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## A Brief Appraisal of Transforming Living Space of South Kolkata

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### **Abstract:**

*Changing urban landscape is an epitome of escalation of congenialities and adversities, infrastructural upgradation and with its transformation of the wellbeing status of the Denizens. Studies analyzing urbanscape and its livability always have immense value to planners and policy-makers as no programming is complete without consideration of the wants and problems of fellow inhabitants. The sole entity of fruitful planning should be social embedded in geographical space.*

*Kolkata conjures up the images of a sprawling urban conglomerate, bursting with population overload and with basic civic amenities under severe strain. This ever-changing metropolis have embarked on a never ending urban. There is an unsurmountable burden on its resources and countless dissatisfactions questioning the pleasure of being a Calcuttan. In this context, the present paper shall attempt to assess living conditions of parts of South Kolkata covering Jadavpur, Tollygunge and Behala, an area which has experienced unprecedented urban transformation in the recent decades and will go on experiencing the same in the coming years. From an essentially colony East Bengali culture the region underwent a thorough make-over to that of the elite Bengali and cosmopolitan culture of the present day. It may be recollected that this southern part of Kolkata was once predominantly rural containing open spaces, wetlands and cultivated areas. Presently the area is a juxtaposition of different facets of urbanized space and a burgeoning population with increasing expectations and aspirations. It is an onerous task to align projects with the needs and demands of the citizens and yet the ultimate objective is to achieve human wellbeing and a highly livable environment.*

*The author questions whether people are experiencing an improved quality of life with improvement of city amenities and services and whether the benefits are transcending the social strata in an inclusive and equitable manner. The scope of such a study encompasses a complicated large inventory of parameters that need to be analysed spatially and temporally. In this paper certain physical environmental, demographic, socio-economic, developmental achievements and endeavours have been dealt with to bring out interrelations between these and hence derive a picture of the state of environmental wellbeing in this part of the city. Certain aspects of the urban environment will be more importantly dealt with like landuse changes and housing, transport and communication, shopping, health services, recreation and cultural amenities, safety and security issues encompassing criminal activities, traffic hazards, power shortages, waterlogging, pollution etc.*

*The paper depicts that there is simultaneous omnipresence of convenience and inconvenience in the area. Despite the presence of amenities and developmental ventures, some clear evil effects are also easily felt and calls for rational intervention for speedy solution. All planning should be based on impact assessment and interdisciplinary studies so as to rehabilitate existing conditions and bring sustainable progress in future.*

**Key words:** *environmental and human wellbeing, urban space, living conditions, livable environment, rational intervention, impact assessment, rehabilitate existing conditions, sustainable progress*

### **1. Introduction**

The contemporary globalised world is living in an urban age and is assembling towards the zenith of urbanization and experiencing profound metamorphosis in every spheres of life. Urbanization characterizes both the developed and developing realms with more than half of the global populace living in urban areas and UNFPA, 2007 projects that by 2050 this will grow to two-third (6 billion people), i.e. 70% of the world is an urbanized global nation. Such metamorphosis will be represented by the intermingling of cultures, admixtures of the benefits and evils, developments and miseries within Urbanscapes in various dimensions. Sprawling urbanization with economic growth and special environmental problems is increasingly becoming emblematic of developing countries. The developmental plan largely emphasizes research and studies that assesses and answers questions underpinning the concepts of wellbeing, quality of life, livability in urban environments.

In this context, Kolkata, an example of historical pride and primacy in the Eastern Indian urban system is assessed so as to establish whether it is an urban example of overcrowding and underachievement, rather than a cosmopolitan centre of growth and opportunity. This paper begins with a discussion of how the concepts of well-being, quality of life and livability are defined, interconnected and measured. The author shall continue to assess the transforming city and its changing well-being with an emphasis on livability of South Kolkata.

