PROJECT JAL

MARKET POTENTIAL ANALYSIS FOR WATER PURIFIER USING NANOTECHNOLOGY FOR THE BOTTOM OF PYRAMID MARKET

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DEVELOPMENT ALTERNATIVES
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Executive summary

- *The study aims at assessing the market potential of water purifier for the Bottom of Pyramid market*
- *A quantitative sample survey was conducted among the consumers as well as the retailers in the north Indian towns (with < 50,000 population) from the states of Uttar Pradesh, Punjab and Haryana*
- *Apart from interviewing the consumers and the dealers, the study analyzed the purifier market and also analyzed the scope of nanotechnology for water purification*
- *Secondary information reveals that the BoP market is pegged at about $1.2 trillion in PPP (purchasing power parity) terms making more than 84% of the total national household market in India*
- *Two-third of the purifier market is UV based indicating that the low-cost, non-electric nanotechnology based purifier not quite reaching out to the BoP in the market*
- *AquaSure (Eureka Forbes), Pureit (HUL), Swach (Tata) and Kent (UF based) are the major brands in the non-electric & storage water purifiers mostly thriving in the BoP market*
- *The consumer research revealed:*
    - *Households in UP primarily depend on community hand pump, while households in Punjab & Haryana depended more on tap water*
    - *Supply of water was generally reported to be adequate*
    - *The average daily consumption of drinking water is close to 20 liters for a family of about 6*
    - *Gauging quality of water (purity) was related to visibly clean water (not muddy, no foul smell)*
    - *Though it is difficult for them to gauge the purity of water but they are quite concerned about the purity of the water*
    - *They were aware of the fact that impure water can cause diseases*
    - *There has been episodes of water borne diseases in the study states, more so in Uttar Pradesh and the average spending on each episode was close to Rs.3000/-*
    - *Awareness about the methods of purification of water was largely restricted to 'boiling of water'*

- *Awareness about non-electric purifier was highest among the different types of purifiers*
- *Pureit (HUL) was the most popular brands followed by Kent & Tata Swach*
- *Usership of purifier is close to 6%*
- *Maintenance of purifier was more impulsive than planned*
- *Users of purifiers were generally satisfied with the services and cost of maintenance was between Rs.350-800/- depending on the type of purifier*
- *About one-third of the non-users of purifiers have expressed their desire to own a purifier-more than half wants to buy a non-electric purifier*
- ***Interestingly, the findings show a general apathy of the slum dwellers towards the issues of purifying water across the different variables/states***
- *Ready to pay between Rs.447/- to Rs.573/-*
- *Replacement guarantee is desirable*
- *Overall estimated market size is about 13% of the total market*

- *The research among the retailers revealed:*

  - *Most retailers were found to stock non-electric purifier than the other type of purifiers indicating a higher demand for non-electric purifier*
  - *Most retailers have shown interest in selling low-cost purifier based on nanotechnology*
  - *The onus of after-sale service is not on the retailers*

- *The study highlights researchers conducted across the globe on nanotechnology, especially related to purification of water*

- *The study also outlines attempts by different corporate giant in reaching the BoP market. Attempts ranging from formation of SHGs, practicing microfinancing etc. are detailed in the report*

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1.0 Introduction

Today, in India, around 500,000 children under five years of age die each year due to waterborne diseases like diarrhoea; 75 per cent of India's rural population does not have access to safe drinking water and over 80 per cent of diseases and 33 per cent of deaths are caused primarily due to unsafe drinking water.[1]

Beyond the rural population, it is estimated that around 80% of urban dwellers do not purify tap water. Many of them are from the lower income strata and cannot afford UV or reverse osmosis water purification systems. They are the potential buyers of economical but effective chemical purifiers. Eureka Forbes, Hindustan Unilever and Tata are trying to aggressively tap this market of affordable and effective chemical purifiers.[2]

Chemical based purifiers, Aquasure and Pureit, together account for 20% of water purifiers sold. Both are becoming increasingly popular because they are effective and affordable. The two brands are reported to be growing at 100 percent per annum. Also, they do not run on electricity and are ideal for locations where power supply is unpredictable. Neither do they demand continuous water supply. Power and water are still scarce even in urban India. [3]

Recently Tata Chemicals has unveiled two new variants of its low cost water purifier, Swach aimed at providing safe drinking water to every Indian household. Swach Smart and Swach Smart Magic are priced at INR749 and INR499. They claim that using the power of Nanotechnology combined with natural ingredients; it delivers safe drinking water at a benchmark price of Re.1 per day for a family of five. Tata Swach is a household water purifier and requires no electricity or running water to operate.[4]

2.0 The BoP Market

According to C.K. Prahalad, "If we stop thinking of the poor as victims or as a burden and start recognizing them as resilient and creative entrepreneurs and value-conscious consumers, a whole new world of opportunity will open up". There are huge potential profits to be made from serving approximately 4 billion people -an economic opportunity he values globally at $13 trillion a year.[5]

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[1] IEWY News: www.iewy.com
[2] c.f. www.waterpurifiers.in
[3] c.f. www.waterpurifiers.in
[4] Tata Swach water purifier priced at Rs.749: Business Editor. Tuesday, December 8, 2009
[5] Prahalad, C K (2005): The Fortune at the Bottom of the Pyramid: Eradicating poverty through profits

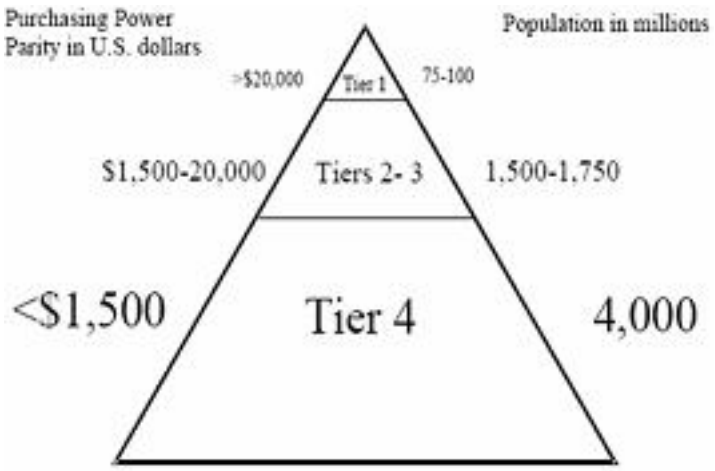


Fig. 1: The World Economic Pyramid[6]

The term 'bottom of the pyramid' was coined by management guru CK Prahalad to describe the poor and the underserved section of the market. The BOP market in India, about $1.205 trillion, in purchasing power parity terms, makes up 84.8% of the total $1.42-trillion national household market. [7]

The base of the economic pyramid (BOP) in India representing the masses is an over $1.2-trillion market, making up the biggest chunk of the global $5-trillion BOP market excluding China, says a study by IFC and World Resources Institute (WRI). [8]

In India, BOP accounts for 88.1% of the total national household expenditure on food, 87.2% of energy expenditure, 85.3% of health spend, 78.8% of household goods expenditure and 52.6% of the country's spend on information and communication technology.

Of the global BOP market, Asia makes up the biggest chunk with a $3.47 trillion market, followed by Latin America ($509 billion), Eastern Europe ($458 billion) and Africa ($429-billion).

Sector-wise, food is the biggest BOP market ($2.8-trillion), followed by energy ($433 billion), housing ($332-billion), transportation ($179 billion), health ($158-billion), ICT ($51-billion) and water ($20 billion). Compared to the BOP, the mid-market segment-those with incomes between $3,000 and $20,000- represents a $12.5 trillion market globally.

The daily wage labourers, hawkers, farmers, rickshaw pullers, vegetable vendors and several others fall into this category.

[6] Prahalad, C K (2005): The Fortune at the Bottom of the Pyramid: Eradicating poverty through profits
[7] Prahalad, C K (2005): The Fortune at the Bottom of the Pyramid: Eradicating poverty through profits
[8] Bottom of Pyramid market stands at $1.2 trillion. Economic Times of India. April 28, 2007

The MNCs need to thoroughly re-engineer their products/services and the marketing strategies to enter into this market, to reflect the very different economics of BOP: small unit packages, low margin per unit, high volume. The same strategies used in catering the premium segment will not fit into this segment. Innovations could improve the lives of millions of people and could greatly expand commerce in India as well at global level.

In the Article Innovation Sandbox, C K Prahalad (2006) says the process for designing breakthrough innovations starts with the identification of the following four conditions — all of which are difficult to realize, even when taken one at a time: [9]

i. The innovation must achieve a significant price reduction — at least 90 percent off the cost of a comparable product or service in the West.
ii. The innovation must be scalable: It must be able to be produced, marketed, and used in many locales and circumstances.
iii. The innovation must be affordable at the bottom of the economic pyramid, reaching people with the lowest levels of income in any given society.
iv. The innovation must result in a product or service of world-class quality.

3.0 The Indian Water Purifier Market

It is estimated that roughly two thirds of the existing water purification market belongs to UV water purifiers and one third is shared between reverse osmosis purification systems and chemical purifiers. In the UV purifier segment, Eureka Forbes' Aquaguard is the clear market leader with approximately 68% market share. Other brands include Philips' Intelligent Water Purifier and Kent's UV purifier. The UV purifier market is estimated to be growing at a lower rate than the chemical based segment.

Reverse osmosis purifiers, which are rather expensive and not the preferred option in many areas, have a smaller share of the market when compared with UV purifiers and chemical based systems. In the reverse osmosis segment, Eureka Forbes is again the major player with 60% share. A major portion of the remaining 40% belongs to Kent reverse osmosis Systems. [10]

[9] Prahalad, C K (2006): "Innovation Sandbox", Strategy + Business, issue44
[10] The water purifier market today: www.waterpurifiers.in

Below are the major brands and the models available in the Indian market in the non-electric segment.[11]

Brand/ model	MRP (Rs.)	Features
Eureka Forbes:		
AquaSure 3PCTi	2290/-	Positive Change Technology: 100% chemical free purification
		Natural shut off
		Double storage; total storage of 20 lit
		No bacteria, no virus, no cyst
		No boiling, no electricity, no running water
AquaSure Xrta	1390/-	18 liter capacity
		No bacteria, no virus, no cyst
		No boiling, no electricity, no running water
Hindustan Unilever Limited:		
General features:	Unique Activated Carbon Filter (*removes remaining dirt, harmful parasites & even pesticide impurities*)	
	Unique Germkill Processor (*it uses programmed chlorine release technology to remove harmful viruses & bacteria*)	
	Unique Polisher (*removes cholrine & other contaminants to make water clean, odorless & good taste*)	
	No boiling, no electricity, no running water	
Pureit Compact	1000/-	Capacity of 14 liters and purified storage of 5 liters
Pureit Classic	2000/-	Capacity of 23 liters and purified storage of 9 liters
Pureit Autofill	3200/-	Can also be connected to kitchen tap
		Has advanced sensor which automatically turns off the water when it is full
		Capacity of 23 liters and purified storage of 9 liters
Pureit Marvell	6900/-	Has automatic turn off system
		End of life indicator

[11] Collated from company catalogues & handouts

Brand/ model[12]	MRP (Rs.)	Features
Tata Chemical Ltd.		
Tata Swach Smart	749/-	Holding capacity of 15 liters
		Uses nanotechnology
		Replaceable cartridges
Tata Swach Smart Magic	499/-	The bulb has a life of 3000 liters Can be fitted with existing storage vessels
		The bulb has a life of 3000 liters
Kent Health Care Products		
UF Gravity Water Purifiers *(Kent Smart, Kent Gold, Kent Gold Optima, Kent Gold Cool & Kent Crystal)*		Non-electric online Ultra Filtration
		No bacteria, no virus
		Fully automatic operation
		Storage tank of 7 liters

4.0 Need for the study

The Department for International Development (DFID) leads the UK Government's fight against global poverty. To take this agenda forward DFID is engaging in a research programme on new and emerging technologies with the potential of reaching the poorest. In this regard, the Development Alternatives Group seeks to identify significant Nanotechnologies for providing clean drinking water reaching the underprivileged in India and what is their market possibility.

