# Samsung India Electronics Private Limited

## Impact Assessment FY 2022-23

As per requirement of The Companies Act, 2013

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# Background of the Study

- The impact assessment was carried out in compliance with the Companies (Corporate Social Responsibility Policy) Amendment Rules, 2021. The relevant section is quoted below:

  ***Rule 8 CSR Reporting***

  *(3) (a) Every company having average CSR obligation of ten crore rupees or more in pursuance of subsection (5) of section 135 of the Act, in the three immediately preceding financial years, shall undertake impact assessment, through an* ***independent agency****, of their CSR projects having outlays of one crore rupees or more, and which have been completed not less than one year before undertaking the impact study.*

- Basis this Samsung India Electronics Private Limited appointed Ernst & Young LLP to perform the impact assessment for their four qualifying projects in FY 2022-23. This is the report of the impact assessment conducted.

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# Background of the CSR Programs

## Vision

**Together for Tomorrow! Enabling People**

The vision draws on the core values - **People**, **Co-prosperity**, and encompasses promise to foster talent & innovation

## Mission

**Education for Future Generations**

Empower the next generation to achieve their full potential, enabling them to pioneer positive social change and build a better world for all

# CSR Initiatives

### Solve for Tomorrow

**Implementation Partner :** Foundation for Innovation & Technology Transfer (FITT),IIT Delhi

### Samsung DOST

**Implementation Partner :** National Skill Development Corporation (NSDC)

### Afforestation Project

**Direct Implementation** at Gautam Budh Nagar, Uttar Pradesh, India

### Smart School Program

**Direct Implementation** in Jawahar Navodaya Vidyala

# Background of the CSR Programs

## Solve for Tomorrow 2022

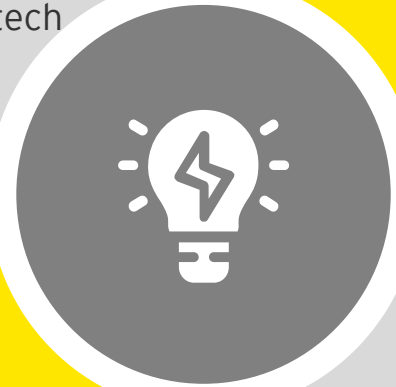
Implementation Partner : Foundation for Innovation & Technology Transfer (FITT), IIT Delhi

A nationwide education and innovation competition for Gen-Z, the competition was on the lookout for ambitious 16-22-year-olds who could solve global issues with game changing tech solutions. Top 3 teams were incubated at FITT

## Samsung DOST

Implementation Partner : NSDC- National Skills Development Corporation

2,500 beneficiaries were trained on the "in-store promoter" role. NSDC partnered with training providers who identified and mobilized youth while also providing virtual sales training. The total program duration was 6 months, which included 1 month of classroom/ online training and five months of on-the-job training.



## Afforestation Project

Direct Implementation at Gautam Budh Nagar, Uttar Pradesh, India

The project aimed to increase the forest cover in urban areas by planting adequate quantity of trees in the Village Nagla Chamuru situated at village Chamuru, Tehsil Dadri of Gautam Budh Nagar

## Smart School/ Classes Program

Direct Implementation in Jawahar Navodaya Vidyala

The program equipped 90 schools with smart devices to resolve education gaps and foster a smart education environment for students from backgrounds with limited/no access to digital equipment

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# EY's Methodology for the Study




| | Solve for Tomorrow | Samsung DOST | Afforestation Project | Samsung Smart School Program |
|---|---|---|---|---|
| **Key Stakeholders** | Winning Teams, Top 10 Teams, Top 50 Teams, FITT Team, Samsung Jury, Young Mentor Buddies | Beneficiaries, Training Partners, NSDC Team, Employers | Subdivisional Magistrate Dadri, Sub-Inspector Forest Department, Village Pradhan, Local Employed and Community Members | School Students, JNV Teachers and Principals |
| **Framework** | • Qualitative Interactions: In-Depth Interactions (IDIs) | • Qualitative Interactions: In-Depth Interactions (IDIs), Focus Group Discussion (FGD)<br>• Quantitative Interactions: 363 | • Qualitative Interactions: In-Depth Interactions (IDIs), Focus Group Discussion (FGD)<br>• Transect Walk and Species Verification<br>• Carbon Sequestration Calculation | • Qualitative Interactions: In-Depth Interactions (IDIs), Focus Group Discussion (FGD)<br>• Quantitative Interactions: 426 |
| **Qualitative Interactions** | • IDIs: 14 | • IDIs: 8<br>• FGD: 1 | • IDIs: 4<br>• FGDs: 2 | • IDIs: 25<br>• FGDs: 2 |

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# Impact Assessment: Solve for Tomorrow 2022

# About Solve for Tomorrow

Samsung India launched the first edition of Solve for Tomorrow in India on 9th June 2022. The competition was aimed at Generation Z for identifying ambitious 16-22 years old who can solve global issues with game changing technology solutions

**CSR Spent in FY 22-23 :- INR 12.02 Cr**

## Phases of Solve for Tomorrow

**A**

### Invitation of Application

- Roadshow and college campaigns for outreach
- 2,189 applications

**B**

### Top 50 Teams

- Online session/ training/ materials on, idea validation, Prototyping, etc.
- Physical bootcamp at IIT Delhi involved trainings on design thinking, preparing a pitch

**C**

### Top 10 Teams

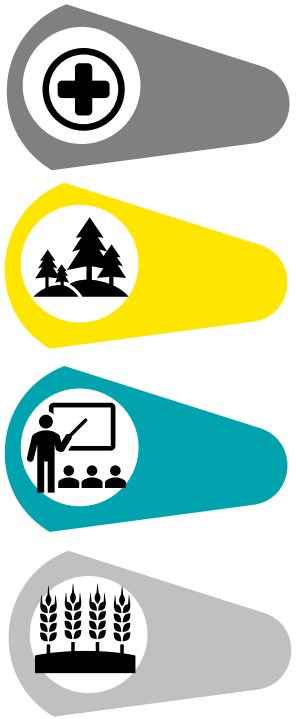
- Advanced session on business plan/ entrepreneurship
- Interaction with Samsung mentors
- Final pitch covered by national media
- The top 10 teams presented their ideas and prototypes to the jury

**D**

### Incubation Support Top 3 Teams

- Mentoring and incubation support
- Fund disbursement from grant pool of 1cr to the teams on the recommendation of committee constituted for this purpose

## Focus Areas (Applications Received)



- Healthcare (662)
- Environment (590)
- Education (577)
- Agriculture (360)

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# Key Findings

# Key Findings :Samsung Solve for Tomorrow

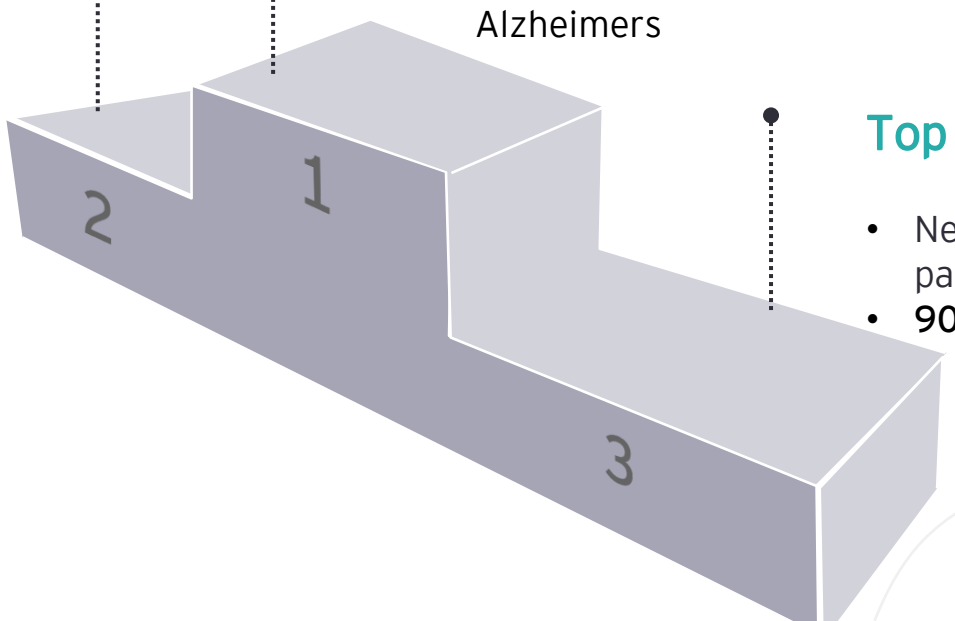
## Top 10 Teams:

- **INR 1Lakh** worth of training courses
- **Backyard Creators**: Secured both government and international grants and developed a bench prototype
  - **Prototype Developed**: Non-surgical adhesive hearing device
- **Planteers**: Developed a prototype focused on collecting and detecting plastic waste.
  - **Prototype Developed:** Underwater device to collect and detect plastic waste

## Winning Teams 2022:

**Incubated at FITT** with grant support capped at **INR 1 crore** for the three winning teams

- **Sputnik Brain**
  - Secured the prestigious Thiel Fellowship and were admitted into Sigma-Squared
  - A board member from Neuralinks, has joined as a mentor.
    - **Prototype Developed:** A wearable device that helps reduce stress
- **Alpha Monitor**
  - Secured provisional patent.
  - Partnered with T-Works, India's largest prototyping centre and honoured with the "Unstoppable 21"
    - **Prototype Developed:** GPS enabled smart wristband helps patients with Alzheimers




## Top 50 Teams:

- Networking opportunity with mentors and other participants
- **900+ Man-hours** of mentorship and training support

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# Winning Team 2022 : Sputnik Brain


## Post Competition Benefits :-

- Received incubation support by FITT with access to a grant pool worth 1cr from Samsung
- Shankar successfully secured the prestigious Thiel Fellowship and were admitted into Sigma-Squared, a global community & networking initiative for ambitious entrepreneurs under 26.
- Clinical trials have commenced for their product.
- A board member from Neuralinks, Elon Musk's initiative on implantable brain-computer interfaces has joined as a mentor.

**Founder- Shankar**

**About Project** - A wearable device that helps reduce stress. It is productizing pleasure through safe brain modulation to tackle the global issue of fatal stress and fulfilling the unmet need for a chemical & adverse-effect free tech. (Sputnik Brain)

## Impact of the Program

- The program team's willingness to support, and treat with respect, such novel technology at such an early stage was highly appreciated by the winning team.
- The most important aspect of the technical training for them was the interaction with Samsung mentors, which facilitated the development of a practical grasp of market dynamics
- The ongoing support after the program was instrumental in maintaining their customer focus during the development of this disruptive technology
- They attribute their acceptance into Sigma-Squared and the Thiel Fellowship to the credibility and visibility gained from media exposure under the program.

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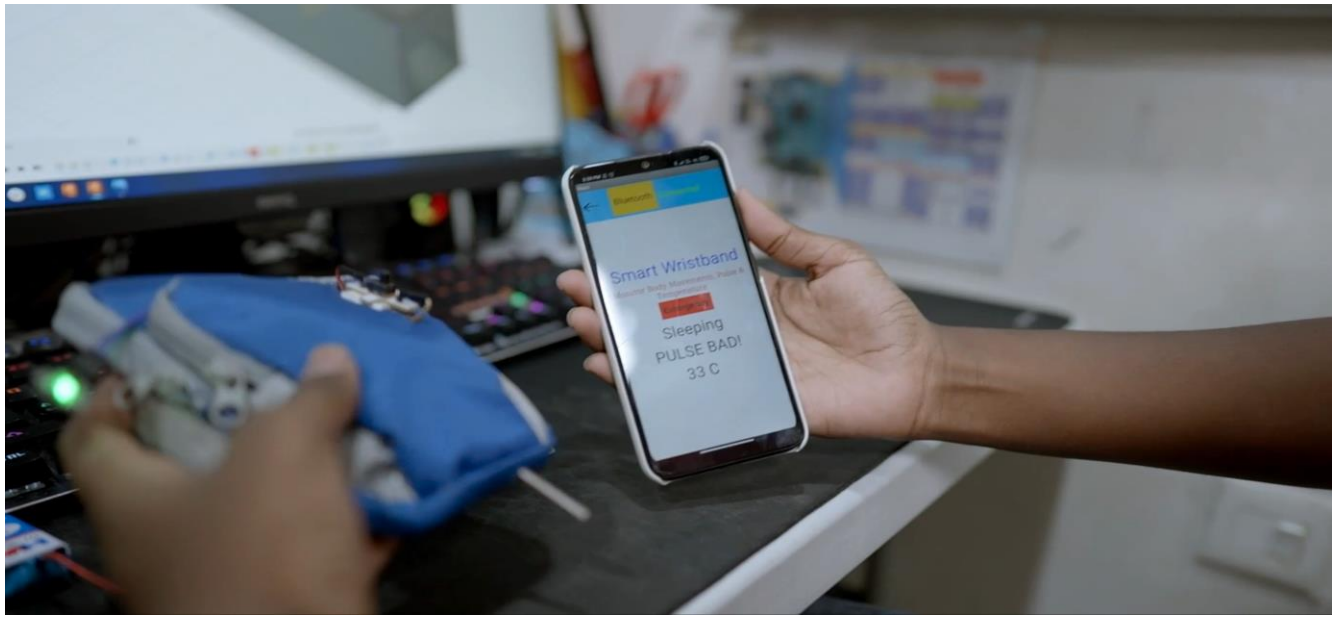
# Winning Team 2022: Alpha Monitor




## Post Competition Benefits :-

- Received incubation support by FITT with access to a grant pool worth 1cr from Samsung
- Secured provisional patent.
- Engaged in discussions with the Chief Technology Officer (CTO) of a prominent conglomerate in the wearables industry for mentorship role.
- Partnered with T-Works, India's largest prototyping centre under Telangana's Startup cell.
- Honoured with the "Unstoppable 21" title by Hon'ble Minister Dharmendra Pradhan, recognized by TOI.
- Interviewed by prestigious media outlets such as Guardian and BBC.

**Hemesh identifies himself as a MAKER**

**About Project** - A smart device that aims to help patients with Alzheimer's. The GPS enabled smart wristband will monitor the patient's pulse, blood pressure and other vital readings.

## Impact of the Program

- Assistance in addressing product-related questions and challenges by Samsung Mentors.
- Improved understanding of pitching ideas and securing funding through the physical bootcamp. Additionally, the bootcamp also provided training in essential business skills for startup operations.
- The FITT team supported and maintained contact even after the program concluded, ensuring continued engagement and collaboration.
- The training session encouraged the adoption of design thinking to enhance prototype development.
- Facilitated connections among aspiring entrepreneurs to foster idea development and discussions spanning prototype iterations and business strategies.

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# Top 10 Team : Backyard Creators

## Impact of Training Session

- The program team's efforts were focused on searching for solutions and, more importantly, posing the most pertinent questions. Through this process, the mentors shaped their thinking, guiding them in the development of their products with wisdom and insight.
- They received valuable support in developing pitch decks, publishing work, and navigating the complexities of the startup ecosystem through the bootcamp.
- This exposure instilled confidence in approaching major firms for collaboration.

## Post-Competition Benefits

- They secured both government and international grants.
- They developed a bench prototype for their product by applying their learnings about design and modelling from the Solve for Tomorrow program.

**The team was founded by twins Raman and Lakshmanan**

## About Project

Developing a non-surgical adhesive hearing device that is cheaper than traditional hearing aid implants and eliminates the need for risky skull surgery.

# Top 10 Team : Planeteers

## Impact of Training Session

The technical training resulted in valuable guidance and support, enhancing their understanding of:

- Environmental challenges
- Project development

They were equipped with the ability to ideate, prototype, and refine their solution effectively during the design thinking session.

The sessions facilitated skill development and problem-solving abilities crucial for addressing the novel challenge of marine pollution.

## Post-Competition Benefits

- The team continues to develop a protype focused on collecting and detecting plastic waste.
- Equipped with the design thinking skills acquired during the program, they aim to further refine their solution.


**Team Planeteers, team members- Akshita, Nikita, and Riya**

## About Project

Building an autonomous underwater vehicle called Aquarius that is capable of detecting micro-nano plastics inside deep ocean beds and collecting them in an accumulator.

