

Urban Sustainability, Resilience, and Liveability in Two Metropolitan Cities of Pakistan (Survey of Karachi and Lahore)

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ABSTRACT:- The problem of cities is very complex in the 21st century and needs to be addressed in the long term strategy with dynamic solutions. The following major problems of the urban centres direly need robust research work on the subject. The growing urban population of Pakistan in two major cities increased population density creates health, hygiene, illiteracy and unemployment in the urban centres at large. The imbalance of resource capabilities and weak local governance system with insufficient stakeholder participation in the institutional reforms and inadequate water resource management creates several issues in urban centres. Poor waste disposal, pollution, and human activities lead to ecosystem degradation unsafe buildings and decaying infrastructure. It was during the last 40 years, between 1950 and 1990; the urban population of the world increased ten-fold, from 200 million to more than 2 billion. Because of the above robust studies on the urban sustainability to face challenges created in urban centers are focused on Karachi and Lahore as part of my post-doc studies and 234 samples were collected in the study. The study employs a cross-sectional field survey method to assess urban sustainability, resilience and liveability in cities and smart city design. In the cross-sectional field survey method, relevant data is collected at one point in time by gathering information through a piloted questionnaire. The research combines both qualitative and quantitative methods since these two methods simultaneously help tackle the research problem under study. The findings are very useful for future planning on urban sustainability, resilience and livability in the best public interest and suggest that new growth centres should be used to reduce the burden on urban centres' complex issues as an alternative strategic approach in the best public interest.

KEYWORDS: Sustainability, Resilience, Liveability and Smart Cities

Note: This paper is part of My Post-doctoral studies supported by the European Scientific Institute and focused on 10 cities but the focus of the paper is on only two cities of Pakistan surveyed by the Author as his assignments during the study.

I. PROBLEM STATEMENT:

The problem of cities cannot be solved simply, because cities are problems in 'organized complexity.' Cities 'do not exhibit one problem,' but rather, can be analyzed into many such problems or segments which, are also related to one another "Cities have the capability of providing something for everybody, only because, and only when they are created by everybody" (Jane Jacobs,1961)The following are major problems of the urban centres in the world, which direly need robust research work on the above-mentioned title of the study. Growing urban population with increased population density creates health, hygiene, illiteracy and unemployment in the urban centres at large. The imbalance of resources capabilities and weak local governance system with insufficient stakeholder participation in the institutional reforms and inadequate water resource management creates several issues in the urban landscape. Poor waste disposal, pollution, and human activities lead to ecosystem degradation unsafe buildings and decaying infrastructure. The uncoordinated emergency services, Poor response of public sector organizations poor public delivery of social services fragile system of community development and adverse effects of climate change on the society and economy are the challenges of the 21st century. (UNISDR, 2012)Scholars and historian supports the notion that urbanization is a phenomenon with a 200-year-old history. In 1800, only 7.31% of the global population lived in cities. During the early 1900s, 16.39% of the world's population lived in cities. During the 2000s, 46.67% (about 2.87 billion people) lived in the cities. It is estimated that by 2050, 67.22% of the population will live in the cities details are shown in table 01 below. It was during the last 40 years, between 1950 and 1990; the urban population of the world increased ten-fold, from 200 million to more than 2 billion (Rogers, 1997). The data mentioned below insists we conduct robust studies on urban sustainability to face challenges created in urban centres with appropriate plans and programs, and these should be based on comprehensive but empirical primary research on the subject matter.

