



# INTEL- DEF FOLLOW THE FIBER IMPACT REPORT



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FOLLOW THE FIBER IMPACT REPORT

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# Executive Summary

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India's inherent strength lies in several facets like a bustling youth population, the high importance given to education, a large number of rural institutions, civil society agencies and a vibrant rural economy and society that is thriving despite various odds. Today, there are 250,000 Panchayats local self-government that function as vibrant rural institutions with elected members. The commonality of all these bodies is their will to contribute to national and economic growth by solving local problems and developing stronger communities. Their collective limitation, again with exception, in contemporary world is lack of advanced knowledge and skills in modern Information Communication Technology capacities to improve augment and scale up activities, operations, and performances. And this major variable limits their contribution to the national growth and development agenda. They thus represent the face of digital divide in India, which is vast and expanding, alarmingly!

India is a digital contradiction or a case of complexity as far as the case of ICT is concerned. On one hand, the country is patted strong for its IT prowess with the IT and ITeS sectors constantly expanding the export share, contributing to national GDP and its human resource making regional, national and global presence. On the other hand, back at home; India faces its grim reality of a country with widening digital disparity with more than 80 per cent of the population in digital poverty. This digital divide and its consequences is not good for the country's long term stability, strength and growth and there is an urgent need to drive domestic technology adoption in India. The first step in doing this is letting the citizens and the society at large know what the benefits of technology are in their life. The national literacy movement which aims to increase literacy in India is noble, but digital literacy is a necessity today to complement and jointly contribute to development and growth with equity.

The National Digital Literacy Mission (NDLM), a joint effort of the industry and civil society, is a small effort towards the above need. Initiated in 2012 by Intel and NASSCOM, the move seeks to bring into focus the need and importance to promote and execute digital literacy for millions in India and also includes active participation of not for profit organizations like the Digital Empowerment Foundation and NASSCOM Foundation. NDLM is a great vindication of the announcement by the Ministry of Communication & IT in the "National IT Literacy Mission" make at least one adult per household in India digitally literate.

As an essential measure under the NDLM, the 'Follow the Fibre' (FTF), program was launched in November 2012, initiated by Intel and implemented by the Digital Empowerment Foundation. The purpose of this initiative was to drive 100% digital literacy in the first three panchayats to receive the National Fiber Optic Network connectivity. The thrust behind this pilot was not mere digital literacy drive but to also draw key lessons and understanding of the digital literacy environment in India: the trends, need, scope, challenges, and future prospects. One key lesson, rural India needs digital literacy right now and without delay to mainstream it with rest of India. Further, digital literacy drives passion, energy, positive emotion to work, contribute and innovate in all small and big things among rural citizens. It is therefore, important and timely, to cultivate this positive energy with ICT support.

The NDLM program and the FTF pilot have arrived at key observations as recommendations. For instance, there is a priority need to make a formal announcement for a National Digital Literacy Mission by the Government with mandate to make India a digitally literate country by 2020. The role of the industry and the civil society along with others stands critical for this national momentum and intervention. Post 2020, imagine the momentum generated in the national economy, society spurring demands, innovations, transactions, and making market dynamic and strong. 🖱️



# Introduction

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**E**ven though India has proved its mettle in the information technology domain as the software and services hub of the world, the country's performance at providing computing technology and Internet access to its citizens to drive personal growth has been tardy. India's performance in technological readiness is disappointing and as per the latest ITU report titled 'Measuring the Information Society', India ranked 119th of the 155 listed countries.

It is ironic that despite the Internet penetration in India, which is an insignificant 10%, is still growing faster than most countries but still 90% of its population is not connected. A McKinsey report states that there will be 330 Million Indians on the Internet in 2015 making it the second largest connected population in the world, however even with that number India's Internet penetration will be a mere 28%. What's more surprising is that for India to reach 40% internet penetration, a number that will match China's penetration at that time, it will need to notch up more than 500 Million internet users! This is no easy task. The three biggest challenges in achieving this feat are limited Internet access, low relevance and high cost. Adding to these challenges is India's continued low ranking across surveys measuring impact of the Internet on job creation and contribution to GDP. Today, the internet is primarily being used as a medium for social networking and entertainment in India, while its immense potential in enabling widespread access to education, healthcare, employability and access to government services is still largely untapped.

We cannot be a connected nation if such a large base of Internet users is not contributing towards India's growth and development. India will truly earn the title of being a 'connected nation' the day it realizes the benefits of the Internet to drive inclusive national growth. This can only happen if India can unleash the full potential of the Internet and drive community and national growth with urgency in the nation. The McKinsey report states that the impact of Internet in India is constrained by current gaps and obstacles in the Internet ecosystem. While India scores well on the availability of human and financial capital, it rates poorly on most other parameters like Internet infrastructure, Internet engagement, e-commerce platforms, the ease of Internet entrepreneurship, and the impact of e-governance.

Today, 70% of Indians live in semi-urban/rural areas and as we think through what is needed to become a 'connected nation', there are two key things that we have to keep in mind that a majority of the 170 million additional users to reach the magic number of 500 million in 2015 will be from semi-urban and rural India, which will only happen if these users see the real relevance of the internet in their daily lives.

While the current situation is still grim, the silver lining in all is that, change is underway in multiple ways. Whether it is the government's commitment to the National IT Policy, which aims to provide ubiquitous affordable access to information and public services for enhancing efficiency, transparency, accountability and reliability and leverage the use of ICT as a driver for social inclusion or the roll out of the National Fiber Optic Network by Bharat Broadband Network Limited (BBNL)\*, which will connect 250,000 gram panchayats with true broadband by 2015.

From an industry perspective, it requires altogether a different approach to the market and what it takes to win not only the market but also primarily the people and path that leads to the market. Status quo will guarantee failure, while innovative and long term approach will bring fruits. Incidentally, some positive steps are being taken in this direction. In August 2012, ten IT industry stalwarts came together to create the 'National Digital Literacy Mission' with the shared vision of accelerating digital literacy and providing the benefits of technology to the grass roots in order to drive inclusive growth. This shared vision complements the Government of India's goal of making 1 person per household e-literate by 2020. 🇮🇳





# PART 1 of

## INTEL-DEF FOLLOW THE FIBER

Impact Report

# About National Digital Literacy Mission

The Government of India's National IT Policy calls out the need for inclusive growth in multiple instances. Inclusive growth however cannot materialize without equal access and the building out of the information infrastructure in India will need strong participation from the government and the industry.

The policy framework should encourage scalable investments in broadband deployment and make technology accessible to the common man while the industry needs to understand the consumer needs, identify existing gaps and build projects and solutions to bridge these gaps. Unprecedented collaboration amongst the government, industry, academia and society is required to build out India's information infrastructure urgently in order to boost our national competitiveness.

As we go down the socio-economic and demographic pyramid, the single most important driver for faster adoption of the Internet will be how Internet usage can boost productivity and impact livelihoods. For instance, showing a farmer how the Internet can give him relevant details like weather, Mandi (Market) pricing and eliminate the middle man to sell his crop directly will trigger faster adoption.

Digital Literacy will play a critical part in creating this awareness. Digital Literacy does not imply knowing complex computer skills but refers to how technology can help citizens improve job skills, access better education or healthcare and government services and use technology in a way that can impact their livelihood and personal growth.



The government and industry must redesign skill training focused on relevant areas like education, financial transactions, agriculture, health care, and government services to demonstrate speedy action. There is an urgent need for the collective creation and dissemination of relevant programs to improve Digital Literacy and empower citizens to use technology for personal growth, which will ultimately lead to the growth of communities and help in nation building.

With this in mind, NASSCOM and Intel initiated the creation of the National Digital Literacy Mission in August 2012. Several leading players from the IT industry like Dell, Google, HP, Lenovo, Microsoft and NIIT along with NGOs like Digital Empowerment Foundation and NASSCOM Foundation came together to collectively work towards accelerating digital literacy in India and helping the government in working towards making one person per household e-literate by 2020.

Work under the mission began in September 2012 and to date three big programs have been driven under the mission as explained below:

**1. Digital Literacy Week:** This week long activity tapped into the talent pool engaged in the partnering organizations to accelerate digital literacy through volunteering activities. The first week long activity was held in December 2012 and saw 500+ volunteers from 10 companies train over 22000 people across 10 cities in digital literacy.

**2. Digital Literacy Portal:** This common online portal, launched earlier in 2013, was envisaged to collate all the digital literacy programs of participating companies onto a common online platform with a vision of connecting communities and citizens.

**3. Follow The Fiber Program:** The first phase roll out of the National Optical Fiber Network was started in October 2012 in three villages across India. NDLM's charter was to accelerate digital literacy in these three villages to enable the citizens to leverage the available technology and connectivity effectively.

## About 'Follow the Fiber' Program

In 2011, the Government of India approved setting up of the National Optical Fiber Network (NOFN) to provide connectivity to all the 2,50,000 Gram Panchayats in the country. This would ensure broadband connectivity with adequate bandwidth. Bharat Broadband Nigam Limited was set up as special purpose vehicle for the establishment, management and operation of NOFN. NOFN has the potential to transform many aspects of the lives of citizens in areas such as education, business, entertainment, environment, health households and e-governance services.

As part of the NOFN roll out, fiber was to reach three villages, Arain in Rajasthan, Muthyalampalem in Andhra Pradesh and Panisagar in Tripura during 2012. The National Digital Literacy Mission decided to 'Follow the Fiber', which means that digital literacy would be imparted to the citizen of the villages receiving true broadband and empowering them with ICT skills to leverage the best use of the connectivity and technology made available to them.



### The FTF Approach

- **Training Hotspot:** Identify and set up a training hotspot convenient for the learners to deliver training, identify and create trainer capacity;
- **Bottom up:** Engage local and grassroots institutions/Panchayats/local government, NGOs/CBOs/ Schools/ Self Help Groups for mobilization of trainees and enrollments;
- **Delivery:** Adopt a training schedule convenient for learners without conflicting with daily schedules of users, daily chores and their livelihoods;
- **Need based solutions:** Promote easy to use solutions in emails/search/tools operation;
- **Sustainability:** Create a community enterprise collective to own and run the program with value added activities for social and economic sustainability, beyond the pilot phase.



This was probably the most challenging and complex assignment for the mission to undertake given demographic, language and geographical challenges. Supported by the Digital Empowerment Foundation, BBNL and local government establishments, Intel took on the task of driving digital literacy training in these three villages receiving the NOFN nodes with three main objectives:

- Achieve 100% digital literacy in these three villages as measured by having one e-literate person per household.
- Study the nuances of executing complex projects like 'Follow the Fiber' in order to determine the challenges, opportunities and recommendations for scaling such programs and share it with partners and the government alike.
- To link digital literacy and ICT skills including network and bandwidth with new opportunities for economic and social empowerment

Intel and DEF embarked on a ten month long journey to achieve 100% digital literacy in these three villages. The first step in this journey was to co-opt the local Panchayats in sharing the government's vision and more importantly in order to convince its citizens to understand the

benefits of technology for their personal and community growth. Following this, training centers were set up in each of the three villages with 10-15 access devices each. The access devices consisted of laptops, Netbooks, tablets and accessories like digital camera, printer, scanner, etc. Six master trainers were enabled across the three locations to imparting relevant and impactful training to the citizens using the Intel Learn Easy Steps curriculum. Each citizen was to undergo 30-45 hours of training following which, she or he was given a certificate of participation.