# Top 50 Teams

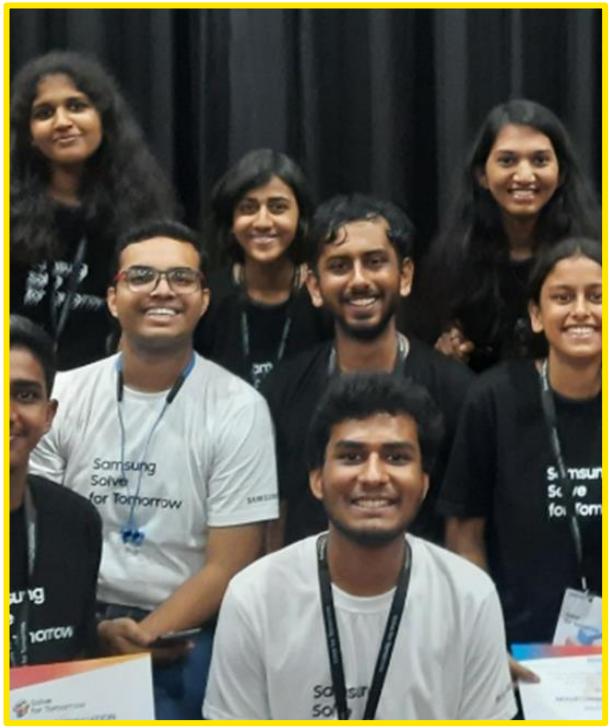
## About The Level Project

The Level project aims to improve children's learning experiences through innovative tech-based solutions.

## Enemies of Syntax

## Overall Program Experience

- The boot camp and FITT were welcoming and inclusive environments.
- Interactions with the Solve for Tomorrow team and fellow participants were highly beneficial and supportive.
- Throughout the program, teams received positive feedback and consistent support.
- Tailored guidance was provided to address specific challenges related to product development.
- Close collaboration with mentors helped refine the project approach and develop sustainable solutions.




## The Level Project

Establishing a unified resource hub for differently abled individuals' assistance needs, alongside OneSpace digital platform for streamlined access to mental health professionals and care for children with autism and parent

## About Enemies of Syntax

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# Top 50 Teams

## About Water Upliftment Team

Introducing an innovative solution to uplift water without relying on electric pumps, addressing challenges of unreliable electricity supply and promoting energy efficiency.

## Social Workers

### Impact of Training Session

- Found the design thinking component particularly beneficial for refining project ideas.
- Enhanced presentation skills through program activities.
- Acquired practical knowledge and skills for developing innovative and sustainable solutions.
- Gained insights and techniques for addressing challenges within their field of work.

### Post-Competition Benefits

- Granted a 1 lakh worth scholarship for post-program courses.
- FITT played a pivotal role in improving both technological aspects and content quality.
- Teams continue to benefit from ongoing mentorship support, refining their project and positioning themselves effectively in respective sectors.

## Water Upliftment Without Using Electric Pump

"Are You Fine". Social Workers are creating an app and website to streamline medical services online, enabling easy access to doctor consultations, ambulance services, and more with a simple click.

## About Social Workers

# Nurturing Innovation: Hear it from the Jury

Ruchika Saxena, General Manager
Samsung Research Institute, Delhi

## Quality of Applications Received

**Fresh Perspectives** Engaging with the Samsung Solve for Tomorrow program allowed the jury member to connect with a diverse array of fresh minds, each bringing unique perspectives and innovative ideas to the table. This was evident through the well-crafted applications.

## Presentation Skills of the Teams

**Professionalism and Sophistication:** The jury member was thoroughly impressed by the professionalism and sophistication exhibited by the selected 50 teams in presenting their innovative concepts. The teams' ability to articulate and present their ideas showcased a high level of professionalism.

## Overall Experience of the Competition

**Women in Innovation:** The jury member found it inspiring to witness a significant representation of solely woman-oriented teams among the participants, underscoring the remarkable outreach and talent identification by the project team.

Meera Vohra, General Manager
Samsung Research Institute, Noida

## Quality of Applications Received

**Impressive Applications:** The jury member was enthralled by the quality of the applications received. Each submission showcased innovative ideas and well-thought-out prototypes

## Presentation Skills of the Teams

**Professional Presentations:** The teams' proficiency in delivering formal presentations was noticed by the jury member. The teams' ability to articulate their ideas effectively added a professional touch to the proceedings.

## Overall Highlight of the Competition

**Practicality of Prototypes:** Practicality of the prototypes presented by the teams was particularly impressive to the jury member. It was evident to them that considerable effort had been invested in ensuring the feasibility and real-world applicability of their solutions.

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# Solve for Tomorrow Implementation Team

The field team interacted with the FITT team to understand and assess the quality of participants along with level of innovation displayed by the participants.

**Dr. Ashutosh Pastor**,
Head Incubation at FITT-IIT Delhi

**Dr. Ashutosh Pastor**, had recognized that Solve for Tomorrow effectively promotes entrepreneurship as a mindset. More than half of the applications exhibited high quality, and the shortlisted candidates displayed innovative thinking.

**Prof. Lalan Kumar**,
Professor IIT-Delhi

Professor Lalan Kumar, who provided one-on-one mentorship to the top 10 teams, which included technical and business mentoring, acknowledged the high caliber of candidates. He suggested that specific training modules tailored to the needs identified in the next series should be considered.

**Prof. Sumer Singh**,
Professor IIT-Delhi

The candidates' ideas and pitches were comparable to any startup platform. They demonstrated quick learning abilities and collaborated effectively with both their team members and competitors. Some of the participants maintain ongoing contact with the FITT team.

## Program Goals

- Encourage Problem Solving Attitude
- Enhancing Skills
- Nurture Entrepreneurial Talent

## Criterion Used for Screening of Applications

- Impact
- Feasibility
- Novelty
- Thought Process

The Young Buddy Mentors expressed appreciation for the candidates' enthusiasm and their ideas. They served as a support system for the selected candidates, aiding in the preparation of pitches, conducting advanced research related to their ideas, performing due diligence, and providing technical support.

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# Conclusion & Way Forward

# Overall Conclusion

- The Solve for Tomorrow Program stands out for its extensive mentorship support and training programs. The participating teams highlighted the tailored mentorship they received as an USP of the program that makes it stand out from other competitions the teams have participated in.

- The Design Thinking Training conducted during the physical bootcamp helped refine the products of the participants that has allowed them to continue with their journey even after the program. Total duration was of 900+ Man-hours for mentorship and training support

- The Program complements the Startup India Mission aimed at promoting startups and helping them on their journey. The Solve for Tomorrow team has remained in touch with even the non-incubated teams, supporting them in planning their journey ahead.

- FITT provided grant support capped at INR 1 crore for the three winning teams

- The incubation opportunity also provided startups with access to lab facilities and its vast network for community exposure. The program also enabled the participating teams to gain visibility and credibility through the media exposure they received.

# Recommendations

## Strategic & operational recommendations for FITT to streamline project management


### Improve Mentor Mapping:

- Implement a more refined mentor mapping process to pair teams with mentors who have expertise relevant to their specific project ideas. This personalized mentorship can significantly enhance the quality of the projects developed by participating teams.


### SFT Global Network

- Create a dedicated platform where past and current participants across countries can connect, share experiences, offer peer-to-peer support, and potentially collaborate on future projects. The network can develop into a global community of ambitious young entrepreneurs along the lines of Sigma Squared.

### Formalize and Expand Post-Program Connections:

- Formalize post-program connections with institutions and alumni through structured networking channels. Enhance jury connections post-program to facilitate ongoing collaboration and mentorship for participants.

### Leverage Government Collaboration

Collaborate with NITI Aayog to align program themes with national innovation priorities. Connect with innovation missions like Atal Innovation Mission (AIM) to leverage their networks, resources, and expertise, further empowering young innovators and enhancing the program's impact.

# Impact Assessment: Samsung DOST Sales

# About Samsung DOST Sales

2,500 beneficiaries received training for the in-store promoter role through NSDC's partnership, including 1 month of classroom/online training and 5 months of on-the-job training

**CSR Spent in FY 22-23 :- INR 20.05 Cr**

## Samsung DOST Program Components

### 1. Classroom Training

120 hours of classroom training is provided for the in-store promoter role defined by the Telecom SSC.

### 2. On-the-job Training

Training in retail stores for 5 months, with a monthly stipend of INR 10,000 provided by Samsung.

### 3. Certification

Assessment and certification are conducted in accordance with Skill India, NSDC, and Government of India standards.

### 4. Job Opportunity

Skilled youth made available for the retail Industry

# Key Findings :Samsung DOST Sales

## Skills Gained

1st — Customer relationship management

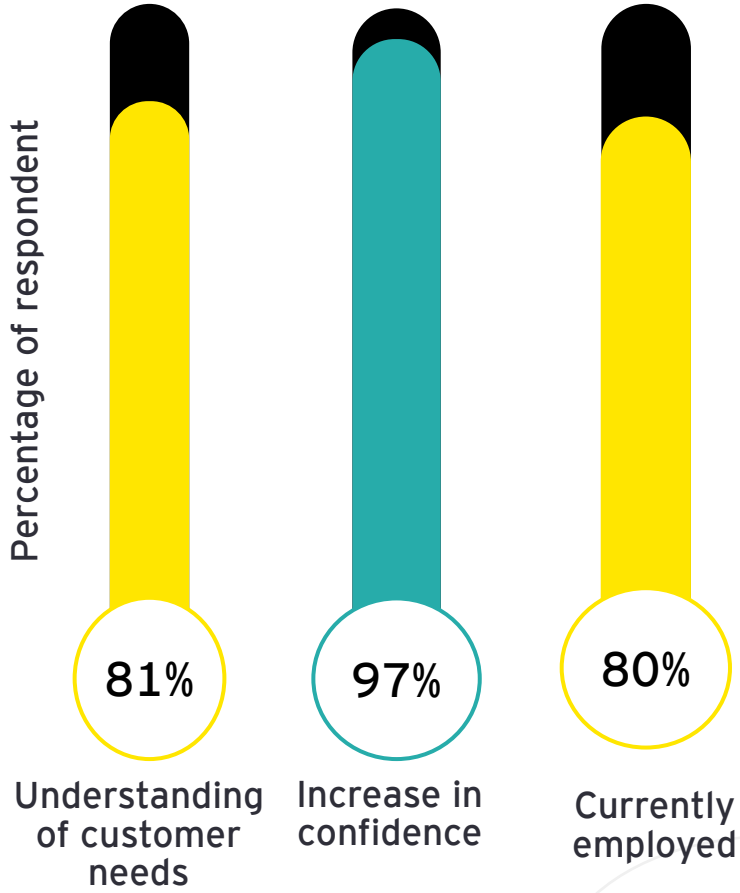
2nd — Implementing effective sales promotion techniques

3rd — Creating and maintaining reports

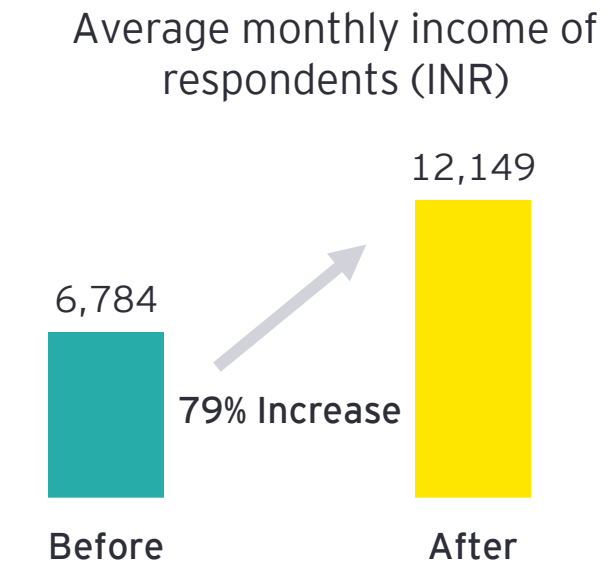
4th — Managing counter activities

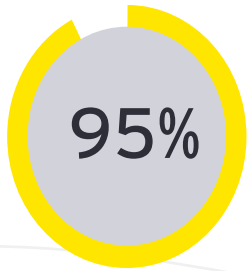
5th — Team Interaction and Soft Skills

## Personal Development




## Economic Empowerment




Recommended DOST to others

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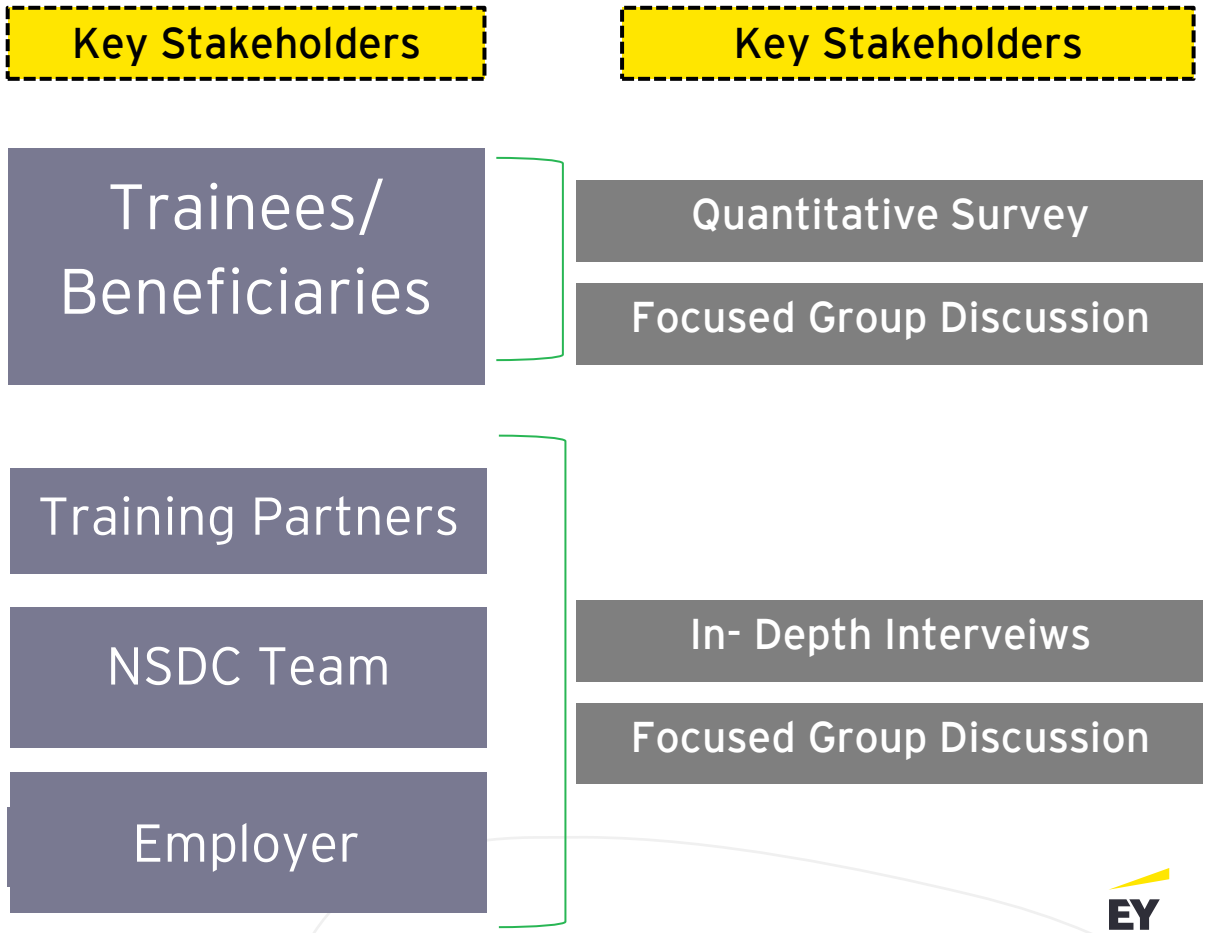
# Approach & Methodology

# Sampling of Respondents

Representative samples were covered over different geographical zones , proportionally divided between 9 locations. The locations with the maximum beneficiaries were selected. Quantitative survey of 363 beneficiaries was carried out.

| Zone | State | Total | Sample |
|---|---|---|---|
| North | Delhi | 96 | 47 |
| North-East | Assam | 131 | 21 |
| West | Maharashtra | 215 | 55 |
| West | Gujarat | 267 | 60 |
| South | Tamil Nadu | 245 | 20 |
| South | Telangana | 151 | 7 |
| East | West Bengal | 238 | 52 |
| East | Bihar | 150 | 28 |
| Central | Uttar Pradesh | 418 | 73 |

Data collection was conducted using qualitative and quantitative questionnaires, with interactions held on the field



