenges faced by police forces when dealing with crime in marginalized communities. The policing strategies can shape the built environment and open spaces

within informal settlements, either by establishing a sense of security or exacerbating tensions and divisions. (Irwin, 2004).

- The study on housing projects for the urban poor in South Africa. It examines the relationship between housing conditions, crime, and the built environment. The research highlights how inadequate housing and lack of infrastructure in informal settlements can contribute to crime-prone environments. It underscores the importance of well-designed housing projects that consider safety and access to open spaces as integral components of sustainable development. (Huchzermeyer, 2006).
- The research implies on the urban governance in Johannesburg, South Africa. It discusses the challenges of governing a city with stark socio-economic disparities, including the impact of crime on informal settlements. The research examines how crime influences the negotiation of city spaces and the development of the urban environment. It offers a perspective on how crime affects the allocation of resources, including open spaces, within informal settlements and the broader urban context. (Frenkel, 2001).

How can formalizing helps to reduce the crime in the informal settlements?

1. Providing legal recognition and ownership: Formalizing informal settlements can provide legal recognition and ownership to residents, which can reduce the risk of eviction and displacement. This can also reduce the likelihood of criminal activity, such as gang violence and drug trafficking, which often thrive in areas of insecurity and instability. (Meth, 2017), (Jones, 2017), (UNECE, 2015)
2. Improving access to basic services: Formalizing informal settlements can improve access to basic services such as electricity, clean water, and sanitation. This can reduce the need for residents to engage in criminal activity to obtain these resources, as well as reduce the risk of theft and reselling of these resources at high prices. (Jones, 2017), (UNECE, 2015)
3. Enhancing community participation: Formalizing informal settlements can enhance community participation in decision-making processes, which can lead to increased social cohesion and a sense of ownership over the community. This can reduce the likelihood of criminal activity, as residents are more invested in the well-being of their community. (Jones, 2017), (Kachenje, 2020), (Peters et al., 2022)
4. Reducing vulnerability to disasters: Formalizing informal settlements can reduce vulnerability to disasters by improving infrastructure and access to emergency services. This can reduce the risk of

criminal activity, such as looting and violence, that often occur in the aftermath of disasters. (Peters et al., 2022)

2.1.4. Previous Studies on enhancing safety and livability in informal settlements

The previous studies on enhancing safety and livability in informal settlements. As the authors, we have analyzed and enlisted a few authors who worked in Amritsar City and its informal settlements Maqboolpura. An informal settlement that suffers from high levels of crime, poverty, and drug addiction. These issues cater the several opinions as per below authors' research.

Issues:

Drug abuse in Amritsar City stems from a range of interconnected causes. First, peer pressure and the curiosity of young individuals drive them toward drug experimentation. The easy availability and accessibility of drugs enhance the problem. Insufficient awareness and education about the detrimental effects of drug use contribute to its prevalence. Also, unemployment, poverty, and stress further push vulnerable segments of the population towards substance abuse. Family and social issues, as well as cultural and religious factors, also play a significant role in this complex issue.

Solutions:

Addressing the drug abuse issue in Amritsar City requires a comprehensive strategy. Strengthening law enforcement and border security is crucial to disrupt the supply chain of drugs. The requirement of enhancing the availability and quality of treatment and rehabilitation services can aid individuals struggling with addiction. Public awareness campaigns, particularly targeting the youth, need to be initiated to educate them about the risks associated with drug abuse. To tackle underlying socio-economic factors, providing alternative livelihood options and skill development opportunities for the unemployed and impoverished is imperative. Involving family, community, and religious institutions can establish a robust support system for prevention and intervention. Additionally, promoting healthy lifestyles and cultivating positive values among the youth will contribute to a more resilient society against the drug menace. (Singh & Singh, 2018).

Issues:

There are several potential core issues related to crime in the Maqboolpura neighborhood, including high unemployment and poverty rates. Lack of basic amenities like electricity, clean water, and sanitization could possibly breed unrest and encourage criminal activity as a way to make up for resource shortages.

Social exclusion and marginalization may cause some Maqboolpura residents to turn to criminal activity out of a sense of alienation from their fellow citizens. A lack of access to high-quality education may also have been considered because of its impact on limiting people's opportunities.

Solutions:

The authors mentioned that targeted efforts should be made to improve access to quality education and skill development programs. This will empower individuals to break the cycle of poverty and enhance their employability. Community-based support systems need to be established. Interventions related to healthcare services and the contribution of cultural and recreational activities can reduce the sense of exclusion and marginalization. Engaging local authorities and policymakers can create inclusive urban development plans, which could pave the way for better infrastructure, housing, and essential amenities for the people. (Sharma & Sharma, 2019).

Issues:

The study conducts critical issues arising from drug addiction in the context of informal settlements, focusing specifically on the Maqboolpura locality. The impact of drug addiction on women reveals that the nexus between addiction and crime presents challenges within these settlements. Drug addiction can lead to increased criminal activity, which can worsen safety concerns and social instability. Drug addiction has a greater impact on women, making them more vulnerable to exploitation and victimization. This problem highlights the complicated relationship between substance abuse and criminal activities, which negatively affect social unity and community welfare.

Solutions:

The rehabilitation programs can be highlighted to the unique needs of women grappling with addiction can play a pivotal role in curbing criminal tendencies. The counselling of these initiatives can ease the recovery and provide a foundation for breaking the cycle of crime. Collaborative efforts between local authorities, NGOs, and community leaders can enhance the availability of social services and mental health support, crucial components in mitigating the impact of drug addiction and associated crimes. (Kaur & Kaur, 2017)

Issues:

A central concern illuminated by the study is the prevalence of drug abuse in Maqboolpura. The absence of accessible educational and vocational opportunities, particularly for children and women, emerges as a core issue. This scarcity not only perpetuates cycles of limited prospects but also leaves these groups

vulnerable to engagement in criminal activities. Such circumstances create a fertile ground for crime to thrive and hinder overall progress.

Solutions:

In Maqboolpura, the important role of NGOs, exemplified by the Citizen Forum Vidya Mandir, in combating the issues by providing education and vocational training, these NGOs empower children and women, equipping them with skills. These changes can create crime free spaces by providing economic independence. (Singh & Singh, 2016).