Hence a systematic research is envisaged in order to assess the current market scenario and conduct a 'market potential study' for the proposed product category, viz. low cost water purifier aimed at the Bottom of Pyramid (BoP) market.

5.0 Objectives of the study

The major objective of the study is to assess market viability of a low cost water purifier aimed at the *Bottom of Pyramid* market.

[12] Collated from company catalogues & handouts

More specifically, the study will aim at understanding the current market scenario:

i. *Among the target audience (consumers):*
   a. Perception about safe potable water-what is considered as safe potable water? How water can be made potable?
   b. Current practice-what is the source of water for drinking? How safe/ potable do they feel is the available water?
   c. Purifying water for drinking- Do they do anything to ensure that the water is potable? What do they do?
   d. Perception & usage of purifier-awareness about the different types of purifier? Desire and latent need for purchasing water purifier? What is the perceived cost that they can spend on a water purifier?
   e. Perceived benefits of a water purifier
   f. Perceived value for money of a water purifier

ii. *Among trade (dealers & retailers selling water purifiers)*:
   a. Current scenario of low cost water purifiers that works on nanotechnology including:
      i. The market size and reach of the Bottom of Pyramid market
      ii. The price points of different available brands
      iii. The service delivery route to reach to the Bottom of Pyramid market

6.0 Methodology of the study

A quantitative sample survey was conducted among the target audience. The data was collected using a semi-structured questionnaire. The questionnaire was developed in consultation with the client. The semi-structured questionnaire contained both pre-coded questions and few open-ended questions. The collected data was entered in dBase and analyzed in SPSS.

Target audience:

The study was conducted among:

1. Consumers (potential consumers) from the Bottom of Pyramid market-semi-urban and adjacent rural areas
2. Dealers/retailers (current & future dealers/retailers of low cost water purifiers)

Sampling frame:

The study was conducted in the northern part of India. The study captured the 'Bottom of Pyramid' market areas for the study. The study was conducted in the states of Uttar Pradesh, Punjab & Haryana.

The following justifications were adopted while designing the sampling frame and arriving at the sample:

- The Bottom of Pyramid market needs to be covered
- Hence, the towns in the study states are arranged with respect to their population
- Proportionate population is taken for the study

	Uttar Pradesh		Punjab		Haryana		
	No. of towns	% to tot	No. of towns	% to tot	No. of towns	% to tot	Total
Less than 10,000	144	20.5	35	22.3	17	16.0	**196**
10,000-20,000	266	37.9	54	34.4	36	34.0	**356**
20,000-50,000	184	26.2	35	22.3	26	24.5	**245**
50,000-100,000	57	8.1	20	12.7	7	6.6	**84**
More than 100,000	51	7.3	13	8.3	20	18.9	**84**
Proportion of towns <50,000	**594**	**84.6**	**124**	**79.0**	**79**	**74.5**	**797**
Total	**702**	**72.7**	**157**	**16.3**	**106**	**11.0**	**965**
Total population	**3,32,47,824**	**70.2**	**81,04,981**	**17.1**	**60,30,454**	**12.7**	**4,73,83,259**

** Census 2001*

The population is being divided into different class intervals. The area for the Bottom of Pyramid market has been taken for the towns with population below 50,000 (consisting of about 83% of the total universe).

Sample size:

The sampling base is based on the above mentioned population table aimed at the Bottom of Pyramid market. The sampling frame is explained with the proportionate sample size for the study:

	Uttar Pradesh		Punjab		Haryana		Total
	No. of towns	% to tot	No. of towns	% to tot	No. of towns	% to tot	
Less than 10,000	144	24.2	35	28.2	17	21.5	196
10,000-20,000	266	44.8	54	43.5	36	45.6	356
20,000-50,000	184	31.0	35	28.2	26	32.9	245
Total	594	100.0	124	100.0	79	100.0	797
Proposed sample of towns	8	57.1	3	21.4	3	21.4	14

Proposed sample of consumers							
Urban sample spread	20 per town						
Urban slum sample	80	57.1	30	21.4	30	21.4	140
Urban general sample	80	57.1	30	21.4	30	21.4	140
Total urban sample	**160**	57.1	**60**	21.4	**60**	21.4	**280**
Rural sample spread	20 per adjacent villages of the selected towns						
Rural sample	160	57.1	60	21.4	60	21.4	280
Total	**240**	**57.1**	**90**	**21.4**	**90**	**21.4**	**420**
Proposed sample of trade							
Dealers/retailers per town	10		10		10		30
Total	**80**	57.1	**30**	21.4	**30**	21.4	**140**
Grand total	**320**	**57.1**	**120**	**21.4**	**120**	**21.4**	**560**

Hence in all, the market potential study was conducted among:

1. 420 consumers, and
2. 140 dealers/ retailers

Apart from the above, depth interviews were conducted among a few experts in the industry. The aim was to understand the efficacy of nanotechnology. The following experts were interviewed:

- Consultants working in the field of 'safe drinking water'
- Experts from the industry such as technical professionals working in R&D

7.0 Findings of the study

The findings are presented in the following sections:

A. Consumer insight
B. Retailer's feedback
C. Perception of experts about providing 'safe drinking water'
D. An overview of 'best practices in providing products and services to rural population in India

A. Consumer insight

As mentioned in the methodology, the study was conducted among the following three target segments:

i. Urban: among slum dwellers and general population, and
ii. Rural population

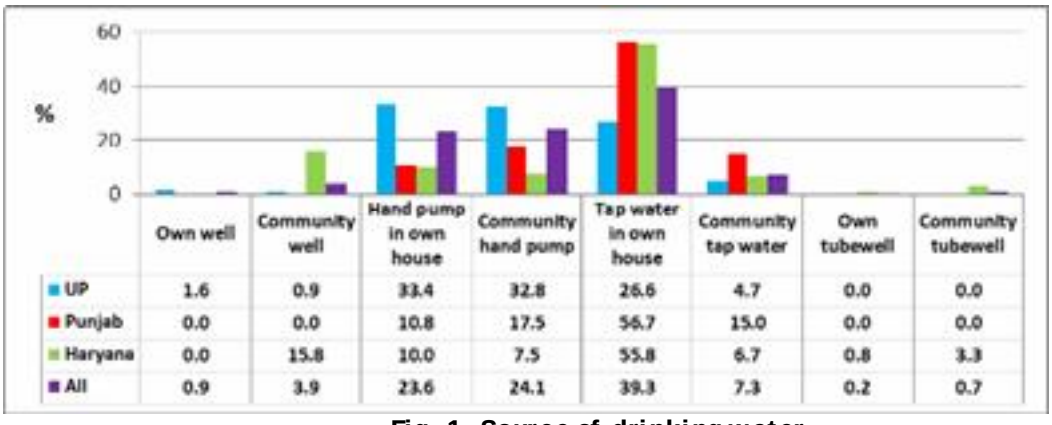
The findings have been collated for all the states (UP, Haryana & Punjab) and are presented on the basis of the place of residence (general, slum & rural). The tables are attached in the annexure for reference.

i. Demographic profile

Within the BoP market, the research shows that primary family income was highest the urban general population followed by the rural population and the slum population. Hence the research indicates that the disposable income will also be perhaps highest among the general urban population, followed by the rural population and the slums.

ii. Awareness & perception about drinking water

Most of the households in Uttar Pradesh are dependent on community hand pumps for water source while most of the households in Haryana and Punjab have had tap water connected to their houses. In UP, the source is primarily community hand pumps in the slum and rural areas and tap water in the other urban areas. In both Haryana & Punjab, in most of the households cutting across the place of residence the source is tap water.



	Own well	Community well	Hand pump in own house	Community hand pump	Tap water in own house	Community tap water	Own tubewell	Community tubewell
UP	1.6	0.9	33.4	32.8	26.6	4.7	0.0	0.0
Punjab	0.0	0.0	10.8	17.5	56.7	15.0	0.0	0.0
Haryana	0.0	15.8	10.0	7.5	55.8	6.7	0.8	3.3
All	0.9	3.9	23.6	24.1	39.3	7.3	0.2	0.7

Fig. 1: Source of drinking water

Respondents have said that they get adequate supply of water in their localities. The level of adequacy is highest in Punjab followed by Haryana and Uttar Pradesh. The supply is generally for about 20 minutes in UP and about 1-2 hours in Haryana and Punjab in day. The daily consumption of drinking water is close to about 20 liters for a family of 5.6 members. Most pay for their water consumptions in urban Haryana than in Punjab and Uttar Pradesh.

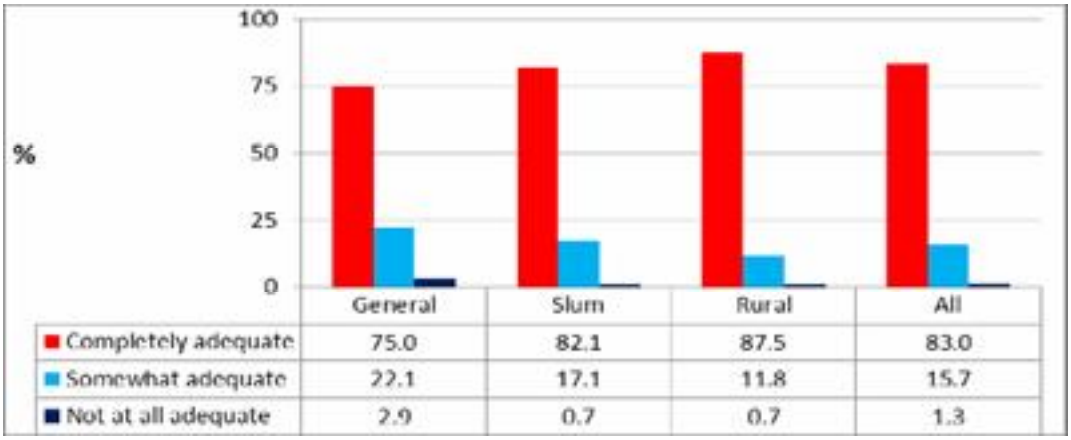


Fig. 2: Adequacy of supply of drinking water

The respondents reported that it is difficult for them to gauge whether the water is clean. There are only visible perceived indications such 'muddy water', 'foul smell' and the 'taste' of water is repulsive.