TABLE-01

Year	Urban population (Million)	% to Total	Growth over last Century	Rural population (Million)	% to Total	Growth over last Century	Total population (Million)	Growth over last century
1500	18.92	4.10%	-	442.45	95.89%	-	461.37	-
1600	28.81	5.20%	52.27%	525.96	94.94%	18.87%	553.96	20.06%
1700	30.76	5.09%	6.76%	572.41	94.90%	8.83%	603.17	8.88%
1800	72.26	7.29%	134.91%	917.56	92.69%	60.29%	989.82	64.10%
1900	270.60	16.39%	274.48%	1380.00	83.60%	50.39%	1650.60	66.75%
2000	2870.00	46.67%	960.60%	3280.00	53.33%	137.68%	6150.00	272.59%
2050 (expected)	6460.00	67.22%	125.08%	3150.00	32.78%	(3.96%)	9610.00	56.26%

People living in urban and rural areas across the world (Source: UN World Urbanization Prospects 2018)

II. OBJECTIVES:

To understand and identify current issues related to urban sustainability, resilience and liveability among two cities.

To analyze and compare urban sustainability and resilience regarding liveability in the cities of Lahore and Karachi cities.

To prepare a plan and recommend solutions to the problems faced by citizens of two major cities and to introduce the concept of smart cities for today’s needs and also for tomorrow’s people in greater welfare of the humans.

III. RESEARCH QUESTIONS:

What are the current issues related to urban sustainability, resilience and liveability in urban cities as a case study of two cities in Pakistan?

How different are sustainability and resilience connected to liveability between urban cities of Pakistan?

What action plans and recommendations can help to solve the issues faced by citizens of 02 focused cities?

IV. SCOPE OF THE STUDY:

The scope of the study is to identify if there are any significant differences regarding the perception of urban sustainability, resilience and liveability towards inhabitants from Europe, Africa and Asia as post-doctoral studies supported by Eurpen Scientific Studies. For this purpose, a survey was conducted into countries: Ethiopia, Egypt, Pakistan, Romania and Albania but this paper only focused on two cities in Pakistan Lahore and Karachi as an author as an assignment. Sustainability is “meeting our own needs without compromising the ability of future generations to meet their own needs” (WCED 1987). Sustainability is a measure of social well-being, economic opportunity and environmental quality Resilience is the ability of the cities to quickly return to a normal state after a disaster Resilience is measured in terms of infrastructure, institutional, economic and social resilience. Liveability describes the frame conditions of a decent life for all inhabitants of cities, regions and communities including their physical and mental well-being Smart city conceptual framework reflects the following three indicators, social well-being, and environment-friendly and economically viable. The infrastructural, resilience, social-economic economic and institutional resilience will be important aspects of the study. Source: (Lynch et al., 2011)

V. THE SYSTEM THINKING APPROACH LIMITATIONS:

The Seven Samurai of Systems Engineering: Concept conceived by James N Martin to deal with the complexities of seven interrelated systems (Martin, 2004). The context system, intervention system, realization system, deployed system, collaborating system, sustainment system, and competing system. All seven systems must be utilized in developing a solution to a complex problem. The current research shall identify complex

issues, explain complexities and address solutions to the increasing urban issues using the principle of seven samurai through comprehensive questionnaires on specific areas of interest.