Issues:

In the case of Amritsar City, the study's application of Geographic Information System (GIS) techniques to map and analyze crime patterns uncovered its main concerns. Crime mapping and hotspot analysis expose the concentration of criminal activities within specific areas. The main points are socio-economic disparities, inadequate infrastructure, and limited access to essential services in informal settlements. These circumstances create an environment where crime can flourish, undermining safety, and perpetuating community vulnerabilities.

Solutions:

The study's utilization of GIS presents opportunities for targeted interventions. By identifying crime hotspots and their socio-economic characteristics, authorities and stakeholders can direct resources toward areas in need of development. Improved infrastructure, enhanced lighting, and increased law enforcement presence can be prioritized in these high-crime regions. The GIS technology can lead to an understanding of urban planning and urban design, offering better open spaces and reducing crime-prone environments. (Kumar & Kumar, 2015).

Issues:

Inadequate urban governance and deficient service delivery result in substandard living conditions for slum dwellers Amritsar City. Insufficient access to basic amenities, such as clean water, sanitation, healthcare, and education, underline the challenges faced by these communities. The absence of services enhances the poverty, marginalization, and vulnerability within informal settlements.

Solutions:

As above studies the solutions can relate which identifies by the authors. The different aspects given by this author, the Investments in essential infrastructure, including water supply, sanitation facilities, and

healthcare centers, the importance of involving slum dwellers in urban development programs, ensuring their active participation and sense of ownership. (Singh & Singh, 2014).

Dharavi Slums: Crime-Affected Landscape

Issues in Dharavi Slums:

Confrontations in the Heart of the Dharavi Slums: Dharavi, a region that excels in the arts and crafts of leatherwork, textile manufacture, and pottery production, faces tremendous challenges in the middle of the colorful tapestry of its informal economy. Locals are forced to engage in unhygienic practices by using small lanes or the nearby river as informal washrooms, further contaminating the environment due to the lack of adequately constructed thoroughfares, easily accessible public amenities, and dignified washroom provisions. (Asian Century Institute, n.d.; Wikipedia, 2023). The dwelling's restrictions, which include small living spaces and tiny sleeping areas shared by up to five occupants, only serve to exacerbate these difficulties and contribute to the risks to the public's health. The history of outbreaks that have marked this community's history, combined with a life expectancy that is below the national average, emphasizes the necessity of a thorough infrastructure transformation and judicious intervention in the healthcare sector. (Asian Century Institute, n.d.; Wikipedia, 2023).

Crime in the Dharavi Slums:

Despite the robust communal fabric and a generally modest incidence of criminal activities, the Dharavi settlement is not immune to apprehensions regarding safety. Within specific enclaves of the locality, particularly in the eastern sector of Mumbai, the issue of crime has gained substantial prominence. Of notable concern is the safety of women, given the occurrence of instances involving rape, molestation, and sexual harassment. The genesis of these challenges related to criminality can be attributed to various factors, including economic disparities, restricted prospects, and deficiencies in infrastructure. (Citations: Hindustan Times, n.d.; Wikipedia, 2023).

Solutions in Dharavi Slums:

1. Granting limited ownership rights to slum residents, which reduces the exploitation and harassment by gangsters who used to claim ownership and demand rent. (Ooi & Phua, 2007), (Corburn & Sverdlik, 2017), (UN-Habitat, n.d.)

2. Providing electricity and clean water to slum residents, prevents criminals from stealing and reselling these resources at high prices. (Corburn & Sverdlik, 2017), (UN-Habitat, n.d.)
3. Training local women to identify and report incidents of gender violence using smartphones and apps, which improves awareness and support for survivors of violence. (Buckley et al; 2017)
4. Redeveloping the slum into a modern business and housing district, which could improve the living conditions and opportunities for slum residents. (Montgomery & Elimelech, 2008)

The discussion provides solutions to prevent crime and improve the quality of life in Dharavi slums. They have shown how granting property rights, providing basic services, empowering women, and redeveloping the slum can have positive impacts on the dwellers and society. The challenges and opportunities that Dharavi slums face, and how different stakeholders can work together to create a safer and better environment for slums dwellers.

2.2. Adaptive Livability Interventions

Adaptive livability interventions are dynamic, flexible strategies that improve people's overall quality of life in a variety of environments. The livability of spaces, from urban neighborhoods to rural communities, is continuously influenced by societal, environmental, and technological changes, which is the basis for this idea. Therefore, there is an increasing need to create interventions that can change and adapt along with these other factors.

There are the main interventions that have been discussed by various authors:

Community policing and participatory governance: This intervention involves strengthening the collaboration and trust between the police and the residents of informal settlements, as well as empowering the local communities to participate in decision-making and problem-solving processes related to safety and security issues. The impact of community policing initiatives in Kolkata's slums was studied, and it was found that they improved the perception of safety, reduced the fear of crime, and enhanced social cohesion and civic engagement among the slum dwellers. (Barnes & Sawhney, 2020)

Environmental design and urban upgrading: This intervention improves the physical conditions and infrastructure of informal settlements, such as by providing roads, public spaces, drainage, sanitation, and lighting. These upgrades can lessen environmental risks, discourage criminal activity, and boost locals' pride in their community. In Ahmedabad's slums, a project run by the Mahila Housing SEWA Trust implemented environmental design and upgrading interventions that resulted in improved health and well-being as well as a decrease in violence against women. (Brown-Luthango et al. 2017)

Livelihood enhancement and economic empowerment: Enhancing livelihoods and promoting economic empowerment for residents of informal settlements, particularly women and young people, by providing them with chances to start their own businesses and develop their skills. Social exclusion, inequality, and poverty—all of which are frequently associated with crime and violence—can be reduced through these possibilities. (Bryant and Veroff 2007)

Social mobilization and collective action: The residents of informal settlements must be organized and mobilized to advocate for their needs, interests, and rights. Developing social cohesion, interdependence, and group resiliency can be achieved through these organizations. A study by Appadurai, for example, examined how social mobilization and collective action functioned in Mumbai's slums. He argued that by fighting the stigma and discrimination they experienced from society and the state, slum dwellers were able to assert their citizenship and dignity. (Vahapoğlu, 2019).

The legal awareness and access to justice intervention: It focuses on informing informal settlement people about their legal rights and helping them access legal aid, dispute resolution, and justice institutions. These services empower slum dwellers to safeguard themselves against exploitation, eviction, and corruption, and to address their concerns. Like, HRLN initiated legal awareness efforts in Delhi, aiding slum residents in obtaining essential documents like IDs, ration cards, voter cards, pensions, healthcare, education, and compensation. (Human Rights Law Network, n.d.)