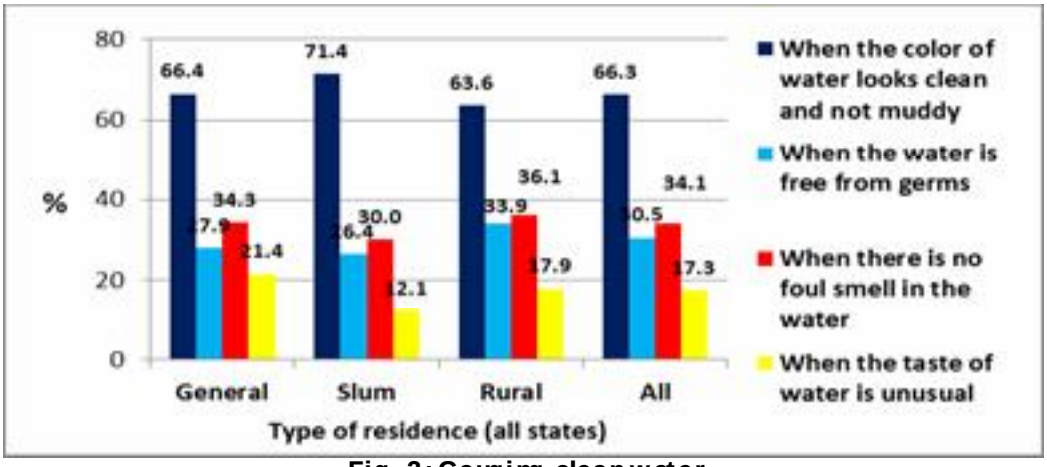
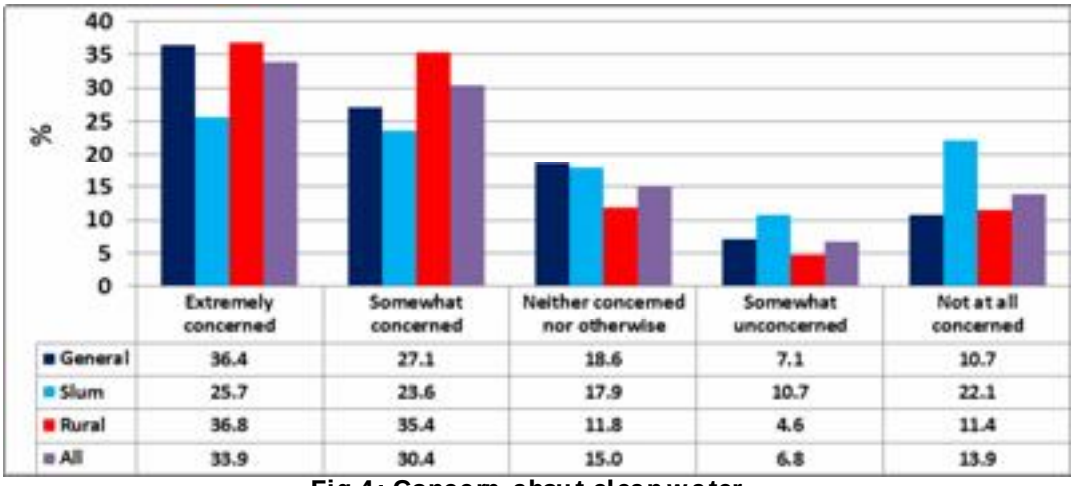


Fig. 3: Gauging clean water

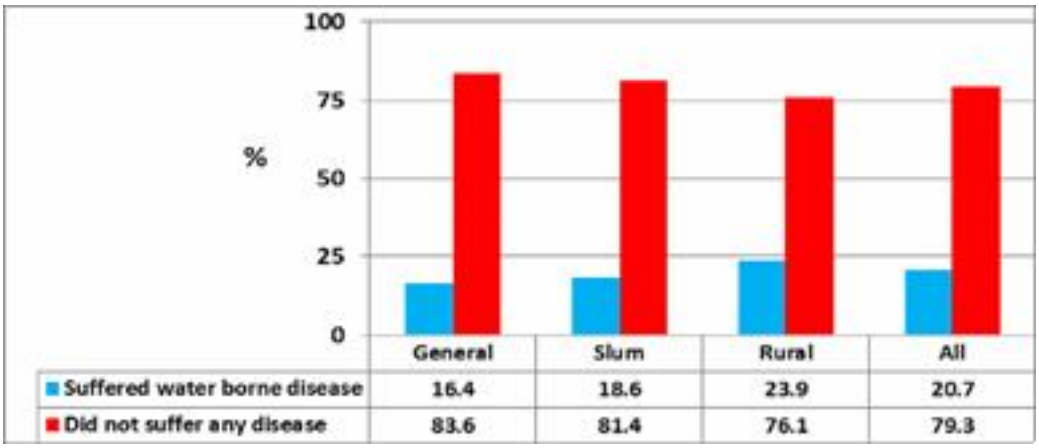
About one-third of the respondents interviewed have expressed extreme concern about the cleanliness of the water that they and their family members drink. The general population as well as the rural respondents have expressed 'extreme concern' while the slum dwellers are almost equally divided between being 'extremely concerned' and 'not at all concerned'.



	Extremely concerned	Somewhat concerned	Neither concerned nor otherwise	Somewhat unconcerned	Not at all concerned
General	36.4	27.1	18.6	7.1	10.7
Slum	25.7	23.6	17.9	10.7	22.1
Rural	36.8	35.4	11.8	4.6	11.4
All	33.9	30.4	15.0	6.8	13.9

Fig.4: Concern about clean water

All interviewed during the survey said the impure water causes major diseases such as cholera, jaundice, diarrhea and other digestive problems. The incidence has been reported to be highest among the rural respondents followed by slum dwellers & the general population. On an average Rs.3000/- has been spend on each episode.

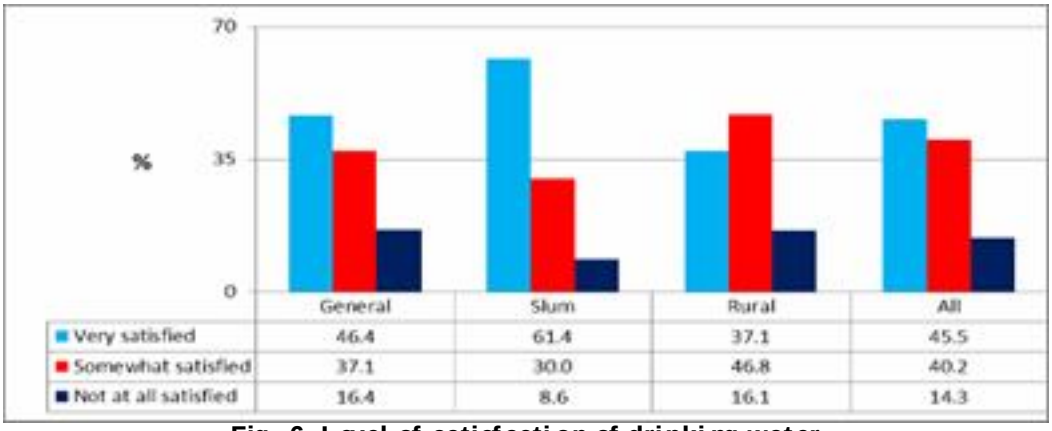


	General	Slum	Rural	All
Suffered water borne disease	16.4	18.6	23.9	20.7
Did not suffer any disease	83.6	81.4	76.1	79.3

Fig. 5: Suffered water borne disease

iii. Current practice

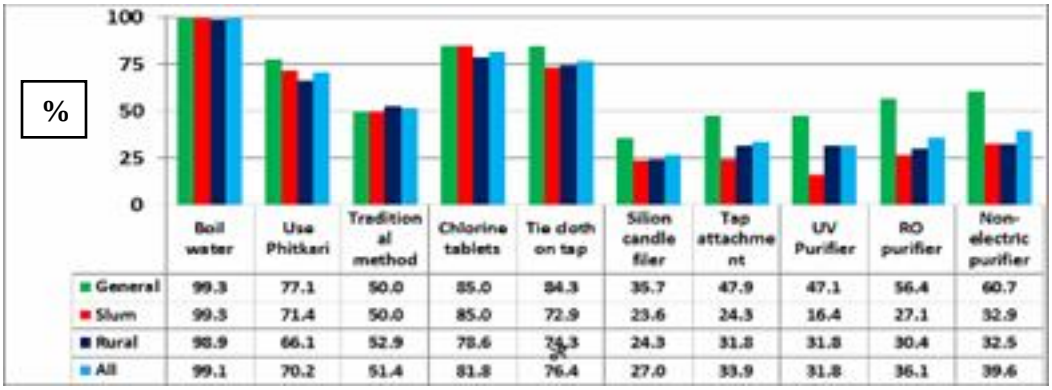
The overall level of satisfaction was found out to be about 46%. The level of satisfaction was highest among the slum dwellers followed by general population and the rural respondents. Almost an equal proportion from the general and rural respondents has said that they are 'not at all satisfied'.



	General	Slum	Rural	All
Very satisfied	46.4	61.4	37.1	45.5
Somewhat satisfied	37.1	30.0	46.8	40.2
Not at all satisfied	16.4	8.6	16.1	14.3

Fig. 6: Level of satisfaction of drinking water

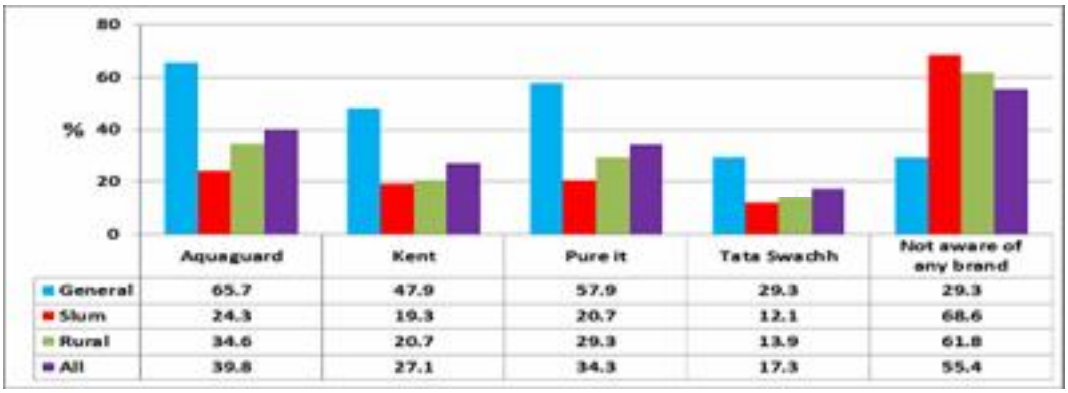
Awareness about 'boiling water' as one of the methods of purification was found out to be almost universal. Among the different types of purifiers, awareness about non-electric purifier was highest. Interestingly, awareness about the different water purifiers was higher among the rural respondents than among the slum dwellers.