# Data Collection and Analysis

The data collected was carefully analysed to measure the impact of the program using the following key parameters selected

| Indicators | Parameter |
| --- | --- |
| 1 Motivation and satisfaction of the beneficiaries | • Reason for joining Samsung DOST<br>• Beneficiaries likely to recommend the program to others |
| 2 Skills gained and personal development | • Reported skills acquired<br>• Reported increase in confidence levels<br>• Reported increase in employment perspective |
| 3 Economic empowerment | • Employment status before and after the program<br>• Self-reported income levels before and after the program |

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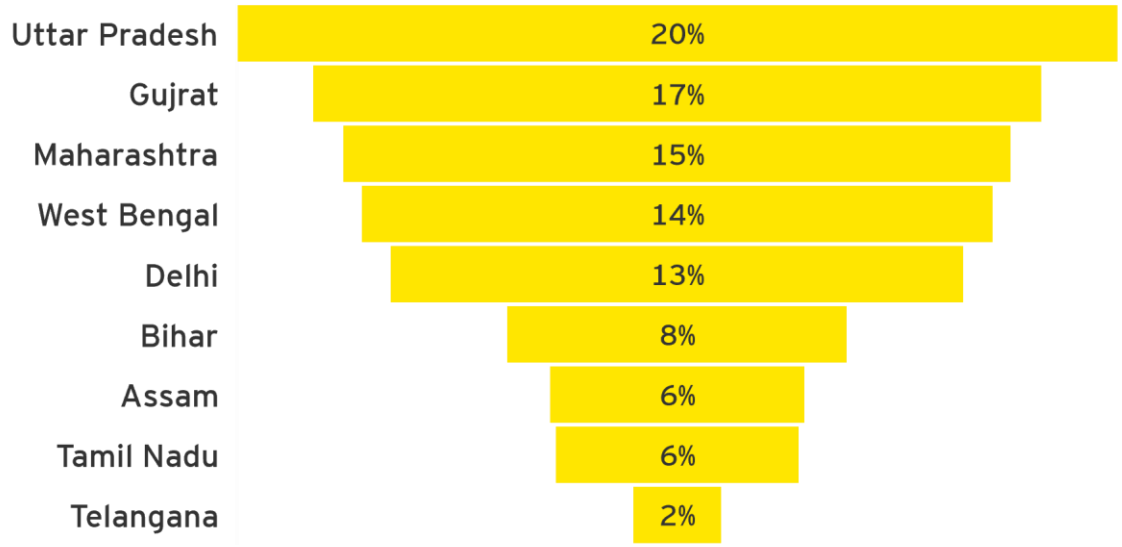
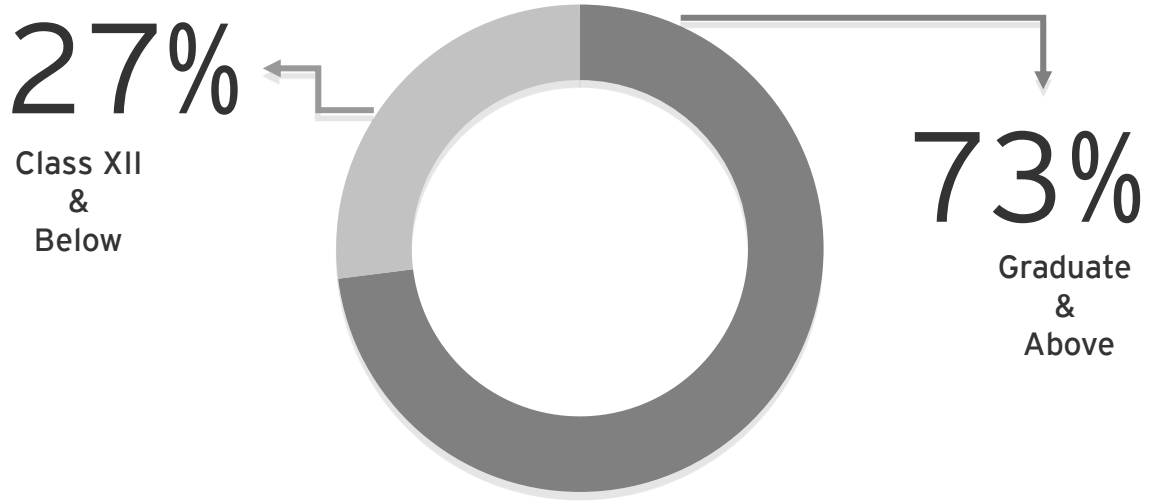
# Key Impact Indicators

# Demographic Profile of the Respondents

## Location of Respondents

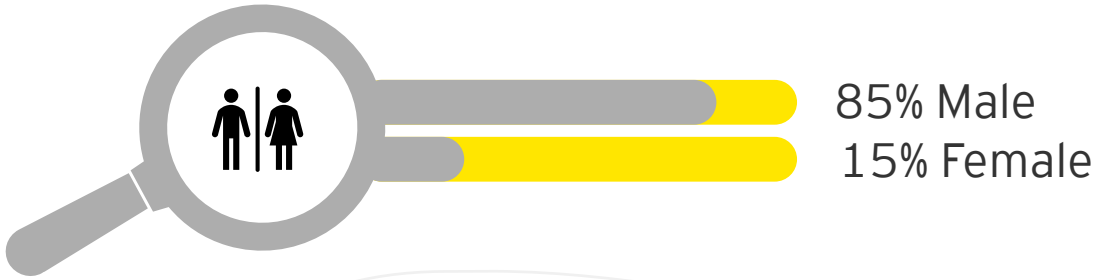



## Educational Qualification of Respondents




## Age of Respondents


## Gender of Respondents

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# Skills Gained & Satisfaction

Ranking of skills acquired by respondents as part of their classroom and on the job training

1st Customer relationship management

2nd Implementing effective sales promotion

3rd Creating and maintaining reports

4th Managing counter activities

5th Team Interaction and Soft Skills

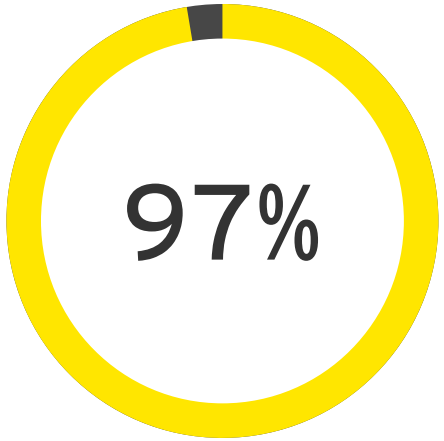
**95%** Respondents are likely to recommend the **Samsung DOST** program to others


Mr. Inderjeet (Samsung DOST beneficiary)

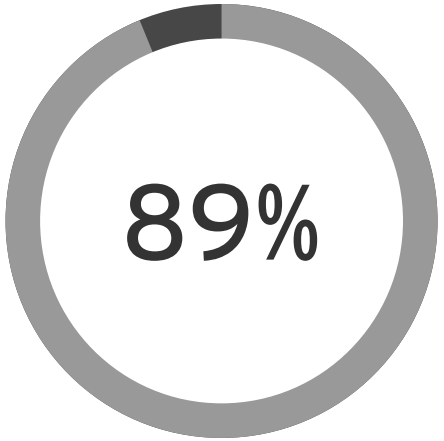
> "The program's communication skills have enabled him to connect with co-workers and manage outside vendors seamlessly, streamlining workplace collaboration
>
> - **Feedback from Employer (Delhi)**

# Personal Development

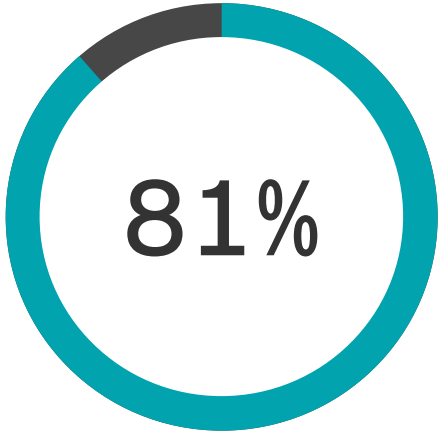
Percentage of Respondents




Increase in confidence




Rise in employment opportunities




Improved understanding of customer needs & preferences

“

The sales skills training from Samsung DOST through NSDC has equipped me with invaluable skills, enabling me to excel in my role with newfound confidence and effectiveness

**-Mr. Rahul, Sales Executive**
**MP Communication (Delhi)**

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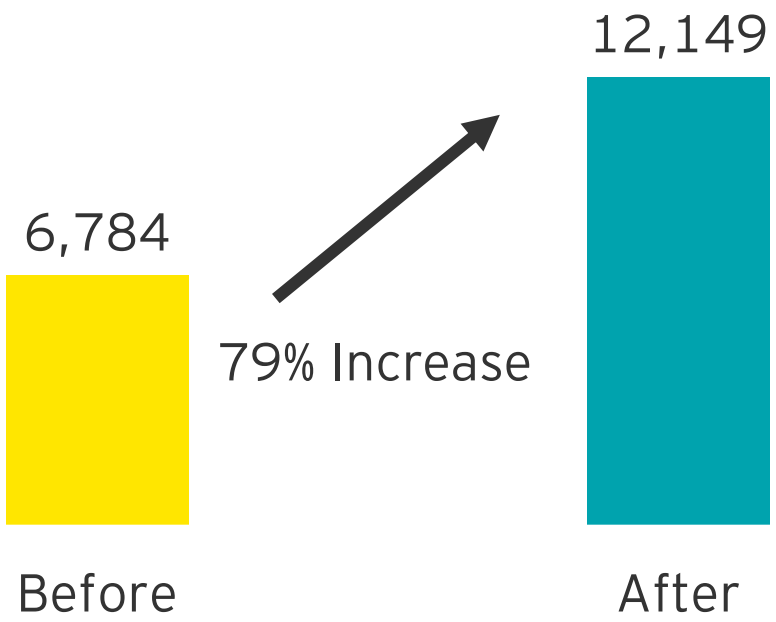
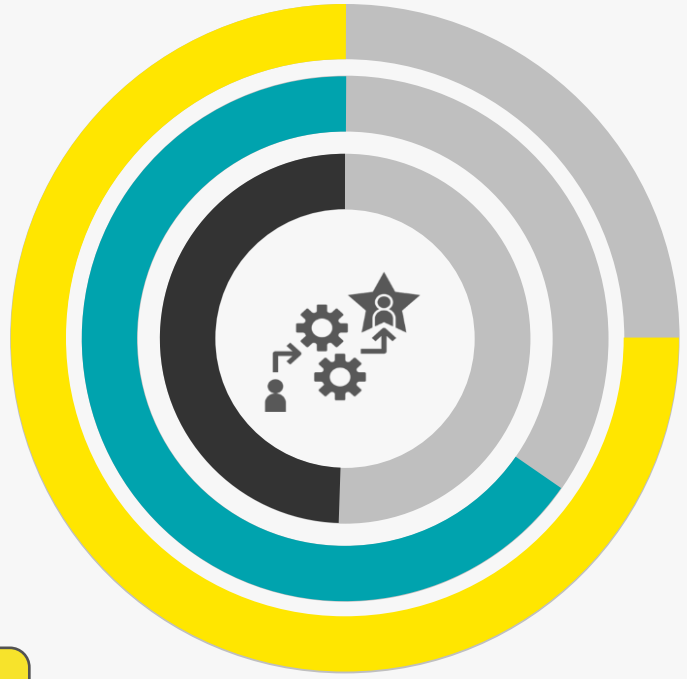
# Economic Empowerment

## Improvement in Income Levels

Average monthly income of respondents (INR)




## Current Employment Status



**80%** Respondents are currently employed

**56%** In-store promoter

**24%** Other roles

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# The Training Partner's Perspective- NSDC

## Qualitative Insights from NSDC Team

### Collaborative Support

- Samsung's support in offering strategic on-the-job training inputs has played a pivotal role in the success of their collaboration.
- Samsung's dedication to enhancing skills and empowering individuals has significantly strengthened the partnership.
- The support provided by Samsung has fuelled positive outcomes and contributed greatly to the success of the endeavour.

### Empowering Success

- Numerous success stories have emerged where individuals experienced significant growth in their sales skills.
- These success stories serve as a testament to the effectiveness of the Samsung DOST program in enhancing employability.
- Additionally, the program has fostered career advancement for many individuals, showcasing its impact on professional development.

### Future Vision

- Enhance the program by integrating elements that support budding entrepreneurship and provide placement opportunities.
- This expansion will equip participants with both placement and entrepreneurship support, thereby fostering diverse career paths for individuals involved in the program.

# Impact Story: From Sales Rep. to Entrepreneur

Shobit Kumar
Shree Shyam Mobile
(Delhi )


## Career Transformation & Success

- The Samsung DOST training program provided Shobit Kumar with comprehensive knowledge of electronics and essential communication skills, significantly enhancing his job performance as a sales representative.
- Empowered by his newfound expertise, Shobit opened Shree Shyam Mobile Store and now earns 30,000 INR monthly. His journey from sales representative to successful entrepreneur showcases the transformative impact of the Samsung DOST program.

# Impact Story: Path to Financial Stability

## Assistance for Financial & Professional Growth

- Sadhna, a resident of Varanasi and the sole earner supporting a family of four, found her financial footing through Samsung's DOST training program. Equipped with enhanced skills, she secured a job in an electronics retail store, supplementing her income and paving the way for a brighter future.
- She found financial stability through Samsung's DOST training program. With encouragement from Samsung promoters, she secured a job in an electronics retail store. Now earning 15,000 rupees monthly, plus incentives and insurance, Sadhna's journey showcases how the program brightened her family's future.

Sadhna at Samsung Varanasi

# Conclusion & Way Forward

# Overall Conclusion

- The Samsung DOST program included a unique on-the-job training component that gave the beneficiaries real life experience regarding the in-store promoter role. The skills gained by the beneficiaries included customer relationship management, sales promotion techniques, and reporting to list a few.

- The partnership with the National Skill Development Corporation helps in aligning the program components to the Skill India Mission

- The Program has been successful in generating livelihood opportunities for the beneficiaries. Not only are 80% of the respondents employed post the program the income levels on an average have gone up considerably as shown in the report above.

- The positive impact of the program is also highlighted by the fact that 95% of the respondents are likely to recommend the program to their peers.

# Recommendations

**Community Retail Entrepreneurship Initiative**

- Introduce specialized entrepreneurship training in Samsung DOST for setting up small electronics retail businesses, emphasizing refurbished products.
- This initiative promotes inclusive economic growth, empowers communities, and creates retail opportunities beyond established chains

**Skill-Based Badges and Micro-Credentials**

- Implement a badge system within the program, allowing graduates to earn digital badges for mastering specific skills like product knowledge, sales techniques, and customer service excellence.
- These badges can be displayed on online profiles such as LinkedIn, offering potential employers a comprehensive view of a graduate's skill set beyond a single program completion certificate.

**Rewards Program for Top Performers**

- Identify KPIs under the on-the-job training component to select top-performers. The KPIs will be based on employer feedback.
- Launch a rewards program component for high-performing participants.
- The rewards program can include upskilling program to further diversify and accelerate their career paths. It may also include facilitating industry connects, support in obtaining diplomas and even international exchange programs for apprenticeship.

**Incorporating Soft Skill Training**

- Emphasize the development of soft skills such as empathy, active listening, persuasion, and conflict resolution. These skills are crucial for building rapport with customers and delivering exceptional service.

# Impact Assessment: Samsung Afforestation Project

# About Afforestation Project

**Samsung** embarked on its **Afforestation Project in August 2021**, marking a commitment to environmental sustainability. The project was carried out at Village Nagla Chamru, Tehsil Dadri, Gautam Budh Nagar Uttar Pradesh

Miyawaki plantation is a method of afforestation that involves densely planting a variety of native tree species in a small area. These trees are typically of different heights and types, mimicking the structure of a natural forest. The Miyawaki technique aims to accelerate forest growth and biodiversity by creating optimal conditions for plant growth and interaction.*

CSR Spent in FY 22-23 :- INR 1.98 Cr

## Rapid Growth

Due to the dense planting and diverse mix of species, Miyawaki forests grow much faster than traditional forests, often reaching maturity in a fraction of the time

## Biodiversity

The diverse mix of native species promotes a rich ecosystem, attracting a wide range of insects, birds, and other wildlife. This biodiversity helps maintain ecological balance and resilience

## Soil Improvement

Miyawaki forests improve soil quality by enhancing microbial activity and nutrient cycling.