## 2. Theoretical Background

The environment is fundamental to the individual well-being and environmental well-being is a reflection of the degree of awareness and appraisal of the critical role the environment plays in our individual well-being. Geographical literature has for long regarded that the three core values: Human, Environment and Economic Well-being are very much interdependent. Sustainable planning is much about associating planning and delivery of services across the social, cultural, economic and environmental well-beings at the same time. More precisely, presently the term environment encompasses within it both the natural and the human spheres. Hence social, cultural, economic and natural well-beings are integrated into the term environmental well-being. In urban research, there is an increasing importance of concepts of well-being and its connection with environmental parameters which makes it imperative to define allied terms, well-being, quality of life (QoL) and livability in this context.

Broadly, well-being has been defined from the clinic and the psychological perspectives. The former defines well-being as the absence of negative conditions and the latter as the prevalence of positive attributes. Gough et al (2007) defined well-being as 'what people are notionally able to do and to be, and what they have actually been able to do and to be.' Angner (2008) said that even the philosophical literature refers to the 'simple notion' of well-being (i.e. 'A life going well') in a variety of ways, including a person's good, benefit, advantage, interest, prudential value, welfare, happiness, flourishing, eudaimonia, utility, quality of life and thriving. McAllister (2005) defined well-being as more than the absence of illness or pathology [...with ] subjective (self-assessed) and objective (ascribed) dimensions. It can be measured at the individual level or societal level and it accounts for elements of life satisfaction that cannot be defined, explained or primarily influenced by economic growth (Camfield, Streuli & Woodhead, 2010). Subjective Well-being (SWB) was defined by Ed Deiner (2009) as the general evaluation of one's quality of life. Some argue that well-being is best understood in terms of holistic happiness or satisfaction with life.

Quality of life and livability are more popular concepts of the day used widely to assess urban environments, but defining and measuring these in a germane way has always been a controversial and debated matter. The term "quality of life" is a very general term widely varying in meanings to different people and encompasses a variety of domains. Broadly, quality of life refers to the general well-being of individuals and societies. The term is explored in the fields of public health, psychology, medicine, economics (Easterlin, 2001 and Fritjers et al. 2004), international development, urban planning, and others and very recently got recognition as a significant component of sustainability (Rogerson, 1999). Quality of life has also been defined "as the satisfaction of an individual's values, goals and needs through the actualisation of their abilities or lifestyle" (Emerson, 1985, p. 282). The World Health Organization defines Quality of life as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns..According to the Applied Research in Quality of Life Journal, examples of concepts directly related to quality of life and social indicators include "happiness, subjective well-being, life satisfaction, the good life, the good society, economic well-being, family well-being, quality of work life, community quality of life, spiritual well-being, leisure well-being, social well-being, emotional well-being, psychological well-being, and quality of home life, among others" (Michalos, Sirgy, & Estes, 2006). In urban and regional planning, "quality of life" generally focuses more on community quality of life and social well-being indicators, rather than the more emotional and psychological indicators.

Derived from the adjective "livable," the neologism "livability" is defined broadly as "suitability for human living" (Merriam-Webster, 2011). Livability became popular in analysis of the built-up urban environment in the 1980s to planners and was applied in shifting of development from the core urban areas to rapidly growing suburban areas. Pioneering reports began to emerge challenging traditional growth assumptions and highlighted regions that were experiencing innovative efforts to make communities more livable. Annual surveys have increased that rank the world's most livable cities, such as the Mercer Worldwide Quality of Living Survey<sup>1</sup>, and "The World's Most Livable Cities" report. These surveys use varied criteria, but typically assess cities on factors such as healthcare, education, public services, transportation, recreation, housing, political stability, safety and environmental quality. Livability studies have developed into coveted symbols of urban planning for holistic environmental well-being among cities.

