

## Understanding the Needs and Dimensions of Women Centric Planning for a Socially Smart City – a case of Bhubaneswar

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**ABSTRACT:** "Safety and security" of women has become an important matter of concerns in all the cities of India as the rate of "violence against women" is increasing day by day. Rapid urbanization results unplanned developments and unavailability of infrastructures in the peripheral areas / fringe areas of the city, that makes the urban environment highly unsafe for women. In case of urban planning, the "safety of women" is always measured by various dimensions like safe urban environment, safe mobility options and female participation in the city planning process. So understanding the dimensions of women safety is the most vital and initial step to make a city inclusive, socially smart and sustainable. In the context of Bhubaneswar city, the increasing rate of violence against women is a clear indicator of the level of insecurities faced by women in their day to day life. The rate of violence and other women sensitive issues are witnessed to be more in the fringe areas than the city centre as the fringe area lacks in many planning aspects. Hence, the objectives of the study are to evaluate the dimensions of "women safety" in the context of Bhubaneswar city and to address the women sensitive issues, needs and concerns through effective urban planning strategies.

**KEYWORDS:** women safety, urban environment, safe mobility, public spaces, inclusive, female participation

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### I. INTRODUCTION

Unplanned and uncontrolled growth of the cities as a negative consequence of urbanization, results inadequate or improper distribution of infrastructures, substandard living conditions, overcrowded spaces and higher crime rate which makes the urban environment highly unsafe for women (UN-Habitat, 2012). The current trends of development especially put emphasis on economic growth, employment opportunities, infrastructure development and integration of ICT (Information and communication technology) in various sectors to make a city smart, but at the same time it is also important for a city to be safe and serves equal function to its citizens. When the cities are measured in terms of "safety and security", it is always a matter of concern that majority of the women face the fear of violence in almost everywhere in a city. It shows that, women sensitive issues, their needs and concerns have never taken into consideration in the urban planning process (UN-Habitat, 2017).

The term "Women safety" when evaluated in the context of Bhubaneswar city, the result shows that the capital city is no exceptional than the other cities of India possessing high crime rate. In the capital city the rate of crime against women is increasing every year that makes women always feel insecure. Women face the fear violence in terms of harassment, sexual assault and eve teasing mainly in the public spaces like streets, markets, parks or while using a public transport. The intensity of violence is witnessed to be more in the fringe areas than the city centre as the fringe area lacks in many planning aspects. All the urban planning strategies including the smart city projects always appear to be gender neutral and women have always been exposed to the risk of violence due to this negligence. Thus these issues must be addressed by implementing effective urban planning strategies at the policy, city and settlement level (Swapna Sarita Swain and Omkar Mohanty, 2015).

### II. DEFINING "SOCIALLY SMART CITY"

Smart city as a new concept of urban planning focuses on the development of cities through the application of ICT (Information and communication technology) to archive the goal of sustainability, economic development and high quality of life (Smart cities:Regional perspectives report, 2015). It always assures a balanced development in all the sectors like economy, environment, living condition of people, mobility and governance (Ayoub Arroub, Bassma Zahi and Essaid Sabir and Mohamed Sadi, 2016). A Socially smart city focuses on non discrimination approach of planning by giving equal importance to all the sectors of society and

preserve the rights of all people irrespective of their gender, age, caste, religion and socio economic background. It considers the needs of women, children, elder person, person with disabilities, sexual and religions minorities and ensures them equal right to the city (Housing and Land Rights Network, Delhi, 2017, Report on India's smart city mission).

The above discussion cleared the fact that, a city cannot be considered smart if the city is not safe and inclusive. Hence addressing the women sensitive issues, needs and concerns through women centric planning approach will be considered as a step forward to make Bhubaneswar a socially smart city.

### **III. WOMEN CENTRIC PLANNING APPROACH AND IT'S DIMENSIONS**

Women Centric planning is an approach that evaluates all the issues and concerns, directly or indirectly related to the "safety and security" of women in a city and to enhance their quality of life by ensuring a safe urban environment. It provides a broader perspective to control different types of violence faced by women which varies with time and space in a city by strategic framework and policies (Swapna Sarita Swain and Omkar Mohanty, 2015).

