Abstract—Changing trends of human settlements and urbanization have a significant impact on all segments of society. Lahore is the most crowded and urbanized district of Punjab. Women participate in the development of the city, they are required to visit workplaces, and experience public places. Subsequently, these public places are grounds of ferocity and discomfort. The study examines the female’s perception regarding safety at public places and the consequent factors contributing towards the insecurity of females. Regression analysis is carried out to interpret the causal relationship between public places and safety elements. In conclusion, it was established that safety elements should be kept in mind to achieve safer environment. The research necessitates urban planners and designers to introduce features for women safety, privacy and comfort in the design of public places.

Keywords—Challenges, development, policies, public places, safety, urbanization.

Introduction

Rapid urbanization has paved the way for economic development and modernization, but it is also propagating disparities and marginalization [1]. Gender, public places, urbanization and safety have direct relationship [2]. Recognition of women as citizens can only be legitimized by guaranteeing safe public places for women. The ‘New Urban Agenda’ encourages urbanization pattern, which comprehends systems and policy measures to favor, safeguard and endorse human rights. Furthermore, Sections 14–32 of the UN report of Habitat III clearly state the need to accomplish gender parity empowering all females [3]. It is also focused on averting and eradicating discrimination, harassment and violence against women in public places. Sustainable Development Goal 11.7 aims to impart worldwide access to secure public places especially for females, special persons and children [1]. Safety, peace, egalitarianism, equity and development are difficult to achieve without the meticulous participation and representation of women in important governance, socio-economic, cultural and policy decision [2]. Global studies and surveys demonstrate that women feel less comfortable and secure in public places even in developed countries and are afraid of violence and aggression. This dilemma is prevailing in developing countries, and the facts associated with women harassment are terrifying. Women harassment and ferocity in public places reported by urban women in India is 79 %, in Thailand – 85 %, and in Brazil – 89 % [4]. Local surveys, studies and literature on women’s safety in public places exposed that women needs and their concerns are overlooked due to societal iniquities, anxieties, and phobia of aggression [5], [6]. Women concerns are entirely different from those of men when they approach public transport terminals, public parks, public squares, markets and bazaars.

Females not only use and perceive cities in a different way than men, but at the same time they also use public places in diverse ways [7]. The physical environment and spatial patterns of towns and cities are predominantly linked to work habits of men and women. Poor women residing in deprived and insecure areas need to travel in the late-night or early morning hours for work or other purposes. These activities may have consequences of being exposed to the risks of harassment, eve teasing, slut-shaming, unwanted comments, kidnapping and violence. Women feel insecure while using public transport, using public restrooms when travelling by bus/train, and by lack of community toilets. Many females, because of their financial problems, work in informal sector such as street vendors or trash collectors, which in turn require the use of public spaces as their workplace.

According to the census of 2017, 48.76 % of Pakistan population are women [8]. It has been observed that there remains an increasing concern about the safety of women in public places over the recent years. Females, predominantly those residing in low income settlements, feel insecure in their place of living after dark as those zones are badly lighten, streets are not properly paved, the sewer water run-offs on the roads and streets making it a threat for them to move, bus stops are often positioned on the corners that force them to move in the dark streets. According to recent newspaper report 85 % of women face harassment in Karachi City [9].

This research study generates a frame of realities, knowledge and facts that can be used widely in city planning to integrate gender as an essential component while designing a safe and inclusive city. The approach adopted for the research highlights solutions to the issues and challenges of fighting fierceness to incorporate in larger towns. This study also revealed various factors that have a vital role in shaping access to the amenities and facilities for females by selecting a dense hub of Lahore city that must be gender oriented in regard with urban design and planning, community involvement, enhanced policies and usage of public places.

A. Research Objectives

- To explore the perception of women regarding their security, level of comfort and needs to overcome the difficulties and problems that they face in public spaces (public parks, markets, bus stops and terminals/waiting areas,
public squares, sports fields, parking lots, roads, streets, public libraries, public transport).

- To obtain suggestions and recommendations from representatives of Women Development Departments and local planning authorities, which aim to enhance and facilitate women’s access and safety in public places by proposing more comprehensive methods and interventions in designing safer public places.
- To propose safety measures, to enable urban planners and designers to introduce features for women security and comfort in designing public places.

I. Methodology

This research follows a relative logical strategy and attempts to cover public spaces in all towns of Lahore. Various categories of public places as a segment of public sphere include all functional areas such as roads, streets, pathways, public toilets, stations, bus stops, bazaars, markets and malls, highways, parks, restaurants, cinemas, public transport (cabs, local rickshaws) and their usage is examined in towns of Lahore in relation to women’s demand for security and safety.