A survey of the literature and current livability programs shows that livability is a concept having multiple dimensions. For example, a definition provided by the Victoria Transport Policy Institute (VTPI) claims that livability is "affected by a community's public safety, environmental quality, community cohesion, friendliness, aesthetics, accessibility, pride, and opportunity" (VTPI, 2010). Recent research on five mature metropolitan livability programs throughout the United States resulted in a diverse array of livability objectives (Fabish & Haas, 2010). The types of livability objectives included in these programs include:

- Environmental goals (such as air quality, open space, and greenhouse gas emissions);
- Economic goals (such as economic revitalization and development);
- Land use goals (such as compact, mixed use development);
- Transportation goals (such as walkability, accessibility, and transportation choices);
- Equity goals (such as affordable housing and mixed-income communities); and
- Community development goals (such as sense of place, safety, and public health).

The definition of quality of life may be proposed as "the effects of a community's livability on its residents." Factors that affect community livability are associated to quality of life benefits. For example, livability factors of economic development like job, service and retail availability are associated with QoL benefits like disposable income, recreation and leisure time; livability factors of housing like affordability, location, diversity of housing types accrue to QoL benefits like shelter, safety, and security; livability factors of transportation like availability of multi-modal network connectivity; mobility; safety; accessibility to places of

work and interest, housing, and services; streetscape attractiveness influencing independence of movement, reasonable and reliable travel times, physical and mental health etc.

Institute of Competitiveness Report on Liveability Index 2011 refers livability to the quality of urban system that contributes to the physical, social, mental and personal blooming of all its inhabitants. It is about desirability of and fulfilling urban spaces reflecting an enriched cultural attainment, equity, dignity, accessibility, conviviality, participation and empowerment. A city that directly benefits its denizens and those who work in it and visit it is livable. It refers to the environmental and social quality of an area, which includes local environment conditions, presence of quality education and health institutions, infrastructure, purchasing power administered by its consumers, safety of self and property and recreational-leisure-lifestyle avenues.

Distinctions need to be drawn between the few intertwining concepts. Livability is different from quality of life enjoyed by the residents of a city. The quality of life is subjective and limited in connotation to the 'desires' of people, the desires and choices varying across sections of society. Livability expands its meaning to include every member in the society and is defined as the fabrication of that utopian urbanscape in which all the people achieve a high standard of living by having access to the basic human needs along with city infrastructure and a safe living environment. It gives more weightage to human needs than human wants although inclusive of the 'desires' of the citizens. The closely related, but subtly distinct concept of "quality of life" focuses more on the user experience of environments. While quality of life and livability are two terms often used interchangeably in urban planning, the distinction lies in the difference between the presence and quality of the amenities of the built and natural environments (livability) and the user experience of those amenities and any associated health benefits (quality of life). In other words, livability refers to a community's services and amenities, whereas quality of life refers to how those amenities shape and benefit the human experience.

The concept of livability is a relatively new field of research in India although much work has been done on QoL and well-being issues of urban areas. While western cities provide high living standards, developing, globalizing Indian counterparts reveal sharp contrasts. The top four metros, although the development propellers of the regions and the country are also examples of overcrowding, rising pollution, aggravating environmental degradation, infrastructural and housing inadequacies rendering urban life much unbearable and provoking social pathology. Hence any form of urban planning aiming at an utopian dream of urban well-being necessitates monitoring of livability parameters.

### 3. Study Area

The city of Kolkata acting as the primate city of eastern India from the era of its birth and with its signature colonial legacy houses 4,486,679 population according to Census 2001. The city's histogenesis saw burgeoning expansion and with it an unsurmountable burden on resources leading to plurality of diverse dissatisfactions and grievances questioning the well-being of the denizens and livability of the urban space. Kolkata is an excellent example of social areas juxtaposed with contrasts between wealth and poverty, power and helplessness, within the legacy of both indigenous and colonial fabrics.

This study shall make a brief appraisal on broadly the city as a whole and specifically South Kolkata, the germination and proliferation of which is historically attributed to the Partition of India. The area encompasses Jadavpur-Tollygunge-Behala areas bearing the Ward numbers 89, 93, 94, 95, 96, 97, 98, 99, 100, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130 and 131.