Women centric planning as an essential tool of Inclusive urban planning, focuses on the integration of gender specific polices, strategies, programmes and the participation of female population in the decision making process. This planning technique also identifies the gender specific needs and facilitates the city with all the required infrastructures such as safe public spaces, sanitation facility, safe mobility and public transportation that protect women's "right to the city" (Doris Damyanovic, Florian Reinwald and Angela Weikmann, 2013).

The dimensions of "women safety" in a city, are ;

- i) Safe urban environment
- ii) Safe mobility and transportation
- iii) Female participation in the city planning process
- iv) Enforcement of legislations

#### **i) Safe urban environment:**

A safe urban environment refers to the environment where everyone feels safe and protected regardless of their gender, age and socio-economic status. It reassures safe, secure and sustainable surroundings by reducing the incidence of violence through proper arrangement of urban spaces and other components of it. While analyzing women safety and security concerns attached to the environment, it is seen that the combination of all the natural, physical and manmade components which is known as "built environment", plays an important role in a city (Sheela Patel and Sundar Burra, 1998).

As "safety" is the foundation of "socially smart city", so understanding the significant contribution of built environment to make a city safe and smart is important. In urban planning, a safe built environment refers to the careful design and placement of residential areas, public spaces, streets and pathways as these areas are associated with a higher risk of crime and violence (Sheela Patel and Sundar Burra, 1998).The various aspects of built environment generally put emphasis on the physical planning of the particular area to make a city safe. For example, the residential built environment which is considered as "safe", consists of planned settlements developed with proper regulations and at the same time it offers a good visual and physical connections with the surrounding areas (Ms. Kirti D. Bhonsle and Dr. V.S.Adane, 2013).

Similarly public spaces as an important aspect of built environment, support the needs of all the citizens in different ways. Public spaces like streets, pathways, markets, public squares and its surrounding areas are the most critical elements of urban environment to decide whether the city is safe or not. As most of the public spaces in the context of Indian cities are "men centric", the systematic integration of urban design in these public spaces is very essential to assure women safety. Hence a safe and organized public space is characterised by its design, availability of supporting infrastructures and accessibility (Ar. Seemantini Soraganvi, 2017). So in the context of women centric planning, urban design is taken as a tool to create high quality and safe public realms by effective implementation of urban design principles. Similarly the supporting infrastructure refers to the availability of safe, clean public toilets, drinking water, street lights, street furniture with regular patrolling in public spaces while accessibility refers to the availability of all the facilities in certain radius so that one can easily approach (Yasha Taheri Khameneh and Maryam Ebrahimpour, 2014).

#### **ii) Safe mobility and transportation facilities:**

In a city, mobility refers to the act of travelling or accessing some facilities like work place, market, educational institutes, hospitals or any other public spaces. The mobility pattern always varies with the number of trips, distance of the trip, mode of travelling and the travel behaviour of the person. In an urban area women face more problems or restrictions in mobility as their travel behaviour is completely different from men and the no. of trips generated by women is also more than men. It should also be noted that a woman has to do more task in a household level and her destination also varies with her task (Heather Allen, 2018, World development

report, 2012). Besides that women use public transport more frequently rather than men in a city. But at the same time they face the fear of violence the most, which force them to change their travel behaviour and also affect their workability up to some extent (Dr. Deniz, 2016).

Mobility and transportation facilities are evaluated by many factors that affect the "safety and security" like the user groups, frequency of use, gender, time etc (Dr. Deniz, 2016). So in a city, safe mobility includes easy accessibility to public transportation that serves equal functions to all the user groups irrespective of their gender. Route optimized public transportation facility is also an indicator of safe mobility that supports the diversified travel behaviour of women. Other than that the integration of smart applications like CCTV installation, GPRS tracking in public transport and safe interchange facilities reduce women's fear of travelling in public transport by bridging the gap between "safe" and "smart" city (Ewelina Julita Tomaszewska and Adrian Florea, 2018).

