

Quality of life experienced by the residents of Nagpur, (Maharashtra, India).

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Abstract— Quality of life has a major influence on where people choose to live and what gives them a sense of pride in their city. City life is appealing because of its diversity. Great cities offer access to a wide range of cultural experiences, job opportunities and things to see and do. An increasing challenge for us all is to sustain and develop the cities we have created, in order to provide people the quality of life they desire. Ensuring that the qualities that make our cities unique are protected and enhanced – now and in the future – is a very important part of this. It is essential that infrastructure and services support the continued population growth that our cities are experiencing. The paper tries to examine the major variables contributing to a good quality of life specific to the people at Nagpur.

Index Terms— Built environment, Life satisfaction, Livability, Quality of life, Resident's perception, Well being.

1 INTRODUCTION-

Assume science makes you immortal, what will you then do for eternity? Such questions help us to put into perspective just what is satisfying about life and what we would rather discard. But it also highlights that we would not wish to just repeat the same things over and over again - production line style. Even what we love becomes boring if we are forced to do nothing else, humans need variety in their lives. We can use a form of ^[1] Kant's categorical imperative to ask "What does what we are doing achieve?" If we all continue doing it for eternity then what benefit is it to us or our world? If the answer is "not a lot" then we may wish to reconsider our options and construct a better lifestyle and this is what we consider here. Before Darwin gave us 'natural selection' many theories of [fitness](#) had been proposed, these mostly derived from [ethics](#) and were variants on the question.

"What is the good life?"

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"Is happiness a quotient of good living?"

Neo-Darwinism answers this only by saying 'survival', a one-dimensional reduction that [trivializes](#) life and cannot distinguish bacteria or virus from human or sequoia tree.

Here we will say that fitness is a multidimensional set of [values](#), unique to each organism, person and context. The higher the complexity of the organism or the more developed the person the more numerous the values or criteria for determining fitness become. This dynamic nature of fitness is very different from the static or fixed criteria previously employed, and reflects the [co evolutionary](#) insights arising from complexity science.

^[2]The Janssen Quality-of-life studies have defined quality of life as subjective well-being. Recognizing the subjectivity of QOL is a key to understanding this construct. QOL reflects the difference, the gap, between the hopes and expectations of a person and their present experience. Human adaptation is such that life expectations are usually adjusted so as to lie within the realm of what the individual perceives to be possible. This enables people who have difficult life circumstances to maintain a reasonable QOL.

^[3] Franklyn VE., in his book 'Man's search for meaning,' 1963 has put forth that; Quality of Life is tied to perception of 'meaning'. The quest for meaning is central to the human condition, and we are brought in touch with a sense of meaning when we reflect on that which we have created, loved, believed in or left as a legacy.

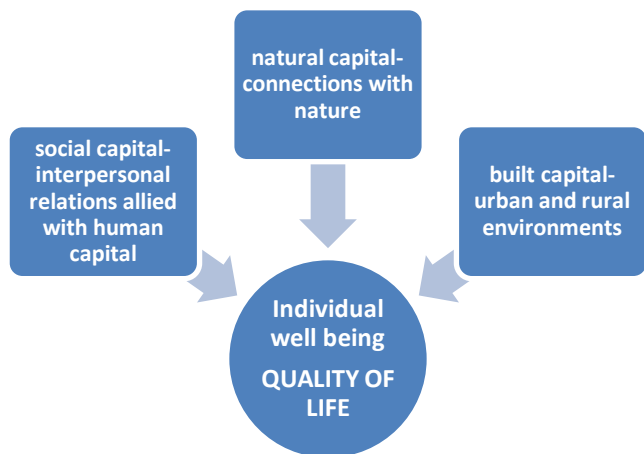


Figure 1- 3 Capitals surrounding an individual

Almost every one of us is surrounded by different sorts of capital like social, natural and built capital. Given all these wellsprings of capitals whence comes our quality of life. As ably summarized by [4] Mulder et al [2006], macro level research into well being has relied on certain models in psychology and economics. In psychology, set point theory holds that as established by genetics and personality, each individual has a fixed level of happiness, around which she or he fluctuate according to the eventualities of life.