### 4. Objectives

The paper shall assess the population growth, densities, slum population and landuse changes specially of the study wards. Certain demographic variables, educational, economic aspects will be discussed in brief. An appraisal will be made of some aspects of medical support system, crime situation and safety parameters, housing options, socio-cultural supporting infrastructure, natural and economic environmental attributes and certain connectivity aspects. This will help in understanding how urban livability is defined and framed in South Kolkata and how quality and well-being are configured within the idea of urban livability, about how people and artefacts shape and are shaped by urban urbanscape and affects well-being. These will help comment on how livable are the wards. This work will also briefly include the nature of relationship of present state of livability with urban adaptation and resilience and thereby well-being in this part of Kolkata. The purpose is to make an attempt to assess and compare the living conditions of the wards across South Kolkata.

### 5. Methodology

The data and methods used address the present purpose for an objective assessment of livability at the ward level of specially the southern part of the city. The selection of indicators is based on the methodology observed for formulating Livability Index 2011 of Indian cities by the Institute of Competitiveness. The livability of the wards have been fragmented into 8 dimensions of demographics, education, health and medical standards, safety, housing, socio-cultural-natural environment, economic and planned environments, each including a number of indicators. Demographic data at ward level is obtained from the Directorate of Census for the year 2001. Data on amenities related to housing, health, education, safety, communication and economy have been mostly collected from Kolkata Municipal Corporation, Ministry of Urban Development, Motor Vehicles Department, West Bengal Pollution Control Board.

Every indicator plays a significant role, either in a positive or negative direction in the final computation of the livability index. In calculation M.G.Kendall's method of assigning weightage to variables, wherever needed to remove biasness converted to percentage and thereafter ranked. The ranks are then added to find the composite scores.

## 6.. Results and Discussion

### 6.1. General State of Livability of Kolkata

From the Livability Index 2011 Report on Indian cities by the Institute of Competitiveness, the following points are revealed.

- Based on composite livability index, Kolkata is ranked third (score 60.44) following Delhi (score 63.50) and Mumbai (score 60.48).
- In case of the demographic pillar, Kolkata is ranked seventh (score 61.78) with Delhi ranked first (score 67.37) Mumbai fifth and Chennai ninth.
- In case of the education pillar, Kolkata is much behind, ranked eighteenth (score 58.57) while Delhi is first (score 71.04), Mumbai second and Chennai third.
- In case of the health and medical standards pillar, Kolkata is ranked fourth (score 65.39) after Delhi (score 83.08), Gurgaon (score 69.06) and Mumbai (score 65.62).
- In case of the safety pillar, Kolkata is ranked first (score 63.83), whereas Delhi is ranked fortieth, Mumbai twenty-second and Chennai eighteenth.
- In case of housing options pillar, Kolkata is ranked twenty-eighth (score 58.15) while Bhubaneswar is ranked first (score 63.64), Delhi forty-sixth, Mumbai forty-ninth and Chennai forty-fifth.
- In case of socio-cultural-natural environment pillar, Kolkata is ranked fifth (score 56.22) while Mumbai ranked first (score 57.31), Delhi fourth and Chennai fifteenth.
- In case of economic environment pillar, Kolkata is eighteenth (score 57.84) while Vadodara ranked first (score 73.17), Guwahati second, Ludhiana third, Delhi fourth, Chennai tenth and Mumbai thirty-third.
- In case of the planned environment pillar, Kolkata is ranked eighth (score 61.77), Noida first (score 73.51), Mumbai second and Chennai ninth.

The above observations reveal a heterogenous nature of Kolkata, as an aftermath of conflicting nature of development in a post colonial complicated socio-economic-political conditions.

