Spatial Planning Strategies for Crime-Prone Public Spaces: Amritsar City

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ABSTRACT

Urbanization leads to changes in the social, cultural, physical and environmental structure of cities, generating criminal elements in cities. The higher the rate of urbanization, the higher will be the crime rate of cities. The overall crime rate of India increased by 3.4% from 2014 to 2015. In the case of Amritsar city, the registered crime rate in 2015 was 163.8 per lakh population. This paper attempts to understand the nexus of crime, landuse, population density, and vulnerability factors to identify vulnerable areas, crime hotspots, and crime rates. It aims to identify crime-prone public spaces for snatching and vehicle theft and suggests planning strategies to counter them. It provides an insight into crime prevention strategies from the perspective of a land use planner. Thus, the present paper provides a way forward to initiate a potential partnership between the government, the police and spatial planners to work with communities to reduce crime in public spaces.

Keywords: *Crime, Land use, Crime Rate, Hotspot and Vulnerable areas*

INTRODUCTION

Crime has been part of our society since the existence of mankind. Over the years, the type of crime, urban setting, social and economic conditions of the people changed so did the methods to commit a crime (Malik, 2016). The phenomenon of urbanization gained attention for its positive and negative impacts on social, economic and environmental

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aspects because 31% of India's population is in urban areas. Though the urban population seems low, the increasing rate of urbanization tells a different story about our cities. It is due to higher accessibility to better opportunities of education, employment, physical infrastructure and lifestyle.[1] On the other hand, urbanization has led to a housing shortage, real estate inflation, slum growth and unauthorized development, urban sprawls, low income, unemployment and high pressure on existing physical infrastructure. Hence forcing cities to develop faster to fulfill the rising demand of its inhabitants at the cost of open spaces, parks, gardens and public spaces. This instigates a rat race amongst nations and individuals to achieve a certain level of economic and lifestyle standards. While failing to do so can lead to repercussions like crime. According to Indian Census 2011 reports, the cities with maximum urbanization are Delhi, Mumbai, Bangalore and Kolkata (in descending order) and have high crime rates (13%, 6.3%, 5.6%, and 4.7%, respectively) (NCRB, 2014). Therefore, it can be said that the increase in population influences crime and the higher the rate of urbanization, the higher the crime rate.

Amritsar is a developing metropolitan city. It is located in northwestern India, approximately 450 km from Delhi. It lies at the international border of India and Pakistan. Amritsar district covers 1394.19km^2 approximately, with a population of 2490656 (Census, 2011). The area under municipal limits is 142.37 km^2, while the population is 1132383, with a growth rate of 17.11% (Census, 2011). With an increase in urbanization, there has been an increase in the rate of crime. According to the reports of the National Crime Record Bureau (2016), Punjab has 37983 IPC (Indian Penal Code) registered complaints during the year 2015 (per 1 lakh population). Amritsar had 1939 IPC registered complaints while the crime rate was 163.8 in 2015 (NCRB, 2016). The crime rate has been calculated only for the registered cases so, there are chances that some occurrences have not even been reported.

The walled city (central area of Amritsar) was formerly known for its planned layout that was resistant to external invasions during the medieval era. Currently, the same area (walled city) provides an opportunity for crime because of grey areas and inadequate lighting. During the last couple of decades, the city has evolved organically, which means it has haphazard developed areas (majorly in southern and eastern areas), while there are some small planned neighbourhoods developed by the Amritsar Development Authority (ADA, 2012). These areas also have crime incidents, but the time of occurrence and the type of crime is different from the walled city because the degree of vulnerability of the areas varies.

The land use and diversity of the activities make the city unique

therefore, it is important to know the character and structure of the city to understand the crime opportunity that has been created in public areas and strategies formulated to counter it.

The objective of this paper is to understand the nexus of crime, land use, social, and vulnerability factors to identify crime-prone public spaces in Amritsar. This paper also attempts to propose place-making solutions that can bring cooperation between the government, planners, police and communities against crime.

Methodology

The study has been conducted based on the data collected from secondary sources which included journals for creating a theoretical framework; a Census Report (2011) for demographic data; the Amritsar Police website (2016), National Crime Record Bureau NCRB (2016), Report Writing (RW) department (2016) for registered crime records and administrative maps; Master Plan (2010-2031), City Development Plan (2025), a study conducted under HUDCO chair on the State of Cities in North-Western India: A Case of Selected JNNURM Cities (Study Focus City: Amritsar 2013) for landuse map, existing and proposed implementation plans. After reviewing the collected data and reports, the shortlisted crimes for this study were snatching and vehicle theft during the year 2016. The study was limited to the municipal limits of the city.

The collected records were filtered and spatially allocated on a map using GIS. An overview of crime for each police jurisdiction was created and analysed hotspots and calculated the crime rate. The crime rate is calculated based on the formula given by National Crime Record Bureau (an Indian government agency).