### 'Follow the Fiber'- Impact Study

One of the objectives of the 'Follow the Fiber' program was to determine the challenges, opportunities and recommendations for scaling such programs and share it with partners and the government alike in the form of an impact study. This impact study aims to provide inputs to any stakeholder who aims to execute programs for accelerating digital literacy at the grass roots. Following is the broad analysis of the challenges, opportunities, outcomes, and recommendations:

### Challenges

- **Erratic Electricity Supply:** In most of the centers, electricity supply was unpredictable and it took longer to complete the training than desired because of the same. While large programs like these can be successfully planned, thought needs to be put into how to address this basic and universal infrastructural challenge. The local government can play a key role in helping address the supply of electricity and in collaborating with the implementers of such programs to identify optimal delivery mechanisms and timings.
- **Lack of Relevance of Technology:** The low levels of basic literacy compounded with low levels of ICT knowledge made it very difficult for citizens to see the relevance of technology in their lives. Only about 8% of the citizens across all three villages knew how to make any use of technology. Most people were unable to understand how using technology could help in their personal growth or contribute to their



### The Result / Milestone

With 12 months of ground intervention in 3 blocks across India, the FTF pilot has important milestones to share. The numbers appear small, but the initiative has been a milestone and path breaking, a first such initiative in India.

- **Reach:** Covered 3 blocks
- **Institutional Impact:** Benefitted 3 Panchayats
- **Mass Impact:** Covered 1700 households
- **Beneficiary:** Benefitted 1700 beneficiaries
- **Capacity:** 6 Professional Master Trainers; 10 Informal Trainers



livelihoods. This challenge clearly reiterates the belief that a cookie cutter approach on digital literacy curriculum is not optimum. Local, relevant and activity based learning needs to be imparted to citizens in order to create relevance and need for technology in their lives.

- **Last Mile Connectivity:** While most citizens in these three villages are already users of mobile phones, the usage is limited to voice calling and short messaging services. The lack of ubiquitous 2G, 3G and Wi-Fi infrastructure compounds the issue further in terms of using their mobile devices for varied usages. The industry and local governments should collectively work on solutions to proliferate the NOFN connectivity to the last mile.
- **Socio Economic Disparity:** A large percentage of the citizens in these three villages were daily wage earners engaged in farming or fishing. Attending these training sessions would entail foregoing their daily wages. Thus a large percentage of the learners landed up being students, stay at home mothers or homemakers from families that could afford to send one person for this training. The result was that 52% of those who became e-literate were women. As programs like these are scaled, thought must be put into how to incentivize every section of the society to partake in this training to truly deliver the benefits of technology to one and all.

## Opportunities

While there was a set of common challenges across all three villages, it was noticed that post training several common opportunity trends were identified on the basis of how citizens wanted to leverage the power of technology and connectivity.

- **Entrepreneurship & Employability:** Over 55% of the learners who attended the training were students and young adults. The training made these youth realize that they could use technology to improve their employability and some of those who attended this basic training demonstrated use of technology

to access opportunities and information regarding jobs online. Some of the frequently seen examples included accessing government services like MNREGA, education information etc. One of the learners from the program went to open a cyber café that would allow more people from his village to benefit from the power of connectivity and technology. There are similar examples of micro enterprises being created when people are empowered with technology.

- **Social Empowerment:** Technology is truly the greatest enabler of inclusive growth and puts everyone on a common pedestal. Typically in remote areas like these three villages, there is a significant and apparent gender disparity. However given that over 52% of the learners were women, a drastic change in their sense of empowerment was noticed. Few of the women who attended the training became self-sufficient by getting jobs as teachers in local schools because they now had computer skills. Accessing MNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) information was one of the most sought after activities. Some of the women who sought this information felt empowered to ask the right questions to the right people when it came to their employment avenues. There were also well documented evidences of people feeling more confident and included in the digital age.
- **Changing Education Landscape:** It was noticed that many schools in these villages had adequate IT infrastructure however due to lack of connectivity and trained personnel this infrastructure wasn't productively used. These training programs created avenues for kids to access educational content from the Internet and other media to improve their knowledge and performance.
- **Accelerated Technology Adoption:** Technology for technology's sake is never good. The main premise of these trainings was to let people know what they can do with technology and how it can benefit their daily lives. There are multiple documented evidences of people beginning to use technology for

### FTF Households Covered / Impacted with the mission: 'One digitally literate per household'

Location	Block/ District / State	Total Household	Household Covered	Digital Literacy Beneficiaries (one/ household)
Arain Panchayat	Arain, Ajmer, Rajasthan	1036	1036	1036
Noangang Panchayat	Noangang, North Tripura, Tripura	353	353	353
Muthayalampalem	Pravada, Vishakhapatnam, Andhra Pradesh	280	280	280
		1669	1669	1669

communication via Skype, booking their tickets using the railway website and accessing opportunities through job search portal, getting weather information that point to the adoption of technology by people in their daily lives. The best example of this was one of the learners who opened a cyber café in his village. Not only did this help him increase his livelihood but it also made a proponent of adopting technology for personal growth.

## The Outcome

The manifold outcomes from the FTF pilot are a wide learning experience for further relevance:

- Enabled connectivity and access in an information poverty environment.
- In a span of 10 months, the program conquered the challenges of digital literacy in rural India; brought 100% digital literacy in all three locations.
- Sensitized the youths / the generation next about the importance of proper use of ICTs and Internet.
- Promoted entrepreneurship and employability change in approach among youth, including young women.
- Infused new methodology for livelihoods and to make living sustainable.
- Contributed in the quality education landscape from manual to digital and encouraged locals to bring new paradigm shift in learning and teaching.
- Contributed in accelerated technology adoption for improving socio-economic condition.
- Contributed in arresting school dropouts and make learning and teaching more creative and qualitative.
- Knowledge to access services enhanced for beneficiaries.
- Encouraged creation of local content among beneficiaries who are in development works.
- Encouraged learners who can become invaluable service providers for larger market in ICT field.

## Recommendations

The NOFN roll out is likely to scale rapidly in the coming years. The government is also looking to scale its existing 'IT for Masses' program to fulfill their goal of 1 e-literate person per household. While the Intel and DEF 'Follow the Fiber' program was implemented in the first three villages to receive the connectivity, it is nearly impossible for just one or two players to scale initiatives like this. However the government, industry and the NDLM partners under the stewardship of NASSCOM, can use the learning from this program. Some of the key recommendations for scaling initiatives like 'Follow the Fiber' are as follows:

- **Sustained Digital Literacy:** Increasing awareness about what the Internet can do in a way that is relevant to the audience is critical in accelerating technology adoption and this is where digital literacy comes in. Digital Literacy does not imply knowing complex computer skills but refers to how technology can help citizens improve job skills, access better education or healthcare and government services and use technology in a way that can impact their livelihood and personal growth. There is no point in teaching a farmer presentation skills as much teaching him how to use a connected device to access weather and farming technique related information. The industry and government need to collectively create and disseminate relevant programs to improve Digital Literacy and empower citizens to use technology for personal growth.
- **Last Mile Access:** It is a known fact that NOFN will provide connectivity to India's 250,000 Panchayats and as per reports, with the deployment of 3G, 4G and BWA, India could have 36 crore mobile broadband connections by 2016. The key thing to keep in mind is that fiber optic broadband and mobile broadband should not be approached with an 'either or' mindset. Both have their own advantages and it makes tremendous long-term sense for India to have optical fiber network laid down in the country. In the short to medium term, thought needs to be put into utilization of the existing 2G, 3G and Wi-Fi infrastructure that

### FTF Training Impact

Location	District / State	Master Trainer Trained
Arain Block	Ajmer, Rajasthan	2
Noagang Block	North Tripura, Tripura	2
Muthayalamma-palem, Pravada	Vishakhapatnam, Andhra Pradesh	2
		Total = 6



can be easily made available to provide true last mile access. Hence, there is an urgent need for the telecommunications service providers to be co-opted into the NOFN expansion as well as the 'IT for Masses' program. Given the acceptance of technology to further educational aspirations it would be prudent for the ecosystem to look at m-education solutions.

- Locally Relevant Content and Solutions:** As we move beyond urban and semi-urban centers with the roll out of NOFN, the next wave of users will be largely local language users. Currently, none of the Indian languages feature in the top 10 languages on the Internet. There is a need to drive content and application in local languages to cater to this audience. The government and ecosystem must create a pool of applications and content that cater to the local needs including remote delivery of healthcare services, education, government services and the like. A 'one size fits all' approach will not work. Incentives need to be put in place to fuel an ecosystem of local language content developers and application providers that can positively impact Indian Internet consumption in the future. The ecosystem also needs to drive innovations at the interface level to enable more intuitive ways of interacting with technology

that simplifies ease of use. For e.g., the day a farmer can speak to his PC and get the latest weather information in his local language, we will see a real need for technology build up in rural India. The industry will also need to think through innovation in areas like alternate power sources as lack of electricity is and will continue to be a key roadblock to Internet adoption and usage.

- Increased Public Private Partnership programs:** The National Digital Literacy Mission is an aggregation of digital literacy initiatives of key IT majors in India. Similarly there are many government and non-government players addressing the same cause. It is best advised for the government to lead the initiative of accelerating digital literacy in India and create a framework for those players working on the same cause to fully participate. The 'Follow the Fiber' program is one of the finest examples of a robust Public Private Partnership model because it made the BBNL, Intel, DEF and local Panchayats equal participants in working towards a common goal. The government can consider a national pilot for their 'IT for Masses' program on a wider scale during the 12th Five Year Plan in which other players can also participate.

### FTF Gender Impact

Location	Total Trained	Women	Men
Arain Block	1036	528	508
Noagang Block	353	195	158
Muthayalamma-palem, Pravada	280	126	154
	1669	849	820

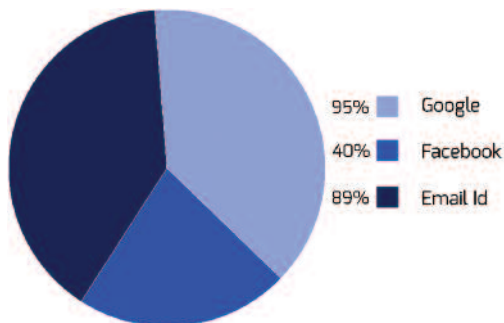


## The Impact

The impact of NDLM centers in all three locations have been overwhelming. And, being three different locations, one in desert state of Rajasthan, the second in the hills of Tripura with tribal communities and the third on the coastal town of Vizag in Andhra Pradesh, show a very diverse ways of positive result og digital literacy. 🧑🏻‍💻

### Arain Panchayat, Rajasthan:

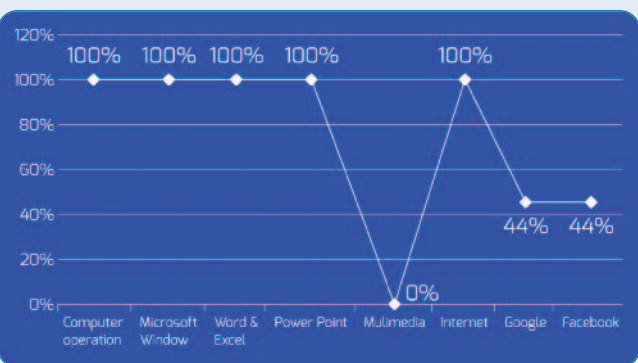
- Arain Panchayat, the first village to have broadband network under the NOFN of BBNL. NDLM in Arain sensitized the youth towards computers and the power of the Internet.
- The involvement of the youth made many youngsters of Arain digitally literate and helped in employment prospects.
- Post NDLM, it was found that 95 percent learners in Arain gained knowledge of Google, 40 percent learners gained knowledge of Facebook and 89 percent learners gained knowledge of emails.
- NDLM provided girls and women in Arain the expo sure to computers and Internet for self-advantage and growth, and its potential to address needs or problems in their own lives and communities.