### 6.2. Demographic Dimension

Initially designed as a port city, Kolkata experienced drastic change after Independence and partly with the largest immigration ever in South Asia. This led to unprecedented population growth followed by an era of rapid urbanization and associated population growth. Kolkata's history show that after independence, all wards experienced rapid population growth and the erstwhile city centre (White Town), surroundings and North Kolkata recorded moderate to lower growth in compare to other parts. With spatial expansion and rise of number of wards from 35 to 145, a remarkable variation in population growth was found between the core and the periphery. This may be rather regarded as depopulation of the city core and sprawling of the peripheries. Assessing the decadal growth rate (1991-2001), it is revealed that the eastern part of the city shows very high population growth rate and south eastern, southern, south western, extreme western tip fringe wards nearly all show high growth rates of the study wards, maximum rate of 4.07% was recorded in ward 125 (Thakurpukur area west of Diamond Harbour Road), followed by ward 123 (Purba Barisha) with rate 3.45, ward 127 (Sarsuna) with rate 3.22 and ward 94 (Golf Club area) with rate 3.03%, at the same time parts of South Kolkata like Charu Market (ward 89), Jadavpur (ward 96), Golf Green, Bijoygarh (ward 95) show negative growth rates(-1, -0.15, -0.10). It may be mentioned that these were the areas where initial post-independence expansion and refugee settlements took place and with near saturation and rising congestion growth shifted to parts which were till even the 1980s-90s sparsely populated wetland and greenery dominated areas. Parts of Behala, Thakurpukur, Haridebpur record alone 2% growth rate (ward124-2.91, 122-2.68, 128-2.54, 131-1.81), the growth rate decreasing with increasing distance from periphery. Till present the population of each of these wards of South Kolkata is very meagre as proportion of the city total (below 1%) and relative to North and Central city parts have low density areas. But by studying population density of Kolkata wards, it is known that the older city records extreme high densities especially the erstwhile Native Town and the southern parts due to very low i.e. mostly below 15000 population/sq km at the peripheral wards and inwards a little higher between 15001- 40000 /sq km lure North Calcuttans and migrants to shift residences here. Population densities are above 30000 but below 40000 in Charu Market area (maximum of 38259/sq.km), followed by south Tollygunge (36109), ward 119 of Behala near Taratola (32350) and in ward 120 i.e. in the vicinity of James Long Sarani behind Vivekanando College (31286). All other wards of South Kolkata have very less population densities, specially Thakurpukur, Sarsuna and Barisha areas. Nevertheless the number and rise of households situation is conformal to the local population and growth density scenario.

### 6.3. Education Dimension

The provision of educational facilities paves the way to economic and complete prosperity. The nature of literacy rate also reflects well-being of the people. The number of educational institutions and allied services also indicate government and private awareness and cooperation in enhancing educational facilities.

The largest share of literate population in South Kolkata is in ward 96 or Jadavpur area (89.6%), followed by ward 98 or Netaji Nagar-Naktala area (87.03%), ward 95 or Golf Green-Bijoygarh area (86.10%), wards 99 i.e part of Baghajatin, 100 i.e Ganguly Bagan and 126 i.e part of Paschim Barisha ( 86.04%). Of the study wards, minimum literates of 70.60% have been recorded in ward 117 and 73.05% at ward 116 i.e towards south of Tollygunge Circular Road and Siriti Ghat area and surroundings. The same picture is revealed in case of female literacy, although it may be said that in nearly all wards of Kolkata female literacy figures are not much impressive and below 50% and Kolkata's female literacy is 6.8% lesser than that of males .

In case of educational infrastructure, the number of government and private schools, colleges, technical institutes, libraries have been taken into consideration. The number of schools is maximum in ward 127 i.e Sarsuna area (14) followed by 7 in ward 122 Haridebpur area, 6 in ward 126 of Paschim Barisha and ward 98 of Netaji Nagar-Naktala and 5 each in 93, 94, 95 i.e Jadavpur-Golf Green-Bijoygarh-Golf Club areas. The number of colleges is not much higher in most places as most wards have none and it is not also quite natural to have plurality of colleges and universities in each ward of a city. But it may be said that in this case, distance from centroid of wards to educational institutions have been relevantly considered. The presence of schools and colleges in close affinity is advantageous, but at the sametime urbanites are mobile enough to opt for better quality education and travel rather to a farther institute or qualifying criteria also prevents availing educational services from an at hand institution.