### **iii) Female participation in the city planning process:**

Good governance as a goal of smart city is always limited to the operation and provision of infrastructures and public utility services. Citizen participation and community engagement which is one of the determinants of good governance has always been neglected in a city planning process. As we have already discussed that the priorities and needs of women in a city is always different from men in terms of infrastructure, transportation, sanitation and in any other field but the lack of female participation in the decision making process always acts as a barrier in proper service delivery and their priorities are rarely considered in urban planning (Asian development bank, 2013). Female participation in urban planning identifies their specific needs and concerns through consultations and focused group discussion that offers safe and reliable services to all. It involves the engagement of women's community based organizations to raise the voice of women in local decision making process.

### **iv) Enforce Legislation:**

Effective rules and regulations always create a stable and well balanced framework for successful urban management and development. Legislation is considered as the foundation of all actions to be taken either in city, national or international level. For addressing women sensitive issues in a city, enforcement of legislation is considered as a productive mechanism which ensures inclusion in all the levels of planning (Governance and social development research center, 2012).

Legislative frameworks identify the gaps in gender sensitive planning practices and at the same time address the issues and gender based violence in public spaces through effective guidelines. It offers a complete framework that supports all the planning approaches from its initial stage to its implementation stage by assuring a high transparency in the governance system (United Nations, Department of Economic and Social Affairs, 2010, Urszula Nowakowska and Irina Liczek, 2003).



**Figure 1 : Cycle of legislative framework**

Source: Author

#### **IV. THE NEED OF WOMEN CENTRIC PLANNING IN THE CONTEXT OF BHUBANESWAR CITY**

Bhubaneswar, being the capital city of Odisha has gone through many changes in terms of population growth, economic growth, city planning and developments in the past 7-10 years. In 2016, when the city was declared as a smart city by the government of India, it enacted with no. of projects and programs in various sectors like housing, transportation as well as infrastructures to deliver a high quality urban life to its citizen. But the smart city mission is not limited to service delivery only, it also emphasizes on the parameters of equity and inclusivity to make the city socially smart. If we evaluate the term "inclusivity" in the context of Bhubaneswar city, it speaks about the facts of gender inequality, gender based violence and other issues that affect the safety of a woman in different ways. So it seems like even after 3 years, Bhubaneswar still lacks in many aspects to claim itself socially smart (Basudev Mahapatra, 2019).

While analyzing the perspectives of Bhubaneswar smart city, it is clear that the development actions are confined to a very small portion of the city within the boundary of municipal corporation (Basudev Mahapatra, 2019). But in present scenario, Bhubaneswar as a result of urban sprawl exhibits the major developments and population growth in the fringe areas. Due to the availability of employment opportunities, proper health care and educational facilities migration acts as a drive force to make people settle down in the peripheral areas of the city. These outward developments basically occur towards the south-west and north east direction where the growth potential is more in every aspects. As it comes under the jurisdiction of Bhubaneswar development planning area (BDPA), these areas are deprived of getting various infrastructural facilities (Department of architecture and planning, IIT Kharagpur, 2010, Final CDP report). If we examine Bhubaneswar development planning area in the context of "women safety and security", it lacks in various aspects of urban Planning. For example, in these areas women experience the problem of long travelling distance to get certain facility or services for which they usually depend upon public transport or need to walk on the street and in the mean time they face the fear of violence (Swapna Sarita Swain and Omkar Mohanty, 2015).