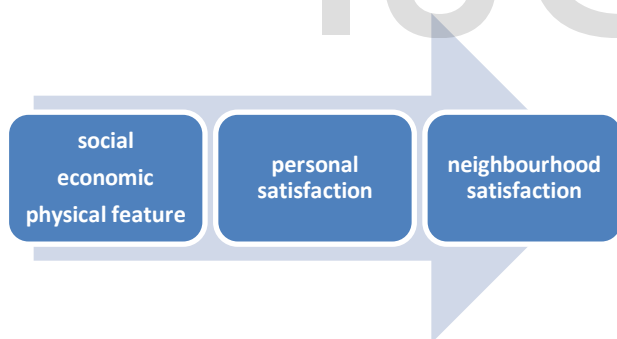


Figure 2 Factors leading to neighborhood satisfaction

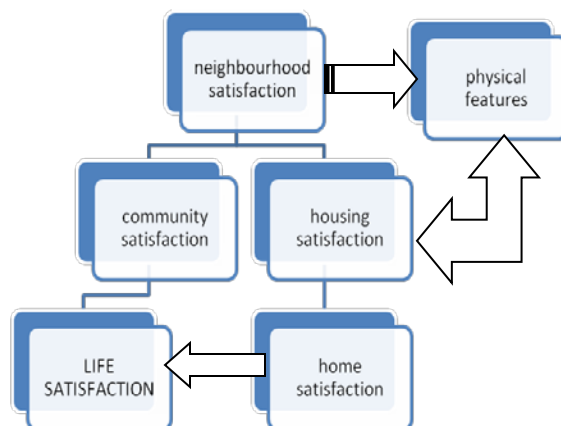


Figure 3 Factors which finally affect life satisfaction

2 MODELS OF QUALITY OF LIFE -

Looking at the quality of life in terms of satisfaction outcomes, [5] Sirgy and Cornwell [2002] tested three models each of which sees life satisfaction proceedings from interaction among different components in the following way –

2.1 Foundational models

1] Daly's means ends spectrum- a useful orientation can be had in a model devised by the environmental economist [6] Herman Daly [1977] who arranges the disciplines in a linear sequence. By this reckoning, we have ultimate means in matter and energy that are converted into intermediate means, usable resources through change from a lower level to a higher entropy state as per the second law of thermodynamics.

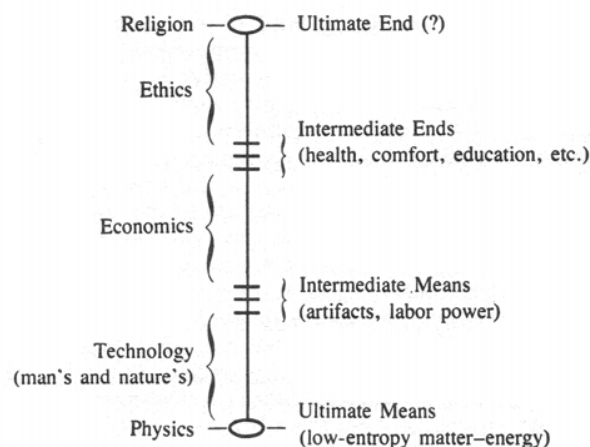


Figure 4 Daly's means ends spectrum

2] **Maslow's hierarchy of needs**- Daly's comprehensive means ends spectrum can be interpreted in the model of human motivation created by the psychologist Abraham Maslow in 1954 [7]. His hierarchy of needs starts with the ultimate means of survival- the physiological necessities of food, shelter and so on. It progresses to needs for safety, involving the self and its property, which also contribute to survival. Further up the hierarchy, we move from the tangible realm of economic artifacts to intangible or non-pecuniary needs.

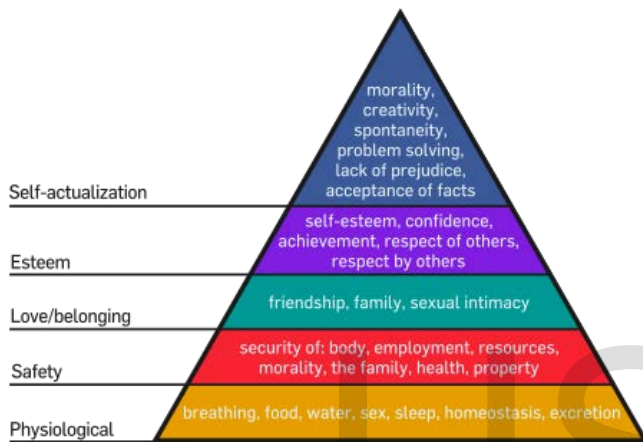


Figure 5 Maslow's hierarchy of needs

3] **Self determination theory**- The two American psychologists via a self determination theory of human motivation concur that people have basic physical demands such as those for food, shelter and security [Desi and Ryan, 2000: Ryan and Desi, 2000a, b][8]-without basic satisfaction life would not go on. Assuming that these physical requirements are met, conceptualization can concentrate on psychological issues leading to mental health and on a higher plane, well being. Hence, human behavior and experience are seen in terms of the meaning of events to people in their attempts to satisfy three basic psychological needs, those for competence, autonomy and relatedness.