VI. RESEARCH DESIGN:

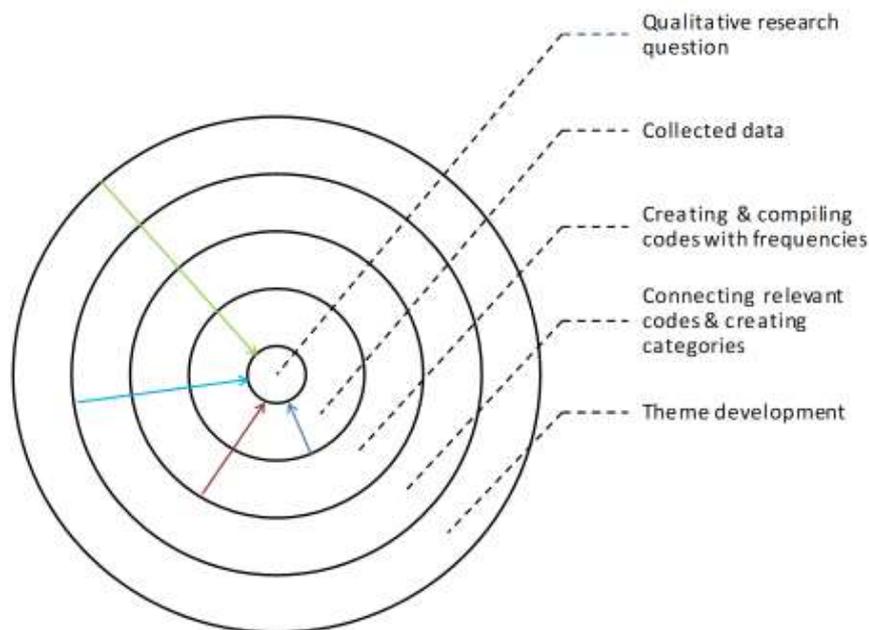
The study employs a cross-sectional field survey method to assess urban sustainability, resilience and liveability in cities and smart city design. In the cross-sectional field survey method, relevant data is collected at one point in time by gathering information through a piloted questionnaire. The research combines both qualitative and quantitative methods since these two methods simultaneously help tackle the research problem under study. A mixed method research is vital to offset the limitations inherent in one method with the strength of another method (Creswell, 2003). Exploratory research (when the problem is not clearly defined) – qualitative followed by quantitative The data collected for the study is through both primary and secondary sources. Primary data: respondents living in two cities. Secondary data: an extensive review of published and unpublished literature, documents and academic journals. Sampling techniques and sample size

Qualitative study: Practice-oriented research – Convenience sampling Samples – Urban planners, architects, civil engineers, firms & civil defence, municipal authorities, utility service providers, etc.

Quantitative study: Simple random sampling Sample size – 200 of both cities but we have taken 234 samples of two cities of the country

VII. METHOD OF DATA COLLECTION:

Qualitative study: In-depth interviews observation Recording information expert judgement Semi-structured questionnaire Quantitative study: A structured questionnaire on sustainability, resilience & Liveability and in smart cities is designed in Figure 01.



Theme development in qualitative research (Source: Damodar, 2021)

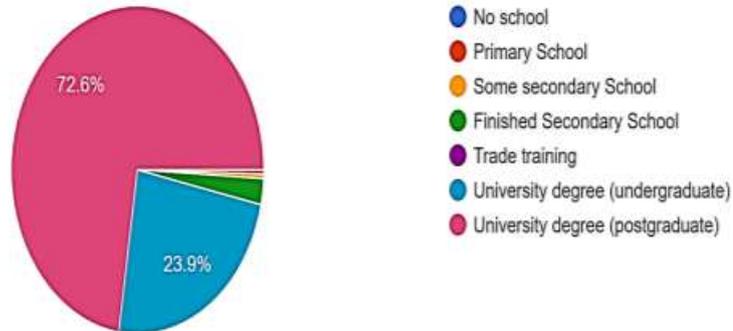
VIII. FINDINGS OF THE SURVEY:

The following data has been gathered from two cities of Pakistan i.e., Karachi and Lahore The current Survey questionnaire was responded to by 234 respondents. The survey comprises 05 questions on sustainability 05 questions on liveability and 05 questions on resilience, the total number of questions is 15 their important finding is given below and the volume of the problems in the cities and these answers on the subject matter. The figures given below are self-explanatory.

SOCIO-DEMOGRAPHIC CHARACTERISTICS

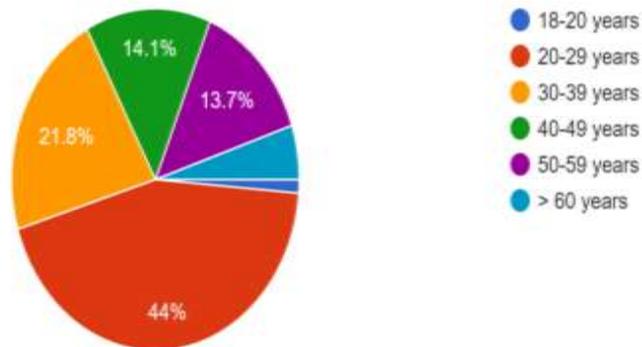
1. What is the highest level of formal or school education that you have completed?

