



National University Of Modern Languages
Islamabad, Pakistan
Department Of Governance And Public Policy
Social Action Project



Smart Sustainable Cities- SSC

Let's Talk About The Future Of Cities!



Group Members
Areej Fatima
Khadija Ashfaq
M. Hamid Khan
Mansoor Ali

PROJECT SUPERVISOR:
Dr. Athar Rashid



Smart Sustainable Cities



smartcities_

TEAM MEMBERS



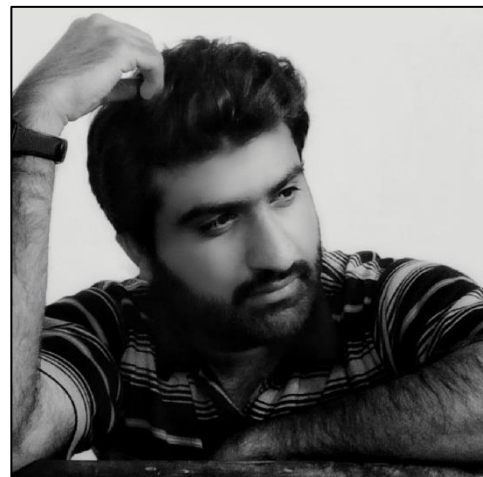
AREEJ FATIMA
PROJECT MANAGER



KHADIJA ASHFAQ
RESEARCH ANALYST



M. HAMID KHAN
PROJECT
COORDINATOR



MANSOOR ALI
SOCIAL MEDIA
MANAGER

PREFACE

We are expected to write a report on our Social Action Project named “Smart Sustainable Cities-SSC” as part of our Public Administration and Governance Curriculum to get practical knowledge in Governance and Public Policy. The primary aim behind this project is to make people aware about the importance of building smart cities and hence promoting the concept of smart citizens for smart cities.

We have included many thoughts in this project report, quickly leading to minute details of our considerable effort. We gained a lot of expertise with numerous tactics that can be used to develop our project while working on it. This initiative will serve as a stepping stone in our professional careers.

TABLE OF CONTENTS

PREFACE	3
ACKNOWLEDGMENTS.....	6
1 PROJECT PROPOSAL.....	7
2 SOCIAL ACTION PROJECT.....	13
2.1 BENEFITS OF SOCIAL ACTION PROJECT	13
3 ABOUT US	15
4 ACTIVITY SHEET	16
5 LITERATURE REVIEW	19
6 WEBINARS	25
6.1 INTRODUCTORY WEBINAR ON SMART SUSTAINABLE CITIES AND ITS CHARACTERISTICS	25
6.2 WEBINAR WITH ENGLISH ACCESS MICROSCHOLARSHIP PROGRAM, SIR SYED PUBLIC SCHOOL, RAWALPINDI.....	26
7 MEETINGS	27
7.1 A VISIT TO MINISTRY OF INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS	27
7.2 A VISIT TO MINISTRY OF HOUSING AND WORKS	28
7.3 A VISIT TO CAPITAL SMART CITY (MAIN OFFICE).....	29
7.4 A VISIT TO SUSTAINABLE DEVELOPMENT POLICY INSTITUTE.....	30
7.5 A VISIT TO LMKT	31
7.6 A VISIT TO PANTERA ENERGY PVT. LTD.	32
8 CAMPUS AWARENESS DRIVE	33
8.1 DAY 1: A VISIT TO DEPARTMENTS OF DIFFERENT LANGUAGES INCLUDING FRENCH, KOREAN, GERMAN, JAPANESE, CHINESE AND ARABIC 34	
8.2 DAY 2: A VISIT TO DEPARTMENTS OF SOFTWARE ENGINEERING, ENGLISH, MASS COMMUNICATION AND BBA	35

8.3	DAY 3: A VISIT TO DEPARTMENTS OF PSYCHOLOGY, EDUCATION, COMMERCE, COMPUTER SCIENCE, INFORMATION TECHNOLOGY AND MATHEMATICS	36
8.4	DAY 4: WALL POSTER PASTING AND DISTRIBUTION OF BROCHURES .	37
8.5	DAY 5: INTERVIEWS WITH STUDENTS ABOUT THEIR PERSPECTIVE ON CONCEPT OF SMART CITIES.....	38
8.6	DAY 6: INTERVIEWS WITH FACULTY MEMBERS OF DIFFERENT DEPARTMENTS	40
9	VISITS TO HIGHER EDUCATIONAL INSTITUTES	41
9.1	A VISIT TO BAHRIA UNIVERSITY ISLAMABAD H-11 CAMPUS.....	42
9.2	A VISIT TO NATIONAL SKILLS UNIVERSITY	42
9.3	A VISIT TO NUML RAWALPINDI	43
9.4	A VISIT TO IQRA UNIVERSITY ISLAMABAD.....	44
9.5	A VISIT TO INSTITUTE OF COST AND MANAGEMENT ACCOUNTANT OF PAKISTAN	45
10	OTHER ACTIVITIES.....	45
10.1	INTERVIEWS WITH FOREIGN STUDENTS AND FACULTY MEMBERS OF NUML REGARDING THE TREND OF SMART CITIES IN THEIR RESPECTIVE COUNTRIES.....	45
11	SOCIAL MEDIA PUBLIC CAMPAIGN	47
12	OBJECTIVES ACHIEVED	48
13	SKILLS ENHANCED DURING PROJECT	49
14	CHALLENGES FACED.....	50
15	SUSTAINABILITY PLAN.....	51
16	FINANCE SHEET	53
17	APPRECIATION LETTER	54
18	CONCLUSION.....	55
19	REFERENCES	56

ACKNOWLEDGMENTS

First and foremost, we want to express our gratitude to Allah Almighty, the author of knowledge and wisdom, for allowing us to accomplish this project. We want to thank the Department of Governance and Public Policy, National University of Modern Languages (NUML), Islamabad, for providing us with this amazing social action project titled "**Smart Sustainable Cities-SSC.**"

We are very grateful to our project supervisor, **Dr. Athar Rashid**, for her profound attention, loving inspiration, and invaluable direction. We want to express our gratitude to **Dr. Waqas Ali Kausar**, Head of the Department of Governance and Public Policy, for supporting and motivating us to work on this project.

Furthermore, we are very much thankful to our Parents, Friends, Social Media followers, and others for their contribution and motivation throughout the project.

Last but not least, we extend our thanks to students of the Governance and Public Policy Department for their encouragement and support.