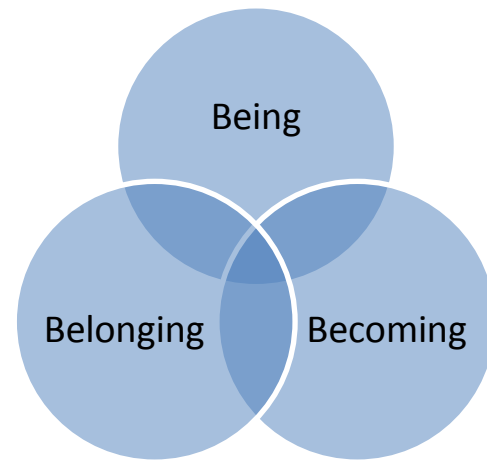


Figure 6 -The 3 domains of life

The definition of quality of life is: The degree to which a person enjoys the important possibilities of his/her life. Possibilities result from the opportunities and limitations each person has in his/her life and reflect the interaction of personal and environmental factors. Enjoyment has two components: the experience of satisfaction and the possession or achievement of some characteristic, as illustrated by the expression: "She enjoys good health." Three major life domains are identified: Being, Belonging, and Becoming. In a way the conceptualization of Being, Belonging, and Becoming can be considered as the domains of quality of life as put forth by the Quality of Life Research Unit, University of Toronto

The **Being** domain includes the basic aspects of "who one is" and has three sub-domains. Physical being includes aspects of physical health, personal hygiene, nutrition, exercise, grooming, clothing, and physical appearance. Psychological being includes the person's psychological health and adjustment, cognitions, feelings, and evaluations concerning the self, and self-control. Spiritual being reflects personal values, personal standards of conduct, and spiritual beliefs which may or may not be associated with organized religions.

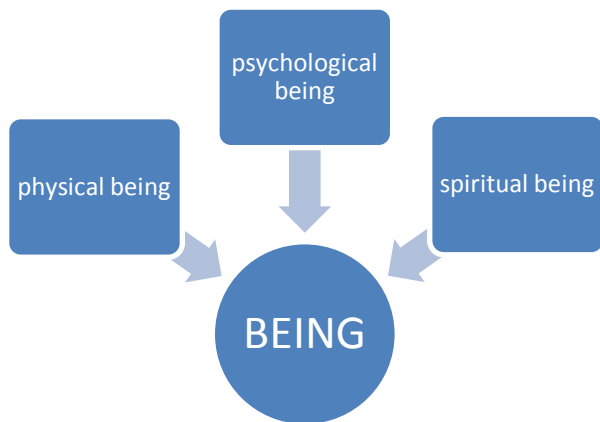


Figure 7 Three different aspects of being

Belonging includes the person's fit with his/her environments and also has three sub-domains. Physical Belonging is defined as the connections the person has with his/her physical environments such as home, workplace, neighborhood, school and community. Social Belonging includes links with social environments and includes the sense of acceptance by intimate others, family, friends, co-workers, and neighborhood and community. Community belonging represents access to resources normally available to community members, such as adequate income, health and social services, employment, educational and recreational programs, and community activities.

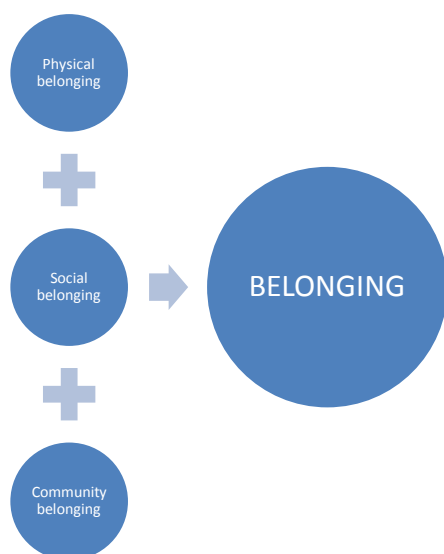


Figure 8 Three aspects of belonging

Becoming refers to the purposeful activities carried out to achieve personal goals, hopes, and wishes. Practical Becoming describes day-to-day actions such as domestic activities, paid work, school or volunteer activities, and seeing to health or social needs. Leisure Becoming includes activities that promote relaxation and stress reduction. These include card games, neighborhood walks, and family visits, or longer duration activities such as vacations or holidays. Growth Becoming activities promote the improvement or maintenance of knowledge and skills.