As the study concentrates on the "violence faced by women" in an urban environment, it is very important to analyze the facts and figures related to this particular problem. If we review the statistical data of overall crime against women from 2010 to till date, it indicates upward trends for both Odisha and Bhubaneswar cases (Swapna Sarita Swain and Omkar Mohanty, 2015). As per the study "intent to disrobe" conducted by National crime record bureau, Odisha has been declared as the 3rd state in the country having highest reported case of violence and sexual assault with an average growth rate of 21% from 2014 to 2016. In the same way Bhubaneswar also witnessed a gradual increase in the no. of crime against women in the last few years with 16.9% of average growth rate which is very high as compared to any other district of Odisha (National Crime Records Bureau, 2016, Crime Statistics in India). So the above discussed facts are clear enough to explain the need of women centric planning in Bhubaneswar city to ensure an inclusive urban environment.

#### **V. OBJECTIVES OF THE STUDY**

To evaluate analyze various dimensions of "Women safety" in the context of Bhubaneswar city.

To ensure a safe inclusive urban environment by addressing the women sensitive issues, needs and concerns through effective urban planning strategies.

#### **VI. RESEARCH METHODS**

A number of qualitative and quantitative methods were adopted to identify the women sensitive issues and its intensity in the different parts of the city. After understanding the research problem, the data were collected in two phases. Data collection from secondary sources were done in the first phase, in which the statistical crime data of different zones of Bhubaneswar were collected from the Deputy Commissionerate office that provide a clear idea about the areas where the incidence of crime against women was relatively higher than the other areas of the city. On the basis of these secondary data, different areas were selected for audit. In the entire process of ground level survey, women safety audits were taken as a major tool in the process of primary data collection.

Women safety audits are the most productive toolkit that provides guidelines to evaluate the women sensitive issues within a given area (Kalpana Viswanath, Marisa Canuto et. al., 2011). But the most important factor is that the safety and security of a woman is not confined to a particular space in city, it varies with space, time and age. By considering this, the safety audits were conducted in various public spaces of the selected areas at different phases of day and night. These safety audits were held with a series of check lists which was proved very helpful in providing the relevant information regarding women safety in various public spaces. The next step involved the analysis of all the collected data and information on the basis of which recommendations were formulated.

## VII. ANALYSIS AND IDENTIFICATION OF ISSUES

In order to deliver effective planning strategies to resolve the women sensitive issues and concerns identified through the safety audits, the next task involves the detail analysis of collected data. By analysing all the data it has been observed that the peripheral areas of Bhubaneswar are more vulnerable to women sensitive issues. These areas were also found to be lack in various dimensions of women safety aspects. These dimensions have also been analyzed carefully and some of the important findings are described below :

### i) Analysis of environmental issues:

Due to the unplanned and haphazard growth in the peripheral areas of Bhubaneswar municipality boundary, most of the residential settlements appear to be isolated and most of the residential areas are deprived of some basic facilities and amenities. For example no shops, medical stores, parks and other recreational facilities are available near the residential areas. Other than that, the absence of "mixed land use zoning" makes those settlements more isolated and inactive. In the detailed survey of residential built environment, it is observed that there are numbers of vacant buildings near the residential buildings which are easily accessible by everyone and most of the time these vacant buildings are occupied by the suspected user groups (drug and alcohol users) that increase threat of occurrence of any offensive activities in it.

Other environmental issues related to various public spaces include insufficient lightings in market places and streets, absence of street lightings in local and arterial streets and substandard road conditions that directly affect the safety and security of women. Most of the public spaces are lacking in safe parking areas, separate pedestrian pathways, safe public toilets and other supportive infrastructures like CCTV surveillance and police patrolling. Apart from that the presence of dark alleys in the markets makes these area more vulnerable and unsafe for women.

### ii) Analysis of safe mobility and public transport facility:

The availability of safe public transport facility is not the only factor that ensures safe mobility to women. The study of women travel behaviour in the city also plays an important role in identifying the issues related existing transportation facility. By taking these two important factors into consideration, the analysis was done which reflects that a higher percentage of female population use public transport facility as compared to male in Bhubaneswar context. Out of these population, about 35% are employed and others are engaged in household activities. For the former case, it is seen that their travel behaviour involves long trip generation with limited destinations like home-office-home or home-office-market-home (fig.2) which needs the public transport facility to be route optimised and safe especially at night. But for the latter case, the travel pattern of care-giving women involves short trip generation with no. of destinations throughout the day. For example; home-school-relative's home-school-home and home-market-playground-home (fig.3). This demands safe and frequent interchange options or convenient mode of Intermediate public transport (IPT) facilities.