The vulnerability of the areas has been identified based on six parameters such as social disparity, dark spots, street infrastructure, connectivity, busy /overcrowded areas and unkept open spaces. These parameters are taken into consideration based on the visual observations as well as the perspective of the local communities on the issue of safety. Later the literature review also supported the selected vulnerability parameters.

Theoretical Framework

Crime originated from a Greek expression 'Krimos' and the Sanskrit word 'karma' means the social order (Syed Mohammad Aamir Ali)[2]. In the 1800s and 1900s, crime theories were devised to understand the psychology of the offenders, victims, vulnerable areas, vulnerable

population, gender-biased crime, gender-oriented crime, effects on victims and pattern of crime. These theories can be categorised as origin-based, law-based, offenders- based, victim-based and place-based. This paper focuses on the place dimension of theories covering topics like a place of occurrence, loopholes of community, lack of security and placemaking. The place dimension theories can help to understand the pattern of snatching and vehicle theft in Amritsar.

Labelling Theory was given by Émile Durkheim in 1897 to understand social construction and interaction. It mainly labels the people as unlawfully deviants or criminals based on the type of crime committed (Evans, 2012). Over the years, there have been debates on if it brings any good to put people under labels or not. But, the idea of labelling areas can be taken forward as it can help to track criminal activities spatially and to establish and understand the spatial pattern and trends.

The Broken Window Theory was given by James Wilson and George Kelling in 1982. Broken Window means that whole of the neighbourhood is labelled as a 'Black Spot' as crime can easily be committed and offenders can escape. This creates a sense of fear amongst people and they go against moral values. The low quality of life is considered one of the main reasons to commit a crime. The community becomes vulnerable because it lacks maintenance as well as security. The colonies, which have weak security or the offenders can easily break through the security without being caught is also marked as broken window. If these areas are identified then it can at least help to reduce minor crimes in the area. The theory mainly focuses to reduce petty crimes by keeping the neighbourhood safe by using high security and create secure urban areas (Wilson and Kelling, 1982).

The Brantingham and Branting-ham Theory was given by Chicago School in 1981 which stated that crime is committed by offenders only when they get an opportunity where they have to put the least effort and there are least chances of getting caught by police. The offender needs to be the master of the area to commit a crime in that particular area therefore, he has to have the best knowledge of the area and its people. The crime is committed when the activities of the people overlap with the activity of the offender or it lies within the radius of his knowledge. The theory works on two principles, i.e. Distance decay functions on victims who move out of their normal activity area and Distance decay difference on offenders—range of distance travelled to commit a crime (Brantingham et al., 1995). The theory focuses to avoid the overlapping of paths, spaces, and activities of victims and offenders which helps to reduce the chances of crime.

The Rational Choice Theory was given by Derek Cornish and Ronald Clarke in 1985 which states that an offender commits a crime only after weighing the pros and cons of the risk taken which includes his chances of safe escaping and valuable gain. The theory is based on calculating the risk that an offender can afford to take just like a cost-benefit analysis (Clarke and Felson, 1993). Therefore, it suggests creating spaces where offenders can find more cost on their part than benefit and get discouraged to commit a crime.

The Defensible Space Theory was given by Oscar Newman in 1972 which states that it is important that society holds a public place, not the government. Therefore, it is important to create a sense of ownership amongst the people which will encourage them to stay alert all the time. This in turn helps to secure the place. As per Oscar Newman, there are five factors which create a defensible space against any crime. Five factors for defensible space: Territoriality, Natural Surveillance, Image, Milieu and Safe Adjoining Areas. The theory focuses on creating areas which are vibrant and can naturally be under surveillance. It also promotes public participation which is usually missing (Eck, John and Weisburd, 1995).

The Routine Activity Theory was given by Cohen and Felson in 1979. The routine activity theory is based on the activities that take place in the surroundings of the people and how the missing elements lead to allowing the offenders to commit a crime. The theory focuses on the lack of security in daily routine which can lead to allowing the person to turn to be a victim. The offenders also have their playfield where they have the best knowledge about the escape routes and hideouts (Geason and Wilson, 1988).

Techniques of Mapping

Racheal Boba (2008), states that crime mapping is a process of using a geographic information system to conduct spatial analysis of crime problems and other police-related issues. The mapping of crime was introduced in the 19th century in France. Initially, the Single Symbol mapping was used by the police which turned out to be ineffective because at a certain stage it will reach a saturation level. Therefore, a demand to use alternative mapping techniques was created. The alternative technique to map crime based on the scale was Graduated mapping. The other mapping techniques introduced are Density (concentration-based), Buffer (Influence area), Chart (different types of crime) and Interactive (Santos, 2013).

This paper covers snatching and vehicle theft crime which uses

density mapping to identify hotspots. Later the overlapping of identified vulnerable areas and hotspot shows crime-prone areas of Amritsar.