1 PROJECT PROPOSAL

Name of Social Action Project	“SMART SUSTAINABLE CITIES-SSC”
Brief details of SAP	<p>The “SMART SUSTAINABLE CITIES” is a social action project of students of governance and public policy NUML Islamabad under the supervision of Dr. ATHAR RASHID aim to promote smart cities.</p> <p>Definition of smart city:</p> <p>“A smart city uses information and communication technology (ICT) to improve operational efficiency, share information with the public and provide a better quality of government service and citizen welfare.” Sustainable cities and communities is the 11th SDG devised by the United Nation to make cities and human settlements inclusive, save, resilient, and sustainable.</p> <p>This project is initiated by the students from the GPP department of NUML, aim at advocating the importance of smart cities and making citizens smart/digitally literate. We selected this project because there is dire need for countries to build smart cities to make future of cities sustainable. The target is to educate people to move toward smart, sustainable, and affordable living style.</p> <p>Statistically, more than half of the population lives in cities. Sustainable development cannot be achieved without the management of urban spaces. The issue of rapid growth in cities- is a result of rising population and increasing migration.</p> <ul style="list-style-type: none"> • In 2018, 4.2 billion people, 55% of the world population live in cities. • By 2050, the urban population is expected to reach

	<p>6.5 billion.</p> <ul style="list-style-type: none"> • 828 million people are estimated to live in slums and the number is rising. <p>Making cities smart means creating career and business opportunities, safe and affordable housing, and building resilient societies and economies. It involves green public spaces and improving urban planning and management in participatory and inclusive ways.</p> <p>Aim of this project is to create awareness and guide common people about new innovative ideas about smart communities.</p>
Name and Team Members role	<p>1: Areej Fatima MF-2013 PROJECT MANAGER</p> <p>2: Khadija Ashfaq MF-2018 RESEARCH ANALYST</p> <p>3: Mansoor Ali MF-2012 SOCIAL MEDIA MANAGER</p> <p>4: M. Hamid Khan MF-2031 PROJECT COORDINATOR</p>
Location/Area of project	<p>Islamabad Capital Territory <u>Housing society</u> Capital Smart City</p>

Duration of Proposed Project	Start Date: February, 2022 End Date: June, 2022
Please choose a category that best summarizes who these beneficiaries will be	<ul style="list-style-type: none"> • Children • Teenagers • Young people • Older people • Women • Men • All the above-mentioned will be beneficial from this project. The plus point of this project will be it can help government institutions and organizations working on housing societies and urbanization.
Local available resources	<ul style="list-style-type: none"> • Housing Societies • Ministry of Housing • Electricity supplier's companies • Water supply companies • Waste and sewage management companies <p>Social Media: Facebook, Instagram</p> <p>Equipment's: Laptop, Camera, Mobile Phone, Posters, etc.</p>
How will this project benefit your community	<p>Need: The important reason behind smart cities is to make the future of cities sustainable. "As the term sustainability indicates the uses of resources to meet the needs of present without compromises the needs of future generation." The smart city concept describes the ability and increases the</p>

capacity of a community to create a solution for challenges and make it a more livable place for all. On the base of the required data, Pakistan is in the critical stage.

Pakistan needs to make a comprehensive housing policy. Both technological and behavioral transformation is needed. The behavior practices include the change of mind of people (making them smart), and aware them of the benefits of smart cities. On the other hand, technology includes a comprehensive and strict housing policy, use of innovative ideas and technology, and making them eco- friendly. In this age of modernization there is need to use technology. By using technology, it saves the resources, affordable to all and meet with the international standard.

Objectives:

- To Advocate the importance of smart cities
- To enhance the awareness about information and communication technology
- To make citizens smart/digitally literate through different webinars.
- To change the behaviour/mind of individual concerning betterment of their own lives and community.
- To organize events and activities targeting all community members that encourages continuous action.
- To meet with administration of housing societies for

	<p>addressing the solution.</p> <ul style="list-style-type: none"> To organize awareness campaigns within NUML premises regarding importance of smart sustainable cities and how it can lead to a better-quality life.
<p>How will you start and manage your SAP</p>	<p>Feasibility: We will take initiative through our social media accounts for advocacy of smart cities and to make smart citizens for smart cities. Secondly, we will conduct online surveys to learn about the understanding of general population about smart cities. Thirdly, we will conduct webinars that will address different topics like concept of smart cities, role of ICT, the importance of smart citizens, and the skills that made an individual a “smart citizen”.</p> <p>Methodology/Approach:</p> <ul style="list-style-type: none"> ➤ We will conduct interviews of executives and collect data by asking questions. ➤ Different awareness drives for the advocacy of smart cities. ➤ Surveys and questionnaires. ➤ Organizing webinars. ➤ Launching social media campaign <p>Continuity: Although changing human behavior is not an easy undertaking, it is not impossible. This programme will stick to its message, have a well-defined plan, and devote all of its human resources to it. Our project will last longer than the semester. We plan to grow our team by bringing on additional volunteers and</p>

	collaborating with various organizations. We shall keep working until and unless we succeed in our aim.
How will you measure the success of your SAP	<p>Outcomes:</p> <ul style="list-style-type: none">• Changing mindset of people• More digitally aware citizens• Promotion of Information and communication technology• Highlighting importance of smart cities <p>Measuring tools:</p> <ul style="list-style-type: none">• Questionnaires• Social media pages• Public interviews• Feedback forms• Activities carried out

2 SOCIAL ACTION PROJECT

A social action project is a step-by-step approach for addressing a social problem. It is carried out collaboratively by a group of people who observe a problem and take actual steps to resolve it. Students are prepared to recognise societal challenges through Social Action projects. It encourages students to think critically and come up with logical answers to difficulties. Students gain practical experience in society through the Social Action project. It aids in the development of vital abilities such as cooperation, empathy, critical thinking, and problem solving, among others. It made them realise that our actions have consequences in society. The project entails social action.

2.1 BENEFITS OF SOCIAL ACTION PROJECT

People get together through the Social Action initiative to help better their lives and solve problems that are relevant in their communities. Small constructive deeds can have a significant impact on society. Volunteering, monetary gifts, community service, or simple neighbourly deeds can all be examples.

The following are some of the benefits of the Social Action programme.

- ✚ It has the ability to energise and empower populations that have been traditionally weak or have not realised their own power potential.
- ✚ It contributes to the society's unity. It fosters a sense of community and shared effort, and it brings individuals together in pursuit of a common goal.

- ✚ Character and self-assurance develop in young people. They have a higher sense of self-worth, which can help them improve their mental toughness. They also gain valuable skills and connections that will assist them in finding work in the future.
- ✚ It has the capacity to motivate others to pursue other positive actions. When people observe the benefits of social action programmes, they are more willing to take on additional actions.
- ✚ They begin to realise that they can solve many of their own difficulties and get the motivation and confidence to do so.

3 ABOUT US

Smart Sustainable cities is a social action project with a sole motive of advocating the importance of building smart cities in Pakistan and promoting the concept of Smart Citizens for smart cities.

Moreover, we are working on different objectives like To promote the value of smart cities. To raise public understanding regarding the use of information and communication technology. Through various webinars, citizens will become smarter and more digitally literate. Individuals' behaviour/thoughts regarding the betterment of their own lives and communities must be changed. To plan events and activities that will engage all members of the community and urge them to take action on a regular basis.