The cultural expression and social integration: It promotes the diverse culture and identity of informal settlement residents, while also helping them connect with other city groups. These activities boost self-esteem, recognition, and encourage conversations and unity among different cultures. The events displayed cultural expression and social integration initiatives in Mumbai's Dharavi, a major Asian informal settlement. And highlighted art created by slum dwellers using recycled materials, showcasing their creativity and promoting intercultural harmony. (The cultural expression, n.d.)

2.2.1. Concept and Principles of Livability

The concept of livability has influenced urban planning, transportation, and public health policy. The standard of living in a place is determined by factors such as affordable housing, convenient transportation, and public services that are accessible. (Sustainable Cities Initiative, 2015). Livability is a multidimensional concept that can be defined and measured in various ways. Some researchers have defined livability in terms of specific indicators, such as walkability, air quality, and access to green spaces.

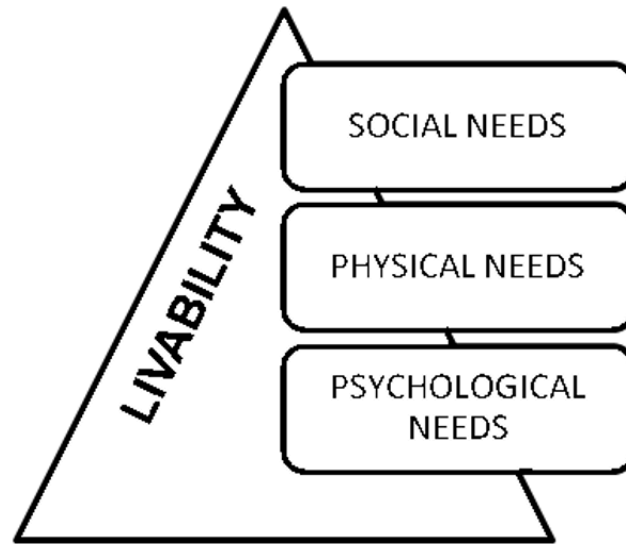


Figure 4. Source: Author (Sketch about Concept of Livability)

The liveliness of a place depends on the existence of happiness of its people, both those who live there and those who visit. Many indicators, like the physical environment, socio-culture, and economic condition. The important parameters like the Livability Index, the Global Livability Index, and the Sustainable Development Goals. These tools try to measure all the different parts of affected areas that make good quality of life. (Ruth & Franklin, 2014). Livability should be understood as a multidimensional concept that goes beyond physical infrastructure and includes social, economic, and environmental factors. The importance of community participation and empowerment in creating livable neighborhoods and promoting social inclusion. The highlights are the need for affordable and accessible housing, as well as the provision of basic services such as water, sanitation, and healthcare, to improve the livability of urban areas in India. (Gupta et al. 2018).

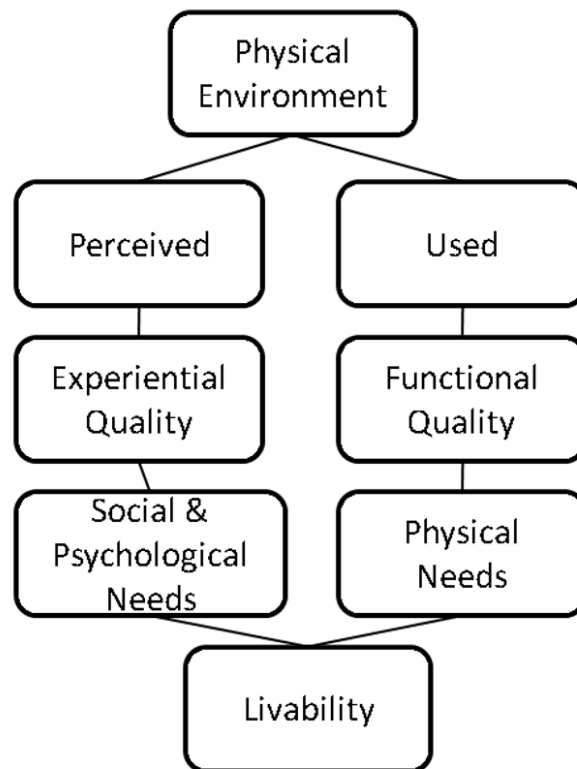


Figure 5. Source: Author (Perceived and Functional Quality of life)

In Indian Context

The concept of livability in India may be a little different from that in developed nations, where some livability factors are taken for granted. Having access to dependable electricity, water supply, sanitary facilities, and public transportation may be thought of as an attractive feature for livability in India, whereas they may be expected as basic necessities in other countries, according to a report by the Confederation of Indian Industries. Similarly, to this, it's possible that India places a higher value on social inclusion, cultural diversity, and community than some other countries do. (Kaur & Singh, 2013)

The suggested quantitative method for analyzing livability in Indian cities Based on 12 indicators that addressed different facets of urban life, including housing quality, infrastructure accessibility, environmental quality, social equity, economic opportunity, etc., the paper created a livability index. The livability of 53 Indian cities was assessed using the index in this paper, and it was discovered that there was a significant variation in livability among the cities. (Garg & Jain, 2013)

From other Indian authors the defined six principles of livability to guide the policies and investments to understand the implementation of adaptive livability:

- Provide more transportation choices
- Promote equitable, affordable housing
- Enhance economic competitiveness
- Support existing communities
- Coordinate and leverage federal policies and investments
- Value communities and neighborhoods (Herrman & Lewis, 2015)

As per techniques of analysis it is vital to understand another principle of livability in which the approach through technology can get the indicators of livability. As per (Jain & Sharma, 2018) paper develops a livability index for Indian cities using a GIS-based approach. The paper uses 10 indicators that reflect the physical, social, and economic aspects of livability, such as land use mix, green cover, public transport accessibility, crime rate, literacy rate, etc. The paper calculates the livability index for 30 major Indian cities using spatial data and maps. The paper also analyses the spatial patterns and correlations of the livability indicators and identifies the strengths and weaknesses of each city.