Nevertheless in this dimension, the best score is for Sarsuna area (ward 127) followed very closely by Jadavpur area (ward 96) whereas worst state is in Siriti area (ward 116) ,followed by Tollygunge south, areas mostly having factories, warehouses, commercial and residential neighbourhoods. The situation is also poor in area behind Charu market i.e ward 89 which is also mostly market area surrounded by purely residential landuse.

#### *6.4. Health and Medical Infrastructure Dimension*

The health of people in highly anthropogenically metamorphosed urban environments is a significant indicator of livability, QoL and well-being of urbanites. Kolkata has been found to score highest among all cities in prevalence of infant mortality rate (74.5 per thousand live births) but the lowest total fertility rate of 1.35 children per woman. The number of dispensaries, nursing homes, hospitals, medicine shops, diagnostic centres, doctors and accessibility to healthcare options are the considered indicators of livability.

In this case the best score is secured by ward 124 i.e. the Thakurpukur area around the Thakurpukur Cancer Hospital area followed by ward 99 i.e. Netaji Nagar- Bagha Jatin area. Condition is average in nearly all parts, the scores getting affected by the absence of hospitals and nursing homes in most wards, but here also the proximity factor predominates. The situation is somewhat grave in ward 89 i.e. Charu Market area where the medical services are least present within limits.

#### *6.5. Housing Options Dimension*

The total number of houses, house density, rentals, sq.foot cost of residential property, land cost, etc are measured indicators in appraisal of this option. It is well recognized that the city centre is getting depopulated showing a trend of gentrification. The escalation of utility services, and lesser crowding increased initial livability of South Kolkata in 1980s and 1990s and first the neighbourhoods of Jadavpur and then Tollygunge fast urbanized. The growth rate of housing in these parts have presently in the last two decades led to increased attraction of Haridebpur, Behala and Thakurpukur areas. The expansion of house density, changes in house types from single family single floor to maximum three floor houses to apartment buildings and high class complexes. A relatively contemporary phenomenon of development of 'sub-cities' coexisting is highly popularized in these parts, exemplified by the emergence of South City Mall and Housing Complex as a combination of an economic, cultural, housing, schooling, medical services in ward 93 in Jadavpur area on the Prince Anwar Shah Road, near the Tipu Sultan's Masjid and on the plot of the 'sick' or unprofitable and made defunct Usha factory and large water bodies or lakes filled up with rubbish. Many other such colossal, overwhelmingly housing estates with commercial spaces like Diamond City complexes, one each in Karunamoyee-Tollygunge area of ward 115, Sarsuna area in wards 127 and 128 and many others underline economic shifts from a rambling industrial condition to an arguably post-industrial condition as most of these have been on sick factory areas, marshy lands and waterbodies. With the rise in this flavour of housing, there has been an increase in Corporation valuation of taxation, land price and residential square foot unit area cost in the vicinity of Jadavpur near Prince Anwar Shah Road (annual property tax evaluation category C), and areas along S.C Mullick Road in Jadavpur's ward 95, 96, 99, along N.S.C Bose Road due to nearness to Metro Railway Station of Tollygunge and along and near Diamond Harbour Road in Behala area (tax evaluation category D). With increasing distance from main roads the land price, flat cost and rentals decrease and the areas fall in tax categories E and F. Hence the focus of growth of South Kolkata has shifted in recent past to Behala region from Jadavpur vicinities where already congestion is a problem.

#### *6.6. Economic Environment Dimension*

The working proportion of population, female work participation, level of income all determine level of income and purchasing power and hence the standard of living and well-being. The livability of an area is also adjudged by the prevalence of poverty, i.e. persons holding BPL cards. The number of markets, shops, shopping malls, banks and ATMs are also determinants. The percentage of population owning low price consumer durables and high price products like cars are yet other indicators.