	Boil water	Use Phitkari	Tredition al method	Chlorine tablets	Tie cloth on tap	Silion candle filer	Tap attachme nt	UV Purifier	RO purifier	Non-electric purifier
General	99.3	77.1	50.0	85.0	84.3	35.7	47.9	47.1	56.4	60.7
Slum	99.3	71.4	50.0	85.0	72.9	23.6	24.3	16.4	27.1	32.9
Rural	98.9	66.1	52.9	78.6	74.3	24.3	31.8	31.8	30.4	32.5
All	99.1	70.2	51.4	81.8	76.4	27.0	33.9	31.8	36.1	39.6

Fig.7: Awareness about methods of purification

Awareness about any brand was highest among the general (urban) respondents while about two-third of rural respondents were not aware any brand of purifier. Interestingly, the brand awareness was lowest among the slum dwellers.



	Aquaguard	Kent	Pure it	Tata Swachh	Not aware of any brand
General	65.7	47.9	57.9	29.3	29.3
Slum	24.3	19.3	20.7	12.1	68.6
Rural	34.6	20.7	29.3	13.9	61.8
All	39.8	27.1	34.3	17.3	55.4

Fig.8: Awareness about different brands of water purifier

User-ship of purifier is very low (little over 6%) among the Bottom of Pyramid population. The user-ship of non-electric purifier among the users is the highest among the different types of water purifiers. This was followed by UV purifiers, filter with silicon candle and RO purifier.

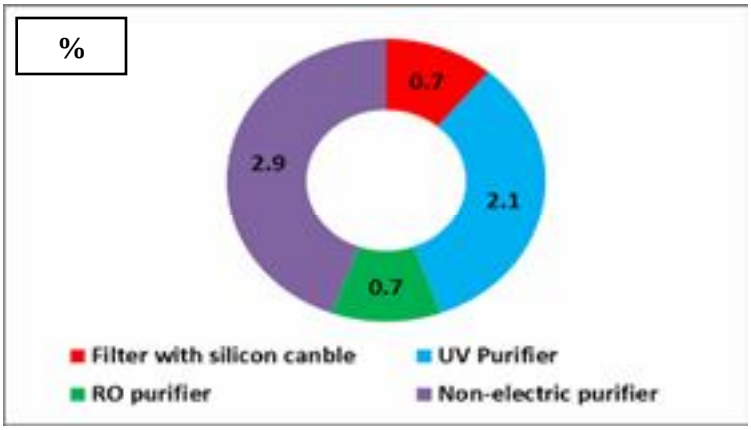
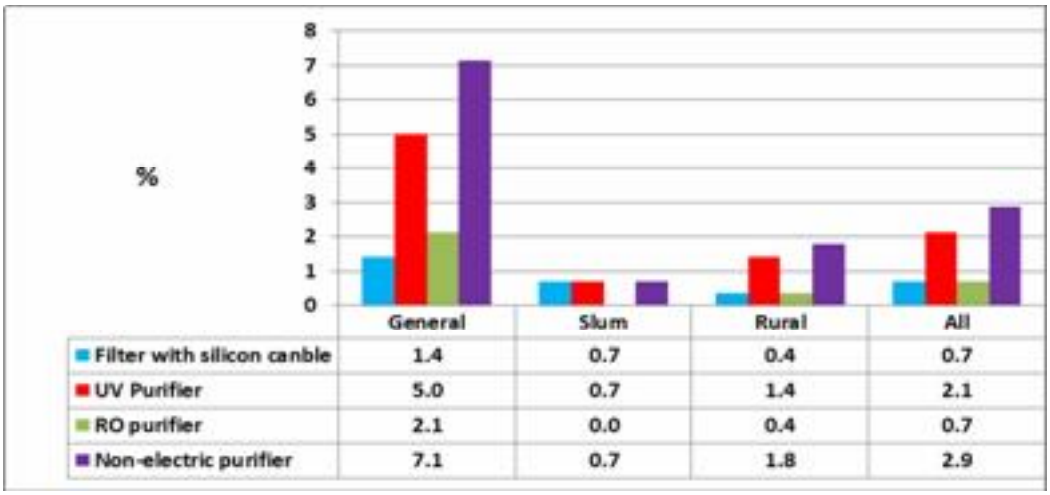


Fig. 9: User-ship of water purifier

The usage with respect to the place of residence indicates that the usage is highest for the general population. The usage in the general population is highest for non-electric purifiers followed by UV purifier, RO purifiers and filters with silicon candle. Interestingly, usage of water purifier is higher among the rural households than their counterparts in slums, though the overall usage is very low.



	General	Slum	Rural	All
Filter with silicon canble	1.4	0.7	0.4	0.7
UV Purifier	5.0	0.7	1.4	2.1
RO purifier	2.1	0.0	0.4	0.7
Non-electric purifier	7.1	0.7	1.8	2.9

Fig. 10: User-ship of water purifier by place of residence

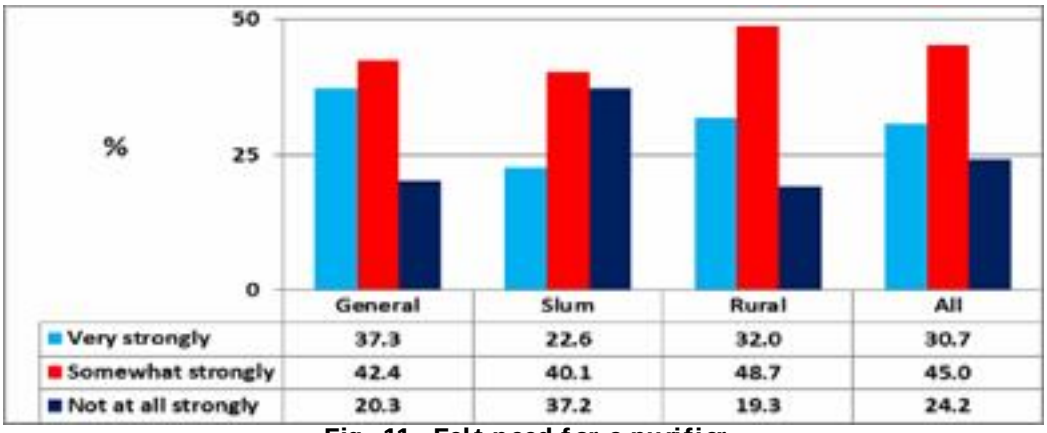
On the question of maintenance of water purifiers, those who owned one have said that the representatives from the concerned company mostly ask them for a quarterly maintenance cycle.

On the question of the level of satisfaction, most of the respondents who were using purifiers were generally satisfied with their purifiers. The episode of breakdown of purifier has been low and the maintenance schedule is roughly within around 4-5 months in a year.

However, generally speaking the respondents (especially in the rural areas) found the retailers slightly apathetic once they have been able to sell the purifier and it is the system of AMC which works by paying an annual fees ranging from Rs.350-800/- which is paid up-front.

iv. Awareness & need of water purifier

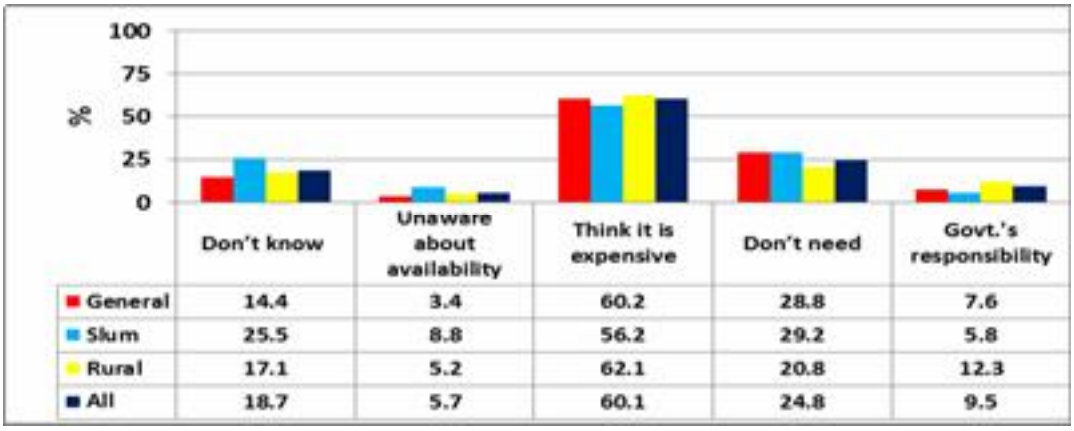
Need for a water purifier was mainly felt by the general population closely followed by the rural households. The slum dwellers however did not feel the need as strongly. More than one-third of the slum dwellers did not the feel the need for a water purifier.



	General	Slum	Rural	All
Very strongly	37.3	22.6	32.0	30.7
Somewhat strongly	42.4	40.1	48.7	45.0
Not at all strongly	20.3	37.2	19.3	24.2

Fig. 11: Felt need for a purifier

Most of the respondents not wanting to buy a purifier have said that they thought 'it would be very expensive'. Others thought they 'don't need one' while others didn't know about it.



	Don't know	Unaware about availability	Think it is expensive	Don't need	Govt.'s responsibility
General	14.4	3.4	60.2	28.8	7.6
Slum	25.5	8.8	56.2	29.2	5.8
Rural	17.1	5.2	62.1	20.8	12.3
All	18.7	5.7	60.1	24.8	9.5

Fig. 12: Barriers for wanting to buy purifier

Close to one-third of the general population followed closely by the rural households said that they will definitely buy a water purifier. About 23% of the slum dwellers have also said that they will definitely buy a water purifier.