2.2.2. Connection between Livability and Crime prevention in Indian planning

Indian authors have looked at the relationship between livability and crime prevention in the context of housing and urban planning. While there hasn't been much research specifically on the relationship between India's livability and crime prevention, some studies have looked at related issues. The reference on Mumbai's urban history from a politics of plurality perspective, emphasizes the spatial conflicts and fresh planning opportunities that arose in response to the city's rapid urbanization and social inequality. The study places a strong emphasis on the value of community involvement and empowerment in establishing livable and secure neighborhoods. (Kanuga, 2018). Another study on habitat reconstruction initiatives in rural India highlights the importance of leveraging existing connections and resources to address the various causes of vulnerability of rural housing, including crime. The study emphasizes the need for sustainable and affordable housing solutions that take into account the social, economic, and environmental factors that contribute to crime and insecurity in rural areas.

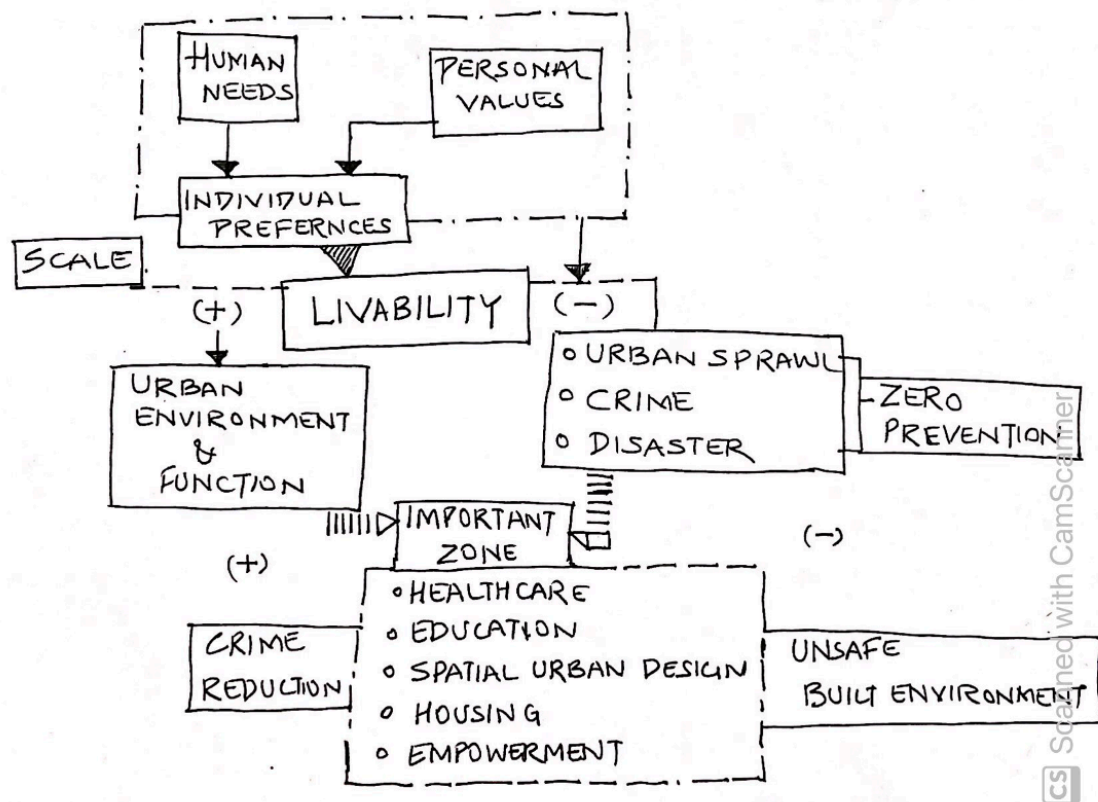


Figure 6. Source: Author (Sketch of correlation between Livability and Crime)

These studies suggest that creating livable and safe neighborhoods requires a holistic approach that takes into account the social, economic, and environmental factors that contribute to crime and insecurity. There is limited research specifically on the connection between crime prevention and livability in India, studies on related topics highlight the importance of community participation, sustainable and affordable housing, and leveraging existing connections and resources to create livable and safe neighborhoods. (Anand et al., 2022)

2.3. Conclusion

Crime and violence are major challenges for old informal settlements in India, as they affect the quality of life of people from informal settlements. The literature review found that livability is a complex concept that varies according to the local context and the preferences of the people who live there. Livability can be enhanced by various interventions and strategies, such as community policing, environmental design, and social mobilization. These interventions aim to address the underlying causes of crime and

insecurity, as well as to improve the physical, social, and economic aspects of livability. The literature review suggested that a holistic and participatory approach is needed to create a livable built environment for informal settlement residents. Livability is a useful concept for understanding and improving the living conditions of old informal settlements in India. Crime prevention is an essential component of enhancing livability in these areas.

3. Case Study: Maqboolpura, Amritsar, Punjab

Maqboolpura is an informal settlement on the outskirts of Amritsar, a border city in the northwestern part of Punjab, India. The city has grown rapidly from a population of 1.62 lacs in 1901 to over 20 lacs in 2011. (Census of India, 2011: Punjab Series-1, 2012). Maqboolpura, however, is a stark contrast to the rest of the city. It is known as the “village of widows and orphans” because of the high prevalence of drug addiction, poverty, and drug-related deaths among its residents. Many of them are survivors of the Partition violence in the late 1940s, who settled in this area with little or no support. This case study explores the root causes and consequences of this social and environmental crisis, which is not only affecting Maqboolpura, but also other communities across India. The case study focuses on the poorly built environment of Maqboolpura, which consists of irregular plots and houses, a lack of street furniture and community spaces, and an absence of planning and regulation. By studying Maqboolpura, we can learn about the challenges faced by other informal settlements in India and devise effective strategies to improve their livability and well-being.



Figure 7. Location of Maqboolpura, Amritsar, Pb. India

3.1. Site

Maqboolpura: A Nexus of Criminality

Maqboolpura was selected for this case study because of the city's distinctive urban design issues, poor livability problems as a result of its criminal activities involving drug addiction and money laundering, and the absence of accessibility to key services and facilities. A good spot to observe and assess various urban design problems, such as congested streets, inadequate transit, a lack of green space, and risky areas where criminal activity occurs. This case study will give readers a thorough understanding of the dynamics of crime-ridden areas and the factors which impact criminal behavior, allowing them to develop effective strategies for preventing crime and supporting social development.