234 responses



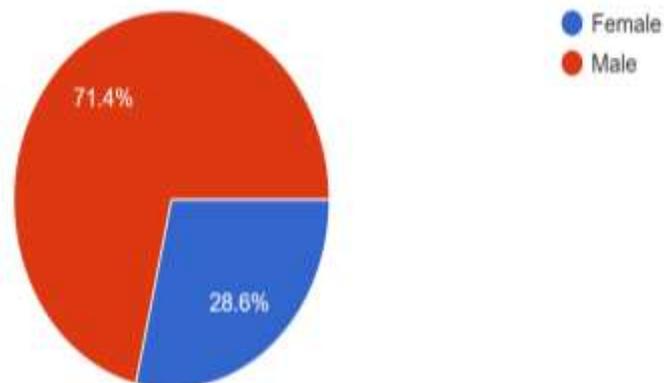
2. What is your age?

234 responses



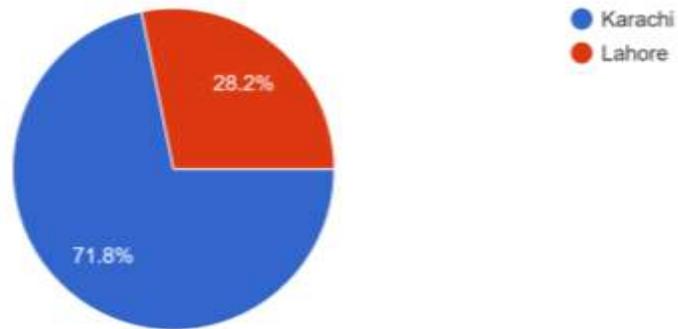
3. What is your gender?

234 responses



4. Which is the city where you are living?

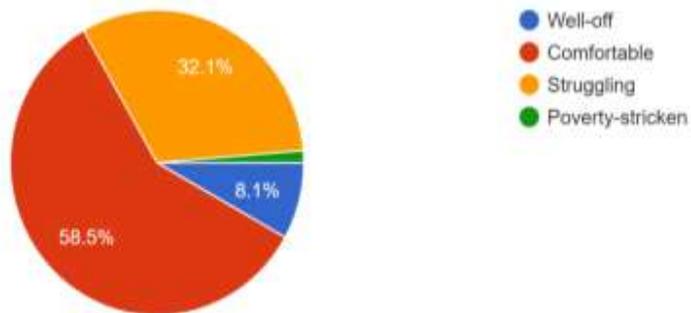
234 responses



HOUSEHOLD INFORMATION

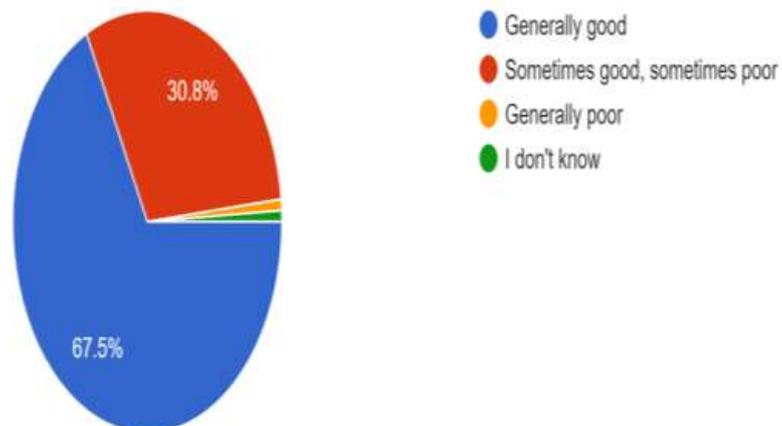
5. Financially speaking how would you describe your household?