### Noagang Panchayat, Tripura:

- Noagang Panchayat dominated by indigenous Halam and Ringling community, which has 400 families.
- FTF center provided information support to the local community regarding jobs, scholarships, admission notices etc.
- NDLM motivated school dropouts to return to classroom learning with motivated teachers trained in digital literacy.
- NDLM motivated young girls and women to come out of home and learn digital skills.
- Digital literacy helped learners in Noagang Panchayat gain maximum knowledge of computer operation, word processing, spreadsheets, Word & Excel and Internet surfing.

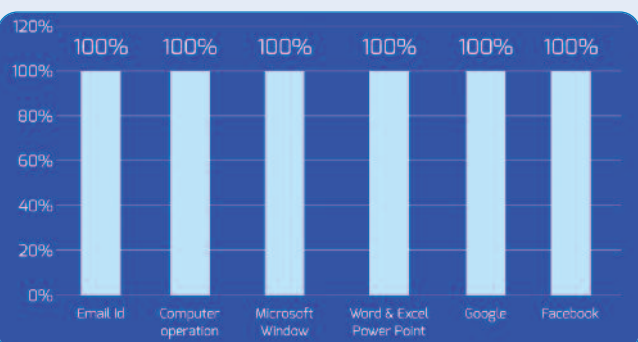
Figure 1: Post NDLM ICT learning Impact in Noagang Panchayat



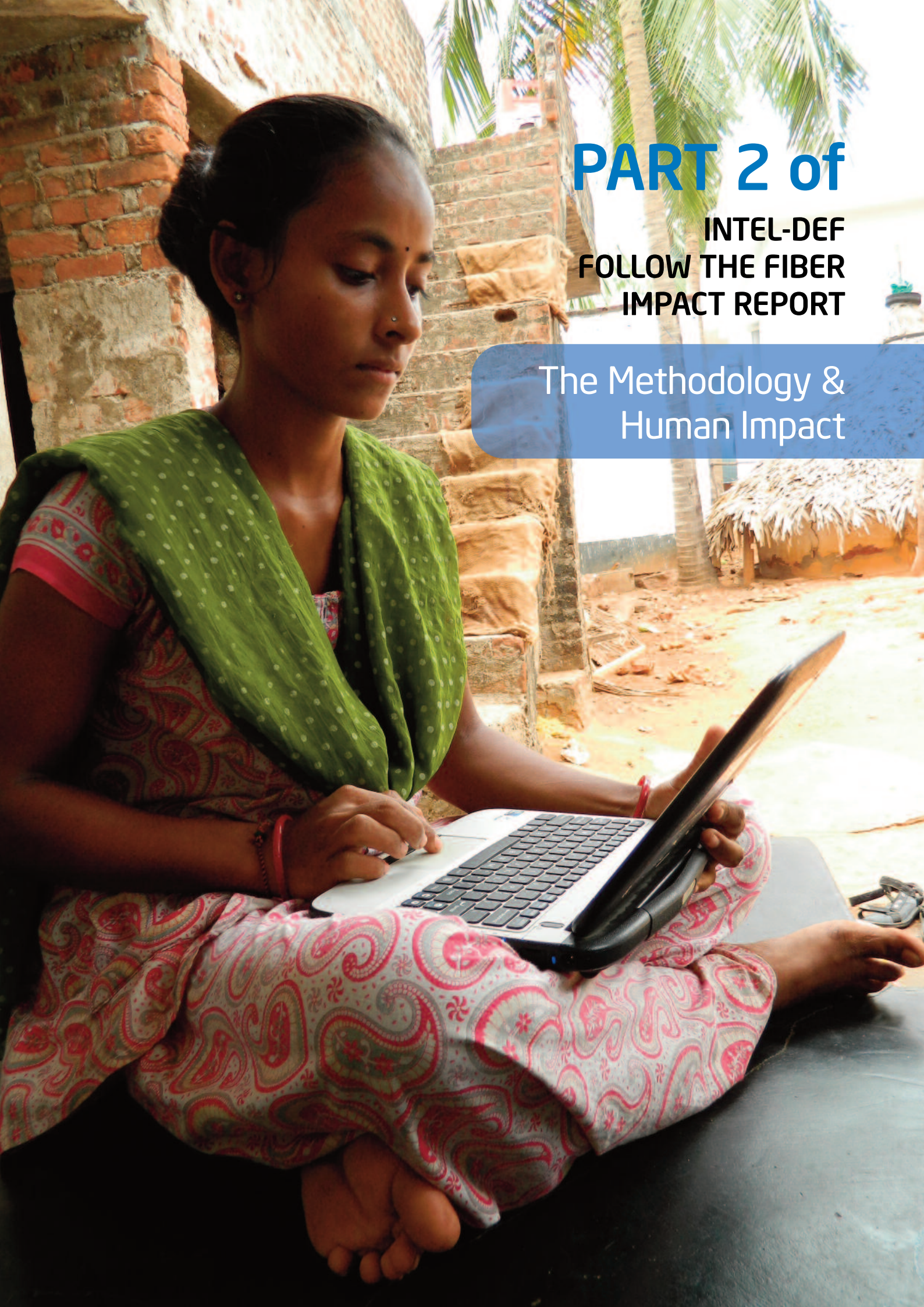
### Muthyalammalem, Andhra Pradesh:

- None of the villagers was technically educated.
- Post NDLM Pilot through resource center at Muthyalammalem, learners gained knowledge of computer operation, Microsoft Windows, Power Point, Google and Facebook.
- Many villagers at Muthyalammalem had never seen a computer but could see and feel its impact post NDLM pilot.
- Program has encouraged youth to know the usage of ICT to improve their lives.

Figure 2: Post NDLM ICT learning Impact in Muthyalammalem Panchayat







# PART 2 of

## INTEL-DEF FOLLOW THE FIBER IMPACT REPORT

### The Methodology & Human Impact

# Methodology of the Impact Study

The study was designed to draw out challenges, opportunities and recommendations keeping in mind conditions before and the impact post the completion of the digital literacy training. The study also compiles thirty real life examples of people who have successfully adopted technology for personal growth during or post the training.

A baseline survey was conducted in the three villages in November 2012 collecting information on

- Occupation
- Education
- Age group
- Gender
- Basic ICT skills - Using a computer or mobile device,
- Knowledge and application of the Internet
- Availability of last mile connectivity (2G, 3G)

Here it was found that on an average across the three centers only 4% were graduates with a professional degree and just about 4% had knowledge of basic ICT skills. 52% of the learners participating in the training were women and about 94% of the people used cell phones.

Post the training, the study captured information on knowledge of basic ICT and Internet skills and usage/application of the Internet. It was found that almost all the learners were able to operate and perform some basic tasks on a computer. While business productivity tools like word processing and spreadsheet were taught using extremely simple activity based approaches it was noticed that the uptake of web based activities like searching for information, email and social networking were easily appreciated and learnt. It was found that over 98% of the

learners learnt searching the information on the internet whereas 78% of the learners successfully created their own email id and close to 61% learners took social networking easily.

Incidentally, it was also found that the entire NDLM center deployment under FTF program was based on its own meticulous methodology of doing baseline before the deployment of the program, which naturally helped in comparing the impact of NDLM.

## FTF Methodology

The methodology of the Follow the Fiber program included baseline, skill assessment, locational mapping for training set up, SWOT analysis and community engagement besides data collation and qualitative analysis.

- A baseline survey on the status of digital literacy and basic IT skills was conducted in November 2012. The purpose of the study was to provide guidance to the project design and implementation and provide a benchmark to measure outcomes.
- The location mapping helped to identify and set up the training centres for the project duration. The setting up of the centre in each of the 3 locations was a centric approach to accommodate the convenience and reduce discomfort for the trainees from each of the household in each Panchayat. Community inputs and consultation with select citizens and community leaders were held to agree to have the training centre at the Panchayat office in each location in Arain, Noangang and Muthyalammalem.
- The program deployment was bottom up and decentralised and at convenience of the trainees. Local institutions including Panchayats, NGOs and



others were consulted to finalize the program delivery.

- It was ensured that the program delivery did not conflict with the daily living activities of the locals. The training was delivered at flexible timing and sessions were of lesser duration of 45 minutes to 1 hour per day. Alternative day method was adopted to deliver training as well.
- Regular and constant handholding and guidance provided to the trainees by the local trainers (selected and trained locally) to learn the maximum by clearing doubts and confusions. The content delivery, was balanced with theory and practical to provide maximum realistic exposure to digital skills.
- In program delivery it was ensured that gender balance and representation from minority groups and tribal were not left out. This was necessary to put into practice the principles of equity and diversity.
- Trainee feedback and inputs were taken regularly to improvise the program delivery and method. For instance, the shifting of time or flexible schedule for trainees emerged from such interactions.
- Proper record maintenance was ensured for trainees,

sessions, attendance, hours spent and trainers' involvement.

- Post FTF training, evaluation and assessment were conducted on the impact of the program for the beneficiaries. Structured and unstructured questions were administered to the beneficiaries, their household members and community representatives about the program efficacy and relevance.
- Analysis of the findings included a Strength, Weakness, Opportunity, Threat (SWOT) analysis of the project based on which, relevant conclusions were drawn and recommendations were made as per terms of reference.
- The program delivery design and implementation were done with consultation of the implementation agency (Digital Empowerment Foundation - DEF). The implementation agency was made responsible and accountable for the program delivery, assessment, guidance, monitoring and data management. The agency was made responsible for program outcome dissemination and contribution to the content of the post program final report. 📄



# Locations and Human Impact Case Studies

## Arain Panchayat, Ajmer, Rajasthan

Arain is perhaps the biggest Panchayat in Ajmer district of Rajasthan, close to historical town of Kishangarh. The population of Arain is 6149 with approximately 2,000 families. The population of males is 3187, whereas females are 2962 and 1077 children. Arain Panchayat has 80 percent literacy rate, including 78 percent male literacy and 62 percent female literacy. However, as far the digital literacy is concerned, Arain also falls apart like many of our hinterland. Yet, there was a lot of awareness about what Internet is and why it may be a necessity to learn computers. Although Arain village is the block headquarters of Arain block, and has many facilities such as banks, a hospital, a police station, a post office, a bus station and several government offices, in general there is no culture of digital life or the Internet. It was a major challenge. After the first two batches were completed we saw that citizen interest increased tremendously.