Crime Prevention through Environment Design (CPTED)

National Crime Prevention Strategies (1996) states that there are four pillars of crime reduction strategies. It aims to reduce the opportunity for offenders to commit crimes by using planning and management principles in the built environment. There are five principles given by Kruger-et-al which explain ways to reduce crime. First, an area is safe only when there is a presence of natural surveillance and visibility of the area. The second factor is that the people living in the area should have an attitude of owning that place which helps to manage that space. The third factor is the accessibility of the area, accessibility should facilitate the easy entry and escape possible during an emergency. The fourth factor is the appearance of the area which means that an aesthetically pleasing area is likely to be less vulnerable to crime than an unkempt public area. The last factor is the target hardening which means that the place should be secure enough to give a hard time for the offender to break through. More the time required to break in, the more the chances of the offender dropping the idea of entering that area. The strategies that are proposed at the end of the study are based on the theories and CPTED principles (Kruger,2005).

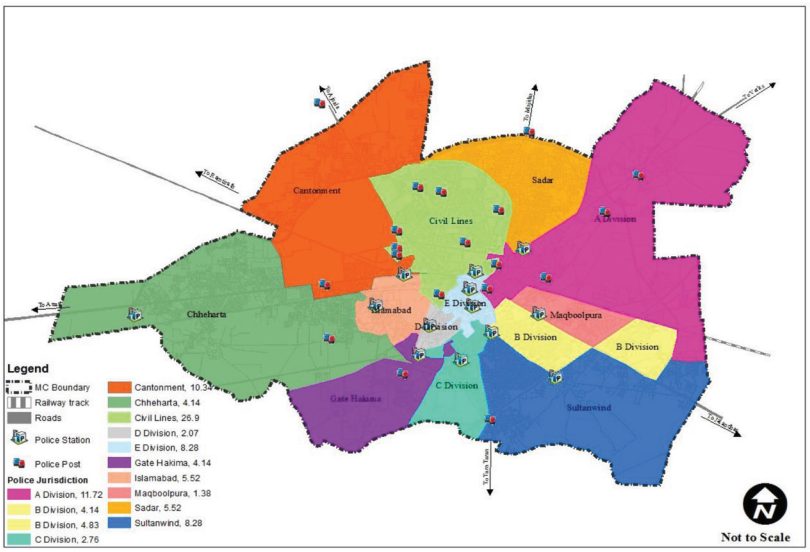
Findings

Amritsar is divided into 13 police jurisdictions which are as follows: A division (north-east, to Verka), B division (east, to Jalandhar), C division (south, southern part of the walled city to Tarn Taran), E division (central - northern part of the walled city), Cantonment (north-west, to Ajnala and Ramtirath), Chheharta (west, to Pakistan border), Civil Lines (north), Gate Hakima, (south-west), Islamabad (central but outside walled city), Maqboolpur (east), Sadar (north), and Sultanwind Gate (south-east, covers 2 regions). Each police jurisdiction is supported by a police station and various sub-stations and posts (refer Map 1).

Amritsar police records showed that the total registered snatching and vehicle theft cases were 145 (Amritsar Police, 2016) out of which 87 were of snatching and 58 were vehicle theft.

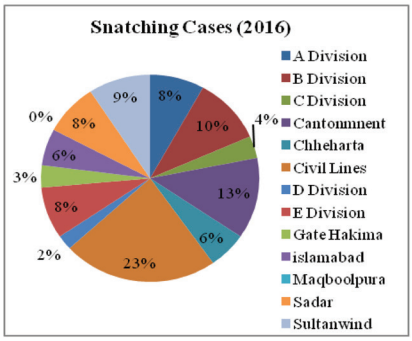
Figures 1 and 2 show the distribution of snatching and vehicle theft respectively, for each police jurisdiction. The graphs show the percentage of individual cases in each jurisdiction for the total number of crimes registered for each category. Figures 1 and 2 show that the majority of the crimes had been occurring in the civil lines jurisdiction

Map 1: Police Jurisdictions



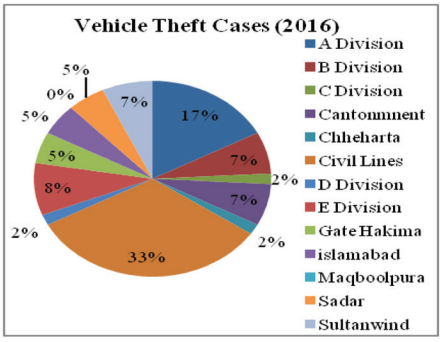
Source: Police Department, Amritsar.

Fig. 1: Snatching 2016



Source: Computed Values from Police Department Data.

Fig. 2: Vehicle Theft 2016



Source: Computed Values from Police Department Data.

and D division jurisdiction had the least number of registered cases. Therefore, civil lines had a maximum share of 26.9% while A division had 11.72% and cantonment had 10.34%. Maqboolpura had a minimum share of 1.38%. The recorded data showed that 78% of criminal activities of snatching were committed in the evening hours between 6 pm to 12 am. The majority share of the vehicles stolen is 2 wheeler, i.e. scooter, motorcycle or activa which is 64% while 27% of the cases are registered for stolen cars. The result showed that vehicle theft activities occur throughout the day but the majority of the theft (i.e. 39%) is committed in the evening between 6 pm to 12 am.