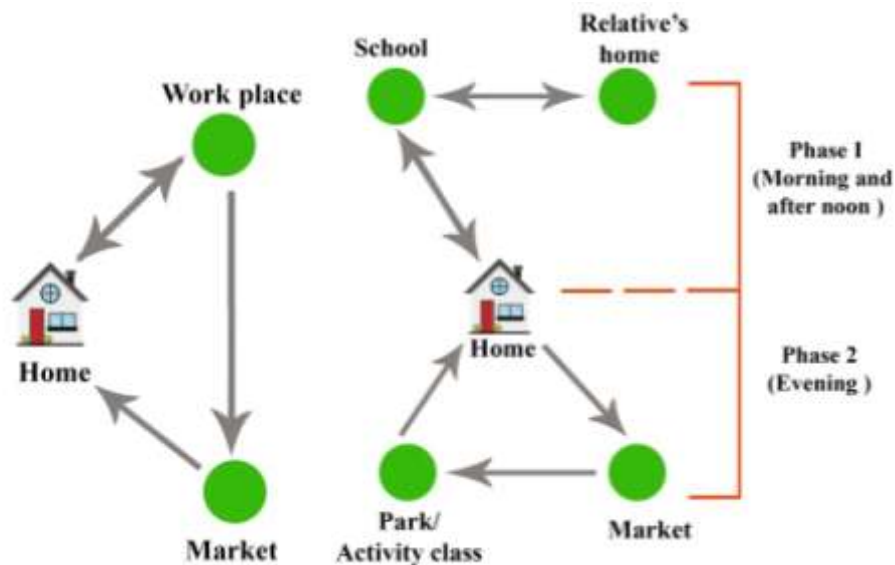


Figure 2 : Travel behaviour of working women, Source : Author  
 Figure 3 : Travel behaviour of care giving women, Source : Author



While integrating the travel behaviour of women with the existing public transportation facilities available in Bhubaneswar context, some issues and problems have been identified which are needed to be considered. The transport facilities and bus services offered by CRUT (Capital region urban transport) is no doubt sufficient enough to provide convenient facilities to women but it lacks in some parts. On the basis of surveys and interviews, it is perceived that in some of the cases it is difficult for women to find a seat while travelling and in some of the fringe areas, the facilities are not route optimized for which they need to cover long walking distance to get any public transport facility. In some places particularly in the outskirts areas the bus stops are safe to some extent in the day time but it becomes highly unsafe after evening due to its surrounding environment and the frequency of bus services reduces after evening that compels women to opt for any alternative mode of transport.

### **iii) Current scenario of female participation in city planning process:**

As discussed earlier, Bhubaneswar city lacks in various aspects and dimensions of women safety in urban planning context and it is realized that the major fact behind this concern is the absence of female participation in the current city planning process. By analyzing the current status of women participation in city planning and decision making process, it has been cleared that the involvement of women in various sector of planning is very negligible. In some of the projects of BSCL (Bhubaneswar smart city limited) community involvement have been noticed like an awareness program namely "safe spaces of youth" was organized with the collaboration of BSCL, BMC (Bhubaneswar municipal corporation) and UNFPA (United nations population fund) which involved the youth and student communities to identify the issues and need of safe public spaces in city (UNFPA : United Nations Populations Fund, 2016-17). But it should also be considered that not only the youth, but the women of all age group should be given equal importance in a city. Hence all urban planning approaches should involve the active participation of female of all age group in the decision making process so that their need and concerns will be successfully addressed.