Arain is the first Panchayat in the country to receive the fiber optic line laid by National Optic Fiber Network of USO Fund and Bharat Broadband Network Limited. On November 10, Intel and DEF established the National Digital Literacy Mission center right in the building of the Panchayat and got the broadband connectivity working for the 15 computers enabled center. The center also enjoyed presence of tablet, camera, printer and scanner.

Being the first Digital literacy program in Arain Panchayat, the attendance of candidates throughout the program was over 80%. At Arain NDLM center, on the last day of Digital Literacy Week, 15 December 2012, a monthly assessment was conducted to examine digital literacy among candidates of the first batch. According to the result, out of 30 candidates, 29 candidates showed remarkable results. 🌐

### Human Impact



#### Avinash Dadhich

**Education:** Graduate

**Village:** Arain

**State:** Rajasthan

**Email:** avipandit09@gmail.com

**Occupation:** Data Entry Operator

Avinash Dadhich, a 23 year old young graduate was unemployed and searching for job prior to joining the NDLM centre at the Arain Panchayat. Despite being a graduate, Avinash was unable to find a job because of a lack of knowledge of computers. Luckily for him though there was a job waiting open at National Informatics Center in district headquarter. Soon after Avinash completed his digital literacy training at the NDLM center and polished his data entry abilities including word processing, spreadsheets and basic internet knowledge, he applied for the job at NIC. Considering that NDLM is primarily oriented to provide digital literacy, it often ended up offering skilling opportunities for those who want to go an extra step.

### Case Study

### Human Impact



#### Santosh Regar

**Education:** 10th

**Village:** Arain

**State:** Rajasthan

**Email:** santoshregar13@gmail.com

**Occupation:** Student

Santosh is a 19-year-old 11th grade student of Arain village who has never stepped out of her village. She always knew about computers and had heard a lot about Internet, Facebook and so on, but never had a chance to experience any of the digital tools. Having heard about the free computer training and internet connectivity at the NDLM, she enrolled herself in the first batch at Arain. She learnt fast, and accessed Internet vociferously. So much so that she was chosen as one of the examples to show how village girls can do wonders if they are given a chance to learn ICT skills. She was invited to Delhi in the Manthan Award 2012 where she boldly shared her learning. "That was my dream journey as I had never thought that I would ever step out of my village and Internet took me to the capital of the country and I met so many people," Santosh relishes her memories and shares them with bright eyes.

### Human Impact

### Case Study



**Nidhi Goswami**  
**Education:** Pursuing B.A.  
**Village:** Arain  
**State:** Rajasthan  
**Email:** gonidhi50@gmail.com  
**Occupation:** Private school teacher

Nidhi is 23 and lives with her parents and two siblings in Arain village. Her brother is pursuing his bachelor's degree from Kishangarh because of the lack of a degree college in Arain. Societal pressures and rampant gender disparities limited Nidhi's ability to pursue higher studies outside Arain. Having heard of the free computer education and Internet course being available at NDLM centre, Nidhi joined the course program for a month. During that one month, she explored e-learning opportunities. Presently, Nidhi has enrolled herself for an online graduation program and is also teaching in a private school in Arain.

### Human Impact

### Case Study



**Vikas Puri**  
**Education:** 12th  
**Village:** Arain  
**State:** Rajasthan  
**Email:** vikasp04@gmail.com  
**Occupation:** Cyber Café Owner

The lack of jobs in Arain makes many youth migrate to the towns and cities. But, Vikas Puri, 20, didn't follow suit and after completing his graduation he started helping with the operations of his father's grocery store. However the income generated from the shop was very limited. In order to improve his livelihood, he joined the computer and digital literacy program at NDLM Center. After learning basic computer skills, he has opened up a cyber café adjoining his grocery shop which is not only supplementing this income but also helping other young students in his village learn computer skills and get basic information like exam results, admissions etc. without having to travel to the nearest town.

### Human Impact

### Case Study



**S Surendra Vyas**  
**Education:** 12th Grade  
**Village:** Arain  
**State:** Rajasthan  
**Email:** vvvsurendra05@gmail.com  
**Occupation:** Computer Operator

S Surendra Vyas, a 21 year old sensitive young man had to give up his education after his 12th because of the abject poverty in his home. When he heard of NDLM center being opened at the Panchayat of Arain, he could not resist and asked his parents to get him admission. He completed the free computer course with enthusiasm and got an opportunity to work as a computer operator in a toll plaza on Ajmer Highway. He however, did not stop at that - he also got asked his mother to undergo the training and she has now joined a nearby Anganwadi center as a caretaker of the small children in Anganwadi.

### Human Impact

### Case Study



**Sumitra Gurjar**  
**Education:** 8th  
**Village:** Arain  
**State:** Rajasthan  
**Email:** sumitrag1980@hotmail.com  
**Occupation:** Daily-wage worker (MGNREGA)

Sumitra Gurjar, 28, lives with her husband and three children in Arain Village. She is a laborer under MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) scheme. Belonging to a BPL (below poverty line) family, she was unaware about using computer and its applications in her daily life. Having learnt that the NDLM program was providing free computer education, she enrolled herself in the first batch at Arain program. She now uses all her entire learning to her by finding details about the labour rate, daily wages rates and also checking online status of jobs availability and distribution of wages under MGNREGA and further informs other job seekers under MGNREGA. Being digitally literate empowered her to improve her livelihood and help those around her.

## Human Impact

## Case Study



**Manraj Gujjar**  
**Education:** 10th  
**Village:** Arain  
**State:** Rajasthan  
**Email:** gurjрманraj2013@gmail.com  
**Occupation:** Data Entry Operator at MGNREGA centre

Manraj Gurjar, a 30 year old married woman, has studied till 10th grade. After getting married, she was helping her husband in farming and other agriculture activities. She somehow managed to convince her husband to allow her to join NDLM center and learn computers and Internet. She learnt data entry, MS Office, Internet, Gmail, Facebook and so on. Her speed of learning was so fast that she impressed everybody and somebody informed the local MGNREGA office about Manraj's new skills and she got a call if she could help with basic data entry work. Today she's able to supplement her family's income.

## Human Impact

## Case Study



**Durga Devi**  
**Education:** 8th  
**Village:** Arain  
**State:** Rajasthan  
**Email:** durgadevidd@yahoo.com  
**Occupation:** Anganwadi Activist

Durga is a 40-year-old woman living in Arain village and has never used computers in her life. When she heard that NDLM centre is providing free basic computer education without any age biases, she stepped forward and enrolled herself. After joining NDLM centre, she learnt computer and internet skills and also learnt about Anganwadi website. She successfully completed her one-month certification course and presently she is working as Anganwadi worker and helping her husband and trying to give better life to her kids.

## Human Impact

## Case Study



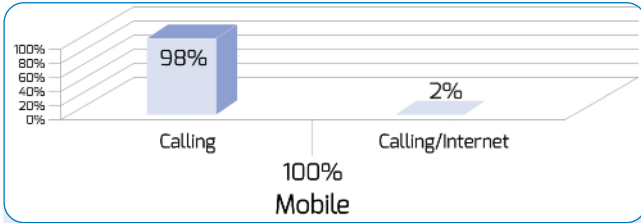
**Ekta**  
**Education:** Graduate  
**Village:** Arain  
**State:** Rajasthan  
**Email:** ektaarain@gmail.com  
**Occupation:** Housewife

Ekta, 27, a graduate housewife, is living with her husband and two kids in Arain village. Despite being Graduate, she was illiterate about using computers. She joined NDLM center and completed the one-month basic computer course, where, she learnt various computer and internet skills. She enjoyed spending lot of time watching videos on YouTube and doing video Skype call among other learners in the center and DEF head office in Delhi. Ekta convinced her husband to buy a laptop for usage at home. While her husband started learning on the laptop at home, she also got Internet connection to her home. Now they informally provide online services to many fellow villagers for booking railway ticket, bus ticket, and for filling online forms for various government schemes.



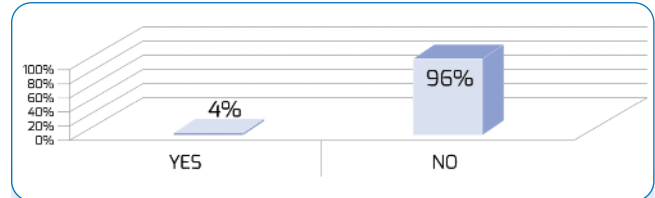
# ARAIN PANCHAYAT VILLAGE: Demographic analysis before deployment of "Follow the Fiber" & "National Digital Literacy Mission" Center

## Mobile phone users & purpose



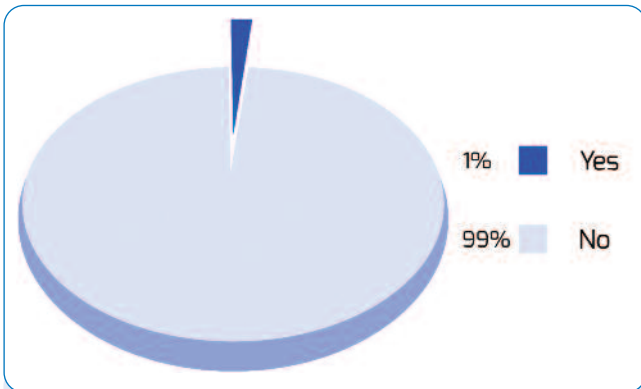
In Arain, 98 percent people use mobile for calling; 2 percent use mobile for other activities like music download etc.

## Email Id



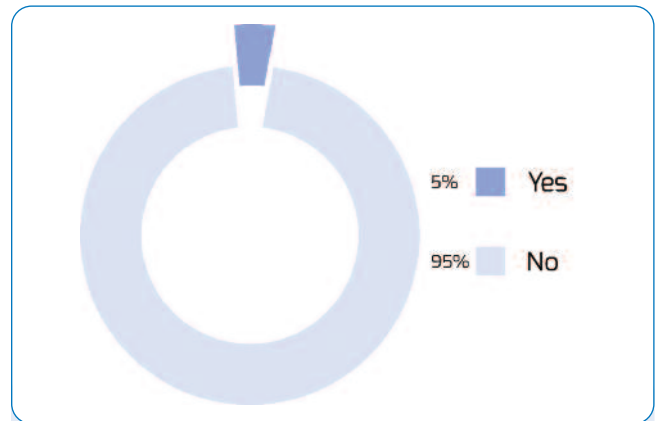
4 percent people had email ids.

## Smartphone



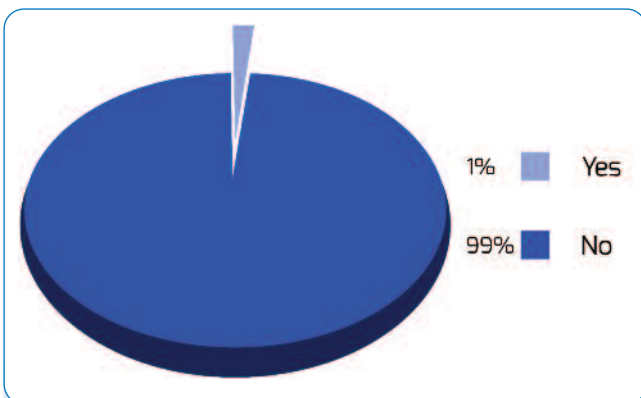
Only one percent villagers have Smartphones.