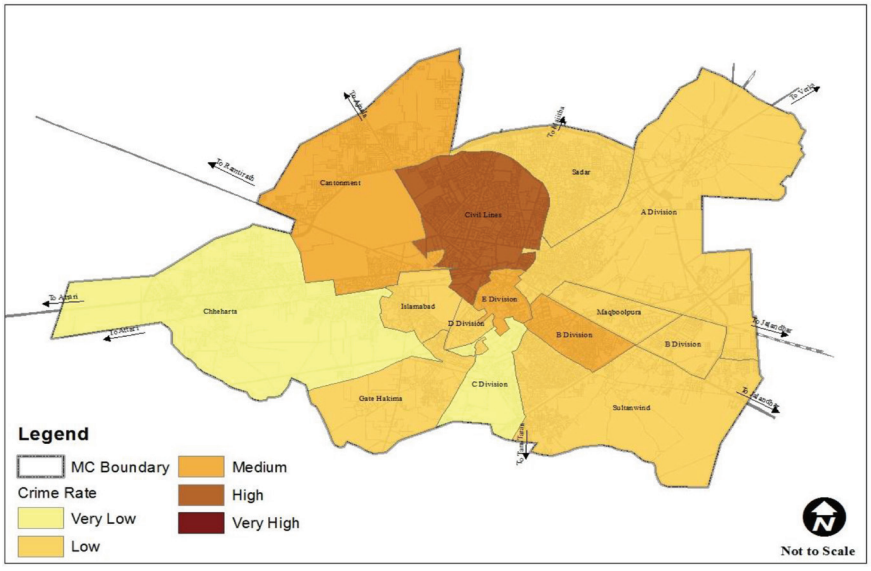
Crime Rate

The crime rate has been calculated at two levels: city level and jurisdiction wise. In both cases, the rate has been calculated per one lakh population (NCRB, 2016).[3] According to the given formula, the crime rate for Amritsar is calculated below:

$$\text{Crime Rate of Amritsar city} = \frac{145}{1219478} \times 100000 = 11.89$$

Similarly, the crime rate for each police jurisdiction has been calculated. The results show that the civil lines jurisdiction had the highest crime rate (30.14), while the cantonment jurisdiction and the E division had the second-highest rate (20). Chheharta division had the lowest crime rate (3.2), followed by the C division (4.9) and then the D division (5.8). Based on the highest and the lowest crime rate values, five categories were formulated (lowest, low, medium, high and very high). The intermediate-range units were set at a regular interval of 10. Map 2 shows a comparative ranking of the crime rate of jurisdictions. The figure shows that the Chheharta jurisdiction and the C Division have very low crime rates while the D division, Maqboolpura, Sultanwind, Sadar, Islamabad, Gate Hakima and B division fall under the low crime rate category. The B division, Cantonment and E division fall under the medium crime rate category. There is no jurisdiction which had a critically high crime rate; therefore, no jurisdiction was a very

Map 2: Crime Rate



Source: Computed Values from Police Department.

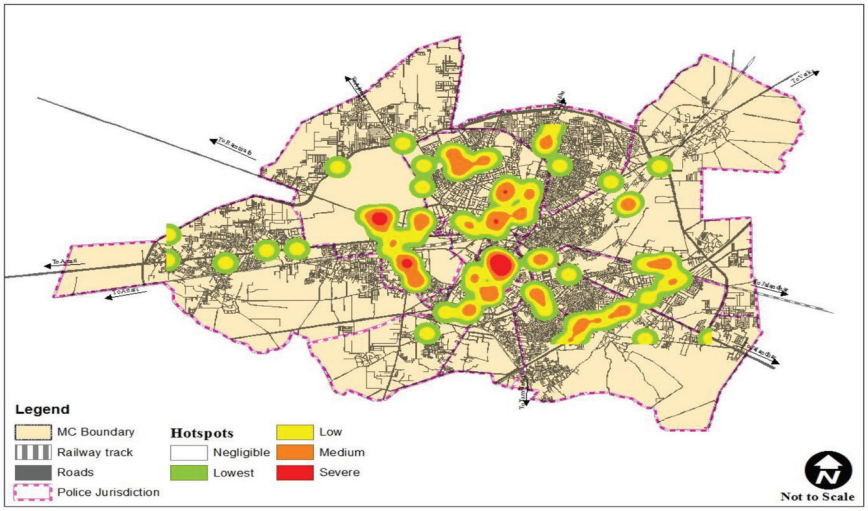
high crime rate. Overall, the comparative ranking shows that majority of jurisdictions were labelled as low crime rate areas but that doesn't mean that other types of crimes cannot take place in these jurisdictions.