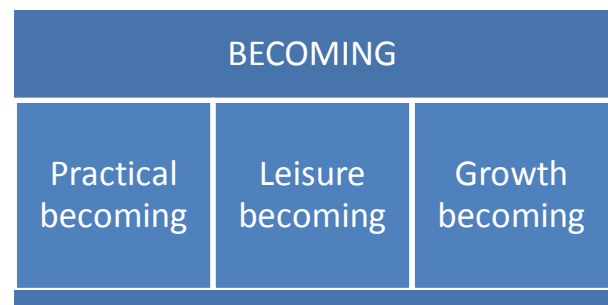


Figure 9 Aspects of becoming

In one of the studies done on the quality of life by ^[9]Wadley David, (2010), "Exploring a quality of life, self determined", Architectural Science Review 53,12-20 ^[1] has questioned the pragmatic top down models, scripts, plans, conceived by the bureaucrats, politicians of how people may or should live, which sits oddly with the individualism behind the neoliberal wave. He tackles these problems in a series of steps. First as background some conventional research into the percepts of quality of life is recounted. Thereafter the foundational models are explored to assist his logical positioning in a move from the governmental line to one that admits an individual approach. While exploring the self determination theory he found that the quality of life is in part, what you make it and that it does not rely on material wealth alone. The flipside is the argument put forward in the article that rather than assuring anyone a living, the global society at least owes its members the hope that collective action will improve rather than worsen current contexts.

In yet another study on the quality of life, in the Indian context, ^[10] Pandey.R.U., and Garg.Y.K., (2012), "Understanding Quality of Life through Livability in an Indian city", Journal of the Institute of Town Planning, India, 54-64, undertook the qualitative research approach

based on phenomenography method to allow inhabitants to freely express their understanding and perception about the quality of life. The survey was done in an interview format and they found that in the Indian context the resident's perception of livability for an enhanced quality of life are ease of mobility, well maintained infrastructure and public amenities, clean environment, sense of identity, safety and community living amongst residents.

3 METHODOLOGY AND CITY SELECTED –

The quality of life can be assessed by quantitative and qualitative measurements. In the last decades, scientists offered several alternative approaches to defining and measuring quality of life: social indicators such as health and levels of crime, subjective well-being measures (assessing people's evaluative reactions to their lives and societies), and economic indices. It is difficult to make objective or long-term measurements of the quality of life experienced by nations or other groups of people.

Researchers have begun in recent times to distinguish two aspects of personal well-being: *Emotional well-being*, in which respondents are asked about the quality of their everyday emotional experiences—the frequency and intensity of their experiences of, for example, joy, stress, sadness, anger, and affection— and *life evaluation*, in which respondents are asked to think about their life in general and evaluate it against a scale. Such and other systems and scales of measurement have been in use for some time.

[11] Since the age structure in India has 31.1% population in the range of 0-14 years, 63.6% in the range of 15-64 years and 5.3% population over 65 years of age. Hence the age group selected for pilot survey of 46 samples was of people between the age group of 25-55 years who are all working in education institutions as faculty members and belong to some of the good known residential areas of Nagpur like pratap nagar, Friends colony, Ravi nagar etc. The sample survey was done of 46 people in Nagpur. The sample so selected were all literate, employed and above the age of 18

years. Of this sample there were 25 males and 21 females.