## ICT Knowledge



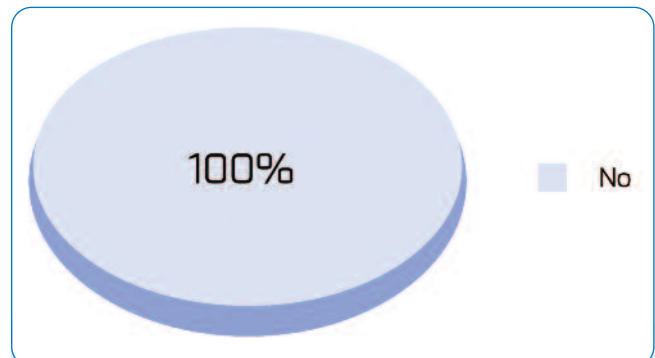
5 percent people had knowledge of ICT.

## Professional degree holders



In Arain, only one percent people had professional degree.

## Internet users



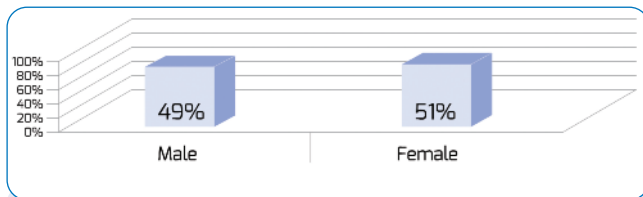
In Pre NDLM survey, we found that there was no Internet facility in the village.

## ARAIN PANCHAYAT VILLAGE: Analysis after Follow the Fiber NDLM Center deployment

Arain village in Arain Panchayat in Ajmer district is not only a big village with a large population but one which showed sincere intent to avail the benefits of the NDLM center. Even though villages in Rajasthan have a serious gender divide, a large number of women came out to get trained.

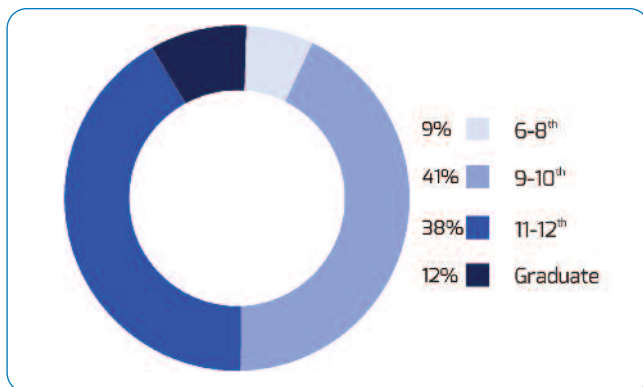
Structured curricula developed by Intel turned out to be very convenient to the first time learners of ICT of the Arain village. Intel Easy Steps helped the learners acquire not only digital literacy but also ICT skills, which helped in many cases to get job. In general, the introduction of NDLM center made a tremendous difference in the lives of the villagers, who enthusiastically learnt it and for the number of months various batches were on, all those who had finished their course, ended up coming to center on odd hours to practice and enjoy the vast pool of information from Internet.

### Ratio Male & female learners

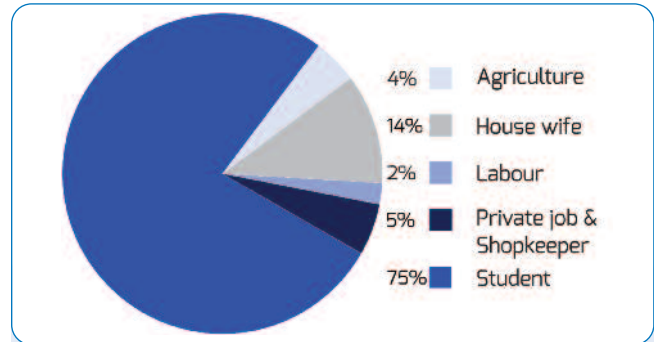


In Post NDLM survey, it was found that male learners were 49 percent whereas percentage of female learners was 51. i.e. higher percentage of female learners.

### Learner's Education

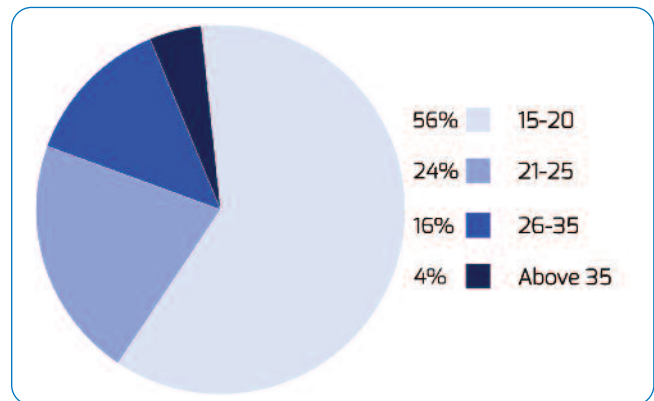


### Occupation



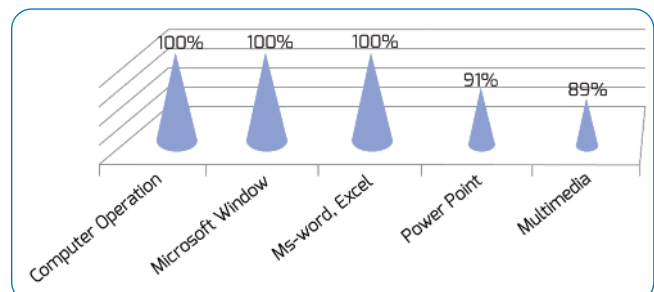
The ratio of learners in post NDLM survey was: 4 percent from agriculture activities, 14 percent house wives, 2 percent labour, 5 percent from private jobs and rest 75 percent were from students. The interesting part of this data was: higher ratio of housewife learners.

### Learner's Age group



### Post NDLM Digital Literacy Rate

Intel® Easy Steps is a basic technology literacy education program for adult learners with little or no experience with computers. Participants learnt the "basics" of the computer, enabling them to use the computer in ways that are relevant to their daily lives. Through active, hands-on experience, participants learnt to explore and use basic computer applications that are used in everyday life.



Post NDLM, it was found that all the learners have knowledge of computer operation, Microsoft Window and MS-word Excel. Whereas 91 percent learners in Arain centre have knowledge of Power point and 89 percent learners have knowledge of Multimedia.

## Noagang Panchayat, Panisagar, North Tripura, Tripura

Noagang is a Panchayat under Panisagar block of North Tripura District. It is 200 Kmes away from Agartala, capital of Tripura, which is third-smallest state in the country, bordered by Bangladesh to the north, south, and west, and the Indian states of Assam and Mizoram to the east. There are 409 families in Noagang Panchayat, which is largely dominated by indigenous communities of Halam and Ranglang tribes.

**“ NOAGANG PANCHAYAT AT GLANCE**  
**Population: 12513**  
**No of Households: 409**  
**Community: 97% tribal people**  
**Main Occupation: Cultivation ”**

Arain village in Arain Panchayat in Ajmer district is not only a big village with a large population but one which showed sincere intent to avail the benefits of the NDLM center. Even though villages in Rajasthan have a serious gender divide, a large number of women came out to get trained.

Across Naogang Panchayat, a lack of digital literacy is their main barrier to the Internet penetration. This status remains relatively stable across several demographic categories, suggesting that this issue affects Panisagar regardless of where they live, their racial and ethnic identities, their educational attainment, or how much money they make. The only noticeable variation is between villagers of differing ages. One of the reasons people are enthusiastic about digital literacy and Internet is that they expect it to bring some of the more urban amenities to their small town, therefore fulfilling some of the education and entertainment needs of young people and making their community more attractive. Hence, it's very clear that adults want a future for their children in their own community. And they are looking to technology to provide better future.

**“ CHALLENGES IN NAOGANG PANCHAYAT**  
**Poor Socio-economic condition**  
**Un-skilled human resource**  
**Low Internet penetration-Low**  
**Low levers of Digital**  
**Literacy rate ”**

Noagang is the second identified Panchayat where National Optic Fiber Network line has been reached in Panisagar, sub division-cum-block of North Tripura District. Approximately 70% of Panchayat area is covered with NOFN line.

For the digital-literacy mission program, 402 members identified from 409 households to make them digitally literate. The introductory program started on 15 November 2012 with 6 laptops. Two trainers appointed to provide training on Digital Literacy programmes, including Intel Easy Step. The first and second batch with 25 trainees (in each) from different background as student, housewives, working people, unemployed youth, etc., has been compiled for the digital-literacy program.

NDLM program introduced computer, information communication technology to the community. Now, NDLM Noagang Centre is playing a vital role in providing computer education, empower the society with information, communication technology. Among other things, the center also provided a well designed program for a complete digital literacy program called Intel Easy Steps which included thorough sessions of Internet, Word Processing and Spreadsheets, Searching and so on. The physical set up of the NDLM center also helped quick learning as the hardware consisted of laptop, computers, tablets, camera, printer, scanner, and so on. 🖱️



## Human Impact

## Case Study



### Leisungak Halam

**Education:** 8th  
**Village:** Naogang  
**State:** Tripura  
**Email:** lhalam2013@gmail.com  
**Occupation:** Secretary of village SHG

Thirty three yearold Leisungak Halam, was just an active member of Self Help Group (SHG) involved in micro enterprises of pickle making and selling in the local market. She was happy and contented. Yet, when she heard of new computer center being opened in her village right in the premise of the Panchayat, she felt a strong urge to join and learn computers and joined the first batch. She specially got tuned into Facebook and learnt how to make a page for her products to promote. She in fact has become quite popular in the community for increasing her income from Rs. 500 to almost Rs. 1300 as she now gets calls and orders for her pickles, turmeric powder, jam and other household products. Needless to mention, her other co-members of the SHG now want to get hooked to Facebook..

## Human Impact

## Case Study



### Lianthangjui Halam

**Education:** 10th Grade  
**Village:** Naogang  
**State:** Tripura  
**Email:** lhalam2001@gmail.com  
**Occupation:** Housewife

Lianthangjui Halam, is a 39 year mother of three children, who has been busy bringing up her children and taking care of her house. Though she always wanted to learn computers, she had no opportunity to do so. The NDLM center was God sent for her and she enrolled in the first batch and completed her training. Today she's teaching her children to use computers and the internet.

## Human Impact

## Case Study



### Uniky Halam

**Education:** Graduate  
**Village:** Naogang  
**State:** Tripura  
**Email:** unikyhalam1@gmail.com  
**Occupation:** Student

Uniky Halam is 21-year-old woman, belonging to the Halam community of Naogang Panchayat. She had completed her bachelor's degree keen on pursuing her higher studies. But being a resident of a rural place like Naogang, she had no idea about where and how to contact in order to get information for enrollment into P.G. course offered by different universities of Tripura and Assam. Uniky joined NDLM program and successfully completed her training. The knowledge of computers, Internet, Google, email, among others opened ample avenues for her and she managed to get admission in to the post graduate course offered by Agartala University because of the internet Uniky is now all set in the way to achieve her P.G. degree and fulfilling her desire for higher studies.