Assessment of these have revealed three features: 1) There are pockets of residential neighbourhoods of elite high income group families ,for eg. in wards 95, 94 around Golf Club and Golf Green, in 93 in and around South City and also in parts of Behala wards and also around Netaji Nagar in Regent Estate and Regent Park areas. 2) There are neighbourhoods of combination of lower and upper middle classes and higher class in most parts of all wards. 3) There are also pockets of very low class shanty neighbourhoods showing contrasting economic standards. In this dimension the best score has been secured by ward 100 i.e. west Naktola area that has experienced unprecedented economic development in the last two decades, followed by ward 96 of Jadavpur and ward 130 of Behala around Vidyasagar Hospital. But there are areas like in ward 117, 122 and 123 where economic environment is yet to flourish.

### 6.7. Communication System Dimension

The livability of urban space is also significantly measured by indicators like media reach, press reach, cinema and internet reach along with road network features, presence of footpaths, public transport features like number of registered vehicle modes, bus and other mode stands etc.

Areas of ward 94 i.e. around the Golf Club area and ward 131 i.e. Behala parts near Taratola score the best in this dimension, closely followed by surprisingly ward 124 which covers the extreme peripheral area of Thakurpukur and naturally wards 96, 95, 97, 98 covering Jadavpur area. All these wards have very well connectivity with other city parts and also excellent intra-ward services. It may be mentioned in this case that ward 96 though very well connected is extremely troubled by the problems of road congestion. Road condition is well maintained and communication related facilities are available at ease. On the other hand, there are wards like 99, 117, 121, 126, 127, 128, 130 covering parts of Baghajatin, south Tollygunge, Paschim Barisha, Sarsuna, around Biren Roy Road, interior Behala areas, the scores are not at all satisfactory, much due to poor road conditions like presence of potholes, narrow roads, least space available for footpath construction, traffic congestion and less supply of vehicles than demanded especially at office hours and odd hours of the day along with an increase in para transit mode fares.

### 6.8. Other Supporting Infrastructure, Cultural and Natural Environmental Dimension

Certain other amenities are imperative to comfortable living conditions like access and regular supply of electricity, drinking water and its quality, presence of parks, gardens, playfields, public spaces, community halls and clubs. Other indicators like drainage condition, intensity and frequency of waterlogging spots, air and noise pollution parameters are also factors affecting livability of an area. In Kolkata socio-culturally upgraded localities are on the eastern side near the peripheral new town areas and also in areas of affluence in south Kolkata. This shows the clear reflection of contrasts in cultures of North tradition bound city parts and the relatively more modern latter settled South. In case of pollution, the old areas, business district, traditionally factory-rich pockets of east and newly added western wards have high industrial pollution.

Although Behala region is handicapped with intense waterlogging and impaired drainage system, specially in certain areas of Barisha, Sakher Bazar, Shilpara, Majhipara, Dhalapara localities, these areas have very good cultural infrastructure and more green space than the more converted urbanised space of Jadavpur and parts of Tollygunge areas. Pollution is more in the proper Jadavpur area, Tollygunge metro station area followed by Behala Chowrasta and near Taratola crossings whereas ward interiors have much less SPM, RPM, SO<sup>2</sup>, NO<sup>2</sup> concentrations. The wards 120, 131, 119, 121 all of which are Behala parts score better although scoring poor in the elements related to waterlogging and drainage. Wards 116 i.e. the Siriti area and ward 89 i.e. Charu Market area score very poor in this dimension.