NAGPUR ON RADAR OF EXPERTS

2011	McKinsey ⁴ <ul style="list-style-type: none"> Nagpur has been identified as one of the 12 global cities which are representative of the largest 'middleweight' cities to be ranked in the top 20 GDP for its respective country or region. 	Institute of Competitiveness ⁵ <ul style="list-style-type: none"> Nagpur Rank 13 in Overall ranking of 100 cities in terms of their competitiveness in India.
2010	PWC ⁶ <ul style="list-style-type: none"> India Top 100 IT Companies – 3 companies from Nagpur Persistent ranked 5, Micropro ranked 76 & Excellon ranked 88 List based on Revenue for the year 2009 	
Earlier	KPMG ⁷ <ul style="list-style-type: none"> 31 Emerging Global Destinations 3 cities of India, Nagpur among them Nagpur – Educational Hub; Lower crime rate, Pollution & cost of living Nagpur – Lower Attrition Levels 	NASSCOM ⁸ <ul style="list-style-type: none"> Nagpur Identified 'Challenger' to 'Leaders' like 'Bangalore' Mentions Nagpur as - Location with competitive labor, infrastructure and enriching living environment.
	Jones Lang LaSalle ⁹ <ul style="list-style-type: none"> Nagpur among Top 5 Tier III cities. Nagpur and Kolkata - Only tier 3 cities with comparable supply of manpower to Pune. Cost of Manpower 15-20% less than Kolkata and Pune. 	Knight Frank ¹⁰ <ul style="list-style-type: none"> 15 Growth Centers in India assessed Nagpur is #1 - People and Infrastructure. Nagpur #3 – Business Environment Overall rank – #2

⁴ McKinsey Global Institute (MGI) report - Urban world: Mapping the economic power of cities - 2011
⁵ Institute of Competitiveness 2011, <http://competitiveness.in/wp-content/uploads/2012/01/CCR-2011-Business-World.pdf>
⁶ PWC – Global Software Top 100, Dec 2010
⁷ KPMG: Exploring Global Frontiers – New Emerging Destinations, Feb 2009
⁸ NASSCOM: Location Roadmap for IT-BPO Growth in India, 2008
⁹ Jones Lang LaSalle: India -Next IT Off shoring Locations -Tier 3 cities, Q1, 2007
¹⁰ Knight Frank: Emerging Growth Centres, India, Q1 2007

Figure 10 Nagpur on radar of experts.

With the above facts in mind, this paper is an effort to understand the precursors of a good life and explore the meaning and important variables affecting the quality of life. The study on the quality of life is carried out for the city of Nagpur as it is the geographical center of India with the zero mile mark in the time zone of GMT +5:30 hrs. Nagpur has an area of 218 sq.km and a population density of 2,405,421(11,101/ sq.km.), with a literacy rate of 93.13% (male -96.16% and female -89.99%). The city has an extreme weather with 3 seasons – summer, monsoon and winter. Average temperature max-46 deg Celsius and min – 10 deg Celsius and average rainfall of 124.2 cms.

^[12]Nagpur is the fastest growing richest cities in India and is amongst the top 3 green cities in India and has no significant riots, almost zero probability of earthquake, volcano and flood, moderate to severe drought prone classification and an almost lowest and further decreasing criminal rate, 68% reduction in last 5 years. It is the 13th largest city in India and third largest city in the state of Maharashtra after Mumbai and Pune and is the second capital and winter capital of the state of Maharashtra. Nagpur is the largest city in 500 km radius and is a major industrial, commercial and transportation center in central India and is home to one of Asia’s largest industrial estates, Butibori [6000ha]. Almost 47% of Maharashtra state power is generated in and around Nagpur.

Nagpur has emerged as one of the major cities of India and was part of confederation of Indian industry ^[13]CII [2010],“Livability index2010: The best cities in India”. The CII livability index 2010 was based on objective analysis of data collected for top 37 cities of India.

4 RESULTS AND DISCUSSIONS -

The Questionnaire was based on Physical, Psychological, and socio economic and overall well being and enjoyment parameter. The physical being and Psychological Being parameters were chosen to discuss about the quality of life, happiness criteria and health of the citizens. The physical parameter includes a good physical health, energy level and ability to function in daily life, ability to get around physically without feeling dizzy, medications needed to function in daily life.

The Physical Being parameter has shown mixed reaction; about 83% of the residents have reported that there is no presence of physical pain, low energy or headaches that indicate good physical well-being. This is also because the people surveyed were mostly young showing good physical well being.