According to the Statistical Abstract of Punjab State - 2020, published by the Government of Punjab (2021). The population of Maqboolpura, a city with the area of 1.29 square kilometres, was 18,370, resulting in a population density of 14,246 people per square kilometre. However, within 100 hectares of the site, unworkable spaces, unsafe areas, and dumpsites are in depleted conditions and more over area

under maqboolpura unit has been encroached by illegal developers and small industry units. The population varies due to the death rate in this particular informal settlement. To understand the situation on the ground, a 17-hectare area in Maqboolpura was selected for our study. This area has a population density of 300 people per hectare, including tenure-based residents, encroachment units, and added floors per dwelling unit inside the Maqboolpura.

Issues in Maqboolpura

Maqboolpura faces various challenges that hinder its integration with the socio-economic, physical, and environmental contexts of the surrounding areas. The built environment is not adaptable to the growing pressure of population growth, resulting in inflexible and unregulated housing development. This has led to an unequal distribution of dwelling units, creating unhygienic living conditions. Open spaces are scarce, and there is a lack of community and functional green areas. The street-to-façade relationship also lacks diversity, resulting in a less imageable district. There is a shortage of social spaces, and the settlements form defensible spaces that reduce transparency and accessibility. This makes inner areas non-penetrable and contributes to a poor width-height factor, making the district less livable.

4. Method

Simone and Sassen have used qualitative methods like ethnography and participant observation to study informal settlements. Simone focused on understanding how residents create social networks and economies to survive in challenging urban environments. Sassen's work examines the impact of global economic processes on informal settlements and how residents engage with them. (Simone, 1997, 231-255), (Sassen, 1991)



Figure 8. Local Planning Area, Amritsar

Ananya Roy utilized a critical ethnographic approach to examine the politics of urban informality and the role of the state in shaping informal settlements. This research method entails analysing power structures and social hierarchies in society to reveal how marginalized communities are oppressed and excluded. Roy's study aimed to explore the intersection of urban informality and state power and how this relationship affects the lives of informal settlement residents (Roy, 2005, 147-158). The research design used in this study is a quantitative and qualitative research design. Quantitative and Qualitative research is appropriate in this case as the study aims to identify and analyse the urban design issues associated with livability in Maqboolpura.

The case study was designed as three-staged research:

(i) The collection of data from the field through primary survey. This stage involved visiting the study area and conducting a household survey. The collected information on the demographic, socio-economic, and environmental characteristics of the dwellers, as well as their experiences of crime and safety in their social circle. The survey also included questions on the existing physical conditions and infrastructure of the area, such as roads, drainage, lighting, sanitation, and waste management conditions. The survey covered a sample of 100 households, which were randomly selected from the population of 3000 households in Maqboolpura.

(ii) Content analysis of the qualitative research data through data from local bodies of government. This stage involved collecting and analyzing secondary data from various sources, such as government reports, official statistics, newspaper articles, and academic publications. The background for understanding the issues faced by Maqboolpura and its residents. The content analysis focused on identifying the key patterns to analyse the causes and consequences of crime, the role of urban design in crime prevention and recommendations for enhancing safety and livability in informal settlements.

(iii) Land use, ground-figure analysis drawings by research authors. This stage involved creating maps and diagrams to illustrate the spatial distribution and configuration of land use, activities, and features in Maqboolpura. The maps and diagrams were based on the primary and secondary data collected in the previous stages, as well as on the direct observation and measurement by the research authors. The existing land use patterns, such as residential, commercial, industrial, institutional, recreational, and vacant areas. The ground-figure analysis drawings, which highlighted the positive and negative aspects of the physical environment in relation to crime prevention, such as built environment, open spaces, transition control, imageability, activity pattern.

4.1. Data Analysis

Livability conditions in slums at Locality Level: Physical Environment Roads: Two different types of roads were observed in the slums of Amritsar city. In the main road areas with some commercial development the roads were paved with bricks or asphalt. However, in the less developed slums, the condition of inside roads was less satisfactory, with undulating surfaces and open drains carrying grey water. The general housing status in these settlements is moderate and most of the houses are of brick construction. (Figure:9) About 40-50% houses were more than one storey. A general lack of set-back (open spaces for air movement) was observed in most of these houses, indicating that general building bye-laws were not observed in construction of these houses. The majority of the units in the slums are of single and double room tenements, series of streets are in dilapidated conditions. (Figure:11)