4 ACTIVITY SHEET

Sr No.	Date	Event/Activities Details
1	15 th May 2022	Introductory Webinar on Smart Cities and its characteristics
2	18 th May 2022	Interviews with foreign students and faculty of NUML regarding the trend of smart cities in their respective countries
3	19 th May 2022	A visit to Ministry of Information Technology and Telecommunication
4	20 th May 2022	A visit to Ministry of Housing and Works
5	24 th May 2022	A visit to Capital Smart City Main Office
6	25 th May 2022	A visit to Bahria University Islamabad H-11 campus
7	25 th May 2022	A visit to National Skills University Islamabad
8	26 th May 2022	A visit to NUML Rawalpindi
9	26 th May 2022	A visit to Iqra University Islamabad

10	27 th May 2022	A visit to Institute of Cost And Management Accountant Of Pakistan ICMAP
11	31 st May 2022	An introductory session on our topic with the English Access Microscholarship Program, Sir Syed Public School, Rawalpindi
12	31 st May 2022	Campus Drive- Day:1 (A Visit to departments of different languages including French, Korean, German, Japanese, Chinese, Arabic)
13	1 st June 2022	Campus Drive- Day:2 (A visit to departments of Software Engineering, English, Mass Communication, BBA)
14	2 nd June 2022	Campus Drive- Day:3 (A visit to departments of Psychology, Education, Commerce, Computer Science, Information Technology, Mathematics, Islamiyat)
15	3 rd June 2022	Campus Drive- Day:4 (Wall Poster Pasting and Distribution of Brochures)
14	6 th June 2022	Campus Drive- Day:5 (Interviews with students about their perspective on concept of smart cities)
15	7 th June 2022	Campus Drive- Day:6 (Interviews with faculty members of different departments)
16	8 th June 2022	A visit to Sustainable Development Policy Institute Islamabad
17	10 th June 2022	A visit to LMKT

18	20 th June 2022	A visit to Pantera Energy Pvt. Ltd.
19	21 st June 2022	Made model of city
20	22 nd June 2022	Display of model

5 LITERATURE REVIEW

Introduction:

Smart cities arose as a result of the ongoing urbanisation process and the increasing population in metropolitan areas (Chourabi et al., 2012; Osman, 2019). Indeed, urbanisation brings with it a slew of environmental, economic, and social concerns (Bibri, 2018). Smart cities seek to address these issues in order to improve inhabitants' quality of life. According to Bibri and Krogstie (2020), a city becomes smart when it is able to develop and implement creative solutions that are based on cutting-edge technologies and cutting-edge scientific knowledge. To put it another way, a city becomes "smarter" as a result of developing and implementing data-driven solutions to facilitate, monitor, understand, analyse, plan, and optimise its operations, activities, services, and policies (Zhuhadar, Thrasher, Marklin, & de Pablos, 2017). Political leaders, public officials, corporations, universities, and residents are all participating in smart city development (Axelsson & Granath, 2018).

All cities in developed and developing countries now recognise the importance of providing public services in the most effective and efficient manner possible. It's also worth noting that a sizable portion of the rural population is migrating to cities to enjoy the benefits of development, and the rate of migration is rapidly increasing. According to global experience, the rate of urbanisation expansion is slow up to 30%, but beyond that, at least up to 60%-65%, the rate of growth accelerates significantly. As a result, the rate of urbanisation would accelerate in order to meet the needs of the people who live in those cities. However, "Smart Technology," which includes improvements in information and communication technology (ICT) as well as other

critical services, is required to achieve this. Cities that have been designated as "Smart Cities" must now adhere to a set of basic criteria. Coalescence, Practicality, and Involvement are three of them.

Energy management, surveillance, telecommunications, health, transportation, sewage system, water resource system, and other areas must all be improved in "Smart Cities." In fact, the majority of smart activities compel the employment of previously unexplored technology. As a result, smart technology necessitates the development of new and modern technologies, as well as new financial and business structures.

In 2015, the United Nations created the Sustainable Development Goals, which aim to foster peace and prosperity for people and the planet in the present and future. As a result, 17 goals were formed, with the intention of serving as an urgent call to action for governments around the world. Ending poverty and other deprivations must be combined with initiatives to promote health and education, decrease inequality, and spur economic growth, all while combating climate change and safeguarding our forests and oceans, according to the SDGs.

Definitions:

Definition of "Smart City" varies with regard to the context and perspective through which it is being conceptualized as well as applied. The different parametric aspects of the definitions of "Smart City" is, in a broad sense, categorized as given here under.

Broad Definition:

The UK Department for Business, Innovation and Skills (BIS) has defined "Smart Cities" as "It does not consider "Smart Cities" as a static

outcome but on the contrary considers it as a continuous process of improvement by the help of involvement of citizens, use of hard infrastructure, use of modern technologies which would ultimately make the cities livable, resilient and capable of combating challenges”.

The British Standard Institute (BSI) on the contrary has given the definition of “Smart Cities” as “The effective integration of physical, digital and human systems in the built environment to deliver sustainable prosperous and inclusive future for its citizens”.

Data Driven Definition:

IBM has defined “Smart Cities” as “one that makes optimal use of all the interconnected information available today to better understand and control its operations and optimized the use of limited resources”.

CISCO defines a “Smart City” as “scalable solutions that take advantage of ICT to increase efficiencies, reduce costs, and enhance quality of life”.

Citizen Focused Definition:

Manchester Digital Development Agency has defined “Smart City” as “smart city means smart citizens – where the citizens have all the information, they need to make informed choices about their lifestyle work and travel options”.

✚ Stages:

Smart cities have gained traction among businesses, governments, the media, and academia over the last 15 years to refer to, on the one hand, the use of information and communication technologies (ICTs) to

stimulate economic development and, on the other hand, the extensive embedding of software enabled technologies into the fabric of cities to augment urban management (Kitchin, 2014). In terms of the first vision, a smart city is one where the economy is increasingly driven by technologically inspired innovation, creativity, and entrepreneurship, all of which are carried out by clever people (Kourtit et al., 2012)

A smart city, according to the second perspective, is one that can be watched, managed, and regulated in real time thanks to ICT infrastructure and ubiquitous computing (Townsend, 2013). The academic, business, and government literature is significantly divided in terms of the ideological rhetoric and theoretical orientation that underpins their vision, just as there are disparities in the definition of a smart city.

Characteristics:

There are various aspects of the building of "Smart Cities" that require special attention. (Kar & Chatterjee, 2015)

- 1. Energy management:** "Smart Energy Meters" should be utilised to manage energy in "Smart Cities." It will regulate energy demand, lower costs, and reduce pollutants, making the environment more environmentally friendly. Obviously, IT assistance is required, as well as an emphasis on "Smart Grid." It features a monitoring system that keeps track of all the electricity that flows through the system. (Kar & Chatterjee, 2015)
- 2. Health hazard management:** An online health consultation system should be implemented. The procedure should be basic enough that ordinary individuals may handle it without difficulty.