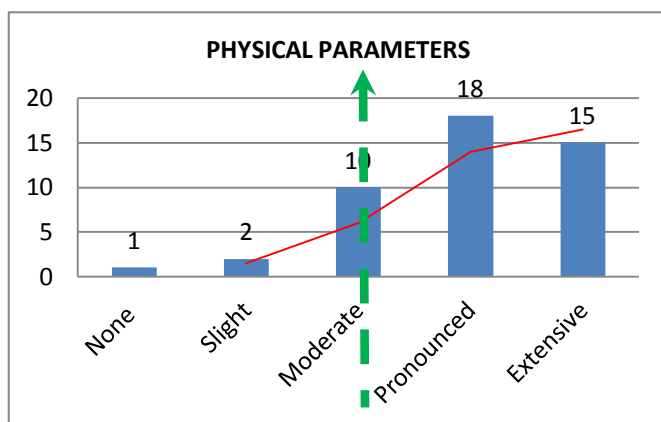


Chart 1

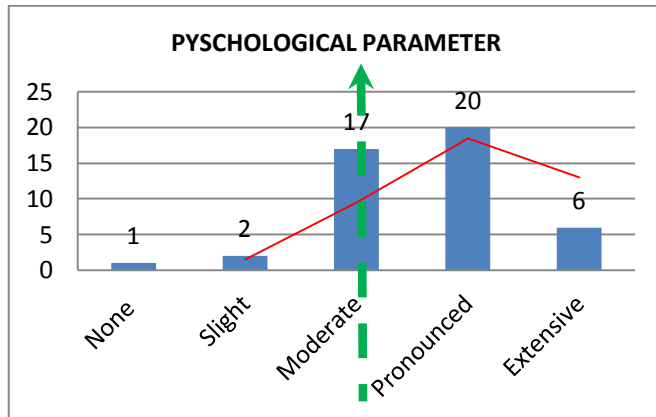
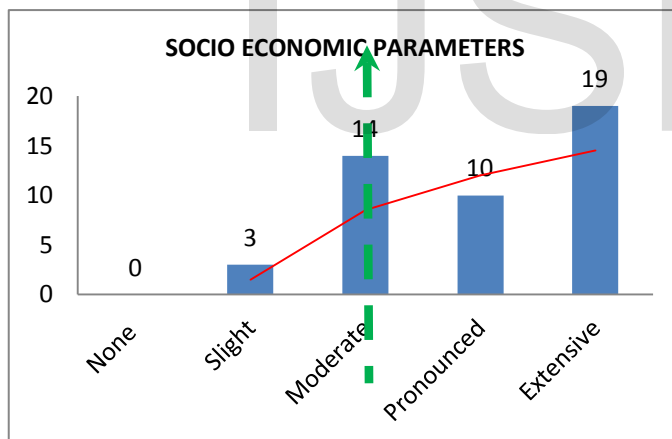


Chart 2

The psychological parameter includes a pleasant mood, opportunity for leisure activities, ability to do things of your interest or hobbies, sex life, drive interest, performance and the overall physical well being and enjoyment. 80% of people have opined that they are relaxed, have positive feelings, maintain a healthy lifestyle and feel connected to others. Whereas 76% feel that they are confident, have a feeling of joy and devote time to things that they enjoy. Residents have given a positive response to psychological and Physical being parameters.



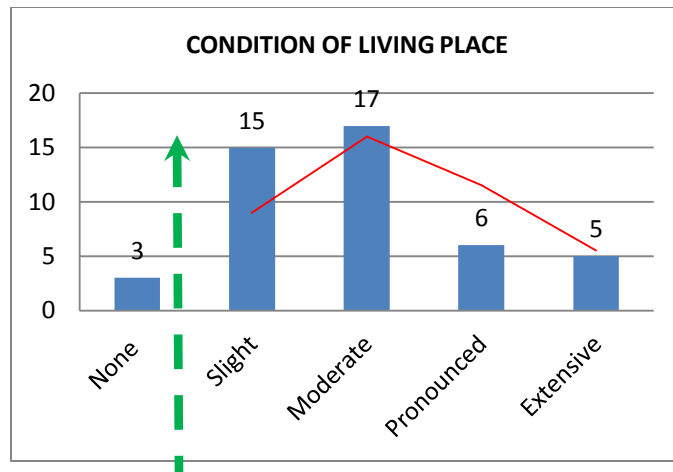


Chart 3

Chart 4

Socio-economic parameter includes your capacity for work, ability to perform household activities, social relationships, family relationships, enough money to meet needs, economic status. 78% of the people are happy with the social life they are enjoying in the city and are fairly good economically as Nagpur's population is mostly service class.