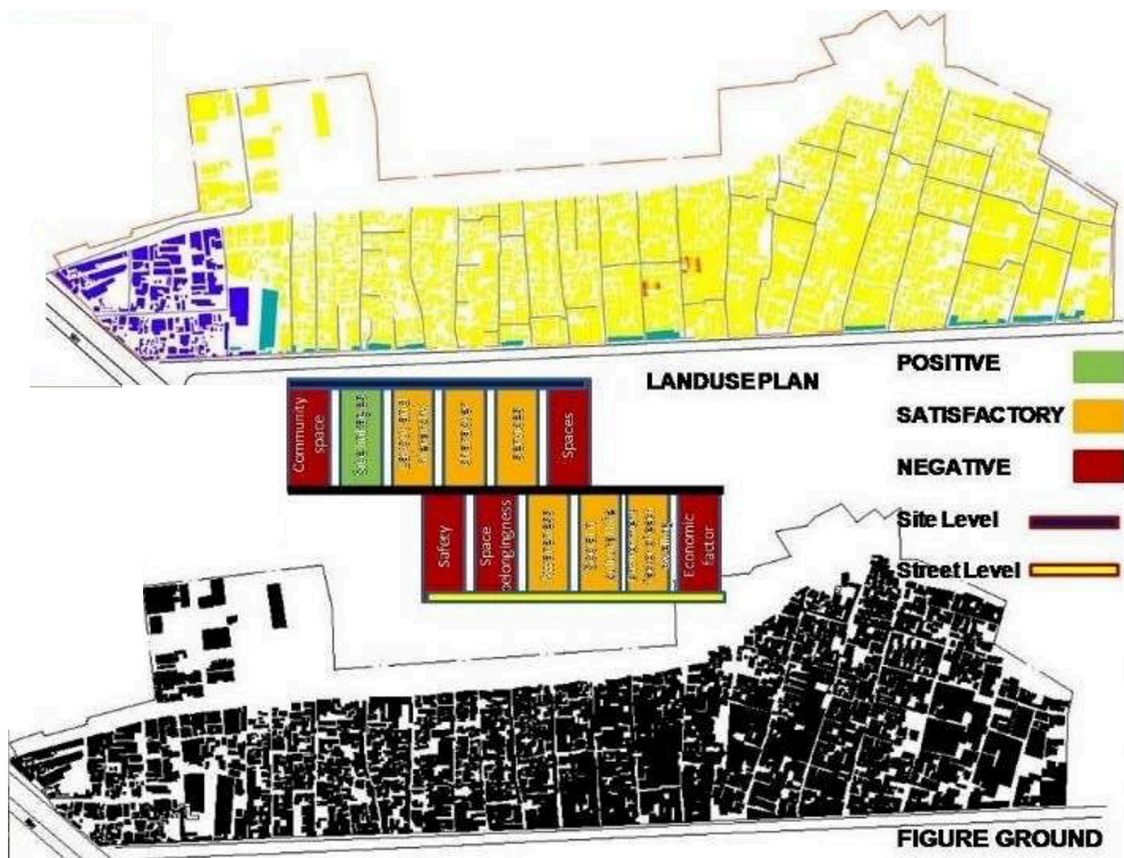


Figure 9. Existing Land use and Ground figure plan analyzing the dissatisfactory built environment with primary survey (Source: Author)



Figure 10. Primary survey represents Imageability, Crime based Vision-Visual impression

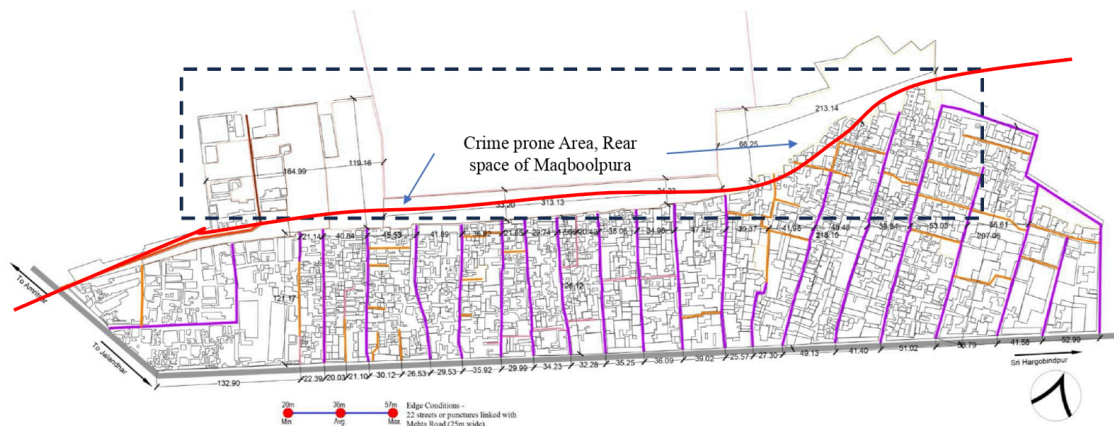


Figure 11. (Source: Author) Edge Conditions and Negative (unsafe) spaces around Maqboolpura



Figure 12. Primary survey represents points of criminal activities

5. Discussion and Findings

5.1. Key Issues: Addressing Livability Challenges

- The findings indicate that Maqboolpura is experiencing several challenges, and the presence of crime is a pressing issue within Maqboolpura. The locality has been plagued by drug addiction and trafficking, leading to a range of associated challenges including health problems, social stigma, and strained community fabric, including poor planning and building regulations, inadequate waste management, social injustice, and unsafe living conditions.
- These issues are the result of local governance negligence and poverty and illiteracy among residents. Non-compliance with planning and building regulations is one of the most critical issues, leading to uneven plot and house sizes and textures.
- Other issues highlighted in the findings are unplanned street styles in Maqboolpura's informal settlements. A lack of network areas and street furnishings brought about an uninviting and poorly maintained environment. (Figure:10,11,12). It could compromise protection within the area, specifically for vulnerable populations like youngsters, women, and the elderly. Poverty and illiteracy among residents exacerbate the difficulty of social injustice.

PARAMETER	VARIABLES	LIVABILITY – CONDITIONS		APPROACH
Life of Slum	70 years	Old informal settlement with poor livability		
Work – Place relation	Near Workplace/Near Institutional Area/Near Posh Colony/ Main Commercial Area/ Any other	work-place relationship distance covers 2-15 kms range.		More people are Unemployed
Surroundings of the slum area	Isolated area/Dirty water pond/industrial area, etc.	Unsafe surroundings		CRIME PRONE AREA
Land use	Composition of Land use	exceeding height control by norms/standards but high density creates congestion		Crime spots
Congestion	Density of population in informal settlements (indicator of congestion)	14246 people per km² (2020)		
Open Spaces	Parks, playing ground, community spaces (mass void relation important)	NULL		Little Open Spaces taken by drug addicts
Landscaping	Ornamental Trees, plants(Environmental factor, Ecological factor)	NULL		Null
Housing Conditions	Building Conditions, Visual Impression, Air, Light, Ventilation.	90% of units		Polluted Air due to Sewage
Street network, furniture	Hierarchy, pattern, condition, geometry, lights, Micro Climate	Street network	Street furniture	Clogged Streets
Physical infrastructure	Network, water supply, drainage, sewerage	network of water connection, sewerage quality		Low Maintenance
Site Maqboolpura (Informal Settlement) Condition - BAD, MODERATE				

Figure 13. Livability Condition and Approach comparative analysis of selective case study (Source: Author's compilation)

Overview of Crime data in Maqboolpura

A part of the city in Amritsar, Punjab, called Maqboolpura has long struggled with the negative effects of drug addiction and trafficking. The area has the sad nickname "village of widows," which is indicative of the large number of male fatalities brought on by drug overdoses and related illnesses. People are suffering under the weight of bias and judgment from both employers and society at large as a result of this serious condition, which has had significant social effects. Because they are so easily accessible and affordable in Maqboolpura, the large number of synthetic drugs—most notably Chitta—remains a

worrying aspect. In particular, there is a concerning increase in demand for these drugs during election seasons.