It would lower the cost of living and make individuals nearly immune to health risks. (Kar & Chatterjee, 2015)

- 3. Urban mobility:** Rapid urbanisation has resulted in severe traffic congestion, pollution, increased risks of road accidents, and higher energy expenses. It's important to remember that getting about cities and going from one area to another is essential. To preserve a pollution-free environment, "Smart Cities" should place a strong emphasis on walkability and cycling throughout the city. It is necessary to have a good freight movement facility. (Kar & Chatterjee, 2015)
- 4. Water supply:** Water should be readily available in "Smart Cities." The inhabitants' demands for dual water supply, such as drinking water and water for other purposes, will be met. Water use will be measured by "Smart Water Meters" that will be installed. This will encourage people to be more cautious about using more water than they need. (Kar & Chatterjee, 2015)
- 5. Sanitation:** A lack of sufficient sanitation will result in epidemics, health risks, and an increase in the city's death rate. The notion of a decentralised sewerage and solid waste management system should be used to develop a city-wide sanitation plan. (Kar & Chatterjee, 2015)
- 6. Storm and rain water harvesting:** In the absence of storm and rain water drains, water piling on roads occurs, endangering public health and leading to the emergence of infectious diseases. It should also be mentioned that storm and rain water drains are still connected to the sewerage network in some places, rendering the system inefficient. In "Smart Cities," this should be checked.

During the summer, however, efficient storm and rain water management will be beneficial. (Kar & Chatterjee, 2015)

- 7. Power:** "Smart Cities" must have universal access to electricity 24 hours a day, seven days a week. As a result, renewable energy sources should be used. To regulate demand, a "Smart Grid" will be built and integrated with renewable energy sources.

Conclusion:

Many elements are necessary for the establishment of "Smart Cities," and funds are required to meet these criteria. Again, knowledge of the cyber world is required to reap the benefits of "Smart Cities." This knowledge cannot be acquired by someone who is illiterate. As a result, recipients must be digitally literate in order to reap the full benefits of "Smart Cities," where ICT is required. Pakistan is not a wealthy nation. The majority of the people here are poor. Poverty hampered their ability to become literate in general, let alone in digital learning.

Another threat is the question of privacy and security. To benefit from the cyber world without being duped, one must not only be literate in general, but also digitally literate. As a result, it is determined that, before executing the establishment of "Smart Cities," the Central and State Governments, putting aside narrow political games, should take a real initiative to investigate wealth resources and make a diligent effort to bring literacy to "Smart City" inhabitants. Citizens can only reap the full benefits of "Smart Cities" then and only then; otherwise, the concept of "Smart Cities" would be purely theoretical with no practical application.

6 WEBINARS

6.1 INTRODUCTORY WEBINAR ON SMART SUSTAINABLE CITIES AND ITS CHARACTERISTICS

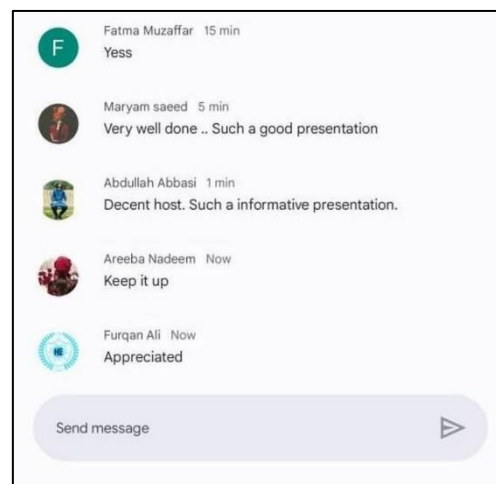
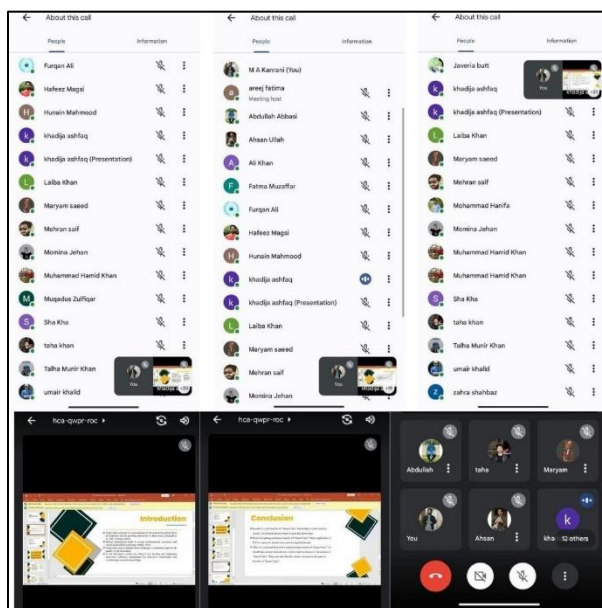
Date: 15th May 2022

An Introductory webinar was arranged by the team 'Smart Sustainable Cities-SSC' on 15 May 2022, Sunday. The topic of the webinar was 'Smart Cities and their Characteristics'. It was hosted by Mansoor Ali. The group members of SSC presented the topic with the help of slides.

The motive of the webinar was to make people familiar with the general concept of Smart Cities.

💡 Following were the topics covered in webinar:

- ◆ Identification of problem area
- ◆ Smart Sustainable Cities around the world
- ◆ Definitions of Smart City
- ◆ And it's Characteristics



6.2 WEBINAR WITH ENGLISH ACCESS MICROSCHOLARSHIP PROGRAM, SIR SYED PUBLIC SCHOOL, RAWALPINDI

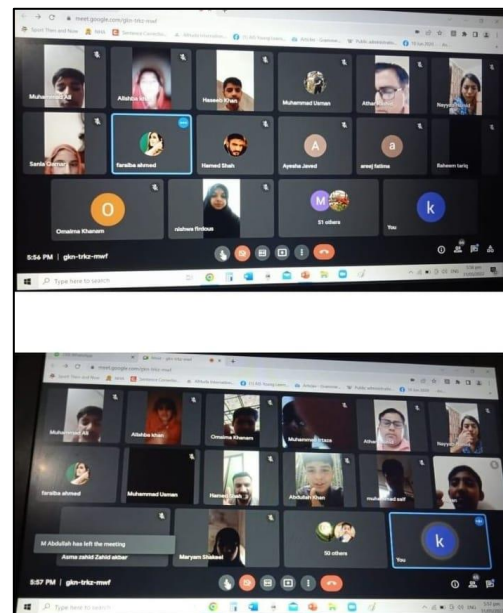
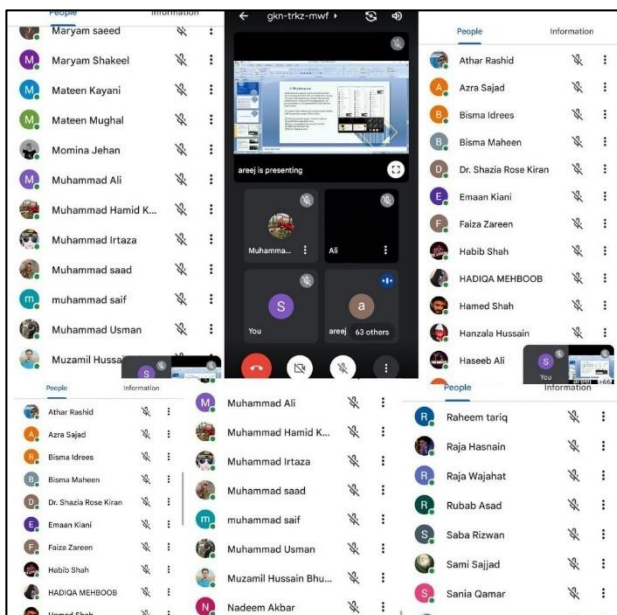
Date: 31st May 2022