## **VIII. CONCLUSION AND RECOMMENDATIONS**

From the detailed evaluation and analysis of the dimensions that affect women safety in Bhubaneswar city, the study come to the conclusion that Urban planning standards, guidelines and byelaws are need to be reviewed and revised in order to reduce the higher level of risk and violence faced by women in an urban environment (Shipra Narang Suri, UN-Habitat, 2011). For example, urban planning standards must facilitate a high density, balanced and mixed use developments of the residential areas, so that it will control the scattered developments through compact planning techniques. City development authorities should take regulatory approach by imposing laws on deviation of building byelaws, permissible height of the boundary wall which obstruct visibility with the surrounding environment and by taking strict action against the existence of unused vacant buildings in the residential settlements.

The study clarified the fact that, women feel more insecure in public spaces due the inefficient design and lack of infrastructure facilities. These issues should be successfully counteracted by effective urban design interventions. Street, markets, public squares and other public spaces should protect the "safety and security" of women and this is possible by improving the lighting fixtures, providing adequate street lights with clear sightlines, assuring safe public toilets, drinking water facility and safe parking spaces in those areas (Suneeta Dhar, Kalpana Viswanath, et.al., 2018). "Vibrant and active streets" with the provision of safe pedestrian pathways, streetscape design as well as streets that offers different type of social and commercial activities around it make women feel more safe and comfortable while using it (Jen Lockard, 2015). Elimination of dark alleys and entrapment areas is also important to make an urban environment safe which should be successfully done by the periodic evaluation of public spaces. Apart from that, all the public spaces should be facilitated with CCTV surveillance and police patrolling to lower the incidence of violence.

The public transport facility should offer route optimized and last mile connectivity to the destinations so that women will not be forced to change their travel behaviour (Mika Kunieda and Aimee Gauthier, 2007, Deike Peters, 2013). Particularly the fringe areas of Bhubaneswar should be facilitated by a strong networking and frequently available public transport services. At the same time care should be taken that these facilities should not be confined to a limited time period. It should assure equal services throughout the day and night also. The bus stops and the transit nodes should also be designed by considering the "safety and security" of women. It includes the installation of CCTV and emergency alarm in the bus stops and transit nodes so that women always find themselves in a protected zone while waiting for any public transport.

All the dimensions of women safety, their issues needs and concerns should be properly managed and controlled by comprehensive legislative approaches. Women sensitive issues, their needs and concerns related to urban environment and mobility should be addressed through strategic framework in the city development plans (Shipra Narang Suri, UN-Habitat, 2011). The development authorities should ensure that all the planning strategies are prepared under the active participation of women and by considering their suggestions and

objections. Local development authorities should take the responsibility of successful implementation of the planning strategies in the city and settlement level. Similarly "women safety audits" should be done periodically by making it an integral part of city planning process (Melanie Lambrick and Kathryn Travers, 2008). Urban local bodies should arrange institutional stakeholders which involve women's community based organisation and NGOs to conduct "safety audits" in public spaces. Along with the audits, safety campaigns, street plays, awareness programs and self defense programmes should also be initiated in city and settlement level to raise the voice of women.

Hence, all the above recommendations and proposals need to be implemented successfully in the urban planning process which will definitely lead Bhubaneswar towards a socially smart and safe and inclusive city.