## Carbon Sequestration

The dense vegetation of Miyawaki forests efficiently captures carbon dioxide from the atmosphere, helping to mitigate climate change by sequestering carbon.

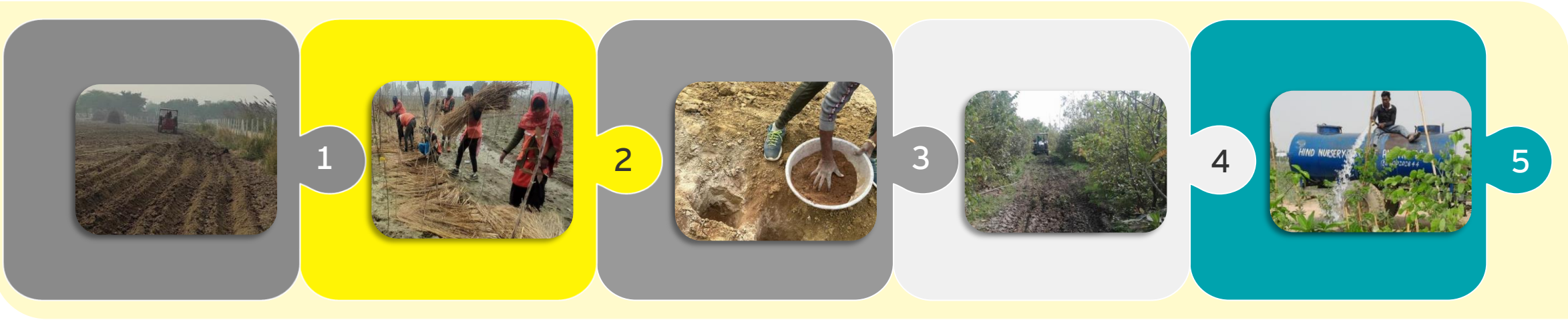
## Urban Greening

Miyawaki forests can be established in small urban spaces, providing much-needed greenery and improving air quality in densely populated areas.

## Low Maintenance

Miyawaki forests require minimal maintenance compared to traditional forests, making them a cost-effective and sustainable afforestation solution.

# Process Flow of Miyawaki Plantation Followed by Samsung




## Soil Preparation

The soil was prepared by clearing debris, weeds, and unwanted vegetation from the site. It was loosened to facilitate better root penetration and water absorption. Organic fertilizers was added to enhance its quality.

## Mulching

A layer of mulch was applied over the planted area to retain soil moisture, suppress weed growth, and provide nutrients as it decomposed. Commonly used organic materials such as straw, leaves, or wood chips were utilized for mulching.

## Selection of Native Species

Native plant species that were well-adapted to the local climate, soil conditions, and ecosystem were carefully selected.

## Planting

The selected species were densely planted in a predetermined pattern, adhering to the Miyawaki Technique.

## Maintenance

This involved monitoring for pests and diseases, weeding as needed, and providing additional support such as stakes or protective barriers when required. It was ensured that the newly planted saplings received adequate water particularly during the initial establishment phase.

Images provided by service provider
The process flow is based on documentation maintained by service provider

# Key Findings :Samsung Afforestation Project

## Carbon Sequestration

**4,740 MT*** → $CO_2$ Sequestered

The afforestation area acts as a carbon sink that has absorbed an estimated **4,740 MT** of $CO_2$ from the atmosphere till date.

**3,563 MT** → Total Biomass

A total biomass of **3,563 MT** exists in the afforestation site, which is the combined weight of all the living plants and trees planted in the area.

## Impact on Biodiversity

- Eurasian Collared Pigeon
- India Robin
- Heron
- Crow Pheasant
- Nilgai
- Wild Boars
- Indian Crested Porcupines
- Indian Hare
- Indian Jackal
- Black Buck
- Shikra

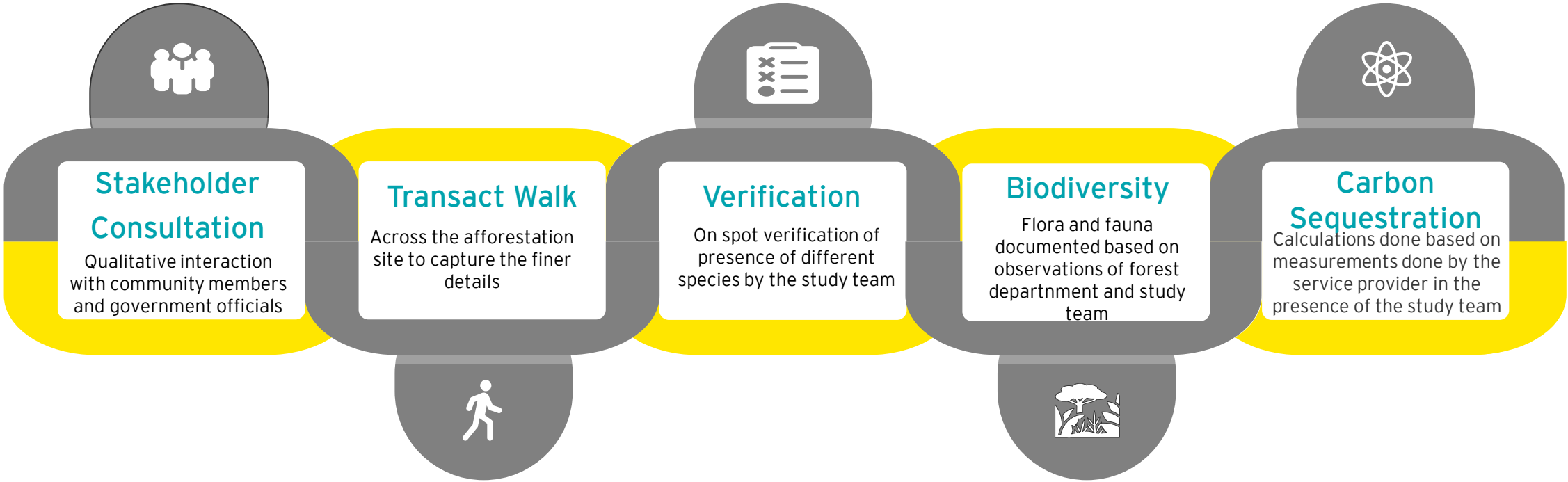
Observed fauna in the afforestation site

The afforestation area has turned into a favourable habitat for Nilgai, leading to a notable reduction in instances of farmland damage caused by this species in the region.

*Metric tonnes

# Approach & Methodology

# Our Approach and Methodology




Stakeholder consultation was carried out to understand impact of the project

## Government Stakeholders

- Subdivisional Magistrate, Dadri
- Sub Inspector, Forest Department

## Community Stakeholders

- Village Pradhan
- Local Community Members

## Project Stakeholders

- Hind Nursery Team
- Locals Employed in the Project

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> This is the largest Miyawaki project in the district. The Prime MInister has also emphasised about this technique in his Mann ki Baat as it is extremely beneficial to the climate
>
> - Mr. Alok Kumar Gupta
>
> Sub Divisional Magistrate, Dadri

# Stakeholder Consultation

While the initiative has brought blessings to our village, it's important to address the concerns of the villagers. We actively handle grievances from both sides. People who were initially unhappy now enjoy the shade as a picnic spot.

-Mr. Pankaj Lohiya

Village Pradhan

The project has greatly improved the soil quality, enhanced biodiversity in the region, and brought down the temperature in the local region. It would be great if Samsung could expand its project to other locations in the region

- Mr. Ramavatar Chaudhary

Sub Inspector, Forest Department

# Key Impact Indicators

# Afforestation Project: Effectiveness and Efficiency

**The forest officials highlighted the challenge in carrying out afforestation at the designated site due to poor soil quality. As per the soil health cards provided by the service provider the average pH of the soil prior to the intervention was 8.13 making it alkaline and highly unsuitable for any afforestation activity**

Efforts were made to improve the soil quality to ensure that the plantation is sustained at the designated site.

Three rounds of tilling were carried out to prepare the soil and remove any unwanted debris, weed and vegetation present at the site.
Additionally, implementation of organic soil supplements such as cocopeat and vermiwash compost effectively maintained essential soil components, fostering optimal growth and sustainability of the forest ecosystem

Images provided by service provider

"Many attempts have been made to restore this land through afforestation, none had proved successful until the Samsung Project. The poor soil quality made it a particularly challenging task"

- Ramavatar Chaudhary
Sub Inspector Forest Department

A layer of mulch was applied over the planted area to retain soil moisture, suppress weed growth, and provide nutrients as it decomposes. Organic materials like straw, leaves, or wood chips were used for mulching.

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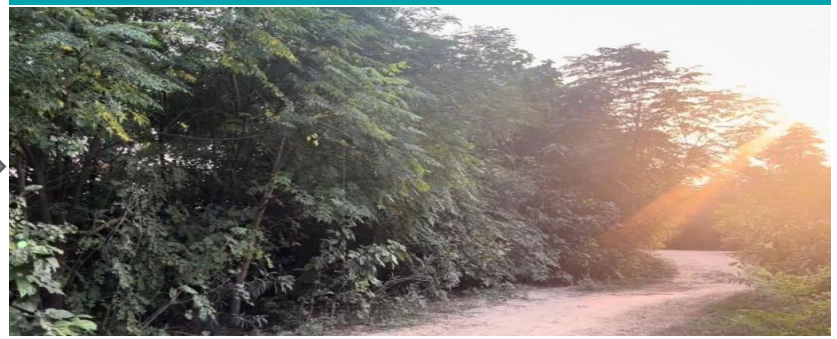
# Afforestation Project: Effectiveness and Efficiency

**The implementing team credits the use of organic liquid fertilizer, cocopeat and vermiwash compost along with vigilant monitoring for pests and diseases for preserving the health of the Miyawaki forest**

| Before | After |
| --- | --- |
|  |  |
|  |  |

Apart from the vermiwash shown above, consultation was carried out with the forest department and the recommended quantity of gypsum was added.

**The improvement in soil quality and reduction in pH is evident from the successful uptake of the Miyawaki plantation**

Images provided by service provider

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# Afforestation Project: Effectiveness and Efficiency



As per the forest department officials the increase in tree cover has been observed because of the soil management techniques and the meticulous selection of native plant species suited to the local climate, soil conditions, and ecosystem dynamics in consultation with the forest department. The thoughtful consideration of indigenous flora ensured the seamless integration of well-adapted plant species, fostering resilience and biodiversity within the Miyawaki forest ecosystem.

*Maps procured by a landscape consultant working with the service provider

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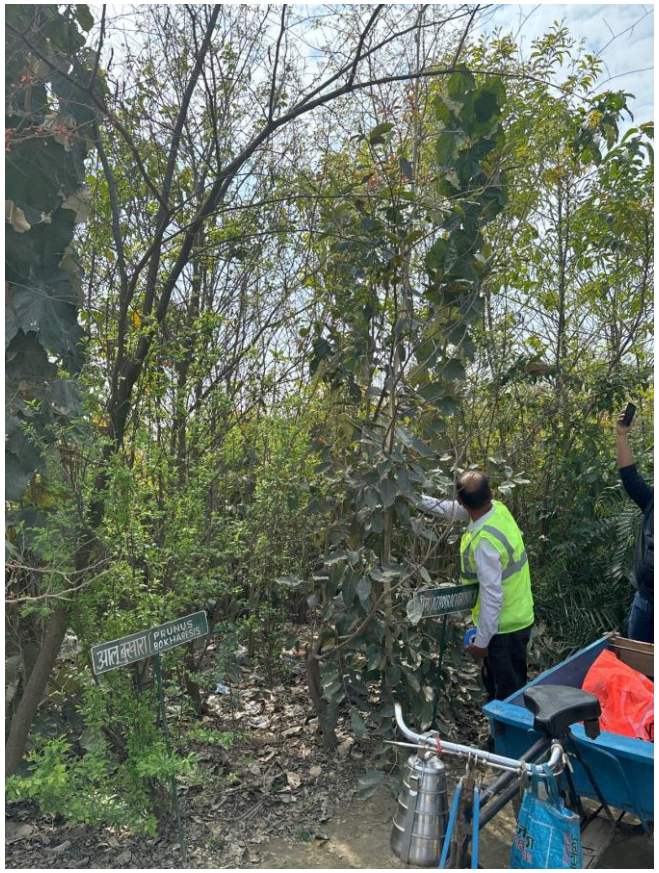
# Afforestation Project: Effectiveness and Efficiency

The study team conducted thorough on-site verification to confirm the presence of the species planted by the vendor.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Flowering plants & Shrubs | Amaltas (Cassia fistula) | Fruit Bearing plants | Aadu / Peach (Prunus persica) | Deciduous Plants | Drumstick (Moringa oleifera) | Timber Plants | Anjan (Hardwickiabinata) |
| | Chameli (Jasminum) | | Aloo Bukhara (Prunus bokharensis) | | Harad (Terminalia Chebula) | | Arjun (Terminalia arjuna) |
| | Champa (Plumeria obtusa) | | Amla (Phyllanthus emblica) | | Imli (Tamarindus indica) | | Babool (Acacia nilotica) |
| | Harshingar (Nyctanthes arbor-tristis) | | Anar (Punica granatum) | | Indian coral tree (Erythrina variegata) | | Bael Patra (Aegle marmelos) |
| | | | Balam Kheera (Kigeliapinnata) | | Jhand (Prosopis Cineria) | | Baheda (Terminalia bellirica) |
| | Hibbuscus/Rosemellow | | Ber (Zizyphus jujuba) | | Jungle jalebi (Pithecellobium dulce) | | Bargad (Ficus benghalensis) / Banyan |
| | Kachnar (Bauhinia variegata) | | Chikoo (Manilkara zapota) | | Pasendu (Diosypyros Montana) | | Bakain (Melia azederach) |
| | Kadamb (Neolamarckia cadamba) | | Dehu | | Sonjna (Moringa oleifera) | | Desi Papari (Ehretialaevis) |
| | Kanak (Pterospermumacerifolium) | | Goolar (Ficus racemosa) | | Sheesham (Dalbergia sissoo)/ Indian Rosewood | | Dhuak (Annogeissus pendula) |
| | Kaniar (Bauhinia purpurea) | | Guava (Psidium guajava) | | Silver Oak (Grevillea robusta) | | Khirni (Manikarahexandra) |
| | Kassod (Senna Siamea) | | Jamun (Syzigium cumini) | | | | Lasoda (Cordia dichotoma) |
| | Marodphali (Helicteres isora) | | Karonda (Carissa karonda) | Medicinal Plants | Kadi patta (Bergera koenigii) | | Pahadi Papri (Holoptelia integrefolia) |
| | Semal (Bombax ceiba) | | Katahal (Artocarpus integrifolia) | | Maulsari (Mimusops elengi) | | Peepal (Ficus religiosa) |
| Bamboo | Bambusa bambus | | Khajur (Phoenix sylvestris)-Desi | | Mulethiya (Glycyrrhiza glabra) | | Pilkhan (Ficus virens) |
| | | | Kinnow (Citrus nobilis) | | Neem (Azadirachta indica) | | Sagwan (Tectona grandis) |
| | Bambusa wamin | | Lychee (Litchi chinensis) | | Phalsa (Grewia asiatica) | | Sheesham (Dalbergia Sissoo) |
| | Gaigantious | | Loquat (Eriobotrya japonica Lindl.) | | Putranjiva (Drypetes roxburghii) | | Toon (Chakresiya) |
| | Lathi Bans | | Mausami (Citrus limetta) | | Rohida (Tecomela undulata) | | |
| | | | Mango (Mangifera indica) | | Semur (Bombax Ceiba) | | |
| | Yellow Valgarious | | Myrobalan (Terminalia Chebula) | | Shahtoot (Morus alba) | | |
| Creeper | Bougainvillea | | Neembu/Lemon (Citrus Limon) | | Siras (Albizia lebbeck) | | |
| | Madhumalti | | Nashpati/Pear (Pyrus communis) | | | | |
| Cactus | Naagphani (Prickly pear) | | Sharifa (Annona squomosa) | | | | |

# Afforestation Project: Effectiveness and Efficiency


100%

Physically verified species: 80

*As per the service provider remaining 5 species were not suitable for the environmental conditions

100%

verification of fruit bearing and timber plant species

100%

verification of deciduous and medicinal plant species

100%

verification of flowering plants and shrub species

100%

verification of traditional plantations species

# Afforestation Project: Impact on Biodiversity

"The afforestation site has become a favorable habitat for the Nilgai, resulting in a significant decrease in incidents of farmland damage caused by the species in the region"

- **Ramavatar Chaudhary**
**Sub Inspector Forest Department**

The Forest Department team visits the afforestation site 1-2 times a month for monitoring the project. They have mentioned sighting the species listed in the image below at the site. The following were also observed by the on-site implementing team and locals.