Crime Nexus

Crime Hotspots, Vulnerability Factors and Land Use Nexus

The analysed spatial data in Geographic Information System (GIS) identified crime hotspots. The density mapping of both crimes gave an overview of the existing loopholes in the community (Paynich, 2013). Map 3 shows the identified hotspots of snatching which are Lawrence Road, Ranjit Avenue Commercial complex, Mall Road. The potential reason for higher vulnerability is due to the areas' prominent commercial landuse. These commercial areas are easily and conveniently accessible through private vehicles. Hence, those people become an easy target because of inadequate lighting, dead spots and unkept spaces. The major landmarks and nodes like Bus Stand, Bhandari Bridge, Trillium Mall, Ranjit Avenue and Rose Garden (lies in A division, E division and Civil Lines jurisdiction) have a large number of users on daily basis. The Higher Income Groups (HIG) and Middle Income Groups (MIG) people are users or the residents of these areas and also the most probable victims of snatching, those are: Hakima Mandi, Sultanwind Road, Logarh and Islamabad areas have informal markets; therefore, these areas are unplanned with high social disparity thus providing crime opportunity. The areas

Map 3: Snatching Hotspots

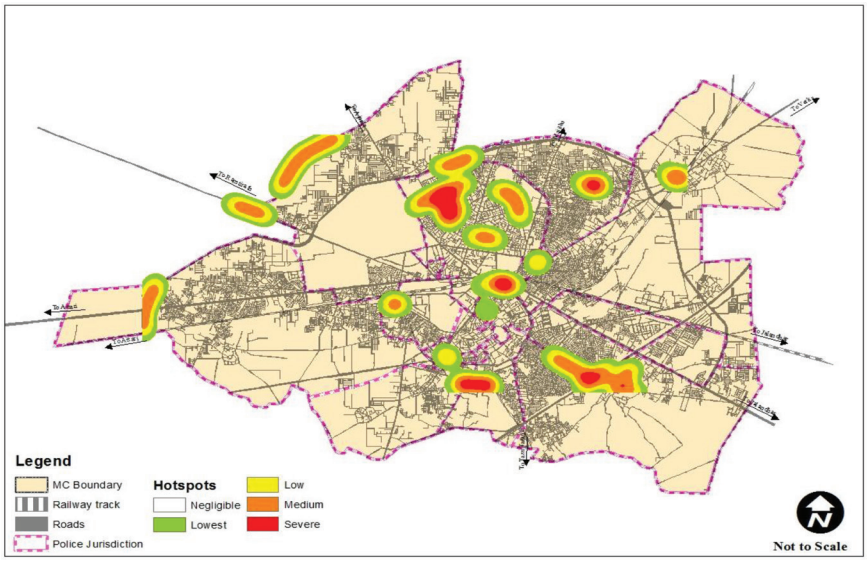


Source: Computed Values, Primary Survey.

at the periphery of the Walled City like Katra Sher Singh, Beri Gate, and Khazana Gate have observed a change of land use from mixed to purely commercial or residential land use leading to an increase in the number of vacant buildings which increases the chances of the crime. The lack of ownership, surveillance and lack of street infrastructure further lead to an increase in the chances of crime.

Similarly, Map 4 shows the identified vehicle theft hotspots, which are mainly located in the peripheral area of the city because people travelling for recreational activities located in the peripheral areas or living in the villages or travelling to neighbouring cities would use their private vehicles for time-efficiency and convenient travelling. The peripheral regions are not active as compared to the central city and lack surveillance hence giving opportunities to offenders to conduct vehicle theft. The unkept open spaces and parks along the major roads like Hakima Mandi, Sultanwind Road and Batala Road and railways tracks are used for open dumping of garbage and parking of vehicles, which lack security and ownership, hence, increasing the vulnerability of the area. Similarly, there are many hospitals, marriage palaces and farmhouses (near the Byepass) which are accessible through private vehicles only. These areas lack security and street infrastructure; therefore, on-street parked vehicles become an easy target. The public, semi-public regions are more active for a short period during evenings and nights but are dead during the rest of the day. The majority of the

Map 4: Vehicle Theft Hotspots



Source: Computed Values, Primary Survey.

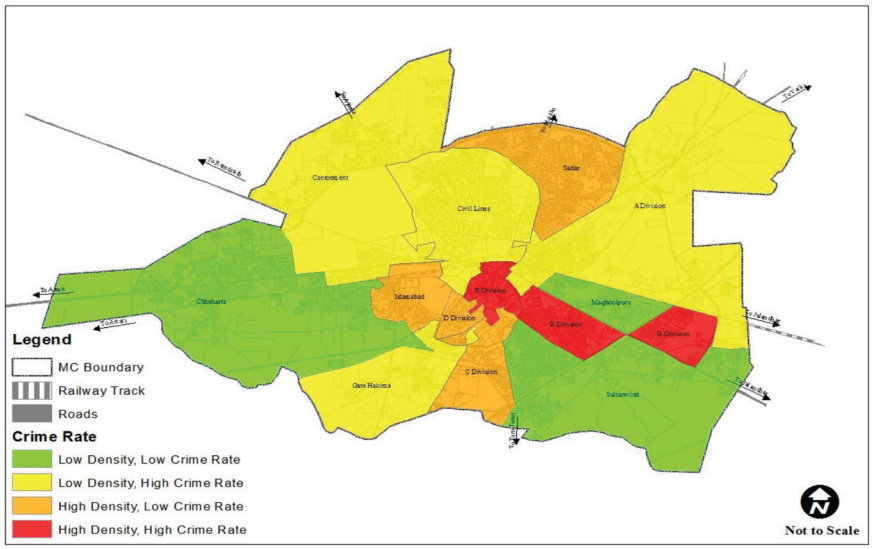
activities involve transportation, venue and event logistics which allow only staff to work around these areas.