B. Sample Size and Sampling Technique

Surveys are conducted with the help of a designed questionnaire in both historical and newly built towns of Lahore; the research study follows simple random sampling technique in which the sample size of 400 respondents (females) of Lahore city where questioned. The sample size was calculated by the following categories:

- population of Lahore District = 11,126,285;
- number of male population = 5,824,131;
- number of female population = 5,300,931.

Then Equation \( n = N / (1 + Ne^2) \) was used where \( n \) is the number of samples, \( N \) is total population of the area (in this case Lahore region), and \( e \) is tolerance (level).

Researchers have used a confidence interval of 95 % for better accuracy, which will give a margin error of 0.05:

\[
e = 100 \% - 95 \% = 5 \% = 0.05
\]

\[
n = 5,300,931 / (1 + 5,300,931 (0.05)^2) = 5,300,931 / 13253.32 = 399.97 \approx 400
\]

Moreover, meetings and consultations took place with officials, planners, policymakers with the help of structured interview questions and with women and additional relevant people to gain the data by both primary and secondary means.

C. Research Design

The designed questionnaire comprises three sections: 1) age groups of vulnerable women and girls and harassers along with the time when women and girls feel unsafe; 2) safety/unsafety in different types of transport and in terminals; and 3) information about insecurity in public parks and public squares. A Likert scale with five components was used to evaluate the responses, which range from strongly agree to strongly disagree [10].

The research study is quantitative in which inferential and empirical studies are used to obtain the results by using statistical techniques for the identification of the effects and relationship between the variables.

D. Data Analysis

To evaluate the data, analysis from SPSS is carried out, to acquire the results, a descriptive technique is used. To infer the collected data in the expressive form, it is essential to lessen the variables to a few interpretable linear groups, for this purpose principal component analysis was applied on the dependent and independent variables and along with it the statistical test of regression was carried out.

II. Results

E. Safety in Public Places

The data collected from women about the safety of public places is shown in Fig. 1.

Public Places in Lahore are Safe for Women

![Fig. 1. Percentages showing women's perception regarding safety](Figure: Authors of the Article)

The respondents were asked about the satisfaction level of safety in public places. Do they feel secure, and if yes what is the level of satisfaction. As described in literature, Greed in her study elaborated that women are vulnerable and feel unsafe in the built-in environment, which needs to be regularized [11, 12]. The results from this study also depicted the same — approximately 80 % of women in Lahore feel unsafe in public places, as shown in graphical analysis, and only 5 % feel safe.

F. Time when Women Feel Insecure

Jane Jacobs in her well-known book “The Death and Life of Great American Cities” explained that a healthy, safe and prosperous city is the one in which its residents feel secure despite strangers [13]. Researchers in this study inquired females about the time when they feel unsafe, graphical representation is given in Fig. 2.

The analysis of the study revealed that 35 % of females feel unsafe in the morning and 38 % in the evening, which is the time
when they face many issues. Pakistan is an Islamic nation and according to the culture of Pakistan women usually do not travel and are outdoors at night, they typically visit educational institutions and workplaces during daytime, the reviews articulated that whenever they travel, they are more vulnerable and exposed to ferocity. Few of the women move in the night time of which 13% in Lahore feel unsafe in the dark. As described in literature, females feel insecure at night because public places are poorly lit, bus stops are often positioned at the places which are also dark that force them to move in the dark streets.

G. Most Vulnerable Age Groups
Females feel that their surrounding places are threatening, more often they are inadequate in their practice and ultimately, they avoid using the areas that they sense as insecure [14] public places such as highways, roads, public squares, neighborhood streets or public parks, which are more frequently used by men than by women. This certainty contributes to the assumption that females are frightened while moving in certain public places. For this sake, women of Lahore of different age groups were asked a question in order to analyze how many females and of which age group are more frightened. The responses are shown in Fig. 3.

According to the survey, in the age group 17−25, 29% of women are vulnerable, whereas in the age group from 26−30, 25% of women feel uncomfortable. The viewpoint of 19% of respondents is that all the generations of females are exposed to fear. To know what women fear of, the analysis of harassers and their acts was carried out, which is explained further.

H. Perpetrators’ Acts in Public Places Lead to Insecurity of Females
Women were asked to describe how harassers disturb them in public places. A graphical illustration is given in Fig. 4. 38% of women have been verbally abused (whistling, singing, etc.), 45% have experienced visual abuse (staring, leering, gesticulating, etc.), and some have been physically abused (touching, groping etc.).