Condition of the living place have covered various aspects as satisfaction with built environment, environmental quality, services and facilities, personal safety, informal interaction, decision making process and place attachment. This forms the major part of the survey which conveys its impact on the quality of life. About 76% of the people surveyed feel that the condition of the living place is moderate and not so good which needs to be improved. This is a matter of concern as this is the state for the so called good residential areas of Nagpur which raises a question as to what would be the condition in the not so good rated areas of the city.

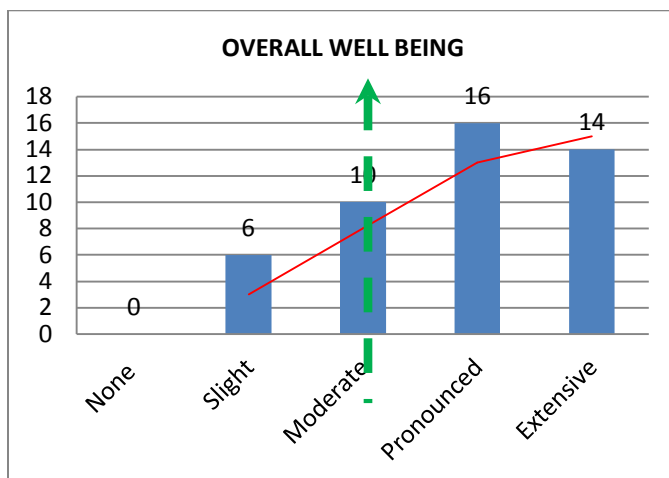


Chart 5

In the overall physical well-being and enjoyment in life parameter, 76% of people have opted for better lifestyle. This clearly indicates that people are leading a satisfactory life. It is surprising to see residents still happy with their life that indicates Indian citizens show adaptability to all situations as in the Indian context,

owning a house for the middle income group households is a high point in their life which comes after years of wait for a dream home in a livable residential area.

The average raw score was found to be 52 with % maximum to be 68%. The chart below gives the average raw score and percent maximum worked out which shows that the quality of life experienced by the men is better than the women and this could be the resultant of the social setup in our Indian society.

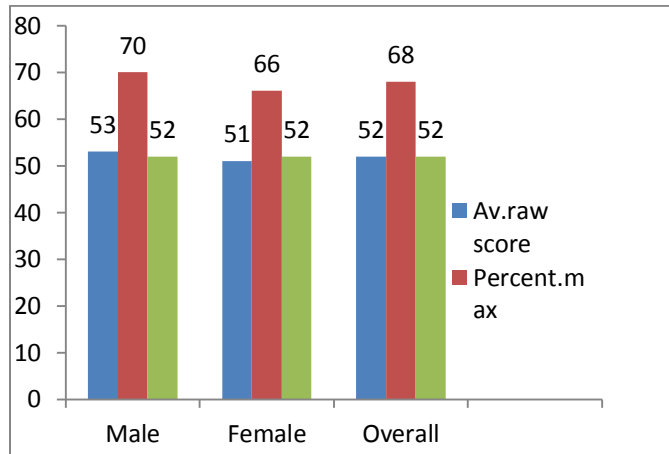


Chart 6 Raw Scores & percent maximum data

The quality of life of unmarried males and females was found to be having a lesser score as compared to married people as the social and family relationships along with the psychological support tends to increase after marriage, making the married enjoy a better sense of well being.

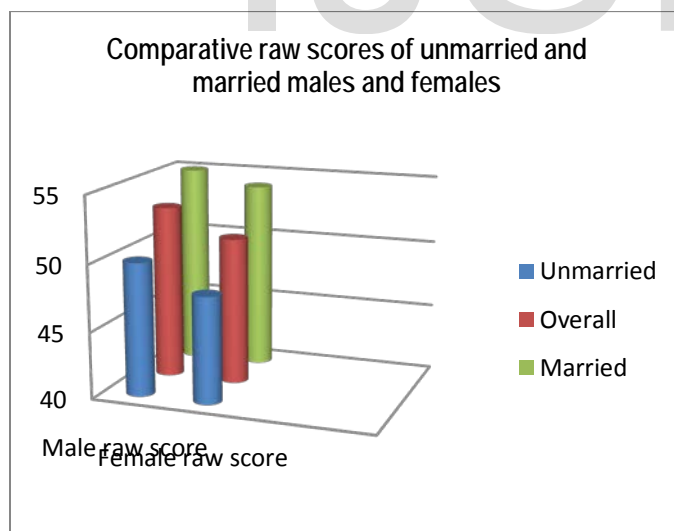


Chart 7 Comparative raw scores of unmarried & married males & females

Out of the fourteen variables so selected for the QOL questionnaire, only three have been considered for a comparative study for males, females and the average score for both. It was found that in today's life the opportunity for leisure is going down more so in case of females as they have to cater to work, house and children too in nuclear setting. The score of the condition of living place, health services and transport etc is

found to be low experienced by both males and females thereby bringing down the scores of the overall sense of well being and the quality of life at Nagpur experienced by the residents of Nagpur.