In Punjab, there has been debate over the complex interactions between the political class, police enforcement, and drug traffickers. The fact that successive governments have struggled to properly tackle the drug pandemic highlights a clear connection that makes comprehensive intervention difficult. The article cites the example of Akali minister Bikram Singh Majithia, who was summoned by the Enforcement Directorate in a Rs 6,000-crore drug racket case in 2014.

People of Maqboolpura are doubtful about the Aam Admi Party's claims that drug traffickers will be destroyed in a timely manner once it assumes power. Their criticism highlights the generality of the problems at hand, demanding ranged and constant efforts to change the current dynamics and free Maqboolpura from the grip of its long drug problem. ("The Economic Times," 2017)

Perception of safety and security among people of Maqboolpura

People in Maqboolpura have a very low feeling of safety and security because they constantly worry about losing friends and family to drugs or becoming victims themselves. Police raids and searches in the region haven't been able to stop the flow of drugs or apprehend the drug dealers; instead, they've created fear and harassment among the locals. The absence of infrastructure, employment opportunities, development, and basic amenities in the region has also contributed to the people's sense of helplessness and despair.

So as to address the roots of their issues and give them access to other means of income, education, health care, and rehabilitation, the people of Maqboolpura need urgent action and support from the government, civil society, and media. Also, the community must be educated and given the tools necessary to reject drug temptation and seek addiction treatment. If Maqboolpura locals are given the opportunity to live a respectable and successful life, their impression of safety and security will only get better.

Impact of Livability interventions on crime rates

The study identifies a number of issues related to livability conditions and proposes a set of ten selective parameters and variables to address these issues. The study evaluates these parameters and variables using a specific calculation method and finds that the resulting score is 1.5 out of 10, indicating a poor livability condition. The Approach from these livability conditions evaluates the resulting score is 0 out of

10, indicating serious action must be taken. (Figure: 13). Livability interventions can include various measures such as improving infrastructure, providing basic amenities, creating employment opportunities, enhancing community participation, promoting education and health care, and reducing drug supply and demand. (Welsh, Zane & Reeves, 2022)

The impact of livability interventions on crime rates in Maqboolpura can be assessed by using various indicators such as the number and types of crimes reported, the victimization and fear of crime among residents, the drug use and addiction rates among residents, the police presence and effectiveness in the area, and the overall satisfaction and happiness of residents with their living conditions. (Gokmenoglu, Yıldız, & Kaakeh, 2022)

A project called “Maqboolpura: A New Beginning” was launched in 2018 by a non-governmental organization called Khalsa Aid International, with the support of local authorities and community members. The project aimed to provide holistic support to the families affected by drug addiction in Maqboolpura by offering them food, clothing, shelter, education, health care, counselling, rehabilitation, and vocational training. (The Pioneer, 2017), (India Today, 2022). The project also involved renovating and beautifying the locality by painting walls, installing street lights, planting trees, and cleaning drains. The project claimed to have reduced drug consumption by 80% and crime by 50% in Maqboolpura within a year. (True Scoop News, 2023).

The impact of community policing on crime prevention and control in Maqboolpura: The study found that community policing had improved the trust and cooperation between the police and the residents in Maqboolpura by involving them in joint patrolling, awareness campaigns, grievance redressal mechanisms, and social welfare activities. The community policing had reduced the incidence and fear of crime in Maqboolpura by increasing the visibility and responsiveness of the police in the area.

These examples suggest that livability interventions can have a significant impact on reducing crime rates in Maqboolpura by improving the physical, social, and economic conditions of the locality and its residents. (Singh, Kaur & Singh, 2019). However, as per interventions at different scales on site, as per evidence and references above about the implementation of policies, The claim of the project is overrated, and as authors, we have identified different spots of Maqboolpura that are not maintained and lack behind all these policies. Common social spaces are unidentified and misplaced, whereas people of the locality are submerged in criminal activities again. As authors, we have proposed some interventions for Maqboolpura, which can definitely be positive possibilities for people in these informal settlements. This will also change the picture of open spaces and how they are interconnected with rich cultural spaces.

5.2. Results

Changes in the built environment and open spaces

The findings of the research highlight the necessity of looking at the Maqboolpura site's existing land use plan in order to gain an in-depth understanding of neighbourhoods with elevated rates of crime and the physical components influencing criminal activity. These results further demonstrate the importance of assessing the proposed land use plan as a potentially satisfactory model for fixing these issues. (Figure: 9,15).

Satisfaction Model

The development regulations identify three zones, namely open spaces (unsafe areas) and redevelopment zones for commercial and optional use workspaces, aimed at enhancing safety and improving livability. Through ground survey and analysis of tangible aspects of Maqboolpura, the study identifies crime-based spots and provides solutions to enhance the safe areas, rejuvenation of open spaces and quality of life (Figure:14). To implement the solutions in the informal settlements by collecting appropriate parameters and variables. Microanalysis of built forms has identified the impact of the uneven urban fabric, requiring further study. Developing functional spaces is essential to rejuvenate the dead cores of Maqboolpura.

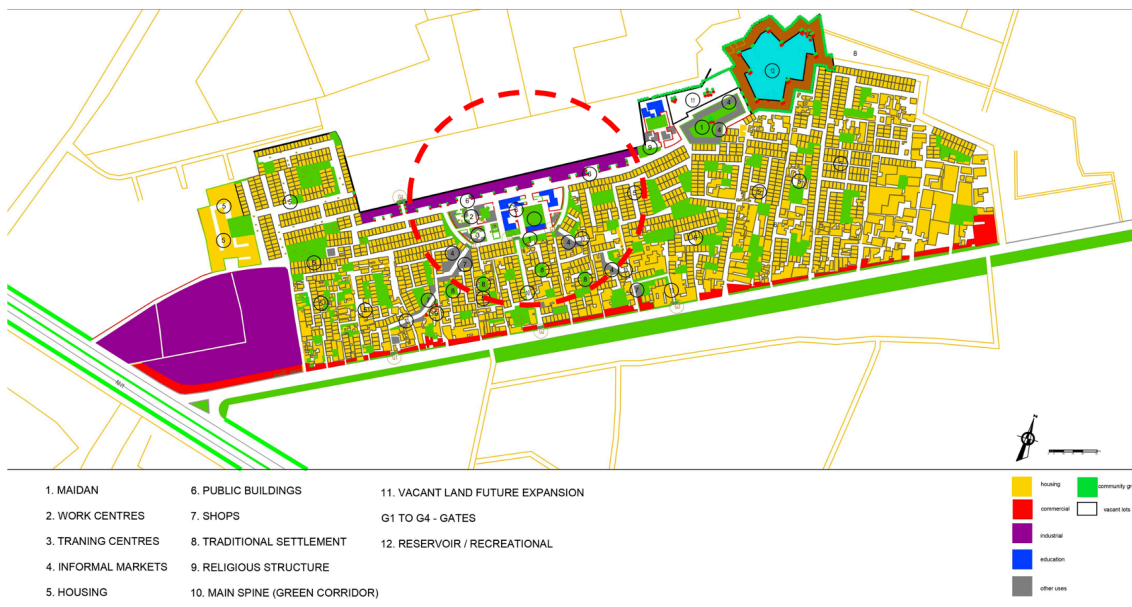


Figure 14. (Source: Authors) Proposed land use plan, Rear belt representing common spaces