We had an introductory session on our topic Smart Sustainable Cities with the English Access Microscholarship Program, Sir Syed Public School, Rawalpindi.

The English Access Microscholarship Program is an international project created by the U.S Department of State. In Pakistan, it is helping underprivileged students of Sir Syed School by teaching them English language and life skills to gain opportunities in employment, education, and life in general.

It was an interactive webinar of 30 minutes followed by a Q/A session, joined by 70+ students.

It was an amazing experience interacting with such talented and intelligent students. Their questions were very profound and we loved to answer them. We enjoyed the webinar.



7 MEETINGS

7.1 A VISIT TO MINISTRY OF INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS

Date: 19th May 2022

SSC had a very fruitful meeting session with Mr. Faisal Ratyal, Director General (PMO), NITB, Ministry of Information Technology and Telecommunication, Government of Pakistan.

He told us that they are planning to take the initiative of converting safe city Islamabad into a smart city by introducing different smart systems like

- ◆ smart street lights
- ◆ smart water management
- ◆ smart traffic management
- ◆ Law and order management

He further said that due to resource constraints, it may take time to implement the plan but they are very clear about what they want to do and how they will do it.

He also informed us about the app “City Islamabad” which is the government service provider smartphone mobile application, developed exclusively for the citizens of Islamabad.

He also emphasized the concept of 'Smart citizens for smart cities' because he believed that without smart citizens, the concept of smart cities will go in vain. And for that, we should raise awareness by doing roadshows, seminars, and talks.

Overall it was a great experience for us as a team to meet and talk with DG Moitt.



7.2 A VISIT TO MINISTRY OF HOUSING AND WORKS

Date: 20th May 2022

Team SSC had a beneficial discussion with the federal Minister for Housing and Works, Maulana Abdul Wasay. We have asked him various questions regarding the functions of ministry, their approach towards making developmental projects sustainable and his role.

To which he responded and briefed us about the role of ministry.

Moreover, we have told him about our project, its objectives and the work we have done so far.

He appreciated our work and wished us the best of luck for our future endeavours.

7.3 A VISIT TO CAPITAL SMART CITY (MAIN OFFICE)

Date: 24th May 2022

The capital smart city is a private housing scheme and is Pakistan's first smart city. Meanwhile, it is ranked as the 23rd smart city in the world. Team SSC had visited Capital Smart City Main Office located in F-11 Markaz.

Their marketing supervisor, Raja Tahir briefed us about the features of Capital Smart City through a model of the city.

The Capital Smart City has a lot of smart features like smart traffic management, smart water management, smart houses with automated technology and many other features.

It was great knowing about such initiative of smart city in Pakistan. We hope that Government of Pakistan will also take some similar initiatives of building smart cities in Pakistan.



7.4 A VISIT TO SUSTAINABLE DEVELOPMENT POLICY INSTITUTE

Date: 8th June 2022

Team had visited Sustainable Development Policy Institute in Islamabad.

As their mission is to catalyse the transition towards sustainable development, defined as the enhancement of peace, social justice and well-being, within and across generations.

Our main motive of visiting SDPI was to learn about different policy initiatives that have been taken in the scope of sustainable cities.

We had a very productive discussion with their Coordinator Policy Outreach/Research Associate, Ms. Amna Ilyas, she told us about her duties and the work of SDPI in making policies for sustainable cities.

Their Associate Coordinator ASRC, Mr. Ali Aamer Javed, told us about the policy process and was kind enough to provide us different journals that SDPI have published in recent years.

Overall, it was an amazing experience visiting and interacting with people, working passionately towards achieving sustainable development in Pakistan through their policy recommendations.



7.5 A VISIT TO LMKT

Date: 10th June 2022

LMKT is a full-service technology company based out of Pakistan offering scalable IT solutions. The company specializes in smart cities, smart buildings, e-governance, clean technology and agri-tech solutions in its pursuit to supporting the country's fast growing economy and rapid urbanization. LMKT together with its affiliated businesses have been consistently ranked as one of the leading ICT service providers of Pakistan.

Team SSC had an opportunity to talk with their HR representative. She briefed us about the company and the work they are doing.

She was very humble and kind enough to answer our questions in an appreciable manner. The environment of their workplace was also impressive.

It was great visiting a company, that is working amazingly in the field of IT and Smart cities.



7.6 A VISIT TO PANTERA ENERGY PVT. LTD.

Date: 20th June 2022

Pantera Energy is one of the pioneer solar energy solution providers in Pakistan. Innovation and intelligence are the core essence of their solar energy management systems for residential, commercial, industrial and agricultural sectors. They have a diversified range of products and services with proven expertise in providing state-of-the-art solar energy systems.

Team SSC had a fruitful discussion with M Saad Nadeem, ASM (North). He gave us a detailed overview of the functions and uses of the solar system. He told us about Alpha that is the concept related to smart buildings in which a building produces its own energy and fulfils its energy requirements.

It was a great learning experience about renewable energy and the concept that is a major characteristic of smart cities.



8 CAMPUS AWARENESS DRIVE

As they say “The first step towards change is awareness.”

Smart Cities is a concept that is very new for the masses of Pakistan. Most of them are not familiar with this term and the ones who are familiar don't have much knowledge about it.

So, through this project we have taken the initiative of promoting this concept in Pakistan. As it's our primary objective to tell people about the importance of building smart cities in Pakistan.

There cannot be a better way to start the awareness from our own university.

It was a drive of 6 whole days in which we have conducted different activities and engaged students.

On the first three days, Team SSC visited different departments of university and tried to cover most of them.

In these days, we have interacted with many students, briefed them about our project idea, and asked about their valuable inputs.

We got a very positive response from students as they were very cooperative and kind enough to give us their time.