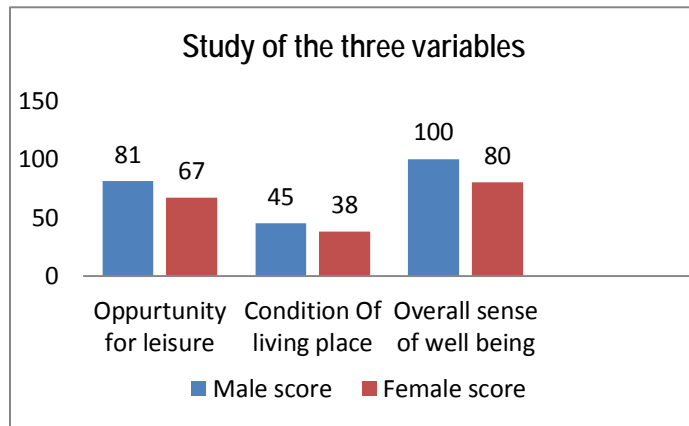


Chart 8 Comparative studies of 3 variables with sores of male, female and average.

In the chart below, the percentages have been allotted to the fourteen variables and it is found that the overall quality of life of people is going down because of the poor score in “condition of living place, health and transport [5.59]” majorly and the other variables as “sex life, drive and interest [5.88]” and “opportunity for leisure activity [6.38]”. It is in the condition of living place that we as architects and planners intervene and bring about some changes to improve the overall score of quality of life of people in Nagpur.

The hypothesis, that the quality of life means a happy life and is a quotient of good living environment is thus proved to be correct.

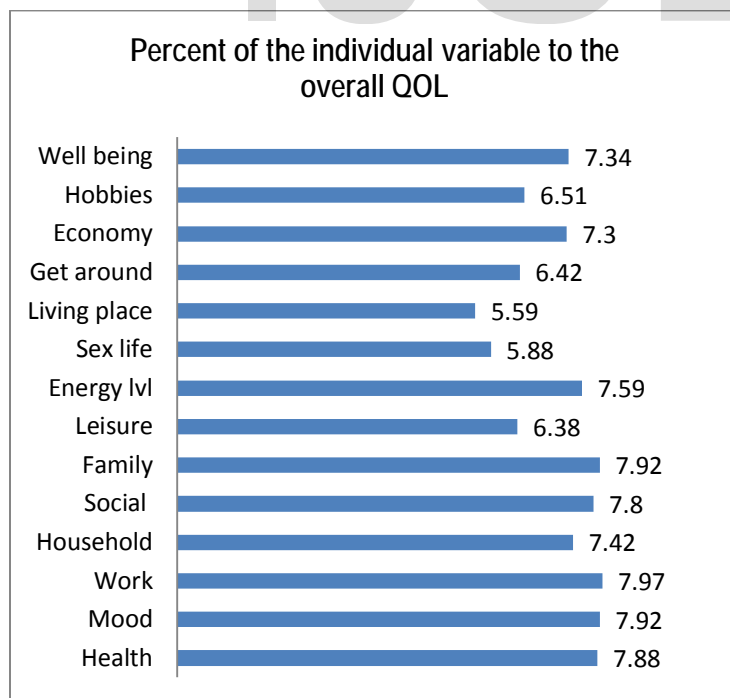


Chart 9 Percent contribution of each variable to overall QOL

5 CONCLUSIONS –

Most residents in the Nagpur enjoy a medium level of quality of life. They are generally satisfied with their lives, enjoy clean air and water and social relationships. However, the key issue like the condition of living place and the built environment that people come across is a major contributor to bringing down the overall quality of life. A better quality of life for all city residents will come about only if we work toward common outcomes in partnership with each other, local government and our communities. Governance with smaller administrative boundaries or zones with strong administrators bridging the gap between people and the city corporations and improvement trusts can also to a certain extent help in betterment of the residential areas. Further research can continue in this direction to know the true picture and exact details of this variable for the people of Nagpur.

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