## Human Impact

## Case Study



### Rubi Bhattacharya

**Education:** 12th  
**Village:** Naogang  
**State:** Tripura  
**Email:** rubindlm2013@gmail.com  
**Occupation:** Student

Rubi Bhattacharya is 19-year-old teenager belonging to Naogang Panchayat village of Panisagar block. Rubi is a meritorious student pursuing her 10+2 studies. She joined the NDLM program to get familiar with computers, Internet, Information & Communication Technology and has successfully completed her training. She is now capable of surfing Internet, downloading contents, connecting to the outer world through Facebook etc. One day while surfing the Internet, Rubi got to know about a scholarship scheme for students of 10+2 and applied for it online. She got scholarship provided by Government of India. "NDLM training turned as a blessing for me and encourages others to become digitally literate as to avail the blessings of modern day technologies of information", says Ruby.

## Human Impact

## Case Study



### Lianthangli Halam

**Education:** Diploma in Rural Development

**Village:** Naogang

**State:** Tripura

**Email:** lianthangli123@gmail.com

**Occupation:** Student

Lianthangli Halam, a 24 year old young man completed his Diploma in Rural Development from IGNOU (Indira Gandhi National Open University). In order to add computer skills to his bio-data, he joined the NDLM training and after that he found himself capable of operating computers and performing basic activities on the internet. He is now utilizing his skills to help fill up online forms for passports, death & birth certificates. He is working as a digital service assistant at the NDLM center.

## Human Impact

## Case Study



### Lalsangzuala Halam

**Education:** Graduate

**Village:** Naogang

**State:** Tripura

**Email:** lalsangzuala123@gmail.com

**Occupation:** Student

Lalsangzuala Halam is 23, enrolled herself in the NDLM center, and completed most the course within one month. Her ability to surf the Internet enabled her to get admission to post graduate course in Tripura University under special Schedule Cast/Schedule Tribe promotional program. She attributes her admission to NDLM centre that provided all information related to community development such as, searching for jobs, scholarships and admissions.

## Human Impact

## Case Study



### Boresangpek Halam

**Education:** Graduate

**Village:** Naogang

**State:** Tripura

**Email:** borsangpekhalam@gmail.com

**Occupation:** Date Entry Operator

Boresangpek Halam is a 29 year old graduate without any knowledge of computers and Internet. Being a graduate, he was under pressure to get a regular job to support him and the family. Boresangpek finally got perfect success out the NDLM center. He joined the center and went through entire digital literacy program and furthered it to skilling himself into computers and its various applications such as word processing and spreadsheets, data entry and accessing the internet and luckily for him, he's now an data entry operator at the National Rural Health Mission and brings home a salary.

## Human Impact

## Case Study



### Johorngak Halam

**Education:** 10th

**Village:** Naogang

**State:** Tripura

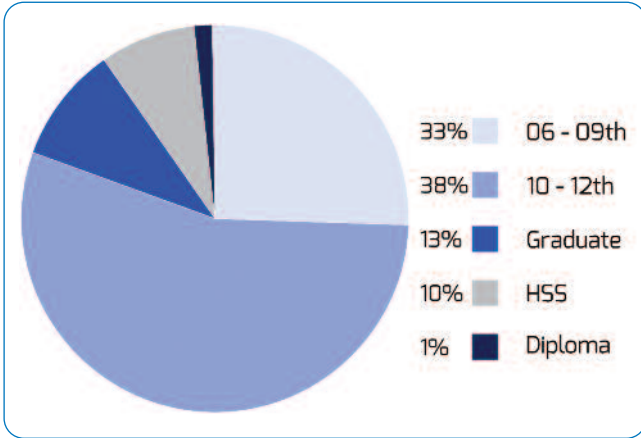
**Email:** jhalamndlm@gmail.com

**Occupation:** Elected representative of Panchayat

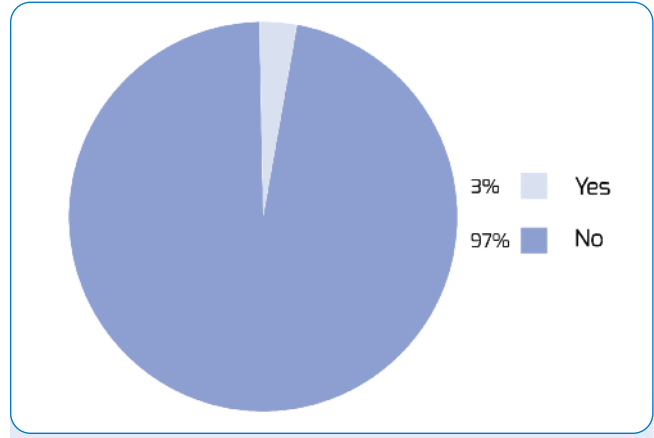
Johorngak Halam, 33, is an elected member of the village council of the Naogang Panchayat. He always wanted to serve his people to the best of his ability, yet his source of information related to any public dealing has been dependent on his senior Panchayat members or block office. He was aware that lot information was available on the internet but his lack of knowledge of computers and the internet proved to be a big impediment. He joined the NDLM center and completed his training and as a result, Halam has ensured that the computers of his Panchayat are functional, and regularly accesses the Internet for relevant information related to his Panchayat including government schemes, announcements, and other information related to public good.

# NOAGANG PANCHAYAT VILLAGE: Demographic analysis before deployment of "Follow the Fiber" & "National Digital Literacy Mission" Center

## Education Level

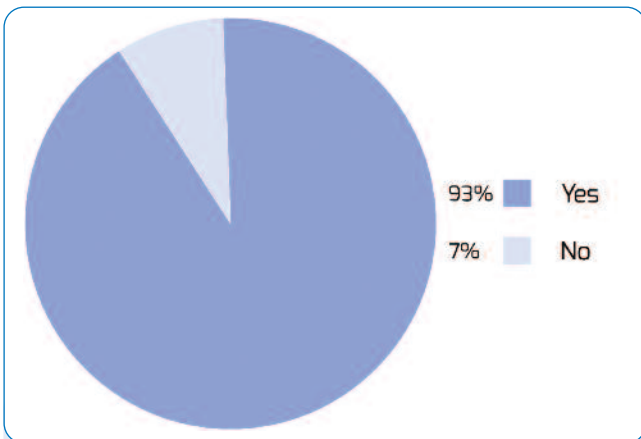


## Professional Degree Holders



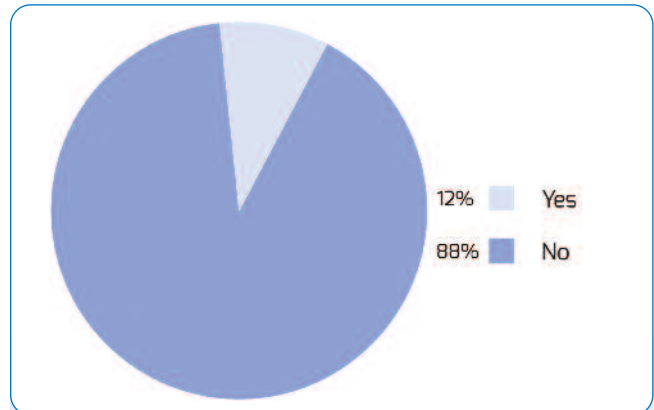
3 percent people have professional degree.

## Mobile Phone users



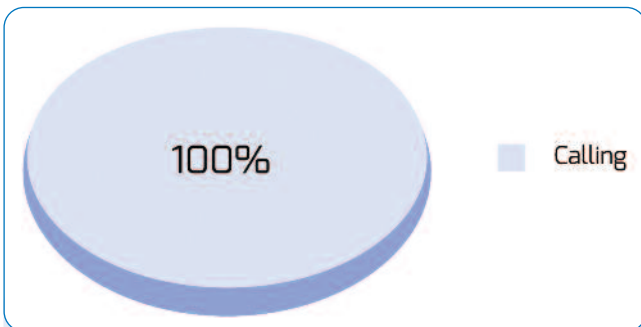
In Noagang Panchayat, 93 percent people have mobile phones.

## ICT Knowledge



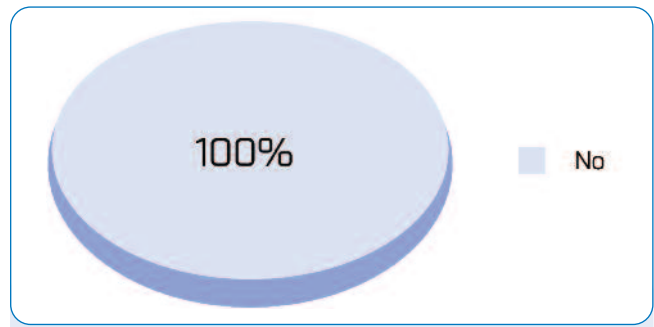
In Pre-NDLM analysis survey, it was found the only 12 percent people have the knowledge of ICT.

## Purpose of mobile phone



All the users use mobile phones for calling.

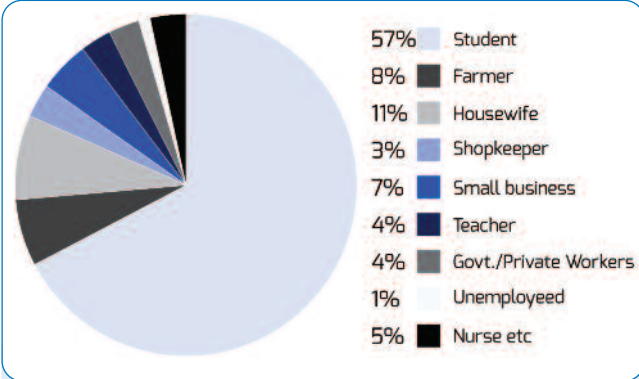
## Using email Id & Online Services



None of the person from Noagang Panchayat had email id and Internet facilities.

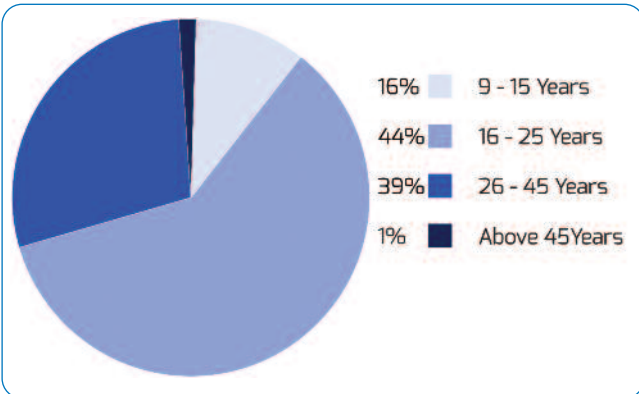
# NOAGANG PANCHAYAT VILLAGE: Analysis After deployment of NDLM Center

## People learned according to occupation

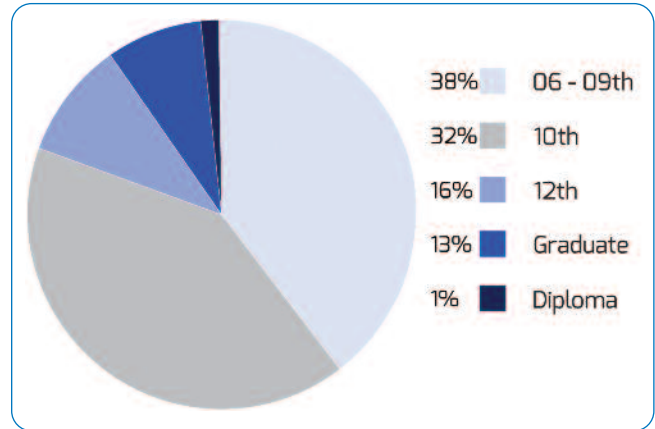


In Post NDLM survey, it was found that highest number of learners was students, followed by housewives.