234 responses



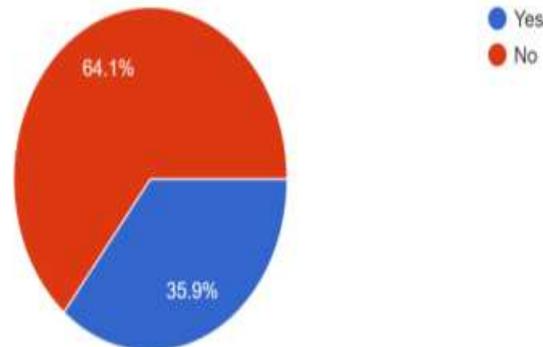
6. Compared to other people of the same age, how would you describe your health?

234 responses



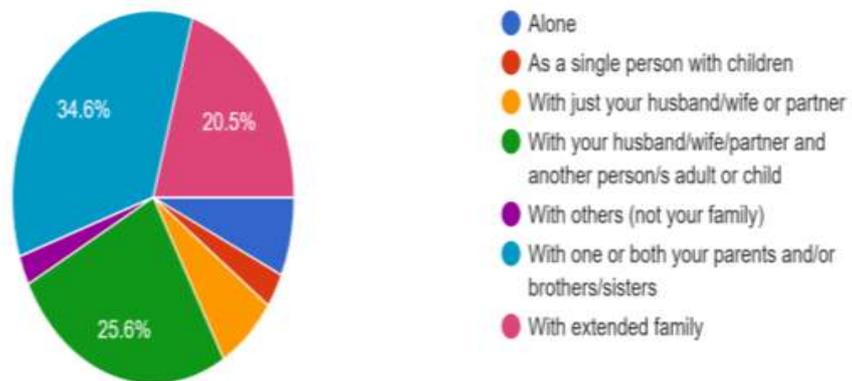
7. Have there been times in the past 12 months you did not enough money for the health care that you or your family needed?