I. Awareness about PSCA App and Helpline
Punjab Safe City Authority envisions secure, peaceful, and prosperous cities of Punjab; it is a security organization with a 4G-LTE communication system, advanced technology and app development system. Women were questioned whether they knew about the safety app system introduced by the authority and about the helpline. The replies are shown in Fig. 5.
The answers showed that about 71% of females are unaware of the services provided by the authority. To make inclusive, secure and accessible public places for everybody, predominantly for females of all ages, the administration should provide training on use of different communication modes to make people aware about laws and policies developed for them. Community representatives should organize campaigns to allow women and girls to report on their issues and then inform them about safety measures, which they should use.

**J Regression Analysis**

**J.1. Causal Relationship Between the Women Safety and Public Places**

From the interviews, discussions and questionnaire survey, it is interpreted that women’s of Lahore face street crime, physical and verbal harassment (that includes touching and passing comments) because streets are narrow and there are no lights in the streets and roads. One of the biggest problems was a conversion of residential localities into commercial zones, which cause problems for many females due to vehicular movement. Some of the complaints are about catcalls, passing comments, phone and visual harassment, women also mentioned many wicked acts such as stalking, repeated phone calls and tailing, staring. During the interview, a few cases of acid attack were mentioned by females, and this sort of events happen because of unavailability of security guards and CCTV cameras in public places. The regression analysis has helped to find out the critical problems regarding the safety of women where every value of independent factor depicts that it is the primary cause of insecurity to women.

**III. Variables**

The dependent variable in the study is women safety in public places, which needs to be calculated. The independent variables are all public places such as public streets, transport terminals, public parks, markets, educational institutions, religious buildings, etc. These variables are developed by researchers to evaluate the correlation between the dependent and independent

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### Table I

**Summary of the Model [Authors of the Article]**

| Model | R | R Square | Adjusted R Square | Std. An error of the Estimate |
|-------|---|----------|-------------------|-----------------------------|
| 1     | 0.937* | 0.877 | 0.816 | 87.645 |

### Table II

**Analysis of Variance [Authors of the Article]**

| Model       | Sum of squares | df | Mean square | F       | Sig.  |
|-------------|----------------|----|-------------|---------|-------|
| Regression  | 147.512        | 6  | 24.585      | 35.587  | 0.000*|
| Residual    | 265.975        | 385| 0.691       |         |       |
| Total       | 413.487        | 391|             |         |       |

### Table III

**Regression Coefficient [Authors of the Article]**

| Model | Unstandardized coefficients | Standardized coefficients | t     | Significance, P |
|-------|-----------------------------|---------------------------|-------|-----------------|
|       | B                           | Std. Error                | Beta  |                 |
| 1     | (Constant)                  | 3.117                     | 0.142 | 0.523           | 0.011 |
|       | Security in public streets  | 0.170                     | 0.178 | 0.186           | 5.529 | 0.039 |
|       | Security and safety         | 0.102                     | 0.067 | 0.118           | 7.865 | 0.046 |
|       | in public transport terminals | Security in public parks | 0.104 | 0.071           | 0.109 | 3.314 | 0.001 |
|       | Security and safety         | 0.14                      | 0.071 | 0.151           | 0.593 | 0.016 |
|       | in bazaars and markets      |                           |       |                 |       |       |
|       | Safety outside educational institutions | Safety outside religious buildings | 0.113 | 0.072 | 0.122 | 4.117 | 0.024 |
|       | Safety outside religious    | 0.126                     | 0.055 | 0.131           | 10.266| 0.000 |
|       | buildings                   |                           |       |                 |       |       |

a) Dependent variable: women safety in public places
variables. The results are explained in the tables further in the text. Table I demonstrates that the value of $R^2$ is significant. The regression model discerns the relationship with an accuracy of 93%.

Table II highlights that analysis of variance (ANOVA) among the variables of women safety in public places is significant.

The evaluation in Table III demonstrates that when the “security in public streets” goes up by the value of 1, “women safety in public places” goes up by the value of 0.186. When the “security in public transport terminals” goes up by 1, “women safety in public places” goes up by the value of 0.198. The increase in “security in public parks” tends to raise “safety in public places” by 0.123. Likewise, when the “safety in bazaars, markets and educational institutions” increases by 0.151 and 0.122, respectively. The analysis depicts that the increase in the value of “safety outside the religious buildings” increases women security in public sphere by 0.131.