Following are some glimpses of our campus awareness drive

8.1 DAY 1: A VISIT TO DEPARTMENTS OF DIFFERENT LANGUAGES INCLUDING FRENCH, KOREAN, GERMAN, JAPANESE, CHINESE AND ARABIC

Date: 31st May 2022



8.2 DAY 2: A VISIT TO DEPARTMENTS OF SOFTWARE ENGINEERING, ENGLISH, MASS COMMUNICATION AND BBA

Date: 1st June 2022



8.3 DAY 3: A VISIT TO DEPARTMENTS OF PSYCHOLOGY, EDUCATION, COMMERCE, COMPUTER SCIENCE, INFORMATION TECHNOLOGY AND MATHEMATICS

Date: 2nd June 2022



8.4 DAY 4: WALL POSTER PASTING AND DISTRIBUTION OF BROCHURES

Date: 3rd June 2022

To make our awareness drive more impactful we have pasted our project posters throughout the campus and especially in the busy areas of the university. Team SSC also distributed some of the brochures among students so that they can read and be better aware of the concept of smart cities.



8.5 DAY 5: INTERVIEWS WITH STUDENTS ABOUT THEIR PERSPECTIVE ON CONCEPT OF SMART CITIES

Date: 6th June 2022

Team SSC conducted interview sessions with students to know their perspectives on smart cities.

In these interviews, we have asked the following questions

Do you know about the term smart city?

Are you aware of the concept of Information and communication technology?

Will it be a good idea to build smart cities in Pakistan?

Do you know about any initiatives for smart cities in Pakistan?

Following were some common responses of students.

Most of the students were unfamiliar with the term smart city

The knowledge of the concept of ICT was also not that common among students.

Most were in favour of idea of building smart cities in Pakistan and they don't know about any initiative of a smart city in Pakistan.



8.6 DAY 6: INTERVIEWS WITH FACULTY MEMBERS OF DIFFERENT DEPARTMENTS

Date: 7th June 2022

We have also interacted with faculty members of different departments.

It was our honor to brief and tell them about our initiative.

We asked them for their valuable input and whatever they knew about smart cities.

We are very thankful to all the faculty members for giving their valuable time.



9 VISITS TO HIGHER EDUCATIONAL INSTITUTES

Team SSC had visited different higher educational institutes/Universities including Bahria University, National Skills University, NUML Rawalpindi, Institute of Cost and Management Accountant, and Iqra University.

The purpose of visiting different universities was to spread our message to students from different career fields and backgrounds.

We conducted an extensive awareness campaign. During our visits, we interacted with different students and analysed their knowledge about smart cities.

It is our finding that most of the students were unaware of the concept and don't even know the basic concept.

Keeping in view this situation, we have mostly briefed them about our project, the concept of smart cities, its basics, and how they can contribute to this initiative.

Moreover, we have encouraged them to become familiar with the digital world and gain some knowledge that makes them digitally literate and smart citizens.

9.1 A VISIT TO BAHRIA UNIVERSITY ISLAMABAD H-11 CAMPUS

Date: 25th May 2022



9.2 A VISIT TO NATIONAL SKILLS UNIVERSITY

Date: 25th May 2022



9.3 A VISIT TO NUML RAWALPINDI

Date: 26th May 2022



9.4 A VISIT TO IQRA UNIVERSITY ISLAMABAD

Date: 26th May 2022



9.5 A VISIT TO INSTITUTE OF COST AND MANAGEMENT ACCOUNTANT OF PAKISTAN

Date: 27th May 2022



10 OTHER ACTIVITIES

10.1 INTERVIEWS WITH FOREIGN STUDENTS AND FACULTY MEMBERS OF NUML REGARDING THE TREND OF SMART CITIES IN THEIR RESPECTIVE COUNTRIES

Team SSC conducted interview sessions with foreign students and faculty members about the status of Smart Cities in their respective countries.

We have visited different departments including departments of Urdu, Arabic, Turkish and Chinese Languages.

Mentioning two of the interviews here:

- ✓ We met Hannah, who is a student of a diploma in the Urdu Language. She's from the United States of America. We have asked her about the status of smart cities in America and her information related to it. She told us that she is not aware of the term smart cities but the concept of the smart city is being applied in America which is the use of Information And Communication technology to manage various city functions like traffic management, waste management, etc which makes their systems very efficient and smart.
- ✓ We also had a discussion with a faculty member of the Turkish Studies department, Enves Ihsan Firozdin. He told us about a Maslak town in Istanbul, which is a small smart town. Further, he briefed us about its smart features.
P.s We couldn't take a picture because he was not comfortable with it.

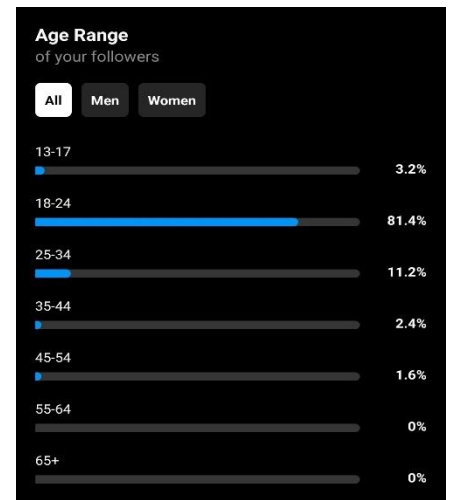
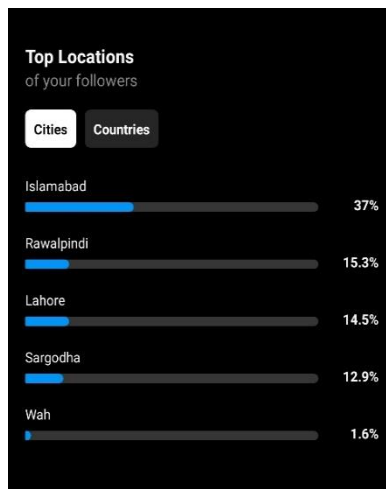
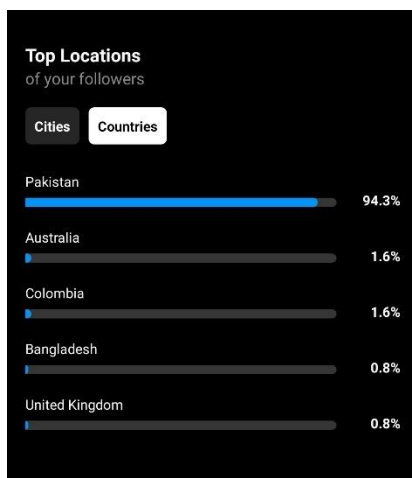
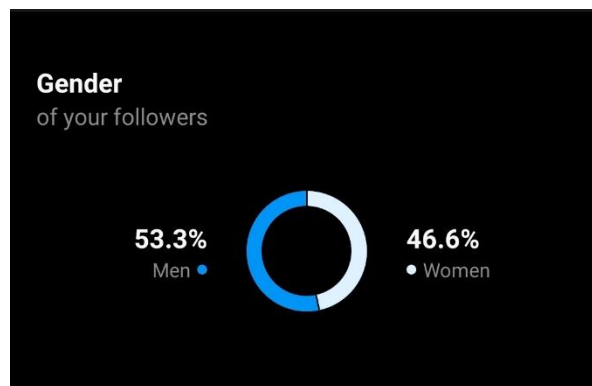
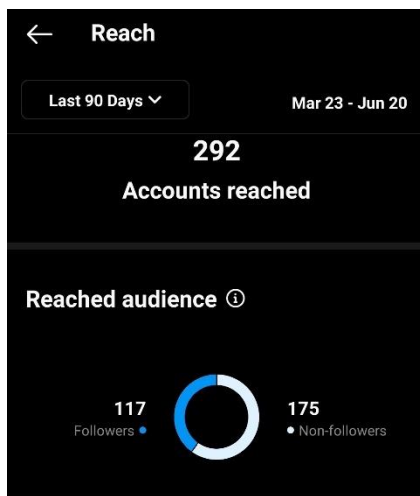
Overall, it was a very interesting activity to conduct. We have learned a lot by communicating with people from different countries and knowing their perspectives about smart cities.