Crow Pheasant

Black Buck

Nilgai

Wild Boars

Indian Crested Porcupines

Indian Hare

Indian Robin

Indian Jackal

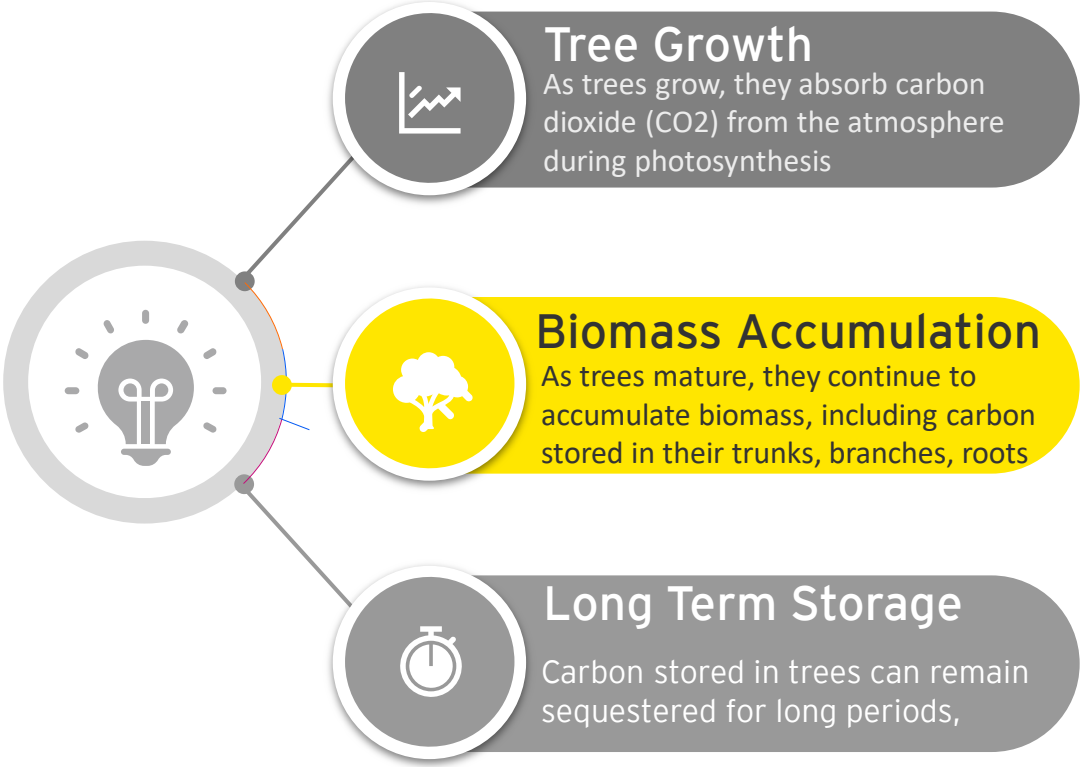
Heron

Eurasian Collared Pigeon

Images are indicative stock images

# Afforestation Project: Carbon Sequestration

Carbon sequestration refers to the process by which $CO_2$ is removed from the atmosphere and stored in carbon sinks, such as forests, oceans, soil, or geological formations, effectively reducing the amount of $CO_2$ in the atmosphere and mitigating climate change.




## Measuring the total $CO_2$ sequestered*

The estimated average $CO_2$ sequestered by a single plant till date was used to extrapolate the total carbon sequestered due to the afforestation project.

*Shadman, S., Khalid, P. A., Hanafiah, M. M., Koyande, A. K., Islam, M. A., Bhuiyan, S. A., ... & Show, P. L. (2022). The carbon sequestration potential of urban public parks of densely populated cities to improve environmental sustainability. *Sustainable energy technologies and assessments*, *52*, 102064

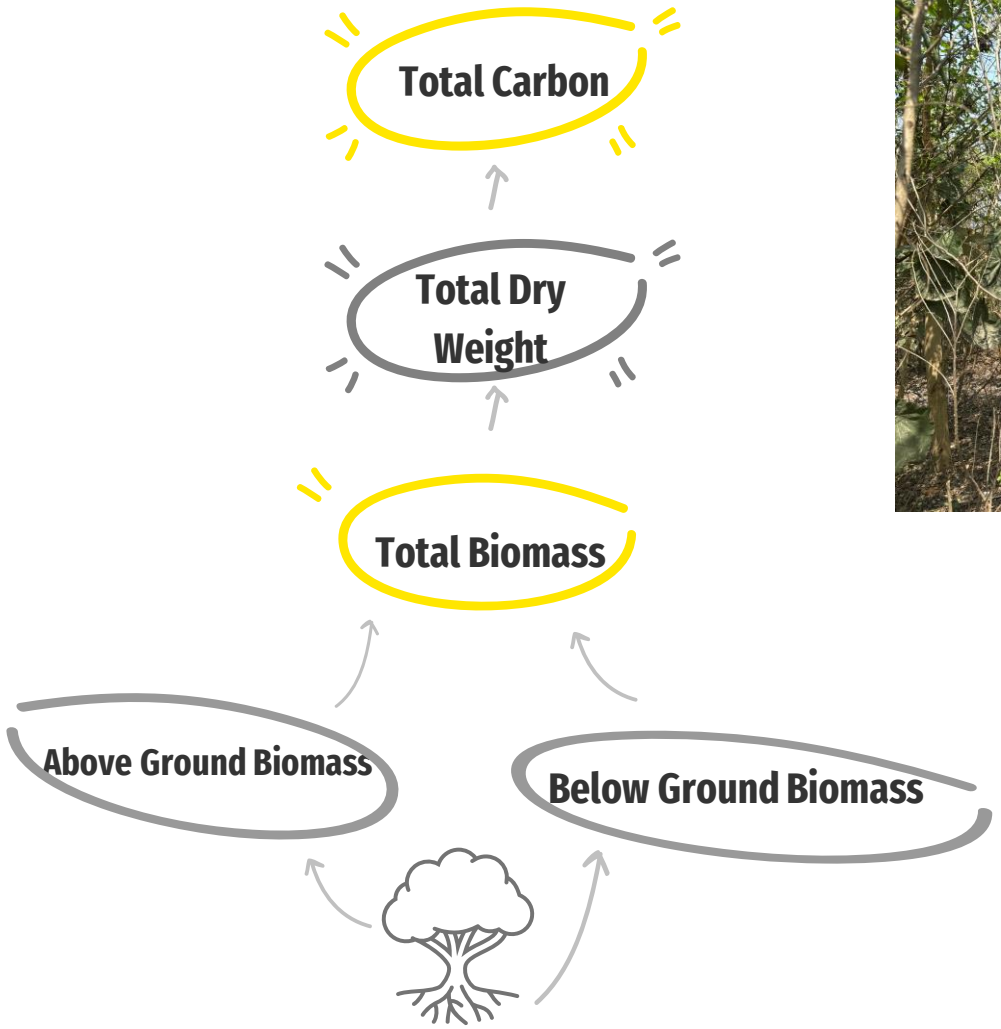
# Afforestation Project: Carbon Sequestration- Our Approach

Above-ground biomass refers to the visible portions of a tree situated above the soil line.
Below-ground biomass, on the other hand, comprises the roots, play a vital role in providing stability to the tree and facilitating nutrient absorption.

To determine the dry weight of a tree, we multiplied the total biomass of the tree by 72.5%, as trees typically contain 72.5% dry matter and 27.5% moisture content on average.

Carbon occupies 50% of the total dry weight. By knowing the total carbon content the total $CO_2$ sequestered till date by the trees was calculated.

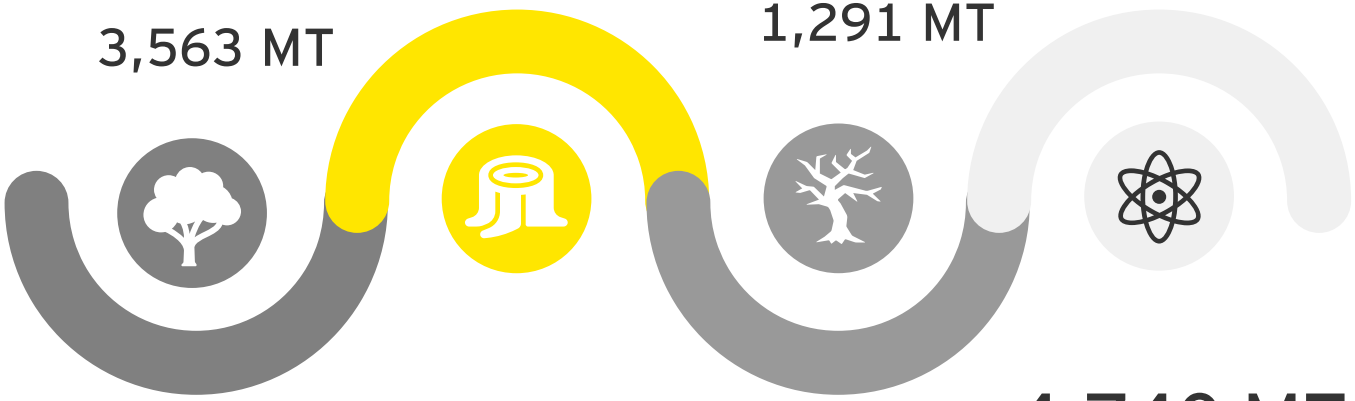
Direct height and diameter measurement was carried out using measuring tape and a bamboo pole.




*Shadman, S., Khalid, P. A., Hanafiah, M. M., Koyande, A. K., Islam, M. A., Bhuiyan, S. A., ... & Show, P. L. (2022). The carbon sequestration potential of urban public parks of densely populated cities to improve environmental sustainability. *Sustainable energy technologies and assessments*, *52*, 102064

# Afforestation Project: Carbon Sequestration

**The height and diameter of one plant from every species was measured during the field visits. This was used to measure the Total Biomass, Total Dry Weight, Total Carbon and Total CO2 Sequestered* since the project inception in metric tonne (MT).**




Each plant in the afforestation region sequesters approximately 28 kilograms of $CO_2$ throughout its lifespan, offering an important contribution to mitigating carbon emissions. In comparison, an individual exhales roughly 1 kilogram** of $CO_2$ daily, highlighting the offset potential of afforestation efforts in combating climate change in the region. This underscores the pivotal role of the afforestation project in rebalancing carbon levels and fostering environmental sustainability.

**The afforestation area acts as a carbon sink that has absorbed an estimated 4,740 MT of CO2 from the atmosphere**

*The calculated amounts are only an indicative value of carbon sequestration and are subject to limitations mentioned at the end of the report , a detailed technical study may be required to investigate and determine the overall environmental impact of the project

**How much does human breathing contribute to climate change? - BBC Science Focus Magazine

# Conclusion & Way Forward

# Overall Conclusion

- The Afforestation program has been successful in restoring a degraded patch of land, on which multiple efforts had been made by the government authorities previously. Interactions with the government stakeholders showed high levels of appreciation for the project.
- The field team also conducted a site survey and verified presence of 80 species.
- The forest department also praised the impact of the afforestation site on the local biodiversity in the region, for example afforestation site has become a favorable habitat for the Nilgai, resulting in a significant decrease in incidents of farmland damage caused by the species in the region.
- It was also estimated that the afforestation area acts as a carbon sink that has absorbed an estimated 4,740 MT of $CO_2$ from the atmosphere. The program contributes to India's various international obligations under UNFCCC, UNCCD, Paris Agreement, etc.

# Recommendations

## Regular Soil Testing

- Soil testing will help in determining the nutrient levels in the soil, including essential elements like nitrogen, phosphorus, and potassium. This will better guide the application of fertilizers or soil amendments to ensure optimal nutrient and soil pH for tree growth.

## Longer Maintenance Period

- The forest department officials have recommended that the maintenance work be carried out for another 3-4 years before the project is handed over to the government

## Incorporating Additional Species

- The forest department officials have recommended incorporation of species like Prosopis juliflora as these improve soil quality and help in restoring degraded land

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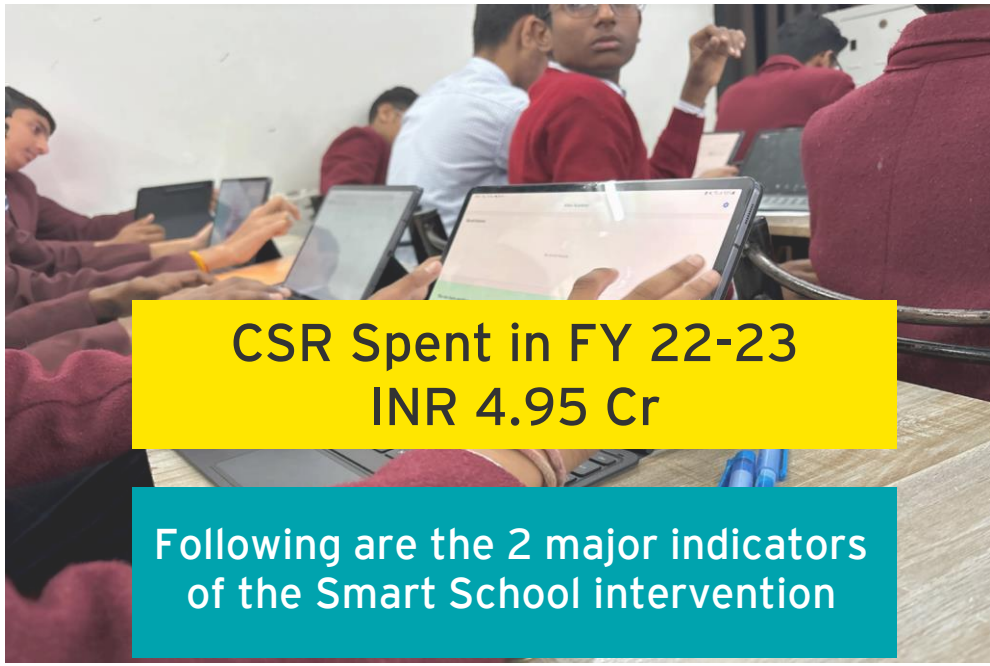
# Impact Assessment: Samsung Smart Schools/Class

# About Samsung Smart Schools/Classes

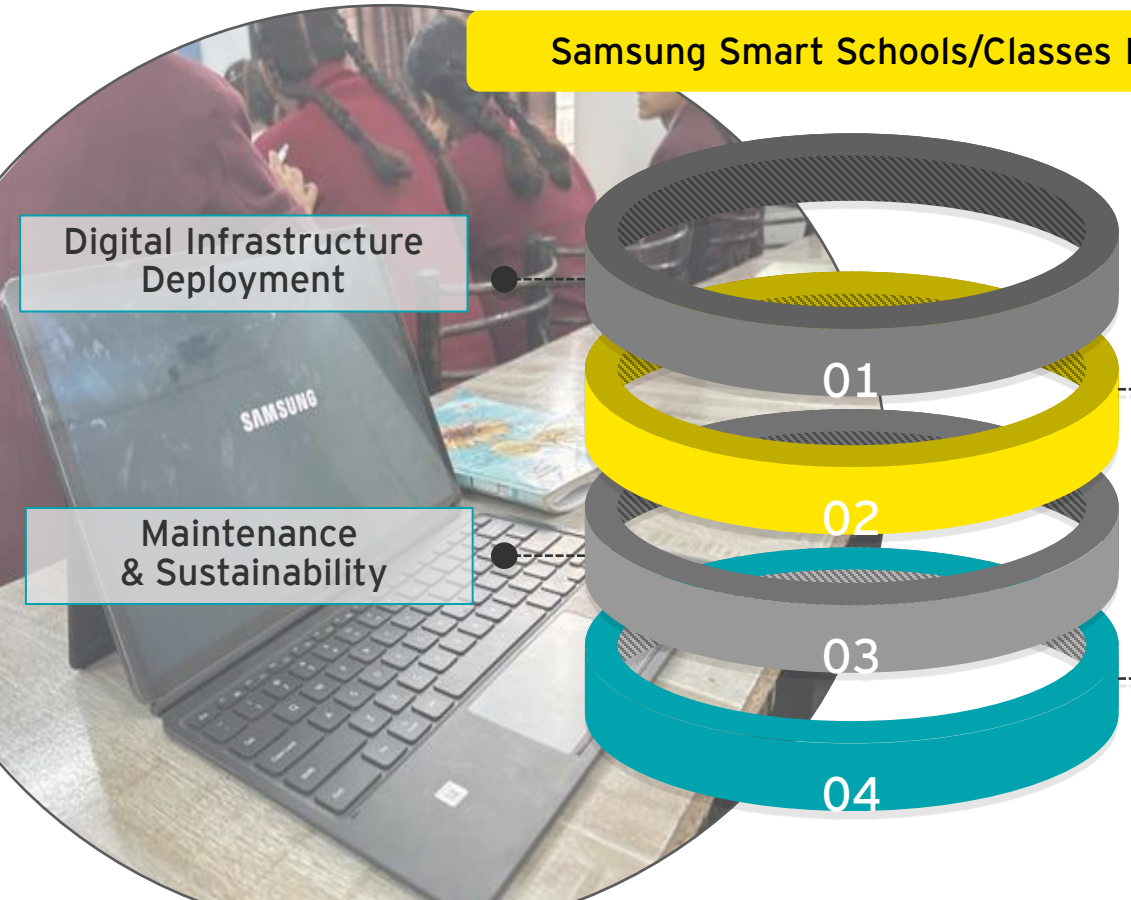
- Samsung equipped 90 Jawahar Navodaya Vidyalaya schools with smart devices to bridge education gaps and create a smart learning environment for students lacking access to digital equipment.
- As part of this endeavour, Samsung has partnered with **Navodaya Vidyalaya Samiti** to implement the **Samsung Smart School (SSS) program**.