234 responses

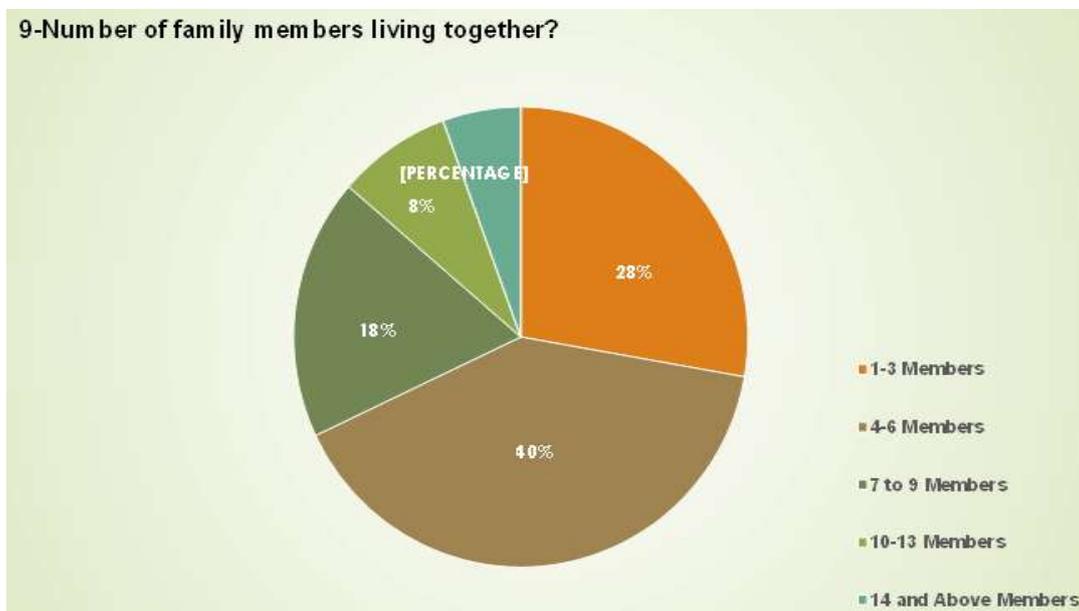


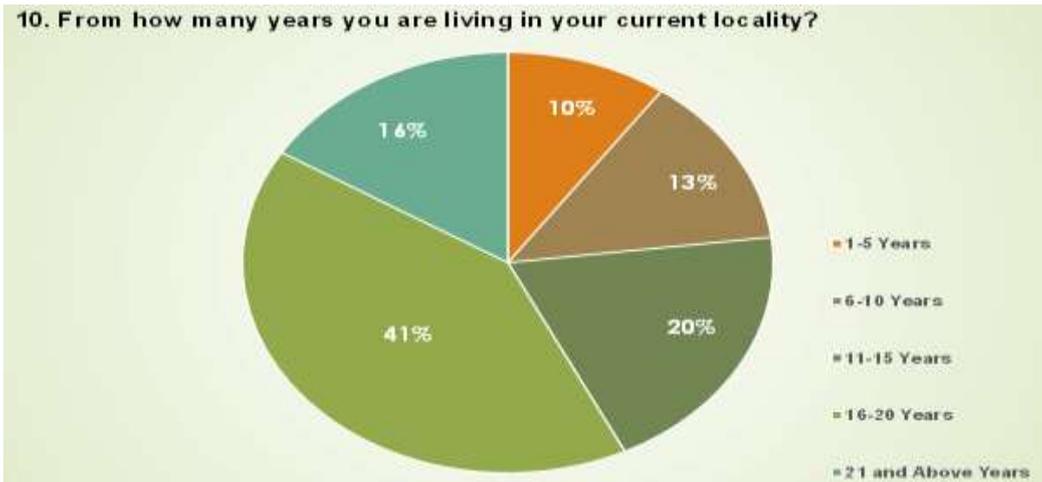
8. With whom do you live? (chosed the best way of describing the situation)

234 responses

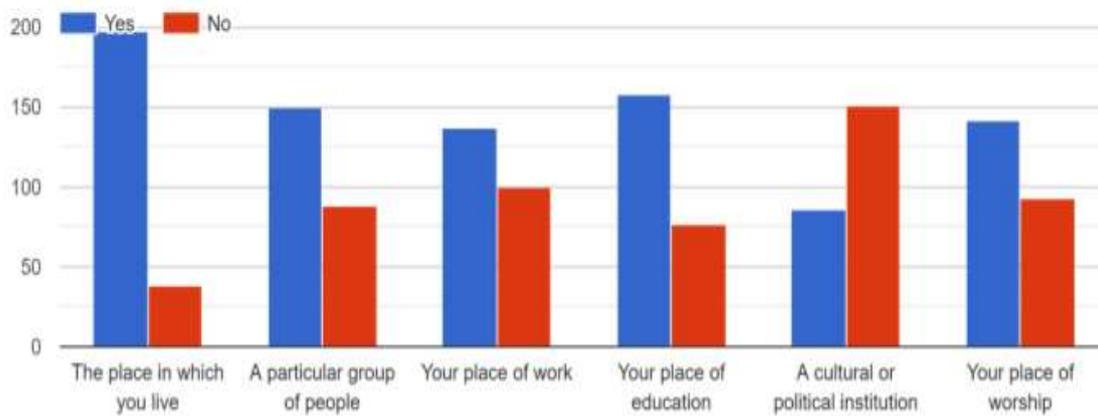


9-Number of family members living together?