## People Learned according to age group



## People Learned according to education level



## Muthyalammapalem Panchayat, Parvada, Vishakhapatnam, Andhra Pradesh

Muthyalammapalem is one of the poorest villages in Andhra Pradesh. There are 454 fishermen families with 1840 population. The village is plagued by several superstitions which the villagers follow to date. The IT revolution in Andhra Pradesh has bypassed Indian villages like Muthyalammapalem.


453 of the 454 families are below the poverty line. Fisheries contribute to their livelihoods. As per official data, 421 people are involved in fishing, 154 women are involved in selling fish and 66 women are daily wage laborers.

In Muthyalammapalem, 197 males and 155 females have attained primary education, 239 males and 151 females have attained secondary education. Only 1 person of this village had a college education. Ironically, none of the villagers are technically educated. As a result, they are unable to understand even simple weather forecast information on television.

Despite the local television channels providing weather forecasts, fishermen from Muthyalammapalem sometimes have to make several wasted trips into the sea before because they are unable to understand the technical language in the forecast.

On 22 December 2012, Intel & DEF inaugurated the Muthyalammapalem NDLM Centre taking advantage of the NOFN Internet Broadband connectivity and trained 350 villagers with basic computer skills. Being the first digital literacy program ever in Muthyalammapalem village, the center started with two batches simultaneously to meet the demands and enthusiasm of the participating villagers.

Just few years back, Muthyalammapalem villagers had never seen a computer. Today, the NDLM centre and its digital gadgets like computers, tablets, internet connectivity, camera and so on are empowering villages with a plethora of information on the internet be it about the weather or crops or even opening them up to the world of emails, social networking. The NDLM center has equipped these fishermen to get all necessary information about the weather well in advance in a simple and understandable form.

Villagers believe that they now have a new weapon in their hands to fight poverty. It comes in the form of National Digital Literacy Mission, which provides local people an interface with the outside world. For instance, fishing communities are getting information on weather, as they would like to understand, 48 hours in advance and with the word of mouth spreading across larger communities. 



### Human Impact



#### V Savitri

**Education:** 10th  
**Village:** Muthyalammapalem  
**State:** Andhra Pradesh  
**Email:** savitriv@rediffmail.com  
**Occupation:** Student

V Savitri, 15, had her dream of completing her higher studies when she had to drop out of school after her 10th standard to help the family earn money to make ends meet. The NDLM center however, served as a ray of hope for her because she spent some time learning about computers and the internet. Savitri figured out through her exposure to Internet that she can attend many courses online and still continue to help her parents in their fishing business. Savitri is already sharpening her skills by taking some classes to teach others in her village about digital skills.

### Case Study

### Human Impact



#### Chintakala Muthiyalu

**Education:** 10th  
**Village:** Muthyalammapalem  
**State:** Andhra Pradesh  
**Email:** chmutyalu.def@rediffmail.com  
**Occupation:** Auto Driver

What difference can a computer possibly make to an illiterate man driving an auto rickshaw in a remote village with a scarce supply of electricity. Chintakala Muthiyalu is a 20 year old auto rickshaw driver and his father is a fisherman. The NDLM program came to his village as a golden opportunity. He enrolled and successfully completed in the program. Today he is familiar with several facets of using a computer and the internet. He says, "Today, I help other people in my area become digitally literate and earn additionally with downloading music and further distributing them on micro-SD cards."

### Case Study

### Human Impact



#### Ganagalla Devi

**Education:** 12th  
**Village:** Muthyalammapalem  
**State:** Andhra Pradesh  
**Email:** ganagallad@gmail.com  
**Occupation:** Student

Improving digital literacy in communities is critical to also develop local commerce. Ganagalla Devi is an 18-year-old tailor who like many others in her villages has always lived in abject poverty. The resources and mentorship, she received throughout each module of the digital literacy and at the NDLM center helped her establish firms grasp on the possibilities of the digital world. Gangalla now is preparing to open her small computer enabled Internet broadband center for providing continued digital literacy and Internet services as her entrepreneurial initiative.

### Case Study

### Human Impact



#### Mypalapalli Mutyalamma

**Education:** 10th  
**Village:** Muthyalammapalem  
**State:** Andhra Pradesh  
**Email:** mmutyalamma@yahoo.com  
**Occupation:** Student

Even though education for girls is not a high priority in her fishermen community, Mypalapalli's parents sent her to school. She was a very good student, but after 10th grade, she was unable to continue her education due to poverty. "Even after 10 year of schooling, I had nothing to show in my life! It was very depressing." She was among the first ones who enrolled for NDLM program. She recognized the importance of the digital skills immediately and decided to pass them on to others. Mypalapalli, 18, wants to start her own Digital Literacy Training Center in her village and wants to be an entrepreneur, who not only share digital literacy skills with others, but also help to support her family financially.

### Case Study

### Human Impact

### Case Study



**Suradadevu Damma**  
**Education:** 12th  
**Village:** Muthyalammmapalem  
**State:** Andhra Pradesh  
**Email:** devusuradad@gmail.com  
**Occupation:** Student

Suradadevu Damma was born into a poor fisherman family in Muthyalammmapalem. Her routine job was always around fishing and work related to fish processing, selling and helping her parents in the fish business. She'd never even dreamt of learning computers or Internet or Facebook. The NDLM center helped her look outward and virtually experience what lies beyond the boundaries of fishermen village. She really dedicated her few months on learning computers and Internet through Intel Easy Step. After having completed the complete program at NDLM, Surada's major time goes into: Internet surfing, exploring and making friends on Facebook, and tutoring others in the center to learn computers faster.

### Human Impact

### Case Study



**Vasupalli Janaki**  
**Education:** 10th  
**Village:** Muthyalammmapalem  
**State:** Andhra Pradesh  
**Email:** janakivasupalli@rediffmail.com  
**Occupation:** Student

Vasupalli Janaki is 16 yearold girl who's recently passed her 10th. Janaki turned out to be one of the most exceptional participants and learners during the NDLM program. Not only did she quickly grasp all aspects of the training but she went to become an assistant to the chief instructor of the Muthyalammmapalem Panchayat based NDLM center helping her earn some money. Janaki has inspired many other villagers, especially women to join the NDLM center.

### Human Impact

### Case Study



**Vasupalli Devi**  
**Education:** 10th  
**Village:** Muthyalammmapalem  
**State:** Andhra Pradesh  
**Email:** devivasupalli@rediffmail.com  
**Occupation:** Student

Vasupalli Devi always had a desire of learning computers and exploring the Internet, and that is exactly what she did as soon as NDLM program started in Muthyalammmapalem Panchayat. She was amongst the first ones to join the center. She opened an email account as soon as she was comfortable using computers and also went on to explore the world of social networking. Today she's an advocate of using the internet and helps many of her friends to do the same.

### Human Impact

### Case Study

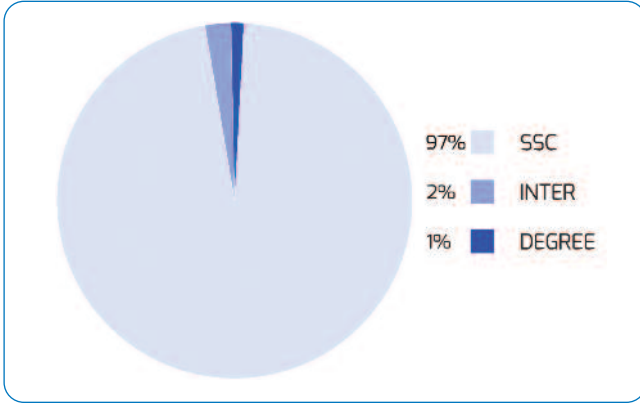


**Koveri Rajeshwari**  
**Education:** 10th  
**Village:** Muthyalammmapalem  
**State:** Andhra Pradesh  
**Email:** rajeswari.kdef@yahoo.in  
**Occupation:** Tailoring

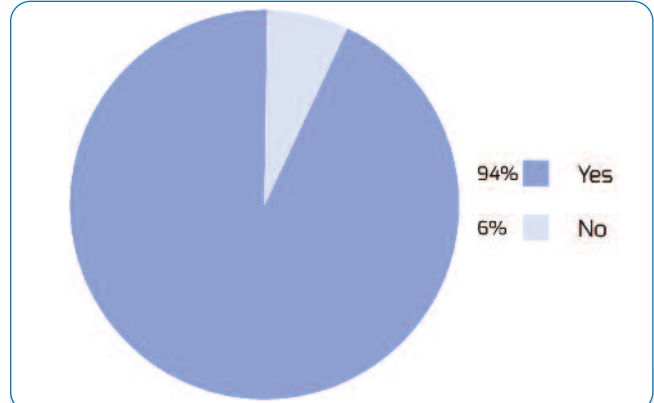
Koveri Rajeshwari, is a 24 yearold mother of two children and is a tailor by occupation. Koveri always had a keen desire to learn computers but had no avenues to do so in her village. She successfully completed her training at the NDLM center and is able to use her computer skills to look for new designs and stitching techniques available in the market. Koveri now offers a range of new designs to her customers and encourages young girls to get digitally literate.

# MUTHYALAMPALEM PANCHAYAT VILLAGE: Demographic analysis before deployment of "Follow the Fiber" & "National Digital Literacy Mission" Center

## Level of education

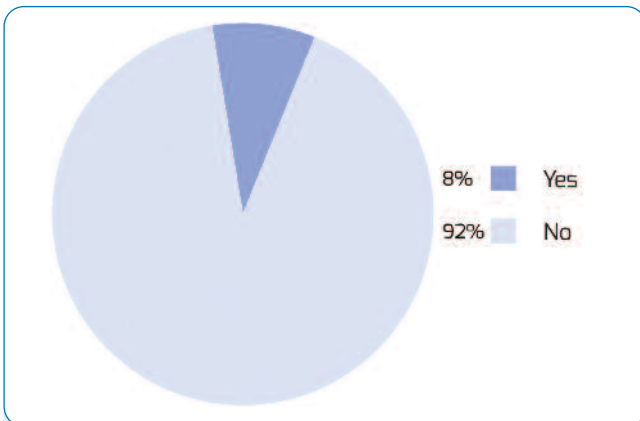


## Mobile phone users



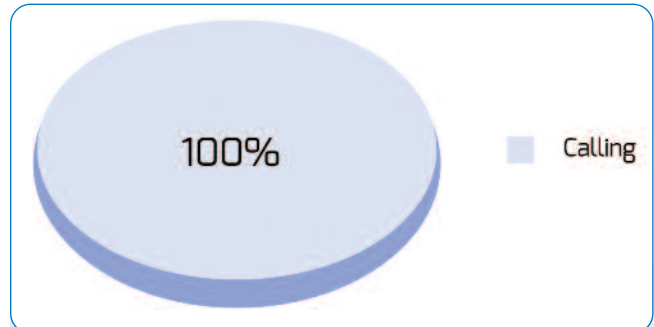
6 percent people in Muthyalampalem are mobile phone users.