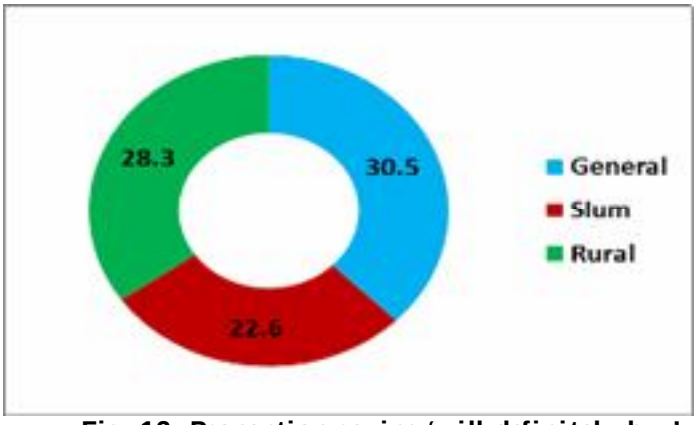
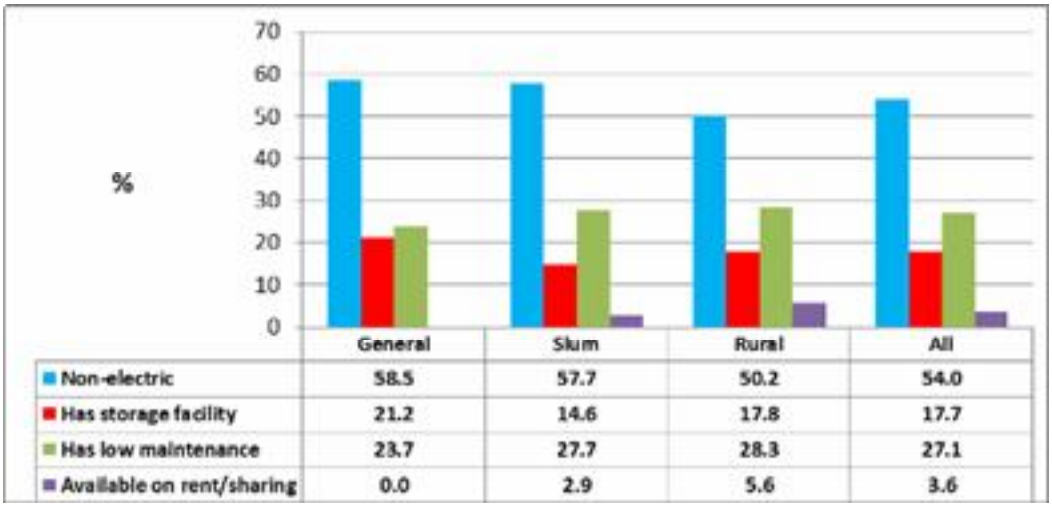


Fig. 13: Proportion saying 'will definitely buy'

Those who have expressed desire to buy a water purifier, more than half have expressed to buy a purifier that would not require electricity, will have low maintenance and have storage facility. A small proportion has expressed desire for using purifier on sharing basis. Most of such respondents belong to slums or are from the rural areas.



	General	Slum	Rural	All
Non-electric	58.5	57.7	50.2	54.0
Has storage facility	21.2	14.6	17.8	17.7
Has low maintenance	23.7	27.7	28.3	27.1
Available on rent/sharing	0.0	2.9	5.6	3.6

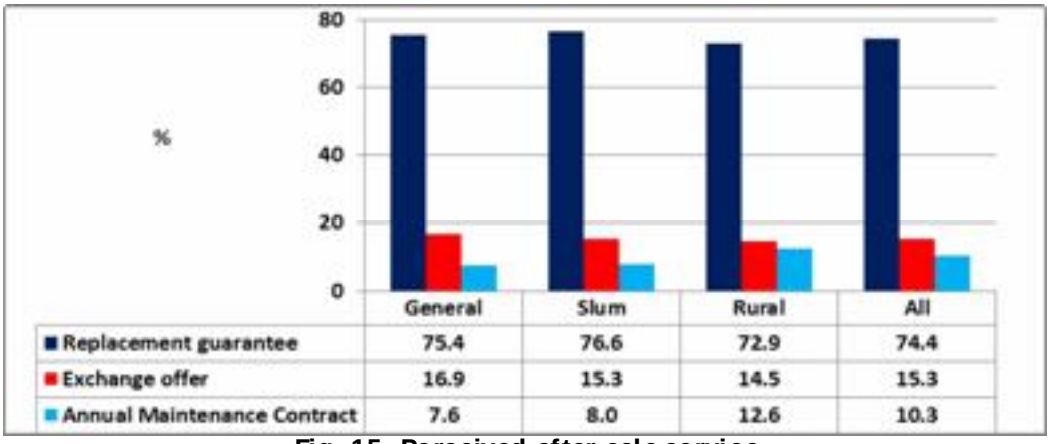
Fig. 14: Preferred featured of the water purifier

On an average, respondents from Punjab were reportedly prepared to pay about Rs.573/- for a purifier, while their counterparts in Haryana were ready to pay about Rs.533/- and those in Uttar Pradesh were ready to pay about Rs.447/- for a water purifier.

Purchase potential:

- 305 out of 560 were not satisfied with the water that they drink (54%)
- 140 out of 305 strongly felt the need of a purifier (25%)
- 71 out of 140 said they will definitely buy a purifier (13%)

Replacement guarantee is the main incentive that most of the respondents have said will attract them. Exchange offer and AMC were also mentioned by a few.



	General	Slum	Rural	All
Replacement guarantee	75.4	76.6	72.9	74.4
Exchange offer	16.9	15.3	14.5	15.3
Annual Maintenance Contract	7.6	8.0	12.6	10.3

Fig. 15: Perceived after sale service

B. Feedback from the Retailers

In each of the study states, the following two segments of retailers were interviewed:

- Retailers selling branded water purifiers
- Retailers selling products related to kitchen products categories

The following sections outline the findings of the study among the retailers.

i. Insight from retailers selling water purifier

Most of the shops selling water purifiers were selling non-electric purifiers. The proportion is highest in Uttar Pradesh, followed by Punjab & Haryana. This was followed by a large proportion of retailers selling UV and RO purifiers. Purifiers with silicon candles and tap attachment were not found to be very popular in the study area. The average sale of non-electric purifier is also highest.

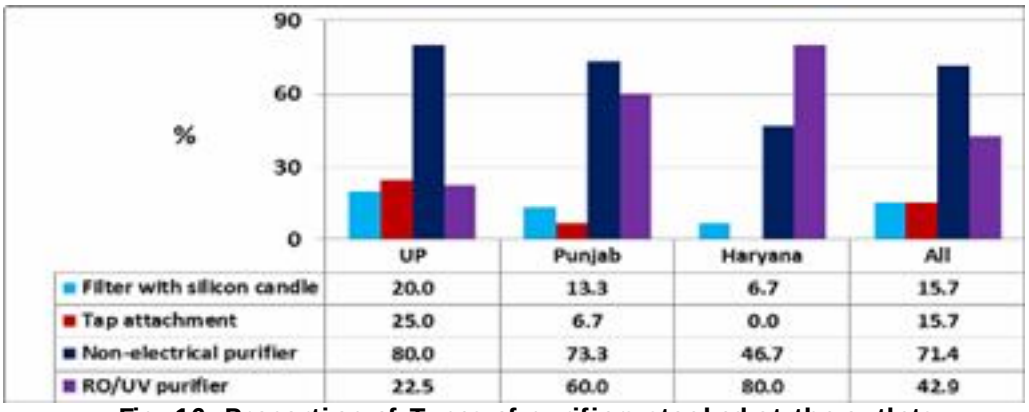


Fig. 16: Proportion of Types of purifiers stocked at the outlets

The footfall is skewed towards non-electric purifiers than the other types. The average sale per month has been found to be highest for non-electric purifier (about 16 per month). Most of the retailers have shown interest in selling a low-cost purifier based on nanotechnology.

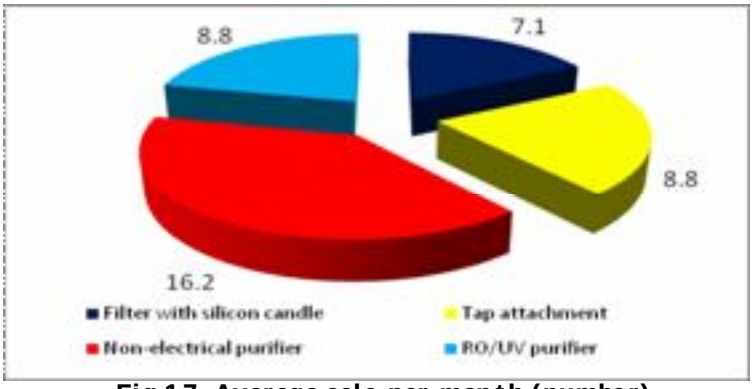


Fig.17: Average sale per month (number)

Non-electric with storage facility and low maintenance cost are the most important attribute consumers' desire from a water purifier.

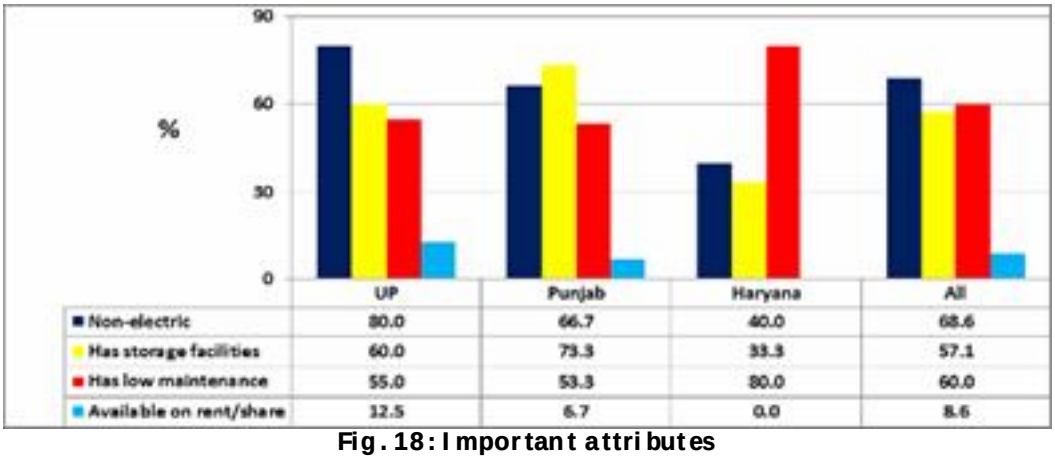
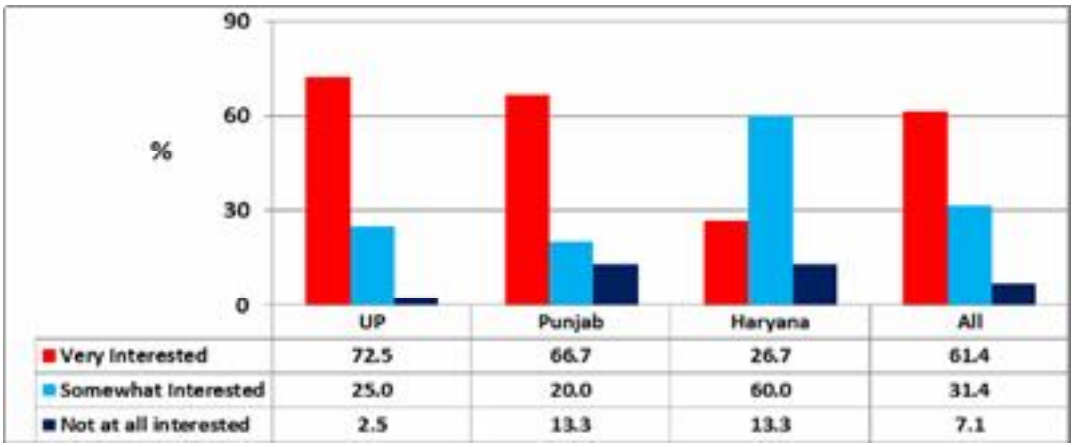


Fig. 18: Important attributes

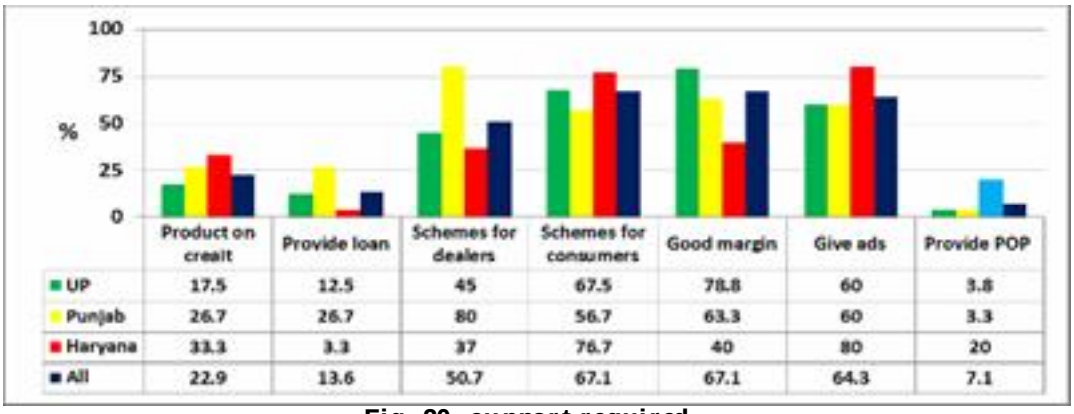
Most of the retailers have interest in selling nanotechnology based & low cost water purifier. It was mainly welcomed by the retailers from Uttar Pradesh and Punjab. Retailers from Haryana did not show much interest in this regard.