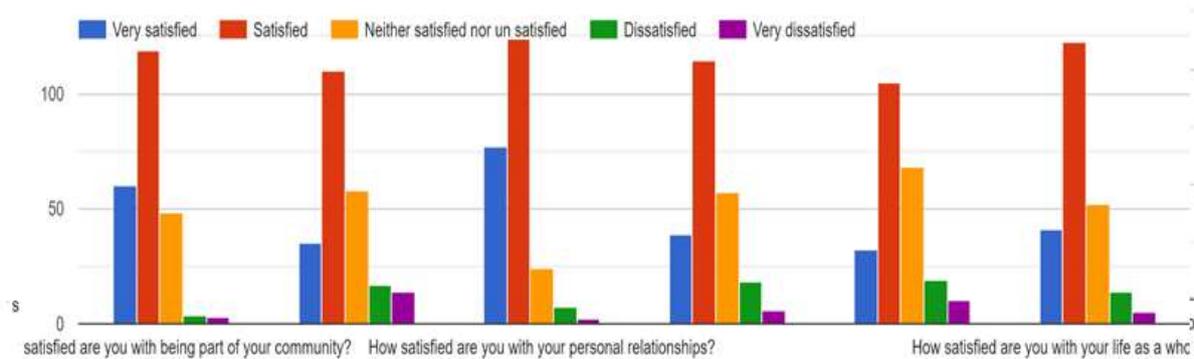


11. What or whom do you identify as your main community?

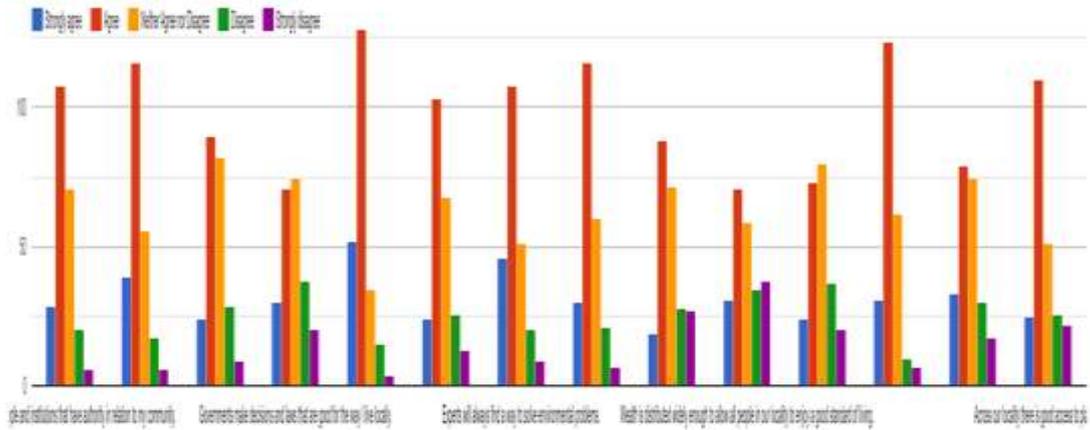


Perception of live

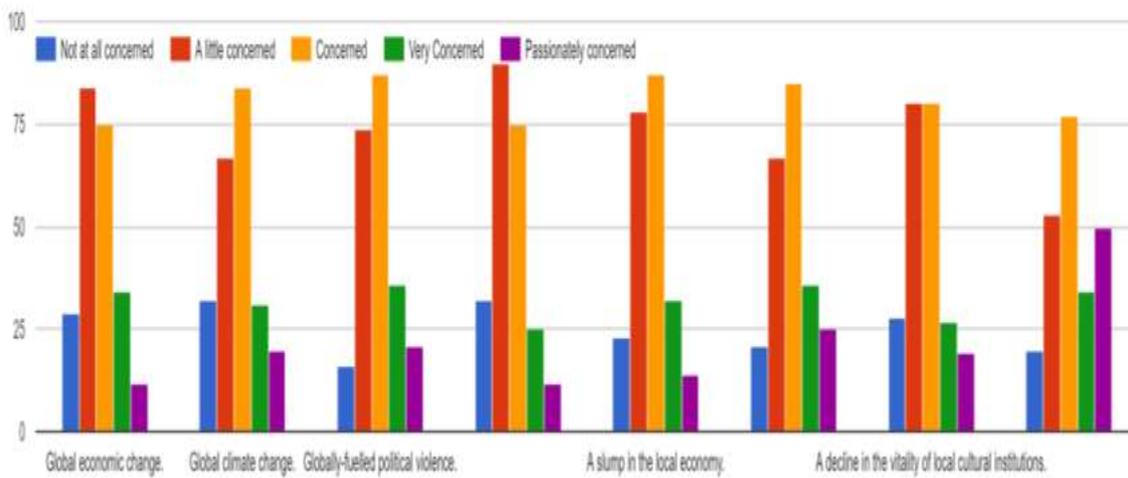
12. Personal on your life and personal circumstances, how do you respond to the following statements?