## Professional Degree



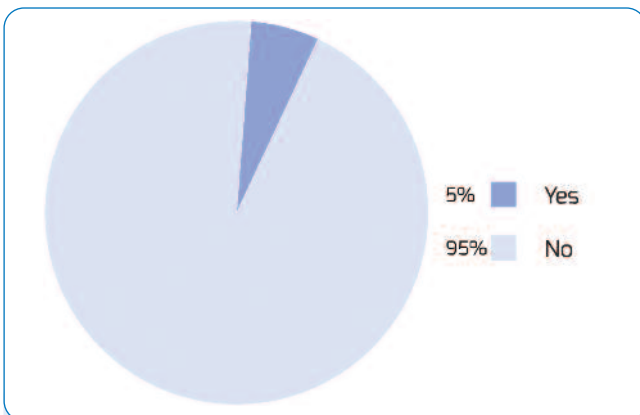
It was found that in Muthyalampalem, only 8 percent people have professional degree.

## Purpose of phone



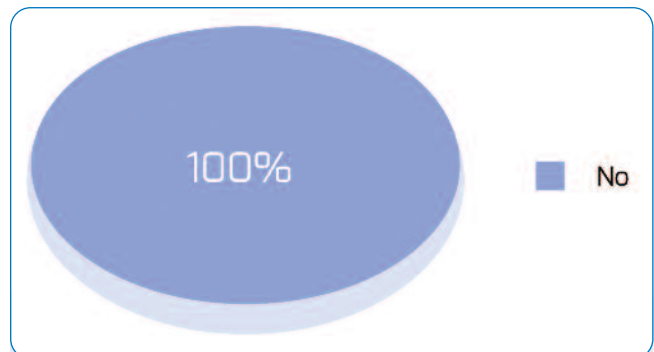
All the mobile phone users in Muthyalampalem use mobile for calling.

## ICT Knowledge



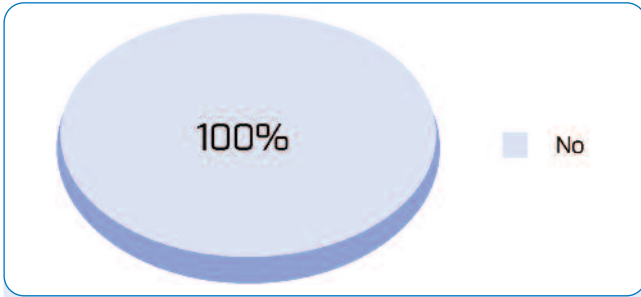
In Pre NDLM survey, only 5 percent had ICT knowledge.

## Smartphone



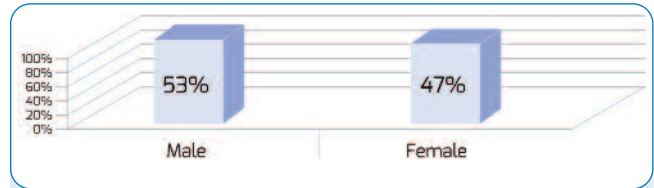
In Muthyalampalem, nobody has smart phone.

### Email Id & Online Service users



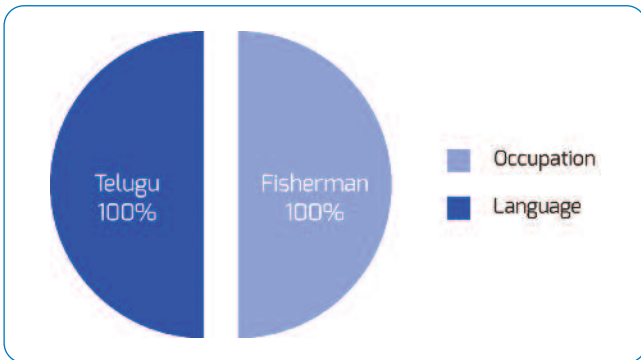
In Pre NDLM survey, it was found that none of the Muthyalampalem villagers have email id and Internet facility.

### Male-Female Ratio

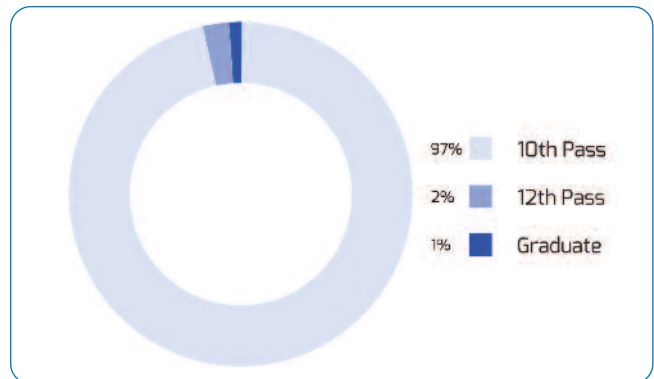


In Muthyalampalem, the percentage of male learners was 53 percent whereas 47 percent were female.

### Language & Occupation

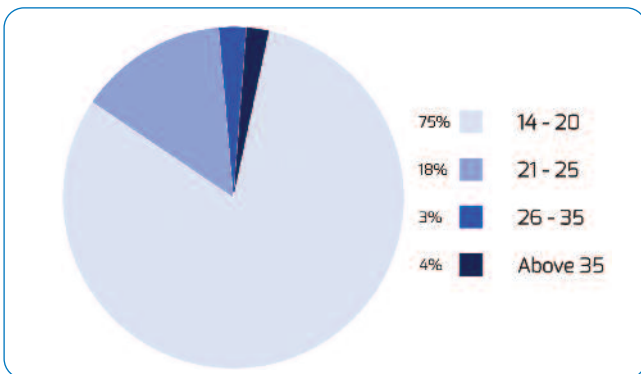


### Educational Level

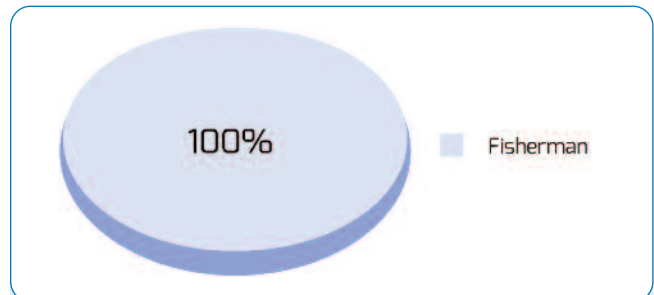


## MUTHYALAMPALEM PANCHAYAT VILLAGE: Analysis Afterdeployment of NDLM Center

### Age group

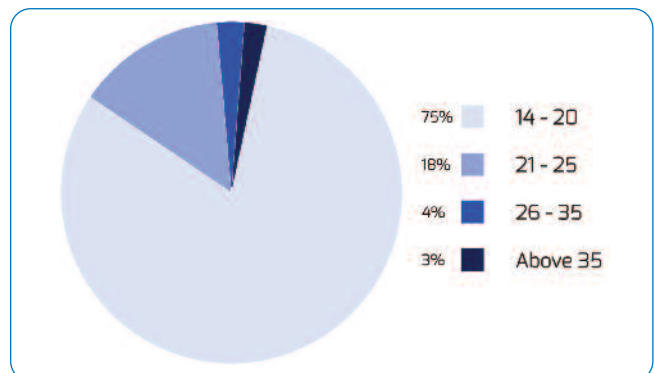


### Occupation of digital learners



All the learners in Muthyalampalem were fishermen.

### Age group of digital learners



# About Us



## About Intel:

Intel is a world leader in computing innovation. The company designs and builds the essential technologies that serve as the foundation for

the world's computing devices. Additional information about Intel is available at [newsroom.intel.com](http://newsroom.intel.com) and [blogs.intel.com](http://blogs.intel.com).



## About DEF:

Digital Empowerment Foundation (DEF) was started in December 2002 as a not-for-profit with the overall focus on Information Commu-

nication Technology for Development. DEF's mission has been to overcome information poverty through the use of ICT and digital tools.

DEF works with government, private sector, foundations and multi-lateral agencies ensure that people who live at the edge of information gets connected and empowered with adequate information. Digital Empowerment Foundations' major initiatives are: Digital Panchayat, eNGO, eMSME, Wireless for Communities, National Digital Literacy Mission, Community Information Resource Centers, Manthan Award for Digital Inclusion for Development, mBillionth Award for Innovations in Mobile & Telecom, Vodafone Mobile for Good, Mobile for Social & Behavioural Change, Pearson Teaching Award, Digital Knowledge Center, eNGO Challenge for Recognising Best NGOs using ICTs, and several research and advocacy programs.

Some of the partners of DEF are: Intel India, Intel Foundation, Vodafone India, Vodafone Foundation, Ford Foundation, European Union, UNICEF, UNESCO, Ministry of Communication & IT, NIXI, .NGO, .ORG, Public Interest Registry, Internet Society, Bill & Melinda Gates Foundation, Internet & Mobile Association of India, Nokia, Microsoft India among others. DEF can be reached at <http://defindia.net>.



## About OKC:

Open Knowledge Community is a not-for-profit organization formed by UN, Public sector and civil society organizations which work on open, transparent, inclusive and sustainable knowledge practices to connect communities, civil societies, in-

dustries and Government through the effective use of information and communication technologies (ICT). OKC is mandated to be a bridge between policy, implementation and practice. OKC aims to empower people, communities, civil societies, industries and Government through a common platform, enabling them to participate in knowledge creation, sharing and dissemination and to support policy development processes, enhance program delivery and help accelerate progress towards developmental goals.

OKC provides critical analysis and research on a wide range of thematics through citizen feedback, think tanks and its large network of communities of practice consisting of NGOs, CBOs, corporate and government agencies. It works towards building a knowledge society that will actively support government outreach and will enable feedback using ICT- and other knowledge-based platform for participatory governance.

OKC is also mandated to act as a recommendatory body for research and analysis towards policy development and regulatory approaches, in order to address the needs of specific social groups such as the underserved, marginalized and differently abled.



## About NDLM:

The National Digital Literacy Mission (DLM) is an initiative of Intel with a support from industry stakeholders such as Lenovo, Dell, NIIT, and NASSCOM and non-profit or-

ganizations such as Digital Empowerment Foundation and NASSCOM Foundation. NDLM is an effort to extend NOFN objectives to empower rural citizens by making them digitally literate.

NDLM is an ecosystem of digital literacy awareness, education and training that will help India take a lead in the global digital economy and help us maintain the competitiveness and also shape a technologically empowered society. NDLM aims to create multi-stakeholder, consortium and work with government and their various schemes and agendas to showcase in some of those panchayats constituencies that how making them digitally literate can change the scenario of governance, empowerment, social inclusion, educational approach and employment.



# INTEL- DEF

## FOLLOW THE FIBER

### IMPACT REPORT

“Follow the Fiber” Impact Report is an analysis of how digital literacy impacts the rural citizens if they are provided technology and broadband Internet access.

FTF is a program of some of IT industry and civil society partners to complement the Ministry of Communication & IT’s plan to connect each Panchayat with 100 mbps optic fibre line and at each Panchayat there should be total digital literacy using broadband.