Analysis of security and safety in various public places such as public streets, public transport terminals, public parks, bazaars and markets, outside and near educational institutions, outside or near religious buildings, showed that there is a strong relationship between women safety and the type of public place.

J.2. Causal Relationship Between Women Safety and Factors Contributing Towards Female Insecurity

The relationship of the infrastructural and land use factors includes (poor lightening, non-availability of separate spaces for families and females in public places, inadequate deployment of security guards in public places, male dominated public places, non-availability of public toilets, etc.) ensuring the safety of women in public places. The researchers prioritized the most frequent issues. Tabular illustration of the analysis is shown in Tables IV, V and VI.

Table IV highlights that the value of $R^2$ is significant. The regression model discerns the relationship with an accuracy of 88%.

Table V demonstrates that analysis of variance (ANOVA) among variables of women safety in public places is significant.

Table VI
Regression Coefficient [Authors of the Article]

| Coefficients | Model | Unstandardized coefficients | Standardized coefficients | t | Significance, P |
|--------------|-------|-----------------------------|---------------------------|---|----------------|
|              |       | B                           | Std. Error                | Beta |               |
| 1 (Constant) |       | 4.570                       | 0.157                     | 0.523 | 0.601 |
| Presence of undesirable factors in public places | -0.002 | 0.079 | -0.002 | -5.529 | 0.033 |
| Poor lighting in public parks | -0.063 | 0.085 | -0.069 | 7.865 | 0.024 |
| Non-availability of separate spaces for families and females in public places | -0.002 | 0.073 | -0.002 | 3.314 | 0.012 |
| Inadequate deployment of security guards in public places | -0.052 | 0.072 | -0.058 | 0.593 | 0.001 |
| Male dominated public places | -0.1 | 0.068 | -0.113 | 4.117 | 0.020 |
| Non-availability of public toilets for females | -0.062 | 0.056 | -0.07 | -10.266 | 0.004 |

a) Dependent variable: women safety in public places

31
IV. INTERPRETATION

The above analysis highlights some elements, which cause hindrance in safety of women at public places. The results shown in the table reveal that when there is some “presence of undesirable factor in public places”, women safety in public places decreases by 0.002. Similarly, when there is “poor lighting in public parks”, it reduces women safety by the value of 0.069. “Non-availability of separate spaces for families and females in public places” tends to decrease safety in public places by 0.002. Likewise, when there is “inadequate deployment of security guards in public places” it decreases women safety in public places by 0.058. The “male dominated public places” and “non-availability of public toilets for females” also have a profound effect on women safety and their impact is 0.113 and 0.07, respectively (Table VI).

The analysis, which included presence of undesirable factors in public places, poor lighting in public parks, non-availability of separate spaces for families and females in public places, inadequate deployment of security guards in public places, male dominated public places, non-availability of public toilets for females, showed strong relationship of women safety with public places and different threats.

V. INTERVIEW ANALYSIS

Interview session was conducted by the officials of the concerned authorities and government organizations. The first meeting was with the Director of Town Planning of Lahore Development Authority. He stated that the Development Authority highly emphasizes the importance of planning for women, separate laws exist for women and they are fully indulged in decision-making. Interview session was also conducted with the representative of “Women Development Department” who told that the Department ensures the effective safeguarding of women rights by protecting female’s rights within the legislative and constitutional framework, but also introduces new statutory framework whenever required.

Further, he added that opportunities are provided to expand the socio-economic status of women. He stated that the Punjab Government took an initiative on Women’s day and announced an Empowerment Package for women. In this Empowerment Package, the Government committed themselves to addressing women safety issues in public places [15]. The next interview was conducted by a delegate of the National Commission on the Status of Women, who stated that their aim is to inspect policies, monitor violations against women’s privileges and individual complaints. They emphasized the importance of planning for women, separate laws exist for women, and they are fully indulged in decision-making. The department also reviews rules and regulations that affect women, monitor violations against women’s privileges and individual complaints, encourage interaction and even dialogue with experts, and NGOs at national, regional and international level.

The Director of NGO argued that they had introduced Complaint Centers for Women in various cities of Pakistan. The Centers are staffed with female police officers, who register female complaints regarding crimes in public places. Further it was added that Punjab Government has established a helpline where women can report about harassment, disputes, and violence, etc. from all over Punjab. The last and final interview was led by representatives of Punjab Safe City Authority. They stated that they record and plan the improvement of environment for women and address the issues that women face in public places. They identify threats faced by women, distinguish barriers of transport services to prevent harassment and plan how to respond to them and to put forward them to government and transport authorities. PSCA has initiated a smartphone application for women’s protection, which enables women to protect themselves from undesirable acts in public places. Lastly, they added that a manual for women protection has been created by government, which is now included in Pakistan school books and in the curricula of grades nine to twelve. This manual includes information on how to approach authorities, promotes awareness about threats, and describes actions girls need to take in case they need to resolve problems and conflicts.