**CSR Spent in FY 22-23**
**INR 4.95 Cr**

**Following are the 2 major indicators of the Smart School intervention**

**Samsung Smart Schools/Classes Model**




- Digital Infrastructure Deployment
- Maintenance & Sustainability
- 01
- 02
- 03
- 04
- Technology Integration Through Teacher Training
- Enhance Rural Student's Creativity & Innovation

1. Utilization of the devices and digital application
2. Satisfaction with devices, smart classes, and content positively impacts student engagement in education

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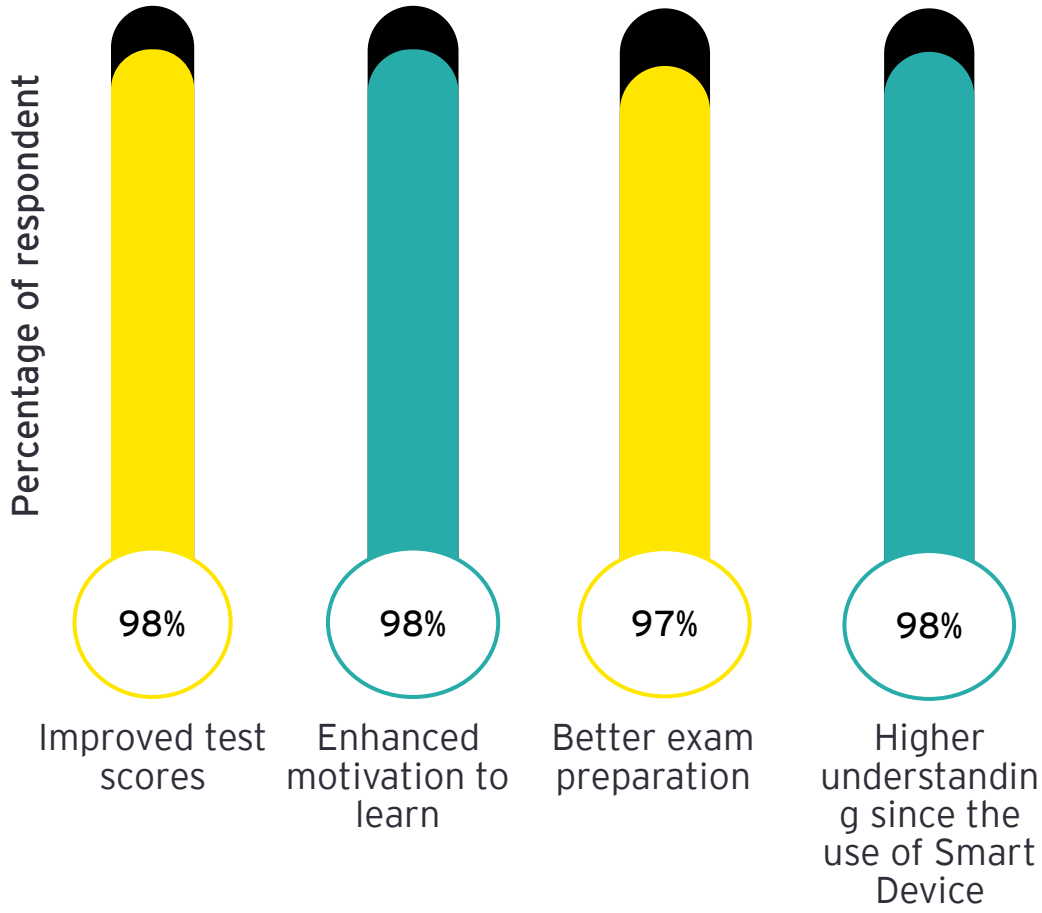
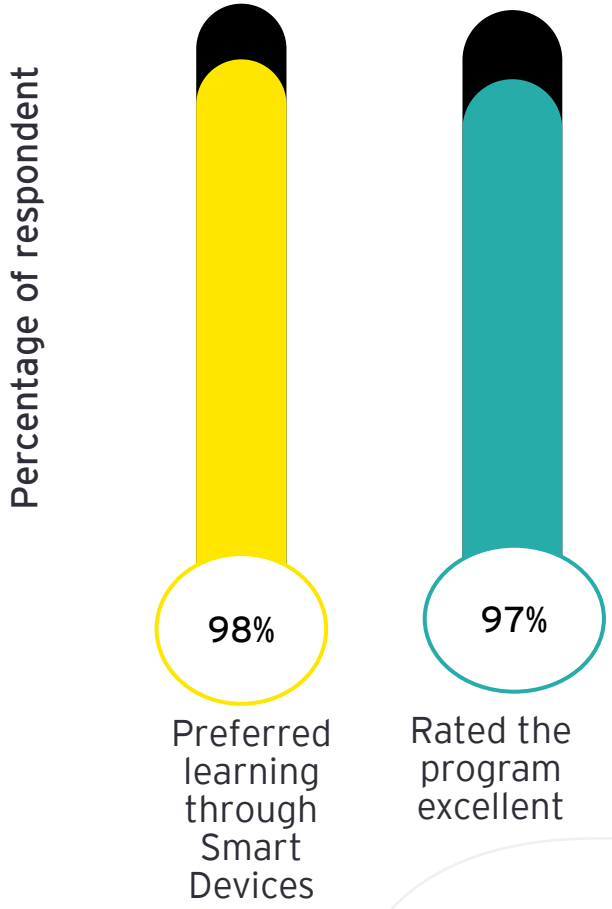
# Key Findings : Samsung Smart School Program

## Benefits for Students




## Student Satisfaction




Across **6** of 10 smart schools visited by field team, **100%** students showed improvement in subject matter understanding


Smart schools implement tablet usage at least once per week

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# Approach & Methodology

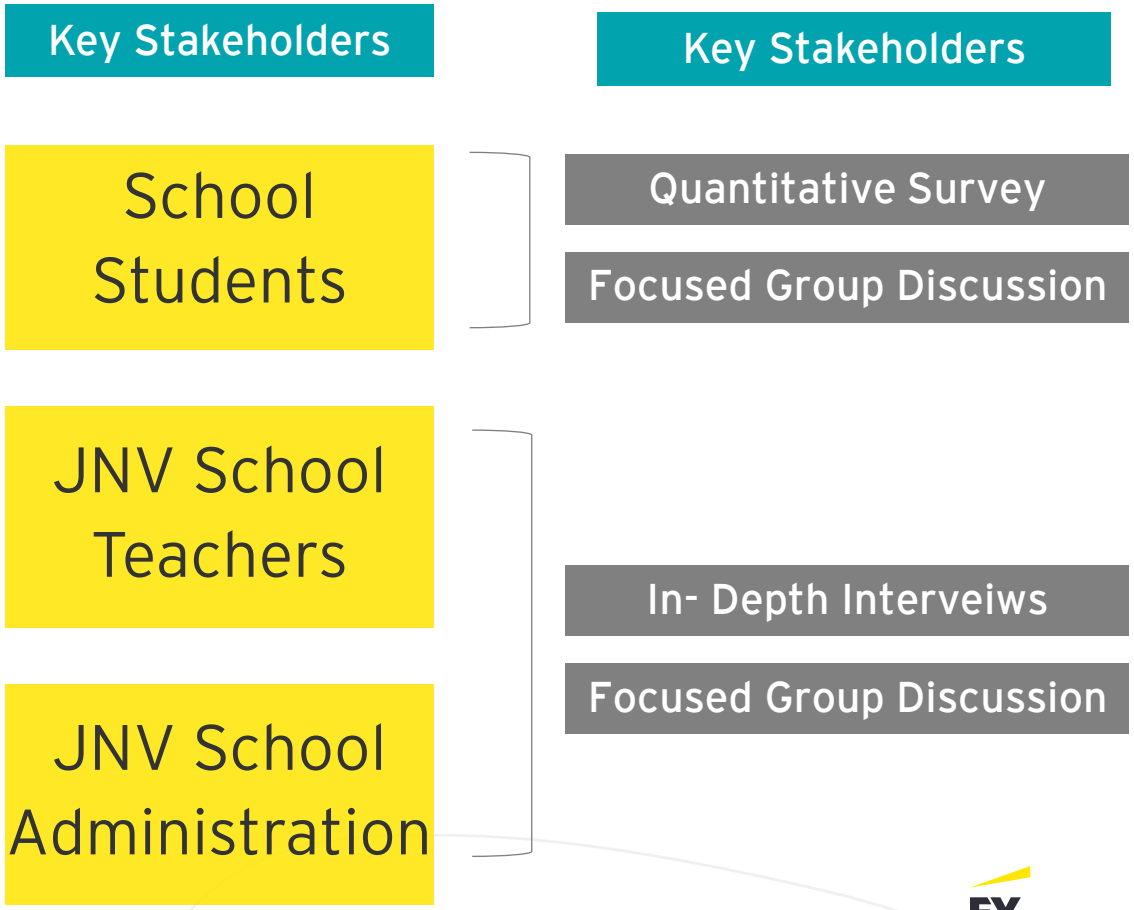
# Sampling of Respondents

A comprehensive sampling strategy was employed to gather data from various geographical zones, ensuring representation from each. This process involved distributing samples proportionally among 10 smart schools/classes :

- Total quantitative samples collected from students: 426
- Qualitative interactions conducted with teachers/principles: 23
- Focus group discussions (FGDs) conducted: 4
- In-depth interviews (IDIs) conducted: 2

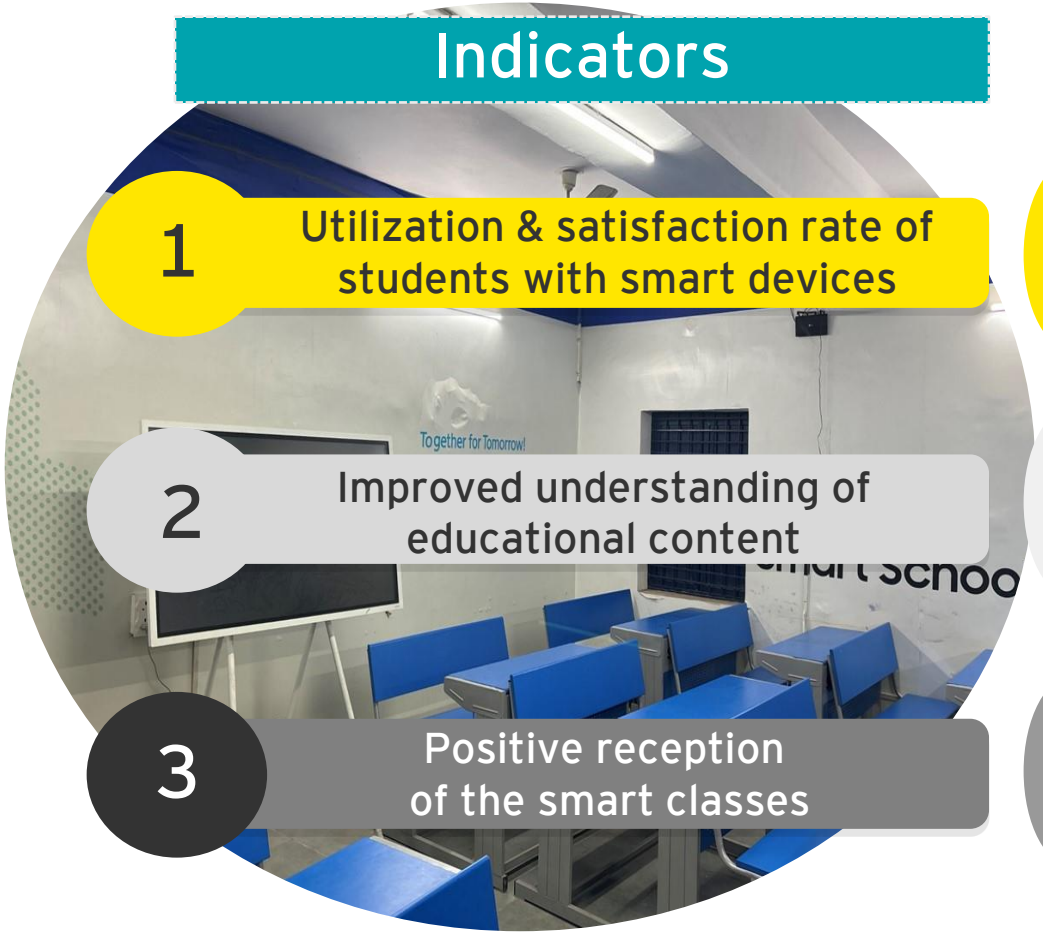
| S. No. | School Name | Project Name | No of Students interacted |
|---|---|---|---|
| 1 | JNV-Raipur | Smart School | 43 |
| 2 | JNV-Kangra | Smart School | 45 |
| 3 | JNV-Udaipur | Smart School | 41 |
| 4 | JNV-Faridabad | Smart School | 42 |
| 5 | JNV-Varanasi | Smart School | 42 |
| 6 | JNV-Dhanbad | Smart School | 49 |
| 7 | JNV-Sambalpur | Smart School | 40 |
| 8 | JNV Patna | Smart School | 42 |
| 9 | JNV Chatra | Smart Class | 42 |
| 10 | JNV Banswara-II | Smart Class | 40 |
| Total | | | 426 |

Data collection was conducted using qualitative and quantitative questionnaires, with interactions held on the field



# Data Collection and Analysis

The data collected was carefully analysed to measure the impact of the program using the following key parameters selected




| Indicators | Parameter |
| --- | --- |
| 1 Utilization & satisfaction rate of students with smart devices | Occurrence of Smart Classes, Higher Understanding, Favourite aspect of Smart Class, Frequency of Tablet usage |
| 2 Improved understanding of educational content | Feel digitally equipped, Enhanced Exam Preparation , Enhanced Exam Preparation, academic performance , Test Score Improvement reported |
| 3 Positive reception of the smart classes | Frequency of Smart class usage by teachers, Increased eagerness to learn, Students preferred learning through Smart Devices , Access to Online Educational Resources, |