11 SOCIAL MEDIA PUBLIC CAMPAIGN

As social media play an important role in increasing public awareness and collecting the views, information and attitudes toward certain issue. Also, Media is the most powerful tool of communication in emerging world and increased the awareness and presents the real stage of society.

Team SSC launched a social media public campaign to aware the public regarding the concept of Smart cities. We wanted people to be aware of the importance of building smart cities and how they can contribute towards the initiative of smart cities. We have posted about different activities we have conducted and engaged our social media followers.



12 OBJECTIVES ACHIEVED

- The main aim was to create awareness, and we have done it through public awareness campaign drive, distribution of brochures, wall poster pasting, and social media campaign. We have ensured that people became aware of the concept of smart cities through all of these activities. Fortunately, we got a very positive response from people.
- We have also motivated them to become digitally literate as it is the most important characteristic of smart cities.



13 SKILLS ENHANCED DURING PROJECT

The most important and final goal of the Social Action Project is to improve our educational and professional career chances. There are numerous skills that add value to us, as described below:

❖ **Negotiation and Communication Abilities:**

During the project, we improved our communication skills by speaking honestly with people and communicating with high officials. We are more confident in our communication with others now than we were previously.

❖ **Time Management:**

This project has tremendously enhanced our time management. We are now more aware of the need to accomplish more in less time and to better manage our time in order to boost productivity.

❖ **Patience:**

The most valuable ability we have acquired as a result of this endeavour is patience. Throughout the entire Social Action Project's striving path, it had always been a part of us.

❖ **Teamwork:**

In any group task, teamwork may make or break the event. We learned how to work in groups and cooperate.

❖ **Critical Thinking and Problem Solving:**

The most significant ability given to our personality through this initiative is critical thinking and problem solving. Our acts and thinking have become more circumspect. Our practise of making snap decisions has shifted, and deep ideas now predominate in our minds before we make a decision.

14 CHALLENGES FACED

The social action project's stumbling phase brought with it a slew of new problems. Some of the most difficult scenarios are being written down:

1. Time Management:

During the project, time management was a big challenge. There was a lot of work to be done in a short amount of time. Conducting online classes on a daily basis was a demanding undertaking that made it tough for us to administer multiple courses at the same time.

2. Repeated Meeting Postponement:

The government entities were severely obstructing our initiative by repeatedly postponing meetings.

3. Officials' Discouragement:

Some groups were discouraging in terms of demotivating us from our goal and discounting our struggles.

4. Lack of facilitation to students:

It was the most challenging thing to face throughout the project. Many organizations whether public or private do not facilitate students. And in our capacity we were unable to follow their rigorous procedures.

15 SUSTAINABILITY PLAN

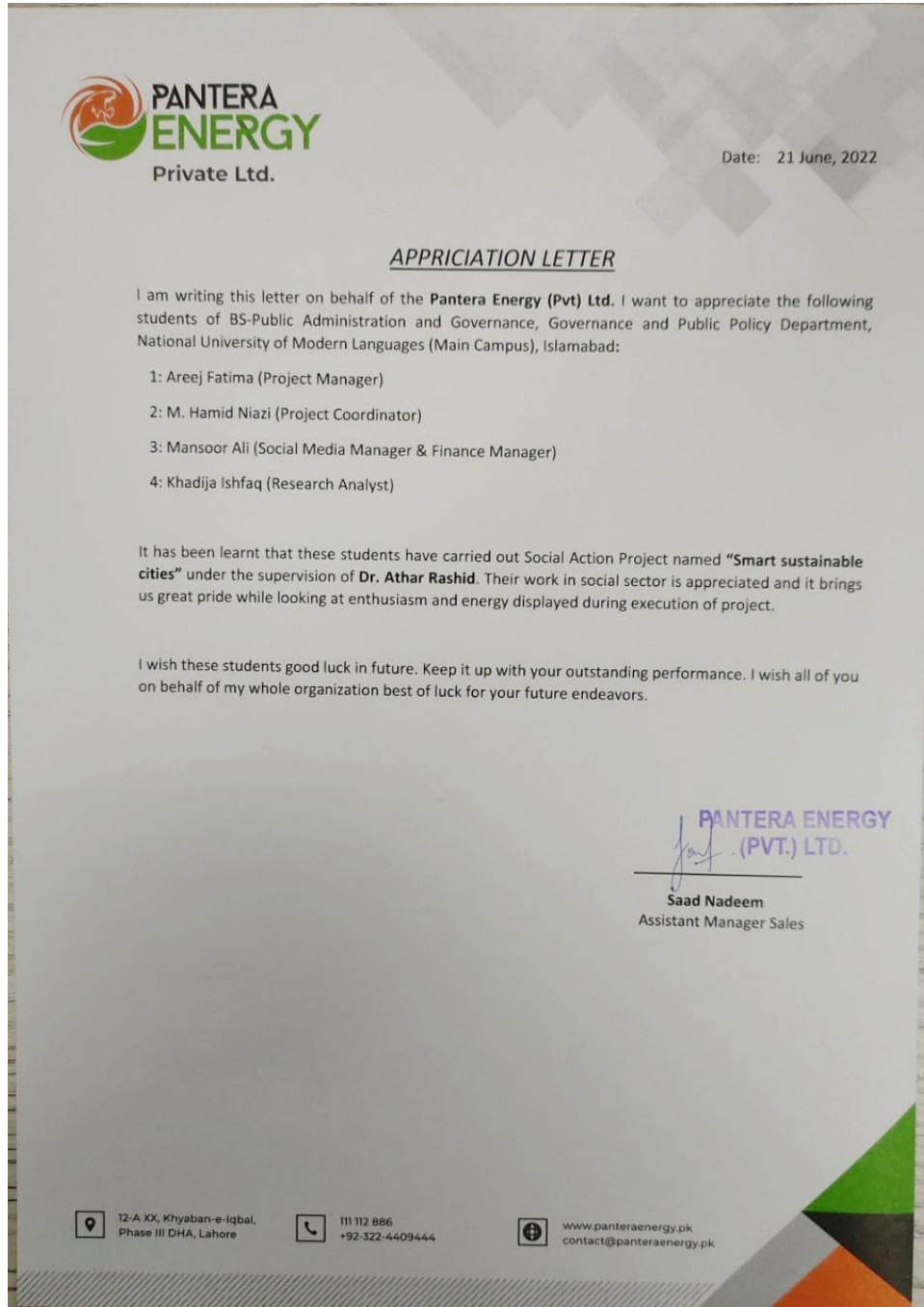
SR.NO	Activities	Month	Date	Day
01	Conduct webinar with Ms. Ayesha (SDPI)	July	04	Monday
02	Arrange webinar on SDG's (Topic: SDG 11, and 7)	August	08	Monday
03	Introduce social action project with new students of GPP (Fall Admission) particularly SSC whole journey. Collaborate with social projects in coming semester. (SDG 11,07)	September	19	Monday
04	(1) Write a Blog (Title: Pakistan relation with SSC)	October	12	Wednesday
05	Visit Capital smart city (Share project report and idea)	November	28	Monday
06	Arrange Focus group discussion with NUML Rawalpindi campus and share whole experience of SSC	December	6	Tuesday
07	Write a magazine on SSC all activities and place it NUML library under the banner of Social action project (Dr. Athar Rashid)	January	10	Tuesday
08	(02) Write a Blog (Title: Pakistan progress	February	9	Thursday