Crime, Social Disparity, Population Density Nexus

Population Density can be correlated to social disparity to understand the dynamics of metropolitan cities. In the case of Amritsar city, the D division, E division and Islamabad are high-density jurisdictions with LIG (low-income group) and MIG (middle-income group) populations. These areas have inadequate basic infrastructure and poor maintenance of public spaces. The low-density areas include the Civil Lines, A division and cantonment jurisdictions supporting the MIG and HIG (high-income group) population of the city (PUDA, n.d). The disparity can be related to the crime rate to understand the dynamics of crime in the city.

Map 5 shows the comparative nexus between crime rate and population density. The nexus of crime rate and population density can be described in four categories (high-density, high crime rate, high-density low crime rate, low-density high crime rate and low-density low crime rate) which categorised 13 police jurisdictions under them. Hence, attempting to understand the interrelation of both the topics. Sultanwind, Chheharta, and Maqboolpura jurisdictions have low crime rates and low density because of the restriction of development in the west. The A division, Cantonment, Civil Lines, and Gate Hakima

Map 5: Crime Rate and Population Density Nexus



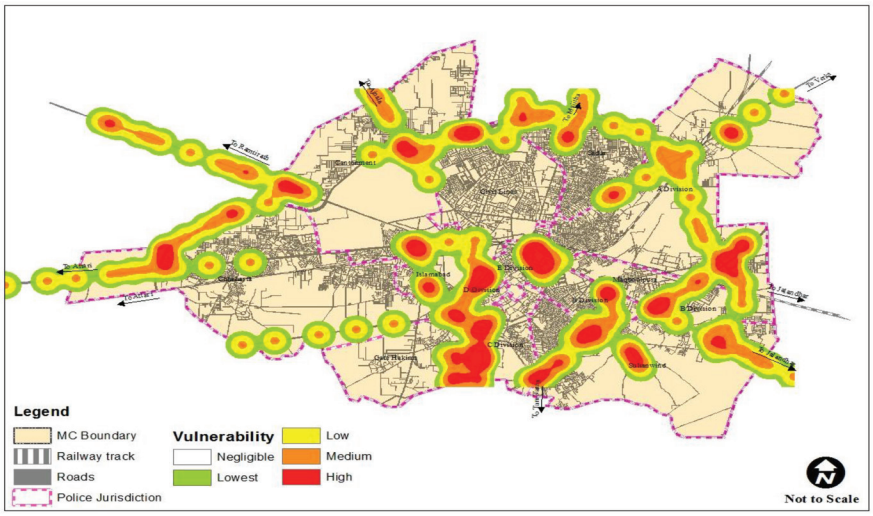
Source: Computed Values, Primary Survey.

jurisdictions have low density and higher crime rates because of the larger window of opportunity and higher stakes. The peripheral areas whether low-density or high-density have the maximum crime because of vulnerability factors like lack of surveillance, unkept spaces and lack of ownership which create higher opportunity windows. The central area of the city has a high-density, low crime rate because these areas have informal surveillance, more sense of ownership amongst people and making these areas harder targets for crime. Gate Hakima area has low density but has high crime rate because vulnerability factors like high social disparity, lack of street lights, lack of maintenance of open spaces and lack of security around the informal commercial market. The Islamabad, Sadar, D division and C division jurisdictions have high-density, low crime rates because these areas have medieval-era characteristics.

The main concentration of the crime was found in the areas where vacant land was unkept, lacked security, illumination and had higher social disparity. The main reason for high density is the proximity to the highway and bus stand, which means easy access to changing mode of travel. The Civil Lines is well-planned jurisdiction while the Cantonment Jurisdiction is a planned and restricted area so, there is no illegal development. It has low-density and high crime rates as it lacks the local sense of ownership and natural surveillance. The B division and E division have high-density, high crime rates because of the proximity to the highway at the periphery. At the city scale, the main concentration of crime is along the central axis of the city. The areas along the Byepass and Grand Trunk Road are more prone to snatching or vehicle theft because of lack of accessibility, inactive activities, and inadequate street infrastructure. The area around the Municipal Corporation boundary along Byepass and GT (Grand Trunk) Road are the hotspots as people tend to change their mode of transport. The western international border acts as a restriction of development and also proves to be a harder target because of the tight security. But at the same time, the common criminal activities in these areas are related to burglary, drugs, vandalism, etc. The crime and land use nexus helped to understand that the vulnerable areas of the city were of pure land use while the mixed land use had different criminal activities.