## REFERENCES

- [1]. UN-Habitat, (2012). Gender issue guide- Urban planning and design.
- [2]. UN-Habitat, (2007). Enhancing urban safety and security ; Global report on human settlements.
- [3]. Swapna Sarita Swain , Omkar Mohanty, (2015). Need for a Gender Inclusive Planning - Bhubaneswar City, Odisha (India). International Refereed Journal of Engineering and Science (IRJES), Volume 4, Issue 7, PP.27-30.
- [4]. United Nations : Government summit thought leadership series, (2015). Smart cities :Regional perspectives.
- [5]. Ayoub Arroub, Bassma Zahi and Essaid Sabir and Mohamed Sadi, (2016). A literature review on smart city ; Paradigms, opportunities and open problems.
- [6]. Housing and Land Rights Network, Delhi, (2017). Indian's smart city mission : Smart for whom? Cities for whom?
- [7]. Doris Damyanovic, Florian Reinwald and Angela Weikmann, (2013), Manual for Gender Mainstreaming in Urban Planning and Urban Development, Urban Development Vienna, Municipal Department (MA 18) – Urban Development and Planning.
- [8]. Sheela Patel and Sundar Burra, (1998). Making cities safe for women and children. Society for Promotion of Area Resource Centres (SPARC).
- [9]. Ms. Kirti D. Bhonsle and Dr. V. S.Adane, (2013). Residential Built Environments: The importance of social capital, Journal Of Humanities And Social Science (IOSR-JHSS) Volume 13, Issue 4, Page : 13-19.
- [10]. Ar. Seemantini Soraganvi, (2017). Safe Public Places: Rethinking Design for Women Safety. International Journal on Emerging Technologies, Volume 8, Page :304-308.
- [11]. Yasha Taheri Khameneh and Maryam Ebrahimpour, (2014). Social safety's women in urban public space (Case study: Mashhad metropolitan). American Journal of Engineering Research (AJER). Volume-03, Issue-08, pp-227-233.
- [12]. Heather Allen, (2018). Approaches for Gender Responsive Urban Mobility. Sustainable Urban Transport Project (SURP) and GIZ.
- [13]. World development report, (2012). Gender and mobility in the developing world.
- [14]. Dr. Deniz, (2016). Effects of Perceived Safety on Women Mobility Habits for Sustainable Public Transportation. American International Journal of Social Science, Vol. 5, No. 4.
- [15]. Ewelina Julita Tomaszewska and Adrian Florea, (2018). Urban smart mobility in the scientific literature. International society for manufacturing services and management engineering. Volume :10, Issue :2, page-41-56.
- [16]. Asian development bank, (2013). Gender inclusive approaches in urban development.
- [17]. Governance and social development research center, (2012). Gender Inclusive Urban Planning.
- [18]. United Nations, Department of Economic and Social Affairs, (2010). A hand book for legislation on violence against women.
- [19]. Urszula Nowakowska and Irina Liczek, (2003). Drafting gender aware legislation. UNDP, Regional Centre for Central and Eastern Europe and CIS.
- [20]. Basudev Mahapatra, (2019). Smart Bhubaneswar : City within a city reflecting inequality. Odisha of my time.
- [21]. Department of architecture and planning, IIT Kharagpur (2010) , Final proposal; Comprehensive development plan for Bhubaneswar development plan area.
- [22]. [Dataset] Government of India (2016), Crime Statistics in India, National Crime Records Bureau (Ministry of Home Affairs) . <http://ncrb.gov.in>
- [23]. Kalpana Viswanath, Marisa Canuto, Carolyn Whitzman and et. al. (2011), Tools for Gathering Information about Women's Safety and Inclusion in Cities, Women in cities international, ISBN :978-0-9736972-7-8.
- [24]. UNPFA : United Nations Populations Fund, (2016-17).
- [25]. Shipra Narang Suri, (2011). Safe cities free of violence against women and girls Initiative ; A draft strategic framework for women's safety in Delhi, Jagori , UN-Habitat, and Department of Women and Child.
- [26]. Suneeta Dhar, Kalpana Viswanath, et. al. (2018), A Rapid Study on Women's Safety in Public Spaces in Jhajjar, Haryana., Jagori.
- [27]. Jen Lockard (2015), Cities safer by design; guidance and examples to promote traffic safety through urban and street design, version 1.0, world resources institute.
- [28]. Mika Kunieda and Aimee Gauthier, (2007). Gender and Urban Transport : Smart an affordable. GTZ, Sector project transport policy advisory service, Sustainable Urban Transport Project (SURP) and GIZ
- [29]. Deike Peters, (2013). Gender and sustainable urban mobility. UN- Habitat : Global report prepared for human settlements.
- [30]. Melanie Lambrick and Kathryn Travers (2008), Women safety audits; What Works and Where?, UN-Habitat Safer Cities Programme.

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