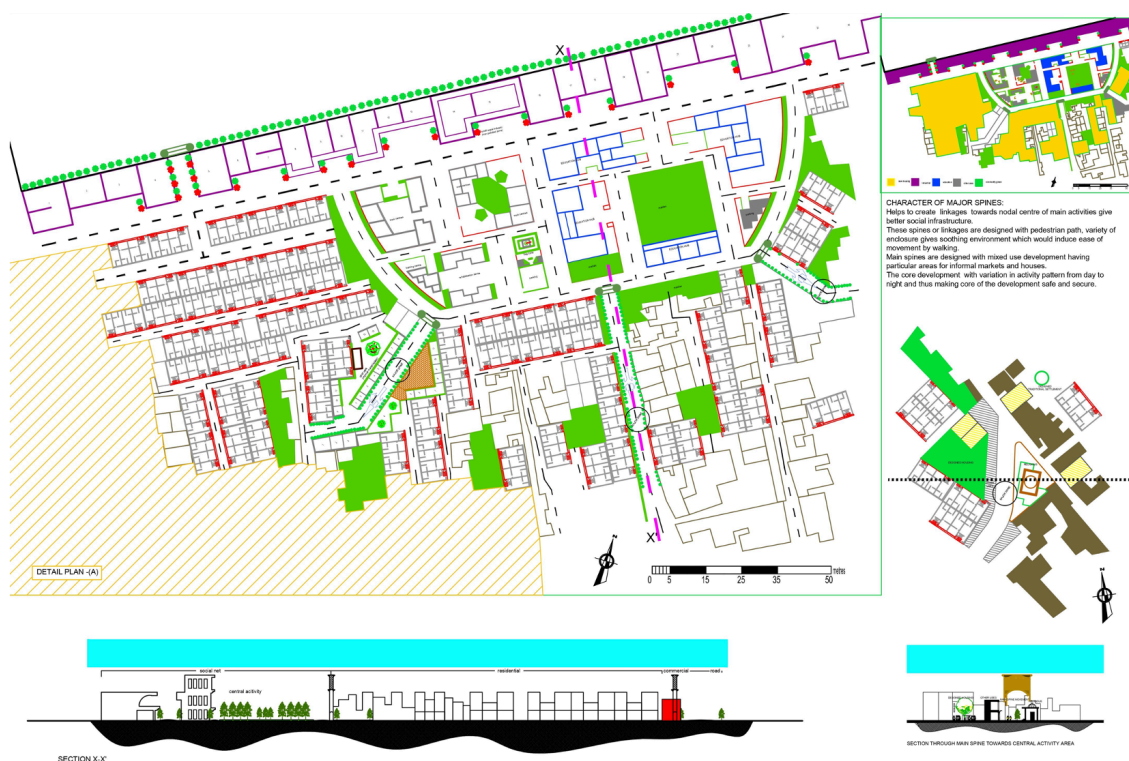


Figure 15. (Source: Authors) Proposed Character of Major Spines of Informal Settlements

Implications for crime prevention and livability improvement

The plan incorporates specialized trading spaces, both open and closed, as the heart of the community, with linear extensions of small-scale industry and strong physical connectivity to the surrounding areas. Active street frontages provide mixed spaces and uses, creating a traditional street scene with a visual surprise. A network of spines, both main and secondary, integrates the differently designed settlements and reduces thoroughfares and wheeled traffic. Density and height variations create an environment with different degrees of accessibility, with a variation of open space systems to create public, semi-public, and private zones. As per the proposed strategies discussed and the change in the land use plan, physical implementation is important. It is necessary to amalgamate the functions of livability for the people of Maqboolpura with the identification of adaptive livability interventions. The purpose of addressing the adaptive issues is to provide a coordinated approach to crime prevention in Maqboolpura, ensuring that new development fits within the context of its surroundings. As a case study of Maqboolpura, it would be easier to gain insights into the challenges faced by other communities in India and formulate effective strategies to combat the consequences. The proposed solutions aim to enhance the functionality of the built environment, increase access to open and green spaces, promote community engagement, and create more lively spaces, which will further help to reduce crime and raise economic conditions.

6. Conclusion

Amritsar, a significant tourist destination and historical city in northern India, hosts multidisciplinary programs that boost the economy and urbanization. Informal settlements play a vital role in society by performing daily socio-economic activities in the unorganized sectors, but ultimately, they experience social isolation, which acts as crime-prone areas and red-alert spaces. The government's approach to improving informal settlement livability needs to be revised. While the focus on physical planning and basic amenities is essential, it does not address the deeper issues that affect people's safety and health, such as poor housing quality, dead open spaces, unhealthy streets, overcrowding, and social isolation. The current approach to improving Maqboolpura's livability and crime prevention takes a holistic approach to ensure people can live in a healthy and safe community. The most important people who are indulged in drug addiction can earn from these proposed small-scale industries. Empowerment for all age groups is needed. This can be achieved through changing land use, developing social and educational hubs, and implementing empowerment programs for residents. This will reduce social injustice and

improve their overall livability. These initiatives can be a satisfaction model for controlling uneven spaces and crime reduction due to livable spaces, including vocational training, healthcare access, revenue generation, communal spaces, and affordable housing, weekend markets for revenue generation, gathering units, and parks. The essential part of creating an affordable built-up and open spaces approach can lead to better coordination and collaboration among stakeholders and the government, resulting in more effective solutions.

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Declarations

Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.