The nexus of crime, land use, social disparity, population density, crime rate and vulnerability are the major factors which helped to identify crime-prone public spaces in the city. Map 6 shows the identified vulnerable areas based on vulnerability factors which include social disparity, inactive areas/dark spots, inadequate street infrastructure, inaccessibility, overcrowded areas, and unkept open spaces. The areas

Map 6: Vulnerable Areas



Source: Derived from Police Data.

like Bhagtanwala, Hakima Gate, Sultanwind, and Chheharta have LIG and EWS housing while Ranjit Avenue, Green Avenue, Basant Avenue, and Kashmir Avenue (civil lines and A division) have HIG and MIG housing (potential victims). The variation in social disparity brings the opportunity for crime in posh areas while poor people are usually labelled as potential offenders. Basant Avenue, Ranjit Avenue, Mall Road, Lawrence road (civil lines) area along the Bye-pass road and residential area of A Division are inactive at night whereas lack of ownership and security led to an increase in crime (NCPC, 2003). The recreational areas, open spaces, and parks are inactive during afternoon hours and lack informal surveillance hence providing a window of opportunity for criminal activities.

The residential areas of the A division, Civil Lines, Cantonment, Sultanwind, Islamabad jurisdiction and the residential areas Byepass road have poor street lights, pedestrian footpaths, foot over bridges, pedestrian ramps, road signages and landscaping, hence, making these areas vulnerable. Ranjit Avenue, Mall Road, and Lawrence Road have prominent commercial activities that tend to attract a lot of attention but lack natural surveillance, security and accessibility through public transport. Therefore, these areas become broken window outside the working hours. The areas in the proximity of the Byepass road, Verka Byepass and Mehta Road areas lack ownership, are highly inactive especially during off wedding season, have poor physical infrastructure and are inaccessible through public transport at night. So, these areas

become broken window, leaving a higher window of opportunity. The areas in proximity of the major roads, pedestrian bridges and commercial facilities such as banks, shopping complexes, bus stands, informal commercial markets and restaurants have a higher tendency of crime because of the availability of easy escape windows. Katra Sher Singh, Katra Khazana, Katra Hakima (walled city areas), Ranjit Avenue, Sultanwind and Nawa Kot have vacant plots, unkept open spaces, and vacant buildings which becomes black spot making the surrounding areas highly vulnerable, hence become the broken window of the city.

RECOMMENDATIONS

In this section, the recommendations are proposed based on the place-based theories of crime spatial planning fundamentals, and CPTED principles (Crime Prevention through Environmental Design). The methods of mapping helped to analyse snatching and vehicle theft data and develop maps identifying hotspots, jurisdiction-wise crime rate comparison, crime and density relation and vulnerable areas which overall depict the crime-prone areas of Amritsar. The crime-prone areas mentioned in the previous section were mentioned along with their land use, and prominent vulnerability factors which make them the broken window of Amritsar. The spatial planning strategies that are proposed to mend these broken windows in each land use category are given below:

- **Residential –** The residential areas of the A division, Civil Lines, Cantonment need to increase the security and build a sense of ownership amongst the residents. So a bottom up approach to include residents to build common public spaces— is encouraged to be applied. Whereas street infrastructure upgrade can be recommended for the residential area of Sultanwind and Islamabad jurisdictions, and the residential areas around Byepass road. A nightwatch/ CCTV can also be incorporated which adds to surveillance of the areas. The slums located in the Islamabad, Gate Hakima, Sultanwind and Verka should be provided with the basic physical infrastructure and the street infrastructure is also required to be upgraded. The landscaping of residential areas of the A division, civil lines and Cantonment jusrisdiction can also be modified to allow residents to have an informal surveillance around their house/street. The walled city is of mixed land use therefore, the street infrastructure can be improved to increase illumination in the areas.

- **Commercial –** The commercial areas in the Civil Lines and Cantonment jurisdictions which include Basant Avenue,

Majitha Road, Mall Road and Ranjit Avenue need to increase surveillance which will add some sense of ownership and make them a harder target of crime. Regulated informal markets can be strategically placed in these jurisdictions to add informal surveillance. The informal markets in Logarh gate, Hall gate, Ram Bagh and Hakima Gate areas are recommended to be well-lit and there should be $3m^2$ of the area around the *rehris*/carts for easy movement of the people (manoeuvring space) to harden the target, hence reducing the window of opportunity. The *Mandi* or farmers' market should at least have a minimum infrastructure to support its working, e.g. parking space inside or outside the drivers' inn, security guards, CCTV cameras, illumination, etc. this will help to harden the target for the offenders (Kruger, 2005).