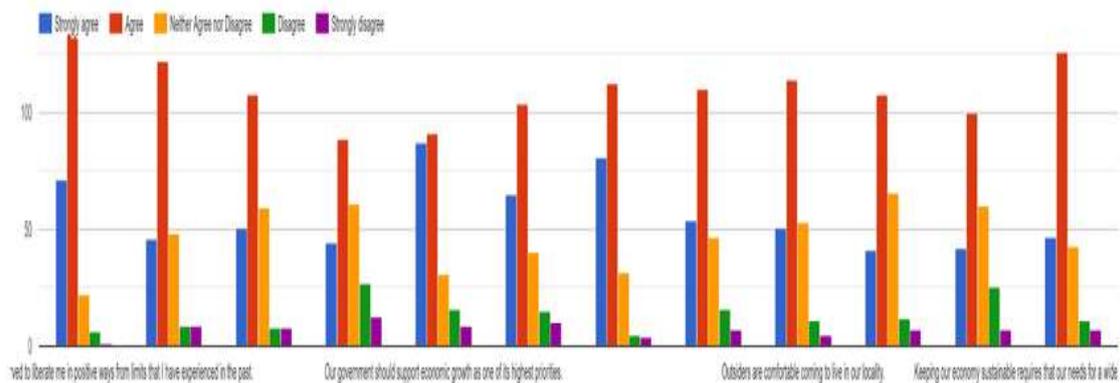
13. To what extent do you agree or disagree with the following statements?



14. To what extent are you concerned that the following issues might impact negatively on the people living in your locality?



15. To what extent do you agree or disagree with the following statements?



IX. CONCLUSION:

This research is one of the unique studies on applying concepts of urban sustainability and the need for smart cities in the 21st century and finding out lacunae in urban development locally and globally. The study is beneficial for urban planners, local government experts, policymakers, political institutions, economists, development planning and engineering students, researchers and international donor organizations. It provides an opportunity to identify urban needs, sustainability requirements, and state of resilience and living conditions of citizens. It brings new ideas about development & improves the lives of citizens as a conceptual framework for smart cities in the Asian region. This study expands to other parts of the world with appropriate results.

The following data has been gathered from two cities in Pakistan i.e., Karachi and Lahore. The current Survey questionnaire was responded to by 234 respondents. Data focuses on 72.6 of the Postgraduate level and 23.9 was the Undergraduate, female participation was 28% but the young population participated up to 44% of the age group from 20 to 29 years of age. On average 4 to 6 people are living together with 40% but 9 to 13 people are living together in the same house as 18% and it is very important to conclude that 14 to 20 people also living together in the same house. Participants identify living place/ residential areas as their community and 31% feel insecure in health and other needs of life in the year.

- The Growing urban population of Pakistan in two major cities increased population density creates health, hygiene, illiteracy unemployment and crime in the urban centers. The imbalance of resource capabilities and weak local governance system with insufficient stakeholder participation in the institutional reforms and inadequate water resource management creates several issues in urban centres. Poor waste disposal, pollution, human activities leading to ecosystem degradation unsafe buildings and decaying infrastructure need policymakers' attention at large to face the challenge of up to 70% of the population urban population in the year 2050.
- The need of the hour is to focus on a new sustainable urban development model of 2050, not for Karachi and Lahore but other growth centres at least 50 more growth centres of the country i.e. new emerging centres Rahimyar Khan, Ghotki, Khairpur, Islamkot/ Thrparkar, Thatta and Gawadar on urgent basis because plan name vision 2025 were not fully implemented in the country so need of new urban planning for emerging urban centres including strategy for above mentioned two megacities of the country in the best public interest.

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