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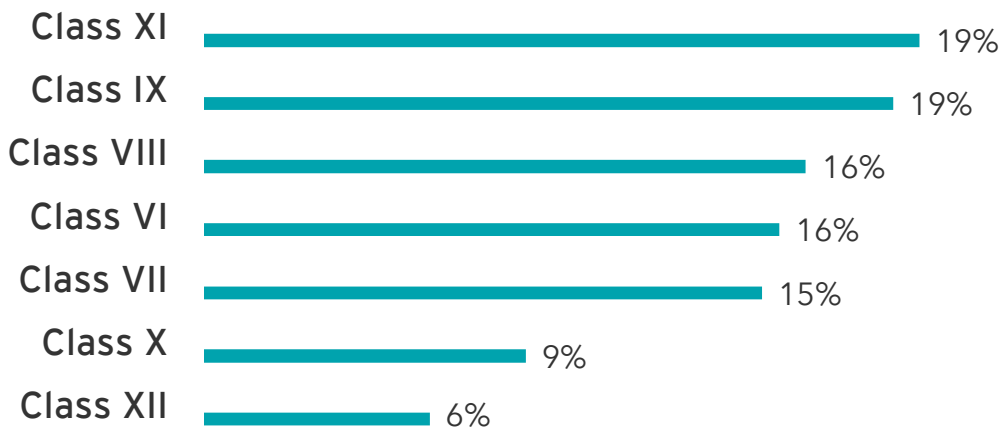
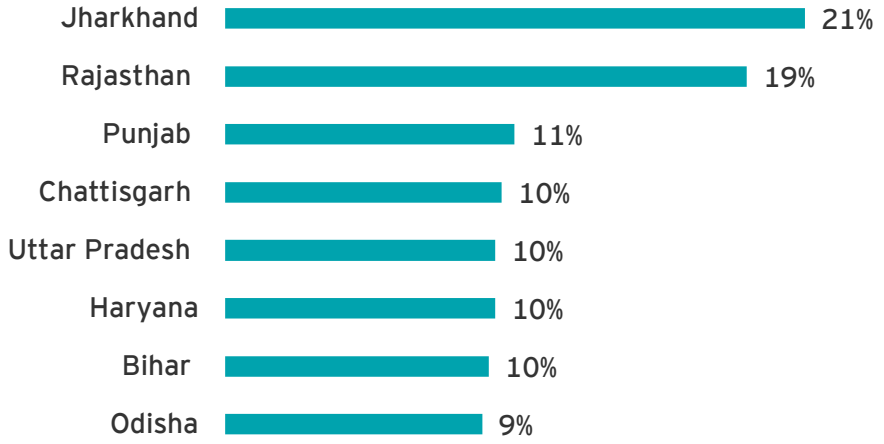
# Demographic Profile of the Students

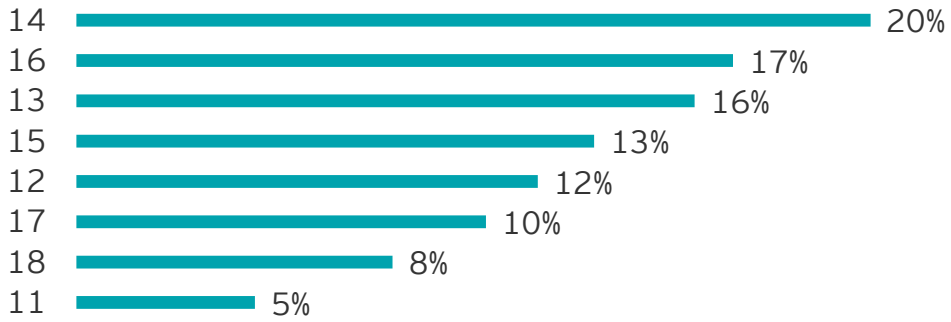
## Grade of Respondents



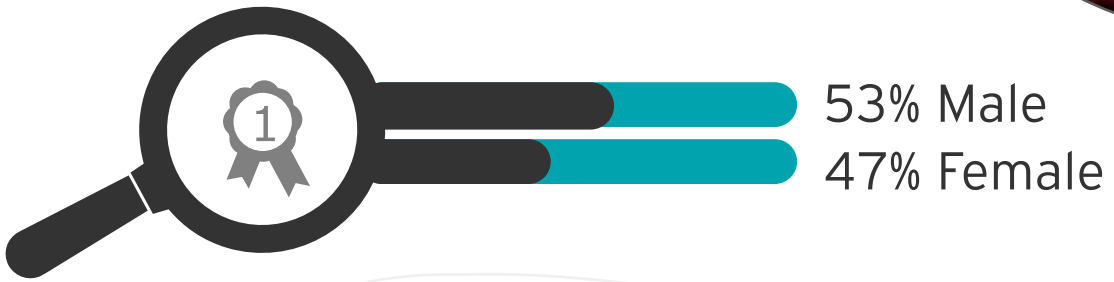

## Location of Respondents




## Age of Respondents




## Gender of Respondents

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# Key Findings

# Students- Utilization of Smart Classes

## Occurrence of Smart Classes

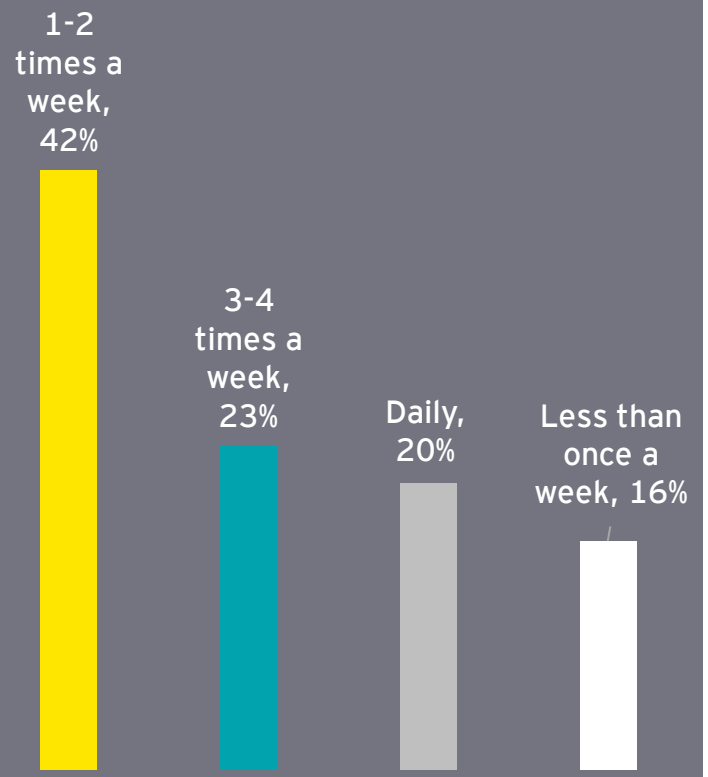
- 1-2 times a week — 49%
- 3-4 times a week — 32%
- Less than once a week — 16%

## Favourite Aspect of Smart Class

- 48% — Visual Learning on Smart Device
- 40% — Samsung Tablet engagement
- 12% — Digital content modules

## Frequency of Tablet Usage

**85%** of students utilize tablets **at least once per week**, indicating widespread adoption and regular engagement with smart devices in the learning process




## Higher Understanding

**98%**

Students observed **an increased subject matter understanding** since the use of smart devices

> "Students demonstrate high engagement and eagerness to learn new topics through interactive modes on smart devices, fostering a tech-savvy learning environment"

Mrs.Ranjana Chaudhary (Vice Principle)
JNV Udaipur

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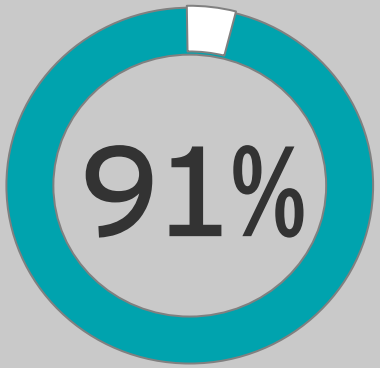
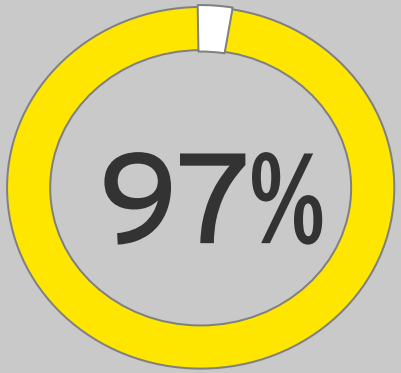
# Academic Enhancement

## Effectiveness of Smart Classes as Reported by Students

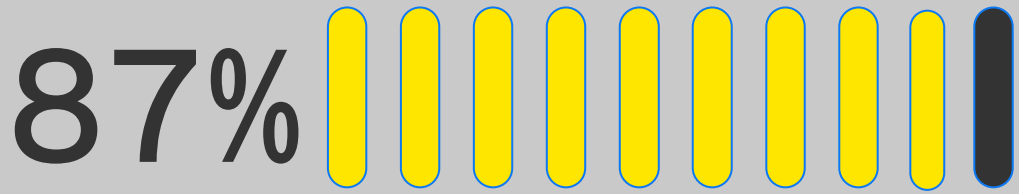



Feel digitally equipped




Enhanced exam preparation

Increased Class Engagement




## Test Score Improvement

"Since the introduction of smart classes, we've witnessed a remarkable improvement in student performance, coupled with a notable increase in their enthusiasm for participating in competitive exams "

- Mr. Mahesh Tiwari Principal , JNV Varanasi

**Across the following 6 smart schools, 100% respondents reported improvement in subject matter understanding**

1. Banswara-II
2. Kangra
3. Udaipur
4. Dhanbad
5. Chatra
6. Varanasi

"Smart classes have made learning feel like an exciting journey, where we can interact with content, and truly understand complex concepts in a way that's both fun and practical"

-Students, JNV Dhanbad

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# Positive Reception of the Smart Classes

## Frequency of Smart Class Usage by Teachers

### Effectiveness in Teaching Methods

**96%** Teachers were able to use the Smart Devices properly for teaching various subjects

### Utilisation of Samsung Flip Smart Board

| | | | |
|---|---|---|---|
| 54% | 1-2 times a week | 27% | 3-4 times a week |
| 14% | Daily | 4% | Less than once a week |

## Increased Eagerness to Learn


Students were motivated to engage in learning through smart classes and regularly attended sessions

"The implementation of Smart Classes has transformed student attitudes and learning approaches. Previously struggling to conceptualize abstract ideas, students now exhibit heightened enthusiasm and achieve higher academic grades, reflecting a newfound clarity and engagement with course material."

- Mr. Abdul Hamid Principal
JNV Kupda Distt. Banswara

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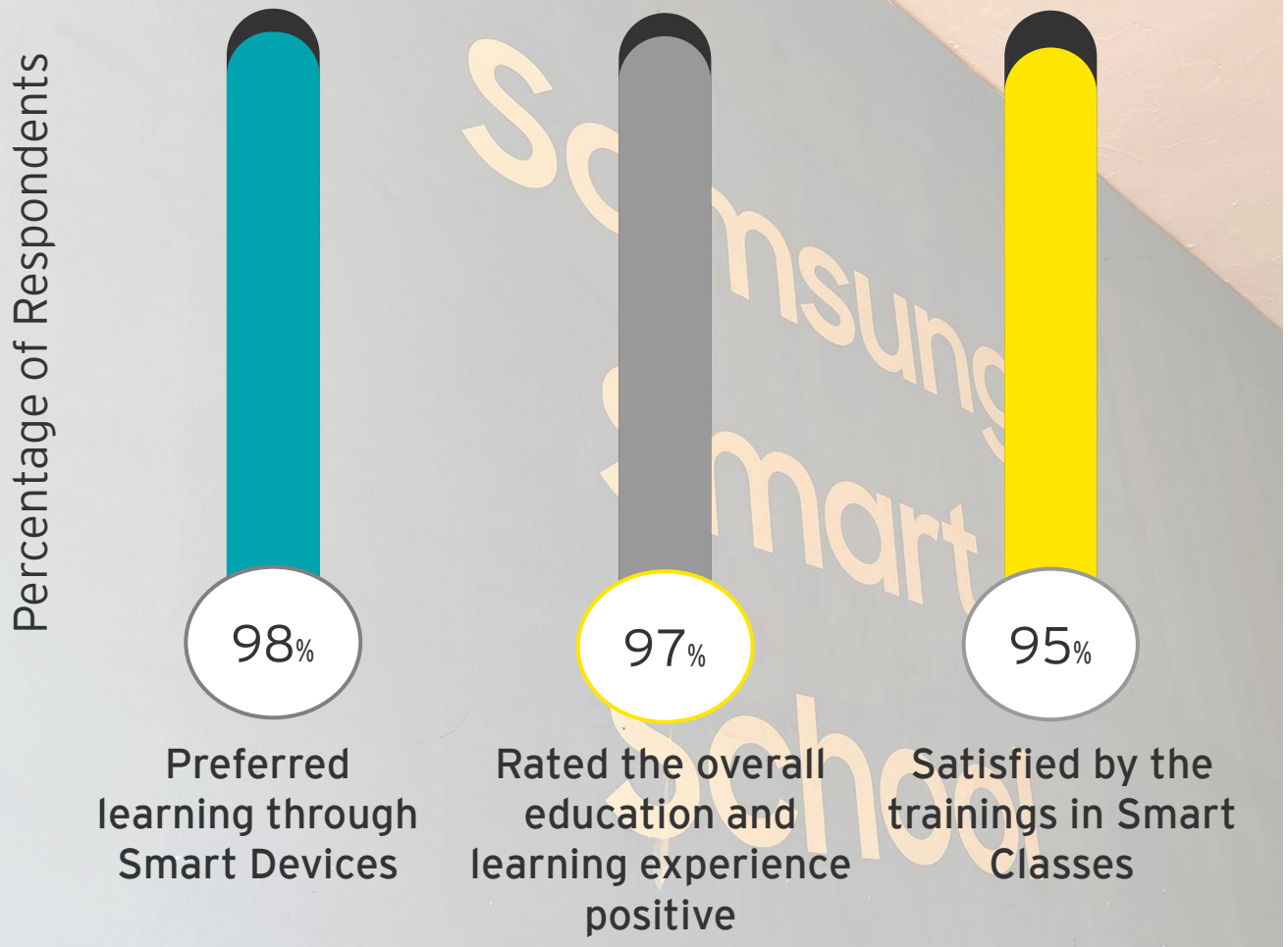
> “Students' strong attraction to smart classes has driven notable improvements in academic outcomes, highlighting the powerful influence of interactive learning methods on their achievements