- **Public and Semi-Public —** The major public and semi-public landmarks are Bus Stand, Sri Harmandar Sahib (Golden Temple), Durgiana Temple, Chintpurni Temple, Jallianwallah Bagh, Museums, other religious sites, etc., which are major tourist attractions of the city. Hence, these areas by default become vulnerable, providing a window of opportunity. But intensive surveillance and spatial planning methods are required to avoid and reduce crime in these areas. The religious places and major landmarks of the city should have emergency booths installed for the tourists and local people at intervals of 300m - 700m. The Booth should be active 24 by 7 which will act as additional security for the area making the areas a hard target for the offenders. Government / Semi-Government buildings should be installed with CCTV cameras while the open space around the built-up should be well maintained, i.e. no dumping of waste, planting ornamental trees like Gulmohar. Police stations and police posts which are the Emergency stationary units should be available within the range of 500 m -1000 m while the mobile unit should be available within the range of 300 m – 500 m. Mobile vans are extremely useful in tourist places like Golden Temple, Durgiana Mandir, Jallianwallah Bagh, etc. The strategic positioning of help desks, police posts, cars, etc. increases the surveillance in the area. The public/semi-public regions around the periphery areas should be provided with regular surveillance. Also, the upgradation of street infrastructure can help to make the area active and interactive for the users.

- **Parks and Open Spaces —** The parks and open spaces in the

civil lines, Chheharta, Cantonment, A division and Sadar jurisdiction need additional informal surveillance during the afternoons and nights. Public participation should be encouraged to build and maintain open spaces so that they don't deteriorate into negative spaces, and become a dumping ground. Also, these parks or open spaces can be converted to a multi-functional park which can increase the daily activity leading to mending broken windows. The landscaping along the roads should be designed and planned to provide privacy to the inhabitants but at the same time allow them to have an eye on-street for their safety.

- **Traffic and Transportation –** The byepass road, highways, major roads and G.T road should have surveillance which can be in the form of Highway Watchers. Highway Watcher**s** are the people working in the proximity of highways who can work in collaboration with the authorities to look over highway activities. For instance, New York and Pennsylvania have used highway watchers or pike watches to add surveillance and security. So, the highway watchers would harden the target for potential offenders and decrease the black spots. In the case of minor roads, and streets, adding little bit of security and informal surveillance can mend the broken window. It is recommended that the spaces and walls around flyovers, FOB, sidewalk, etc. should be made interactive to orient the movement of people, hence these areas become dynamic. The increased land use and transportation interaction can mend the broken window and doesn't allow negative space formation. There should be regulated and authorized parking in the walled city and around the outer ring roads which can help to reduce vehicle theft.

- **Miscellaneous –** Community participation plays a vital role to reduce crime as it helps to bring a sense of ownership amongst the people and automatically they become caretakers of the area. Community volunteers groups can work with residents, business owners, and city officials in advocating for parks and recreational spaces, designing open space areas, and working with environmentalists to clean up vacant lots and contaminated areas. The awareness campaign can involve the community in cleaning and managing vacant areas which are unkept and negative spaces of the area can be reused for different activities like kennels for street dogs, etc.

CONCLUSION

Public spaces of a city tend to become vulnerable as soon as it shows any issues like an increase in social disparities, degradation of open spaces, inactive area or dead spots, inadequate street infrastructure, low connectivity or inaccessibility and overcrowding. When public areas show a combination of any two or more vulnerable parameters then it becomes a broken window. Hence, it is important to mend the broken windows before the damage increases.

The landuse of the city gives a unique character to the city. The spatial arrangement of the land use orients the movement of the people forming connectivity patterns in the city. So, any alteration in the land use changes the interaction between different land uses which can either bring incoherence or mend the broken window. In the case of Amritsar mixed landuse has promoted better public spaces with a lower crime rate as compared to pure landuse areas.

The recommended strategies are measures to create surveillance by bringing eyes on the street- a popular concept by Jane Jacobs where the monitoring of commercial areas as well as neigbourhood is done by the residents themselves while doing their routine activities of selling and interacting in the areas thereby making the area safer and free from crime, reducing the not-in-my-attitude of the people by creating a sense of ownership among them. It makes them feel that these spaces are living entities with a sense of belongingness. Hence, community awareness and participation are some of the influencing factors in the successful implementation of the strategies. Transportation planning tends to give a direction to the future development plans. Therefore, improving inter-and intra- connectivity of the city, it can influence the characteristics of the city.

This paper is an attempt to bring forward the idea that police, government and planners should collaborate to prepare strategies to reduce crime in the city. Also, the inclusion of public participation can help in the successful implementation of the strategies. Rachel Boba has stated that there have been cases in Connecticut, Kansas, San Diego, Boston and Pennsylvania, where police agencies joined hands either with police department's research forums, universities, private associates or corporates to reduce crime. Also, campaigns on social media on safety of the neighbourhoods can be run through various channels like facebook, Instagram, whatsapp etc. by making people aware of the activities going in the neighbourhood. GIS mapping as mentioned in the above tool can be used to identify various hotspots

where various kinds of analysis can run thereby showing true picture of the city to the citizens, administrators, police, etc. Lastly, an effective monitoring system should be created using planning indicators, vulnerability indicators and IT networks to reduce crime.

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