	UP	Punjab	Haryana	All
Very interested	72.5	66.7	26.7	61.4
Somewhat interested	25.0	20.0	60.0	31.4
Not at all interested	2.5	13.3	13.3	7.1

Fig. 19: Intention to sell

Retailers perceived 'attractive schemes for the dealers and consumers' the major incentives for the retailers for pushing the product.



	Product on credit	Provide loan	Schemes for dealers	Schemes for consumers	Good margin	Give ads	Provide POP
UP	17.5	12.5	45	67.5	78.8	60	3.8
Punjab	26.7	26.7	80	56.7	63.3	60	3.3
Haryana	33.3	3.3	37	76.7	40	80	20
All	22.9	13.6	50.7	67.1	67.1	64.3	7.1

Fig. 20: support required

The retailers have perceived families from middle class and from the rural areas as being the major target audience. Good consumer scheme & better margin were the major triggers for the retailers for pushing the product.

ii. Role of retailers

The role of the retailer appears to be not quite relevant and proactive as far as after sale service is concerned. The retailers themselves maintained that they seldom provide after-sale service to the customers.

A few of the verbatim shows this:

- Nobody provides after-sale service to the customers
- We only provide replacement opportunity
- We don't provide Annual Maintenance Contract
- We replace old purifier by giving them back to the distributors
- We sell the body of old purifiers to scrap dealers
- We sell the steel body of an old candle filter
- We do not provide any after-sale service, men from the company visit the customer and provide the desired service

C. Perception of experts about safe drinking water

Experts say that nanotechnology could be the answer to ensuring a safe supply of drinking water for regions of the world stricken by periodic drought or where water contamination is rife. Writing in the International Journal of Nuclear Desalination, researchers in India explain how carbon nanotubes could replace conventional materials in water-purification systems.

S. Kar, R.C. Bindal, S. Prabhakar, P.K. Tewari, K. Dasgupta, and D. Sathiyamoorthy of the Bhabha Atomic Research Centre (BARC)[13] in Mumbai, India, explain how new water purification technologies are constantly being investigated but to be viable in the developing world these have to be relatively simple and inexpensive to install, operate, and maintain.

They have turned to nanostructured, the carbon nanotubes, hollow carbon fibers less than a billionth the thickness of a human hair. The unique chemical properties of carbon nanotubes mean that only very small molecules, such as water molecules can pass along their interiors, whereas viruses, bacteria, toxic metal ions, and large noxious organic molecules cannot.

Mr. PT Gurnani, a former Chief of Engineers in UP Jal Board says that researchers have identified a signature for water inside single-walled carbon nanotubes, helping them understand how water is structured and how it moves within these tiny channels. This is the first time researchers were able to get a snapshot of the water inside the carbon nanotubes.

Single-walled carbon nanotubes (SWCNTs) offer the potential to act as a unique nanofiltration system. While experiments have demonstrated extremely fast flow in these channels, it is still unclear why, and few studies have experimentally probed the detailed structure and movement of the water within nanotubes.

[13] Link: www.sciencedaily.com/release; posted on September 16, 2008

Dr. S Mukherjee, an environment scientist working in the field of water & sanitation cites the case of Lawrence Livermore scientists Jason Holt, Julie Herberg, and University of North Carolina's, Yue Wu and colleagues. He described an article appearing in the July edition of Nanoletters, wherein they used a technique called Nuclear Magnetic Resonance (NMR) to get a glimpse of the water confined inside one-nanometer diameter SWCNTs.

Further review of secondary literature outlines the different research studies being conducted across the globe. The following outlines a brief of the same.

Nanofiltration (NF) membrane technology is widely applied for removal of dissolved salts (i.e., desalination) from salty (i.e., brackish) water, removal of micro pollutants (e.g., arsenic and cadmium), water softening (i.e., removal of calcium and magnesium ions), and wastewater treatment. RO membranes are also used for the desalination of brackish water, ocean, and seawater. RO and NF water treatment plants typically consist of two types of treatment stages in series. These are the pre-treatment and membrane systems. The pre-treatment system removes particulate matter, in particular, suspended solids. The membrane removes some soluble substances and minute substances that were not rejected by the pre-treatment system. RO treatment plants reject all soluble and minutely insoluble substances but water.

There are four pressure-driven membrane processes. These are microfiltration (MF), ultrafiltration (UF), nanofiltration (NF), and reverse osmosis (RO).These processes may be distinguished by pore size, transport mechanism, applied pressure, and range of applications. The pore sizes for MF, UF, NF, and RO are respectively 0.05 10 µm, 1 – 100 nm, < 2 nm, and < 2 nm. The pore sizes decrease from MF to RO membranes. The pore sizes correspond to the size of molecules that are retained by the membrane. NF and RO membranes are the most widely used membrane processes in water treatment. MF and UF membranes are generally used in pre-treatment. The main advantages of the membrane process for water treatment is that it does not require chemicals, requires relatively low energy, and is easy to operate and maintain.[14]

[14] Mulder, op. cit.; and J. L. Moitsheki, "Evaluation of the Performance of Nanofiltration Membranes in Detrimental Ion Rejection and To Monitor Fouling and Membranes with Their Subsequent Chemical Cleaning," master's thesis, Potchefstroom University, Potchefstroom, South Africa, 2003; and A. Sonune and R. Ghate,"Developments in Wastewater Treatment Methods," *Desalination*, Vol. 167, 2004, pp. 55 – 63.

NF membranes, on the contrary, selectively reject substances. The characteristic selectivity of NF has advantages in comparison to RO because it enables the retention of nutrients present in water that are required for the normal functioning of the body. For example, calcium ions are necessary for the healthy development of bones.[15]

Researchers are using nanomaterials (e.g., carbon nanotubes, alumina fibers) to build structures that have controlled shapes, density, and dimensions for specific filtration applications. For instance, researchers have developed and tested cylindrical membranes with pores tiny enough to filter out the smallest organisms.

Other source materials for nanofilters include zeolites, attapulgite clays, and nanoporous polymers. Zeolites, attapulgite clays, and polymers have been used for many years to purify water. Recent improvements in scientists' ability to see and manipulate on the nanoscale allow for greater precision in designing these materials, for instance, allowing much greater control over pore size of membranes

Desalination is the removal of dissolved salts from raw or untreated water by either thermal or membrane processes. A thermal process uses heat to evaporate water, which is then collected by condensation. In a membrane process, pressure is applied to force the raw water through a membrane that retains the dissolved salts.

Reverse osmosis (RO) membranes can retain all the salt, whereas other membrane processes, such as nanofiltration (NF), selectively retain some salts. Desalination is carried out for various reasons, including limited freshwater, increasing demand, global warming, regulation, cost effectiveness, and politics.

Below are a few of the researches:

Organization	Country	Type of technology
Rensselaear Polytechnic Institute[16]	USA	Devised a simple method to produce carbon nanotube filters that efficiently remove micro-to-nano scale contaminants from water
Banaras Hindu University[17]	India	Devised a simple method to produce carbon nanotube filters that efficiently remove micro-to-nano scale contaminants from water

[15] Filtration Industry Analyst, op. cit.; and Mulder, op. cit.; and Moitsheki, op. cit
[16] Link: www.rpi.edu
[17] Link: www.bhu.ac.in

Organization	Country	Type of technology
Argonide[18]	USA	Developed a filter comprising oxidized aluminium nanofibres on a glassfiber substrate
Solmetex[19]	USA	Developed & manufacture heavy metal binding resins that remove metals & metal complexes including mercury, arsenic, cyanide and cadmium from water
Filmtec Corporation[20]	USA	Nanomembrane filtration technology
North West University, Potchefstroom[21]	South Africa	Nanomembrane filtration technology
University of Stellenbosch[22]	South Africa	Nanomembrane filtration technology
Los Alamos National Laboratory[23]	USA	Developed a new class of nanoporous polymeric materials that can be used to reduce the concentration of common organic contaminants in water to parts-per-trillion level
Long Beach Water Department[24]	USA	Reduced overall energy requirement of seawater desalination using a relatively low pressure two staged nanofiltration process

There are merits and demerits of nanomembrane technologies (e.g. nanofiltration and reverse osmosis) over conventional filtration technologies. The conventional sand filter does not retain some microbes and dissolved salts (e.g., arsenate). Nanofiltration (NF) and reverse osmosis (RO) membranes remove all multivalent ions and bacteria. The conventional carbon filter, biological sand, and biological carbon filters do not remove some bacteria and dissolved salts (e.g. calcium).

[18] Link: www.argonide.com
[19] Link: www.solmetex.com
[20] Link: www.dow.com/liquidseps/prod/prd_film.htm
[21] Link: www.puk.ac.za/fakulteite/natuur/scb/index_e.htm
[22] Link: http://academic.sun.ac.za/polymer
[23] Link: www.lani.gov
[24] Link: www.waterindustry.org/new%20projects/desal-20.htm

D. An overview of best practices

A few of the attempts to reach out to the most distanced underprivileged has been outline in the sections below. Each of these attempts is worth being the best in its attempt to perhaps fulfill the commercial agenda but also reaching out to the people in the BoP market.

The trajectory of innovation in countries such as India is taking a different path from the Industrial Revolution in the West. Communication technology such as television and cell phones has leaped across to India. Bottom-of-the-pyramid thinking had created huge markets based on $20 cell phones and $0.02 sachets of shampoo. But microfinance and technology are teaming up to drive further innovation into rural markets.

The picture below shows the bullock cart carrying the $70 red "refrigerator" called ChotuKool (Little Cool) designed by Indian company **Godrej & Boyce.** Next to it is a blue carton containing the battery-powered portable water-purification system called Pureit, designed and sold by **Unilver's** India unit.