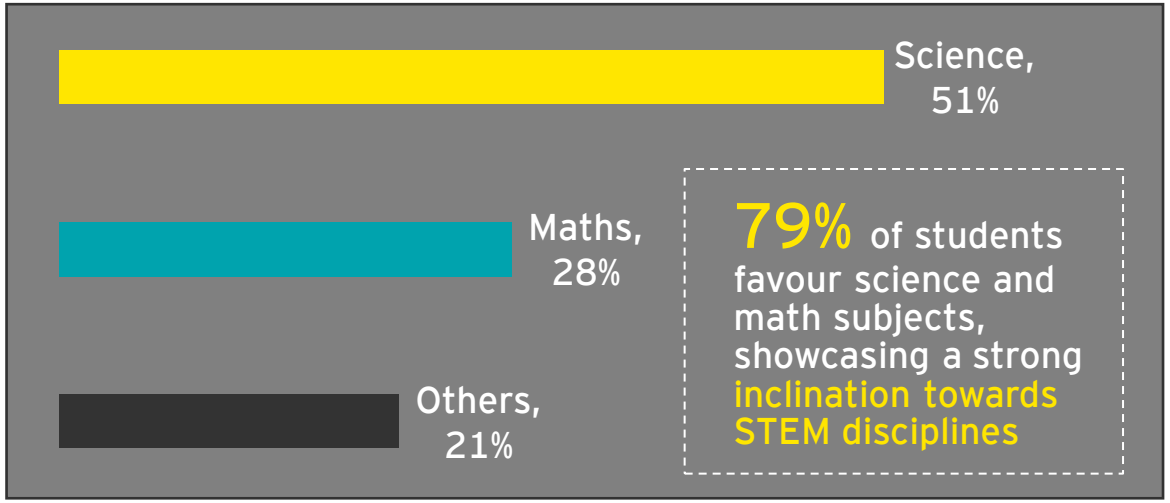
- JNV Kupda  Distt. Banswara  Teachers

# Transformative Journey for Students

## Students enthusiastically embrace smart classes, as reported by them through the following indicators :-




## Students particularly enjoyed learning the following subjects through smart classes :-




## Access to Online Educational Resources


Reported improved availability of digital learning resources

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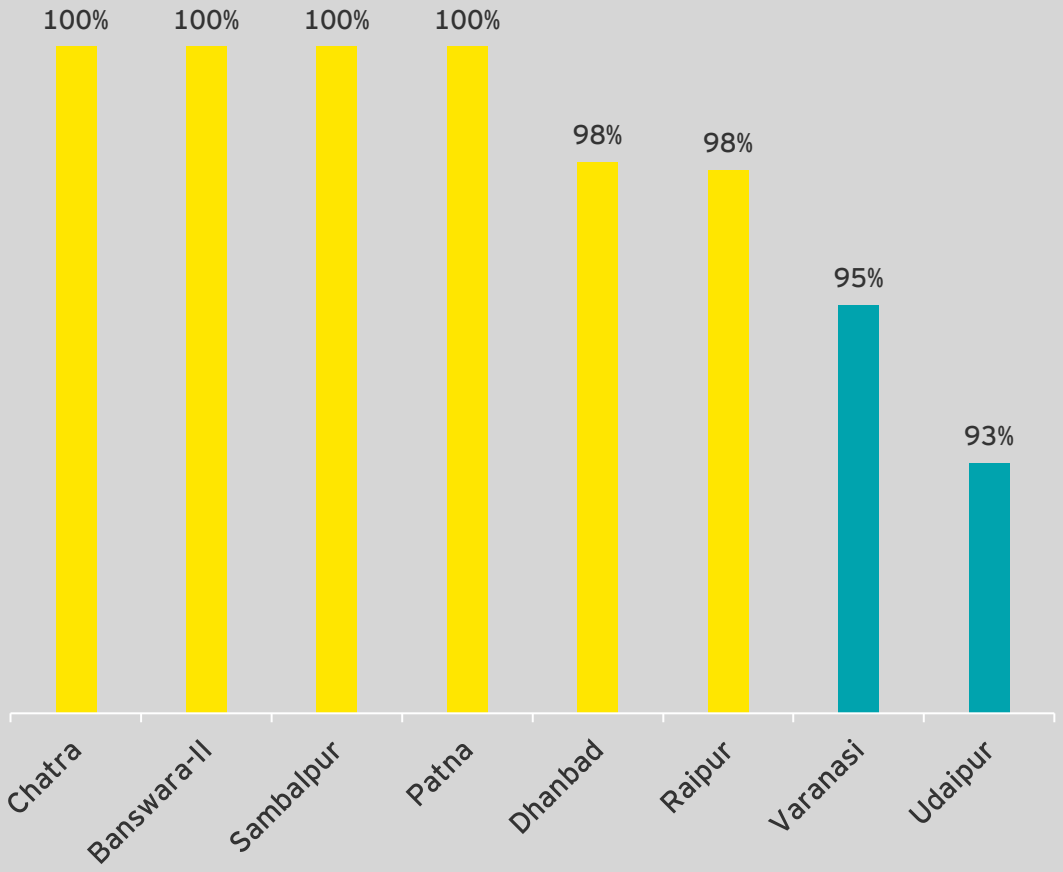
# The Furniture Revolution in JNV Smart Classes


> “The furniture and renovation of the smart classes have significantly uplifted the teaching environment. Compared to the usual less-furnished JNV rooms, the upgraded facilities create a more conducive atmosphere for learning. As a result, both students and teachers feel more energized and motivated, contributing to a positive classroom experience.”
>
> - Mr. DK Singh Principal JNV Faridabad

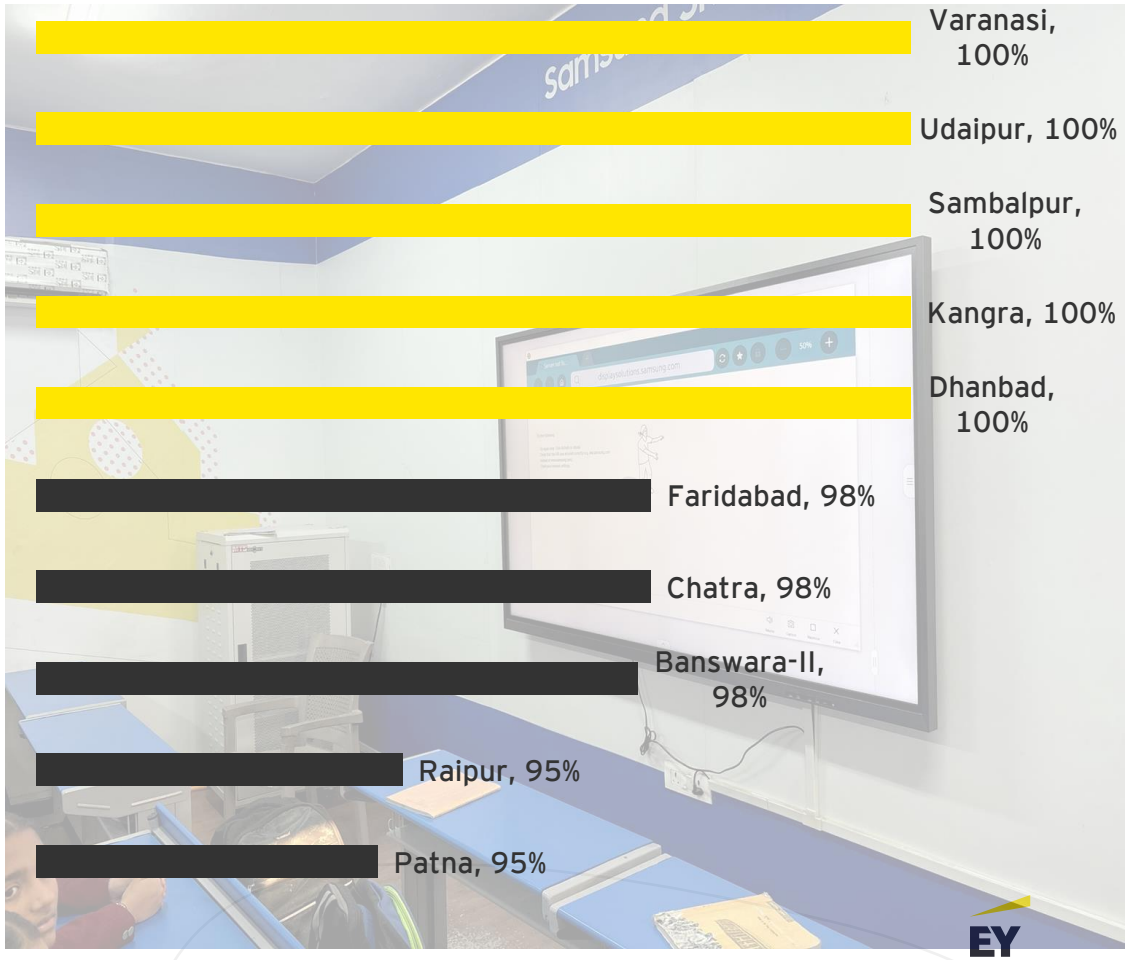
# Location Wise Findings- Satisfaction

## Student satisfied with teaching in smart classes

**6/10** schools received more than 95% satisfaction rate from students regarding teaching in smart classes.




Internet access availability in smart classes is consistently high across various locations, as observed in the findings

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# Impact Story: Smart Classes as an Enabler

## Transformative Impact on Teaching Methods

The Samsung Smart Schools program has truly transformed the teaching methods. With access to essential resources and comprehensive training on digital tools, They have been able to deliver more engaging lessons across subjects like English, Social Science, and Physics. The interactive content and versatile language options have significantly improved student engagement and understanding

## Enhanced Student Engagement and Learning Experience

With interactive content and versatile language options, students are not only happier and more enthusiastic when smart classes start but also show improved engagement and understanding. Teachers have observed increased attention spans and better concept grasping, emphasizing the need to expand smart class implementation for enriched learning experiences.


JNV Udaipur

# Impact Story: Going Beyond the Curriculum

The school organized a robotics workshops for its student which was enabled by the presence of the smart devices installed by the Samsung Smart School/ Classes Program

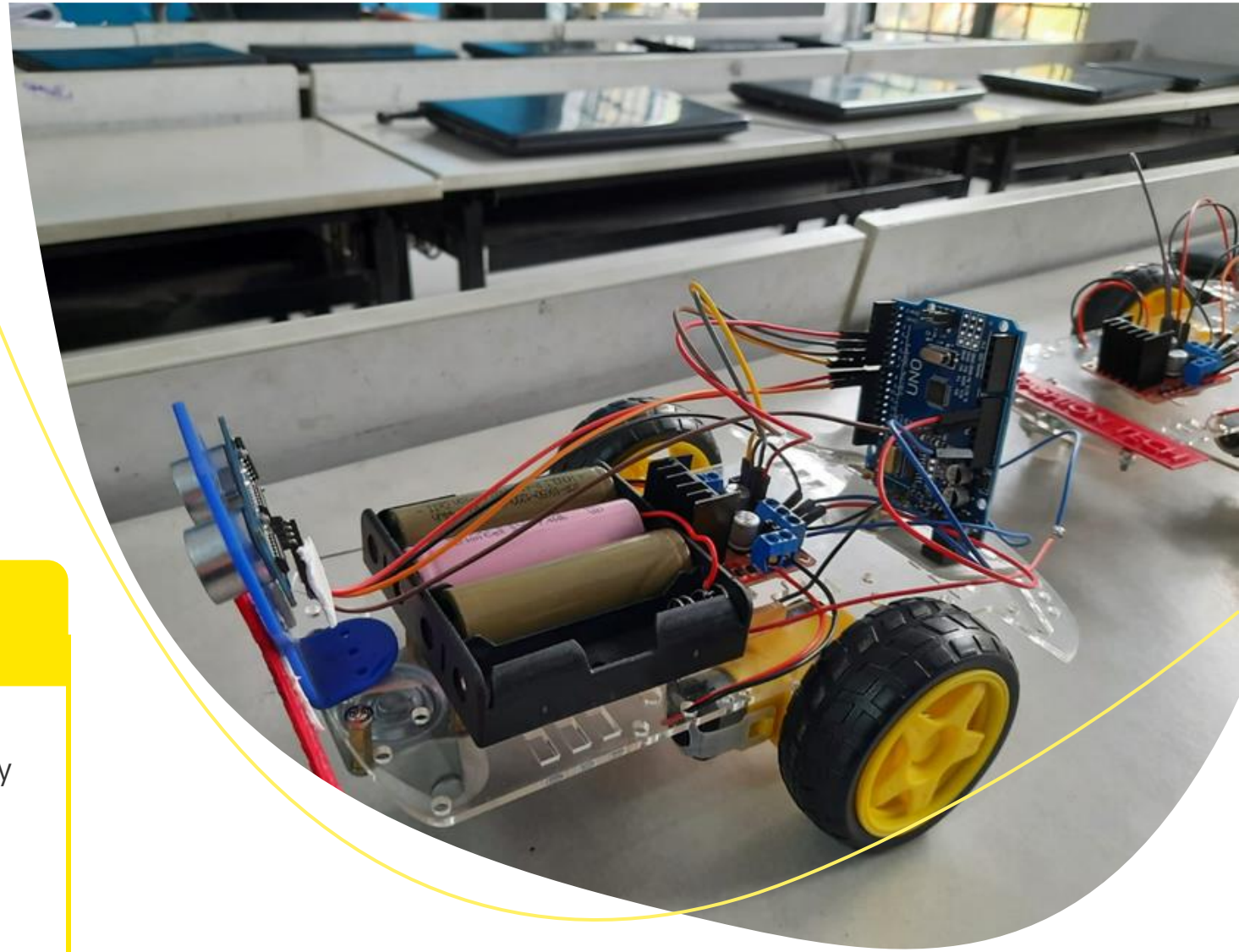
## Students Developed Innovative Prototypes

This resulted in the students developing multiple protypes during the workshop which included:

- Sensor enabled walking stick for the blind
- Sensor enabled dustbins
- Motion stick driven model car
- Sensor enabled light bulbs

## Students Inspired to go Beyond the Workshop

The exposure provided by Samsung's Smart School and Classes has sparked the curiosity of students, leading them to utilize smart devices for researching how to develop their own drones!




JNV Dhanbad

# Impact Story: Smart Devices Transforming Learning

## Impact on Academic Journey

Their utilization of smart devices has been transformative. Suraj and Aditya have experienced noticeable improvements in their academic performance and confidence levels. With deeper understanding, improved retention, and heightened engagement, they feel better equipped to unlock their full academic potential and succeed in competitive exams and beyond.

## Enhanced Classroom Performance

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JNV Varanasi

# Conclusion & Way Forward

# Overall Conclusion

- The Samsung Smart Class/ School Program involved the establishment Smart Classes/ Schools through the installation of Samsung tablets, Smart Boards, Samsung Flips in 90 Jawahar Navodaya Vidyalaya.

- 94% of the surveyed JNVs utilised the Smart classes every week 85% of respondents utilize tablets at least once per week, indicating widespread adoption and regular engagement with smart devices in the learning process.

- High utilisation rate translated into 95% satisfaction of respondents with the program. 98% of the respondents reported improved understanding of the subject matter 97% reported improvement in exam preparation and 91% felt more digitally equipped as a consequence of the program.

- The program complements the Governments PM-eVidya initiative and acts not only to improve students learning outcomes but also as an enabler of their digital empowerment.

# Recommendations


## Curriculum-Aligned Digital Content Enhancement:

- Ensure that digital content on the Teach Next software is continuously updated and aligned with the curriculum under the National Education Policy to enhance relevance and effectiveness


## Regular Teacher Training Sessions:

- Conduct regular training sessions for teachers in collaboration with Samsung to ensure they are equipped with the latest knowledge and skills to effectively utilize smart class technology.

## Foster Collaboration and Community Engagement:

- Project Collaboration tool: Facilitate project-based learning where students collaborate with peers from other JNV and international schools via video conferencing and online tools.
- Community Digital Literacy Workshops: Conduct workshops for teachers, parents, and community members in nearby villages to bridge the digital divide and support students' digital learning.


## Local Needs and Career Aspirations:

- Career Exploration Platforms: Integrate online platforms offering career insights, skill requirements, and educational pathways, enriching students' understanding of various professions and helping them align their interests with future goals.
- Industry Expert Guest Speakers: Arrange virtual or in-person sessions with professionals across industries, enabling students to explore diverse career options firsthand

# Limitations of the Study


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- **Response Bias**: The findings of the report are based on quantitative surveys conducted with a cumulative 789 respondents across all projects, as well as qualitative interactions undertaken on the field with direct and indirect beneficiaries. In this respect, the inferences of the study are restricted to the surveyed responses.
- **Selection Bias**: The report may be limited by the selection bias as the survey team was dependent on the IPs to connect with beneficiaries from the collected sample list shared in advance. Further adjustments were made on concurrence of Samsung team to meet the targeted sample, keeping in mind the logistical challenges witnessed on the field.

## Smart School/ Class Program:

- **Sampling Bias:** Of the total 90 schools covered under the intervention, 80 were limited support schools (Smart Classes) and the remaining 10 were extensive support schools (Smart Schools). Given the responses from school administration, the sample of 10 schools was favoured for 4:1 ratio towards Smart Schools

## Samsung DOST:

- **Response Bias:** The income levels and employment status reported in the study are self-reported income levels and employment status of the respondents and have not been verified under the study.
- **External Factors:** Any change in income levels observed post the intervention maybe attributed to factors other than Samsung DOST program as well. It is beyond the scope of the study to identify these factors.

# Limitations of the Study

## Afforestation Project:

- **Documentation Bias:** Baseline information reported about the soil quality and process adopted for the afforestation project is based only on the documentation maintained by the service provider (Hind Nursery).
- **Observation Bias:** List of animals and birds sighted at the afforestation site is based on observations made by the forest officers during their monthly visits.
- **Verification:** On-site verification of plant and tree species was dependent on the Hind Nursery team assisting in identifying the planted species. Verification of only the presence of a particular species was carried out, that is, verification of total number of plants and trees planted was beyond the scope of the study. Verification of 80 species was considered as 5 out of the 85 species were not suitable for the environmental conditions as per the service provider.
- **Carbon Sequestration Calculation:** Measurement of height and diameter of only one sample from each of the 80 verified species was carried out. Further, 80 out of 85 species (as reported by the service provider) were considered for the carbon sequestration study. This sample provides an indicative value of carbon sequestration has been calculated through extrapolation. The carbon sequestration calculated does not include the carbon stored in the soil due to the project.
- **Measurement Methodology:** Support of the service provider (Hind Nursery) was taken in measuring the heights and diameters of the selected sample. The direct measurement of height was carried out using measuring tape and bamboo pole to estimate height of plants and trees.
- **Plantation Covered:** Out of the total 200,000 plants and trees (as reported by the service provider) in the afforestation project, approximately 10,000 consist of bamboos, cacti, and creepers. The methodology adopted does not accurately measure carbon sequestration by these specific plant types.

# Thank you!

The better the question. The better the answer.
The better the world works.

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