VI. DISCUSSION

The current study revealed that many girls and women from different zones of Lahore region are facing issues in public places that include harassment at bus terminals, staring of harassers, stalking, touching, obscene gestures, whistling, comments, etc.), which need to be sorted out. Government and local authorities have started various initiatives to enhance security in public places, but the challenge is that most of the females are unaware of it. This study delivers significant findings that give answers to key questions posed concerning the issues of females’ safety in the public places of Lahore. After literature studies and obtaining results, researchers conclude and recommend that in order to ensure safe city for females (Table VII) policies, strategies, and structured plans should be developed and other initiatives must be taken in order to have a proper framework for designing safer cities.

Table VII
CHARACTERISTICS OF A SAFE CITY, WHICH NEED TO BE CONSIDERED [16]

| A safe city for females is a city where: |
|----------------------------------------|
| a) females can enjoy and have easy access to public places without any fear of harassment and violence against them in the street or the road; |
| b) discrimination against females is not exercised, and they have definite social, economic and cultural rights; |
| c) females equally participate in decision making that has a positive impact on the community where they live; |
| d) the government promises to provide equal rights to all residents without excluding girls and women; |
| e) a safe metropolitan area is where the government immediately gives response, provides attention and prevents as well as punishes ferocity against females |
| f) the government ensures justice for all girls and women. |

VII. SECTORAL RECOMMENDATIONS

K. Public Transport

- Integration of women’s issues and perspectives in city transport planning and development policies by effective
management of gender mix in public transport, which endorse women needs in public transport system.

- Representation of female transport planners in urban transport planning agencies that may amalgamate women needs (such as alternative and particular routes in peak hours for females who use to travel for education and work purposes, provision of appropriate spaces for the women in bus terminals, separate type of transport for females) in policies and plans.

- Ensuring functional and effective monitoring mechanism by installing CCTV cameras in public transport terminals and buses.

- Indissoluble and comprehensive solutions for women safety in public transport contain safeguard measures such as ensuring optimum passengers boarding during peak hours, provision of separate seating capacity for females, adequate lighting, installing of CCTV cameras, identification and analysis of hot spots.

- Lahore Transport Company in collaboration with the Transport Planning Unit and local operators should conduct biannual women safety audit in public transport.

- Envisioning and formulation of Inclusive Public Transport Action Plan for Metropolitan Corporation Lahore

L. Public Squares, Markets and Bazaars

- Security and use of public places are closely connected and the security in public places is ensured by providing open structures, mix land uses, visual connectivity, appropriate signage and monitoring by security cameras.

- Public facilities should be easily accessible and legible for all segments of the population.

- Demarcation of specially protected areas (i.e. female only bazaars) for females so they can utilize these places with their potential and perspectives and are not exposed to men’s eyes and any other kind of pestering.

- Women Development Department should launch a self-protection training program for women, which would provide training in schools and universities and at work places as well.

- Being custodians of urban development plans and policies urban planners and architects should integrate women needs such as adequate lighting and landscaping in public places, they must be visible enough, safer traffic circulation, urban furniture, potential hiding spots, proper signage, availability of security personnel, proximity to emergency services, and easy access to public transport should be provided envisaged in urban master plans, building bye-laws, land use rules and in design of new housing schemes so that females’ safety and privacy concerns are addressed and adapted in local development plans.

- Provision of clean, safe and easily accessible females’ toilets in public places.

- Launch awareness campaign in public locations about PSCA App and helpline for women safety.

- All mobile phone companies should introduce a panic button in the design of new cell phones for women security.

- Punjab Safe City Authority should establish small sub-offices in public places, i.e. public parks, bazaars, public squares and markets for effective monitoring and quick response.

- Launch awareness campaign “Women in Urban Streets” by introducing street arts which endorse and signify women safety measures.

M. Public Parks

- Provision of separate family and female only spaces in public parks, which prohibits male entry in these particular areas.

- Ensure the presence of security guards in family spots in public parks.

- Managers and administrators of public parks should conduct a women safety audit to analyze women satisfaction regarding safety measures.

- Creation of Surveillance Group comprised on local community members, so they can monitor and observe functions and the activities.

- Centrally connected streets and walkways of parks, which increase the legibility, and physical access of the users.
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