### 6.9. Safety Dimension

Livability escalates when inhabitants are safe and this is measured by using crime data, police patrolling or surveillance sites and certain other indirect measures like presence of relatively dark roads, roads without shops, accident prone spots etc. According to NCRB reports, in 2011, Kolkata with crime rate 71% and Madurai with 206.2% were the only two cities which reported less rates than their domain states West Bengal (79%) and Tamil Nadu (227.8%). On the contrary, there's a rising hue and cry regarding a sudden escalation of deviance in the city. Kolkata reported the highest rise of crime in one year, a 13.9% rise from 2009, i.e. from 13615 IPC cases in 2009 to 15510 in 2010, but actual numbers are far less than Delhi's 45994 cases in 2010 from 45247 in 2009 and Mumbai's 33932 in 2010 from 31262 in 2009. It will be vague to regard the city as a criminal's den or a peaceful heaven. The omnipresent truth remains that embedded in the dynamic social system of every developing city is its crime component, influencing and getting influenced by the elements of the socio-economic fabric. In Kolkata, thefts, including motor car theft, 2-wheeler theft, car parts theft, theft by servant, electric wire theft, house theft, etc. dominate. Next in importance is criminal breach of trust and cheating cases. These form about 15% in all divisions, except in Central division, where these form nearly 30%. Pocket picking & snatching proportions are nearly same (about 10%) everywhere. Dacoity, robbery and murders are relatively very less in every year. Crime data from 2000 to 2011 depict that in all years large police station-wise disparity in total crime numbers is clearly noted. Whereas some stations show consistently high numbers, some moderate numbers, some show very less numbers. In most years, maximum number was recorded in Hare Street PS ( 367 in 2000, 384 in 2001, 321 in 2002, 308 in 2003, 314 in 2004, 453 in 2011) and rate is increasing constantly. Other stations with high crime numbers and sudden rises are Shakespeare Sarani, Bowbazar, Bhowanipur, New Market, Muchipara, Burrabazar, Gariahat, Park Street, Jorasanko, Taltala, Lake and Karaya. PSs that show very decreasing numbers, some very surprisingly are Talla, Hastings, Taratola, North Port, West Port, Pragati Maidan, Tiljala, Metiaburz, Rajabagan. Theft cases are highest in nearly all Police Stations from 2000-2011. The new stations of South Kolkata like Thakurpukur, Haridebpur, Purba Jadavpur, Survey Park, Kasba, Garfa, Regent Park, Bansdronei also have high numbers. Pocket picking and snatching cases are moderately high in Kolkata, mostly in market and business areas. In 2011, 3 cases of House Breaking by Day and Night have taken place in Thakurpukur. Robbery and house breaking reigns supreme in certain peripheral parts of South Kolkata, specially in elite residential neighbourhoods with relatively more open spaces and commercial with close proximity to main thoroughfares.

Ward 94 of Jadavpur and the extreme peripheral localities of Thakurpukur, Behala, Sarsuna score poor when parameters like presence of relatively dark and quiet or less busy roads, roads without shops, accident prone spots are taken into consideration. These areas may be considered safe when police patrolling aspect is considered.

## 7. Conclusion

This urbanising southern part of Kolkata is heralded as the more glamorous and popular city area and many believe and establish that the former parts of the city will and is fast losing predominance transforming into an old city centre with derelict buildings and infested with problems. Disparity in development, livability and well-being is clearly revealed by the present study. Whereas some parts of South Kolkata show high levels of infrastructural development and rapidly disappearing greenery, natural space and augmenting congestion, there are others in the extreme periphery that have become the focus of recent upgradation and urbanization. The study establishes that ward 96 i.e. Jadavpur area is the best in terms of livability followed by wards 124 (Thakurpukur), 131 (part of Behala near Taratola), 120 (small area of Behala behind Vivekanando College for Women), 95 (Golf Green-Bijoygarh), 98 (Naktola-NetajiNagar). On the contrary, the worst score is secured by ward 89 (Charu Market area), followed by 123 (Purba Barisha), 116 (Siriti Ghat area), 117 (South Tollygunge area), 128 (northern part of Biren Roy Road West).

Amidst this dynamic cityscape of Kolkata, active and responsive administration should work hand in hand with civil society groups, private players and public to strategize to maintain urbanizing yet livable spaces. Identification of specific problems at the neighbourhood level and tackling them with efficient public administration machinery, increased public investment on public infrastructure, ensuring public safety through regular surveillance system, compulsive environmental conservation measures and increasing recreational cultural facilities is imperative to realize the vision of making lives of denizens more prosperous.

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