Microfinance institutions such as **SKS Microfinance** and **Basix** are enabling the purchase of such devices in rural India, where 700 million people make less than $2 per day. Often these institutions enable women to become entrepreneurs. In the long run this will improve nutrition, literacy, create smaller families and contain population growth in addition to improving the lots of rural consumers.[25]

[25] Link: http://business.outlookindia.com : articles appeared on January 23, 2010

Aqua Sure is a Storage Water Purifier product produced by Eureka Forbes, a market leader in water purifiers in India, and marketed by Basix, a Micro finance Institution. The aim of this partnership was to promote awareness generation about the need to consume clean water, because the rural poor in India like the rich, typically strive for status symbols rather than products which are beneficial to them, leading to low demand for water purifiers. Eureka Forbes leverages on Basix's network of loan officers who serve as the link between the company and the rural populations, providing customer intelligence while also simultaneous marketing the purifiers to the self-help groups which it meets regularly. Sales have increased by 20% since the partnership.[26]

Women are part of a self-help group created and run by Swayam Shikshan Prayog, an NGO microfinance institution (MFI). Shantipriya is Godrej's new retailer, one of 101 such retailers it now has in 77 villages. "With two growing kids, there is pressure on the household to increase income. In three months, I have already sold six ChotuKools," she says with pride. She markets ChotuKool to her villagers, explains its features and benefits using a flip-chart, and knocks on several doors every day to hard-sell it.

Women like Shantipriya convinced Godrej to cut the price of ChotuKool from Rs 3,700 to Rs 3,200. She earns Rs 150 as commission for every ChotuKool sold. Sakhi Retail, a specialist company promoted by Swayam Shikshan Prayog, earns another Rs 100. Godrej has junked the traditional model of a proprietary channel with a sales force and a distributor-dealer chain. Instead, it has joined hands with MFIs to create a new distribution ecosystem.[27]

MFIs now have access to 50 million clients. They reach these consumers through self-help groups—a small collective of 12 or so women members who meet regularly to pool savings, seek income-generating loans and make repayments. Companies like Godrej are now using MFIs and self-help groups as new retailers to pry open the bottom-of-the-pyramid market. "Companies value the fact that we are a powerful social network," says Prema Gopalan of the Swayam Shikshan Prayog. The MFI also sells Hindustan Unilever water purifiers and BP Energy India cooking stoves. It accounts for 60,000 of the 200,000 Oorja stoves sold across the country by BP Energy.

[26] Link: www.iumap.org/aquasure-via-basix-mfi

[27] Link: www.theindiaexpert.com/rural-innovation-chotukool-water-purifier-finance-and-distribution

Incidentally, these stoves were co-created by BP Energy and villagers. SKS Microfinance, the largest of its ilk in India, is now selling mobile phones for Nokia and a large basket of merchandise for Metro, the cash and carry (wholesale) chain. Spandana Sphoorty Financial, an Andhra Pradesh-based MFI, wants to sell tractors, but manufacturers do not want to upset the existing distribution chain.

The sprawling reach and power of self-help groups are now being leveraged by companies to penetrate this market. "The bottom of the pyramid is not a huge monolithic market," says G Sunderraman, Vice-President, Corporate Development, Godrej & Boyce. "We have to understand the nuances and the needs of customer segments within." That is why he called the 1,000 women to the Osmanabad fair. And that is precisely why several consumer product companies are exploring this emerging retail channel that is promising to take them into the heart of India's vast rural hinterland.[28]

A project launched by PATH in 2006 will examine whether commercial market forces can help reduce the incidence of waterborne disease by delivering practical and affordable household water treatment and storage (HWTS) systems to poor families.[29]

Current HWTS initiatives are only reaching 7 to 8 million people worldwide. Most projects have failed to scale up beyond a limited geographic coverage, to bring about long-term changes in household water management behavior, or to achieve financial sustainability.[30][31]

A commercial approach may be able to help overcome some of these challenges. Unlike non-profit programs, which rely on external grants and subsidies, commercial ventures sell goods at prices that cover all of their costs—making the approach inherently more sustainable. The potential for profits also creates an incentive for more companies to enter the HWTS market. These companies may compete for market share by reducing prices, improving the quality of their products, developing innovative technologies, and heavily promoting their products. All of these strategies will tend to heighten public interest in and sales of HWTS products.[32]

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[28] Link: www.indiaenvironmentportal.org.in

[29] PATH website. Safe Water Fact Sheet webpage. 2007. http://www.path.org/publications/pub.php?id=1437.

[30] Clasen T. *Household Water Treatment: The Challenge of Scaling Up* [Powerpoint online]. 2006. Available at: http://www.iwahq.org/uploads/conference_graphics/beijing2006/workshops/who%20household/Thomas%20Clasen.pdf. Accessed July 7, 2007.

[31] 9. Harris J. *Challenges to the Commercial Viability of Point-of-Use (POU) Water Treatment Systems in Low-Income Settings* [dissertation]. Oxford University; 2005.

[32] 10. Agarwal R, Bayus BL. The market evolution and sales takeoff of product innovations. *Management Science* 2002;48(8):1024–1041. Available at: http://www.business.uiuc.edu/agarwalr/Agarwal&BayusManagementScience2002.pdf.

With more companies manufacturing HWTS products, it may also be easier to scale up production and distribution, reach different geographic areas, and serve diverse market segments. Critics, however, point out that the people who need HWTS systems the most are often the ones who can least afford it—making it unrealistic for HWTS programs to go to scale without substantial external support.

Village Financial Services Pvt Ltd., a Kolkata-based microfinance company, has signed an MoU with Hindustan Unilever Ltd to promote use of safe drinking water among the poor. The collaboration will enable poor households to purchase HUL's Pureit water purifiers through the VFS network. The targeted 250,000 beneficiaries will be offered loans at zero rate of interest to buy the purifier. The loan is repayable weekly over a period of eight months.[33]

One of the most talked about rural micro-enterprise project is Shakti commissioned by Hindustan Unilever's (HUL). This rural micro-enterprise [in India] is led by women-entrepreneurs. The project was started in 2001 to empower underprivileged rural women by providing income-generating opportunities [by selling soap, shampoo and other personal care products], health and hygiene education. The company's next frontier has been to provide safe drinking water. Poor quality water is a source of major disease in India. Hindustan Unilever has worked to develop Pureit, a relatively affordable home water purifier. Following pilots in the south of India, the company is now using its Shakti network to distribute Pureit across the country.[34]

Another innovator in rural distribution-the $3.6 billion, Calcutta-based tobacco-to-hotels conglomerate ITC-has also been trying to build a platform that others can use. ITC plans to create a trust that could work as an agency through which companies-both private and public -- could market goods and services to Indian farmers. The trust route would hopefully make other companies more willing to sign up with their offerings. ITC has the right credentials to launch this trust. Like Hindustan Lever's project Shakti, its eChoupal venture has been the subject of several case studies.[35]

The rural initiative of the Mumbai-based $1.3 billion House of Godrej-Godrej Aadhaar-plans to set up 1,000 stores across India in the next five years. Delhi-based telecom major Bharti Airtel chairman Sunil Mittal has tied up with Wal-Mart, which will need its supply chain. From the Goenkas to the Gulabchands, from the Tatas to the Thapars, every major Indian business group has plans to move into the hinterland.[36]

[33] Source: Hindu Business Line, July 20, 2010
[34] Link: www.hllshakti.com; www.washfinance.wordpress.com
[35] Link: www.knowledge.wharton.upenn.edu/india
[36] Link: www.scribd.com/doc/48156149/rural-marketing

8.0 The Road Ahead

The study analyses the market potential of water purifier in the BoP market. Though secondary research shows that there have been a number of efforts from the industry and the NGO alike to penetrate into this (BoP) market, the road is not very easy to trudge.

The research highlights:

- The size of the BoP market is unquestionably very large and is also largely un-served
- As far as purification of water is concerned the practice is primarily 'home-based-remedies'. Usage of purifier is very low
- Latent need is expressed and hence there is a market potential for water purifier
- Purification of water is largely at the household level than at the community level
- There are examples of corporate entities trying to penetrate into this market using different techniques (SHG, microfinance, provide entrepreneur skill etc.)

Based on the above, the following pointers are presented:

- At the first stage, correct awareness about 'purity of water' needs to be imparted to the community
- The communication strategy should also target households as purification of water is largely at the household level
- Market linkages to be established: a 'village-market' link should be established using sustainable CBOs (Community Based Organizations) or other such organizations either in existence or created. This linkage is the most crucial link in the entire process
- Multi-Level Marketing (MLM) model such as that used by *Amway* may work out. The model works on a loosely knit chain of individuals working towards a common cause of 'selling purifiers'. They are linked with the local distributors and can be part of a larger 'youth group'
- This may be bundled up with other household products so that there is a basket of products that keeps the sale happening and the group becomes sustainable

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ANNEXURE 1

RESEARCH INSTRUMENTS

Confidential for research use only

MR03019 GRASP ANALYTIQUE PROJECT JAL-CONSUMERS MARCH 2011

Good _____. I am _____. I am from GRASP Analytique, a research agency based in Delhi. We conduct surveys from time to time on the different products and services. Currently we are conducting a survey on perception about water purifiers

I	**DEMOGRAPHIC PROFILE**		
	PLEASE INTERVIEW THE HEAD OF THE HOUSEHOLD		
Q1	What is your name? **vkidk uke D;k gS**		
Q2	Address **irk%**		
		Phone/ mobile no.	
Q3	What is your age? **Ask age at last birthday. Record completed age in years.** **vkidh mez D;k gS**	_____years	
Q4	Education of the respondent **vkidgk¡ rd i<+s gSa**		
Q5	Occupation of the respondent **vkidk O;oklk; D;k gS**		
Q6	What is the total monthly family income? Please mention income from all sources. **vkids ifjokj dh dqy feykdj fdruh vkenuh gS** **Record in the appropriate code.**	Below Rs.5000/-	1
		Rs.5000-10,000/-	2
		Rs.10001-20,000/-	3
		Rs.20001-30,000/-	4
		Rs.30001-50,000/-	5
		Above Rs. 50,000/-	6
Q7	How many members are there in your household? **vkids ifjokj esa dqy feykdj fdrus lnL; gSa\ ¼,d gh PkwYgs esa ½** ONLY RECORD THOSE WHO SHARE THE SAME KITCHEN		**Members in HH**
		0 to 5 years	
		6 to 10 years	
		11 to 18 years	
		19 to 25 years	
		26 to 35 years	
		36 to 45 years	
		More than 45 years	
		TOTAL	

II	**AWARENESS AND PERCEPTION ABOUT THEIR DRINKING WATER**		
Q8	From where do you source drinking water for your household? **vki ihus dk ikuh dgk¡ ls ykrs gSa**	Own well **vius dq,¡ ls**	1
		Community well **Lkkewfgd dq,¡ ls**	2
		Hand pump in own house **Äj ds gSUM&iEi ls**	3
		Community hand pump **Lkkewfgd gSUM&iEi ls**	4
		Tap water in own house **Äj ds uy ls**	5
		Community tap water **Lkkewfgd uy ls**	6
		River water **ufn ls**	7
		Other: **vU;**	