	in SDG 10, 07)			
09	Attended seminar at SDPI (Share project report for addition in magazine)	March	13	Monday
10	Arrange awareness walk on SSC importance in NUML main campus	April	19	Wednesday
11	Make video/animation video and upload on social media under the banner of social action project	May	23	Tuesday
12	Monthly bases posting on social media related to SSC	Every Month

16 FINANCE SHEET

Sr. No.	Event Details	Date	Charges (Rs)
1.	Visit to Ministry of IT and Telecommunication	19 th May 2022	320
2.	Visit to Capital Smart City	24 th May 2022	580
3.	Visit to Ministry of Housing and works	20 th May 2022	100
4.	Visit to SDPI	8 th June 2022	350
5.	Visit to LMKT	10 th June 2022	290
6.	Visit to Pantera Pvt. Ltd.	20 th June 2022	400
7.	Visit to Bahria University	25 th May 2022	350
8.	Visit to NUML Rawalpindi	26 th May 2022	500
9.	Visit to National Skills University	25 th May 2022	300
10.	Visit to ICMAP	27 th May 2022	300
11.	Poster Print	24 th May 2022	700
		TOTAL	4190

17 APPRECIATION LETTER



18 CONCLUSION

It is concluded from our research and experience during the project that the concept of Smart Cities is very relevant for Pakistan. Most of the people are not aware of it. In times when the problem of urbanization is increasing day by day and it is becoming difficult for the government to provide service delivery to its citizens. Solution of this problem lies in the concept of building Smart Cities. The use of technology in cities will make their systems efficient.

Therefore, Pakistan needs to make major changes in urban planning. Both technological and behavioural changes are required. People's minds must be changed (they must become smart), and they must be made aware of the benefits of smart cities. Technology, on the other hand, involves a thorough and rigid housing policy, as well as the utilisation of novel ideas and technology, as well as making them environmentally friendly. It is necessary to employ technology in this age of development. It saves resources, is inexpensive to all, and meets international standards by utilising technology.

19 REFERENCES

- ✓ Chourabi, H., Nam, T., Walker, S., Gil-Garcia, J. R., Mellouli, S., Nahon, K., et al. (2012). Understanding smart cities: An integrative framework. In Proceedings of the 45th Hawaii international conference on system sciences (HICSS-45) (pp. 2289–2297). Maui, HI, USA: IEEE. Retrieved from <http://www.computer.org/csdl/proceedings/hicss/2012/4525/00/4525c289-abs.html>.
- ✓ Bibri, S. E., & Krogstie, J. (2020). The emerging data-driven smart city and its innovative applied solutions for sustainability: The cases of london and barcelona. *Energy Informatics*, 3(5), 1–42. <https://doi.org/10.1186/s42162-020-00108-6>
- ✓ Zhuhadar, L., Thrasher, E., Marklin, S., & de Pablos, P. O. (2017). The next wave of innovation—review of smart cities intelligent operation systems. *Computers in Human Behavior*. <https://doi.org/10.1016/j.chb.2016.09.030>
- ✓ Axelsson, K., & Granath, M. (2018). Stakeholders' stake and relation to smartness in smart city development: Insights from a Swedish city planning project. *Government Information Quarterly*, 35(4), 693–702. <https://doi.org/10.1016/j.giq.2018.09.001>
- ✓ United Nations: Sustainable development goals (2018). <https://www.un.org/sustainabledevelopment/sustainable-development-goals>
- ✓ Corbett, J., Mellouli, S.: Winning the SDG battle in cities: how an integrated information ecosystem can contribute to the achievement of the 2030 sustainable development goals. *Inf. Syst. J.* 27, 427–461 (2017)
- ✓ Drira, K.: Toward open smart IoT Systems: an overview of recent initiatives and future directions. In: 9th IFIP International Conference on New Technologies, Mobility

& Security, NTMS 2018 (2018)

✓ Ismagilova, E., Hughes, L., Dwivedi, Y.K., Raman, K.R.: Smart cities: advances in research —An information systems perspective. *Int. J. Inf. Manag.* 47, 88–100 (2019)

✓ Kotzé, P., Coetzee, L.: Opportunities for the Internet of Things in the water, sanitation and hygiene domain. In: Strous, L., Cerf, V. (eds.) *IFIPIoT 2018*. IAICT, vol. 548, pp. 194–210. Springer, Cham (2019). https://doi.org/10.1007/978-3-030-15651-0_16

✓ *Smart Cities Framework: Guide to establishing strategies for Smart Cities and Communities*, British Standard Institute, PAS, 181(2014).

✓ *Smart Cities Background Paper*, London: Department of Business Innovation and Skills (2013)

✓ V. Cosgerove and al. *Smart Cities: Introducing the IBM city operations and management solutions IBM* (2011)

✓ G. Falconer and Mitcheli. *Smart City framework: A systematic process for enabling Smart Connected Communities* (2012)

✓ Kitchin, R. (2014) The real-time city? Big data and smart urbanism. *GeoJournal*, 79: 1–14.

✓ Kourtit, K., Nijkamp, P., Arribas-Bel, D. (2012). Smart cities perspective – A comparative European study by means of self-organizing maps, *Innovation*, 25: 229–246.

✓ Townsend, A. (2013) *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*. New York: W.W. Norton & Co.