Q9	Is there enough supply of water to meet the requirement of your family? You would say that supply is.. **vki ds ifjokj ds fy,] D;k vkid¨ ihus dk ikuh i;kZIr feyrk gS\ vki dgsaxs ---**	Completely adequate **fCkydqy i;kZIr feyrk gS**	3
		Somewhat adequate **dqN gn rd i;kZIr feyrk gS**	2
		Not at all adequate **fCkydqy i;kZIr ugha feyrk gS**	1
Q10	**If '2' or '1' coded ask.** For how many hours in a day you get supply of water? **;fn Áå 9 esa *2* ;k *1* d¨M fd;k gS r¨ iwNsa Avkid¨ fdrus ÄaVs ihus dk ikuh feyrk gS**	_____ hours **ÄaVs**	
Q11	How much water do you generally consume in a day for your family? **vki ds ifjokj esa ihus ds ikuh dh dqy feykdj ,d fnu esa fdrus yhVj dh [kir g®rh gS**	_____ liters per day **yhVj ¼d fnu esa½**	
Q12	Are you paying for water? **D;k vki ihus ds ikuh ds fy, iSls n srs gSa**	Yes **gkj**	1
		No **ugha**	2
Q13	**If '1' coded in Q12 ask.** How much do you pay per month? **;fn Áå 12 esa *1* d¨M fd;k gS r¨ iwNsa Avkid¨ ,d eghus esa fdrus :i; nsus iM+rs gSa**	Rs. _____ per month **:i; ¼d eghus esa½**	
Q14	When would you deem some water pure and fit for drinking? **vkid¨ ;g dSls irk pyrk gS fd ikuh 'kq} gS v©j ihus yk;d gS** **PROBE.**	When the color of water looks clean, and not muddy **TkCk ikuh esa feV~Vh u g¨ v©j fn[ku s esa lkQ yxs**	1
		When the water is free from germs etc **TkCk ikuh esa d¨bZ fdVk.kq u g¨**	2
		When there is no foul smell in the water **TkCk ikuh ls cn cw u vk,**	3
		When the taste of water is unusual **TkCk ikuh dk LOkkn vthc&lk g¨**	4
		Other : **vU;%**	
Q15	How much concerned are you about the purity of portable water in your household? **vki ikuh dh 'kq}rk d® ysdj fdrus fpafrr g¨rs gSa** Record response on a 5-point scale where '5' is 'extremely concerned' and '1' is ' not at all concerned'	Extremely concerned **cgqr fpafrr**	5
		Somewhat concerned **dqN gn rd fpafrr**	4
		Neither concerned nor otherwise **u fpafrr u vfpafrr**	3
		Somewhat unconcerned **dqN gn rd vfpafrr**	2
		Not at all concerned **fcydqy fpafrr ugha**	1
Q16	For whom do you think it is most important that the drinking water should be pure? **ifjokj esa fdl ds fy, ikuh dk 'kq} g¨uk lcls t+:jh gSa** SINGLE RESPONSE ONLY	For infants (upto 1 year) **,d lky ls N¨Vs cPp ¢¨a ds fy,**	1
		For children less than 10 years old **nl lky ls N¨Vs cPp ¢¨a ds fy,**	2
		For old people **cM+s@ cqt+qx¨aZ ds fy,**	3
		For women **efgykv¨a ds fy,**	4
		For one and all in the family **lfjokj ds gj lnL; ds fy,**	5

Q17	Do you think impure drinking water may cause health problems? **D;k vkid¨ yxrk gS fd v'kq} ikuh LokLF; ds fy, gkfudkjd g¨rk gS**	Yes **gk¡** No **ugha**	1 2
Q18	**If '1' coded ask.** What are the different health problems that impure drinking water may cause? **;fn Áå 17 esa *1* d¨M fd;k gS r¨ iwNsaA v'kq} ikuh ihus ls d©u&d©u lh chekfj;k¡ g¨ldrh gSa**	Cholera **gStk** Jaundice **ihfy;k** Typhoid **Vkb QkbM** Diarrhea **nLr** Digestive problems **gkt+es dh lEL;k** Other: **vU;%**	1 2 3 4 5
Q19	Has there been any episode of any water borne disease in your house of any member of your family during the past 1-2 years? **fiNys 1&2 lky esa] D;k v'kq} ikuh ihus ls vki ds ifjokj ds fdlh lnL; d¨ d¨bZ LokLF; lEcfUèkr ijs'kkuh gqbZ**	Yes **gk¡** No **ugha**	1 2
Q20	**If coded '1' ask.** How many of such episodes do you recall that occurred during the last 1-2 years? **;fn Áå 19 esa *1* d¨M fd;k gS r¨ iwNsaA fiNys 1&2 lky esa fdruh ckj ,Slk gqvk**	No. of episodes: _____ **fdruh ckj**	
Q21	Now let us talk about each of those episodes. How much do you recall spending on the treatment? Please tell me inclusive of doctor's fees, tests, medicines, travel to doctor etc **vkidk gj ckj dqy feykdj ¼MkWDVj dh Qhl] VsLV] nok] bR;knh½ fdruk [kpkZ gqvk**	Rs. _____ per episode **gj ckj fdrus :i; yxs**	
Q22	Apart from doctors fee, tests, medicine etc how much was the loss of labor? **MkWDVj dh Qhl] VsLV] nok] bR;knh ds vykok vkids dke dk fdruk uqdlku gqvk**	Rs. _____ per episode **dke dk fdrus :i; dk uqdlku gqvk** No loss of labor **dke dk uqdlku ugha gqvk**	 99

III	**CURRENT PRACTICE**		
Q23	Do you think that the water you drink is pure and safe? **t¨ ikuh vki ihrs gSa] D;k vkid® yxrk gS fd og 'kq} o lqf{kZr gS**	Yes **gk¡** No **ugha**	1 2
Q24	How satisfied are you with the drinking water that you get from the source mentioned in Q8? **vkius crk;k fd vki ihus dk ikuh ____ ¼Áå8½ ls ysrs gSaA ;g crk,¡ fd vki ml ikuh ls fdrus**	Very satisfied **cgqr lUrq"V gSa** Somewhat satisfied **dqN gn rd lUrq"V gSa**	3 2

	lUrq"V gSa\	Not at all satisfied fcydqy lUrq"V ugha gSa	1
Q25	Why do you say so? **Probe for reasons of satisfaction or dissatisfaction.** vki ,slk D;¨a dgrs gSa\		
Q26	There are a number of methods in which one can clean/purify water. Please tell me what methods are you aware of? **Record in the grid.** ikuh d¨ 'kq} djus dh cgqr&lh fof/k;k¡ g®rh gSaA vki fdu&fdu fof/k;¨a ds ckjs esa tkurs gSa\ Record the first mentioned as 'top of mind' (TOM), the subsequent mentioned as 'unaided' and those mentioned on prompting as 'aided'		
Q27	What do you **do** to purify the drinking water? **If using a purifier (coded 6-10) ask.** Which brand of purifier are you using? At what price did you buy it? vki ikuh d¨ 'kq} djus ds fy, d©u&lh fof/k viukrs gSa\ ;fn 6 - 10 esa d¨M fd;k gS r¨ iwNsa A vki d©u ls czsUM dk l;wfjQk;j bLreky djrs gSa\ vkius bl s fdl nke ij [kjhnk Fkk\		

Methods	Awareness (Q26)			Current usage (Q27)		
	TOM	Unaided	Aided	Use	Brand & price	
Boil the water **Mckyuk**	1	2	3	1		
Chemicals like Alum (*Phitkari*) **fQVdjh] vkfn jlk;fud inkFkZ dk bLreky**	1	2	3	2		
Traditional method **ikjeikfjd fof/k**	1	2	3	3		
Chlorine tablets **Dy¨fju dh x¨fy;k¡**	1	2	3	4		
Tie a cloth at the mouth of the tap **uy ds eqg¡ esa diM+k ck¡/kuk**	1	2	3	5	**Brand**	**Price**
Filter with silicon candles **flfydu dSUMy ;qDr fQYVj**	1	2	3	6		
Tap attachment **uyds ij yxk fQYVj**	1	2	3	7		
UV purifier **;w oh l;wfjQk;j**	1	2	3	8		
RO Purifier **vkj v© l;wfjQk;j**	1	2	3	9		
Non-electrical purifier **fcuk fctyh ds pyus okyk l;wfjQk;j**	1	2	3	10		
Do not know of any method fdlh fof/k ds ckjs esa ugha tkurs	**99**					
			Use nothing dqN bLreky ugha djrs	**99**		

CHECK Q27: IF CODED 6 - 10 (USER OF PURIFIER) GO TO Q39, ELSE CONTINUE
;fn Áå 27 esa 6 - 10 d¨M fd;k gS r¨ Áå 39 ij tk,¡ vU;Fkk vxyk Áå iwNsa A

Q28	How strongly do you feel the need for a water purifier for your family? vki viu s ifjokj ds fy, l;wfjQk;j dk g¨uk fdruk t+:jh le>rs gSa\	Very strongly cgqr t+:jh	3
		Somewhat strongly dqN gn rd t+:jh	2
		Not at all strongly fcydqy t+:jh ugha	1
Q29	Why do you say so? **Probe.** vki ,slk D;¨a dgrs gSa\		

Q30	You have said that you are not using any water purifier. Why don't you use any water purifier? **vius dgk fd vki l;wfjQk;j bLreky ugha djrs gSa A vki l;wfjQk;j D;¨a ugha bLreky djrs gSa**	Don't know about it **blds ckjs esa tkurs ugha gSa**	1
		Don't know where they are available **;g ugha irk fd dgk¡ feyrk gS**	2
		Think it is expensive **gesa yxrk gS fd egaxk gS**	3
		Don't think that we need one **ge [kjhnuk t+:jh ugha le>rs gSa**	4
		Believes its government's responsibility to provide safe drinking water **;g ljdkj dh ft+Eesnkjh gS**	5
		Others : **vU;%**	
Q31	In case you had to a buy a water purifier, what type of water purifier would you want? **;fn vkid¨ l;wfjQk;j [kjhnuk g¨rk r¨ vki fdl Ádkj dk l;wfjQk;j [kjhnrs**	Non-electric **fcuk fctyh ds pyus okyk**	1
		Has storage facilities **ftlesa ikuh LV'j fd;k tk lds**	2
		Has low maintenance **ftldh j[k&j[kko dk [kPkkZ de g¨**	3
		Available on rent/share **t¨ HkkM+s ij ;k lkewfgd r©j ij miyC/k g¨**	4
		Other: **vU;%**	
Q32	If you come to know of a water purifier that is available at a <u>reasonable rate</u>, what is the chance that you will buy it <u>for your family</u>? **;fn d¨bZ l;wfjQk;j cgqr okftc nke ij miyC/k g¨ r® D;k lEHkkouk gS fd vki mls vius ifjokj ds fy, [kjhnsaxs**	Will definitely buy **fcydqy [kjhnsaxs**	3
		May or may not buy **'kk;n [kjhnsaxs**	2
		Will definitely not buy **fcydqy ugha [kjhnsaxs**	1
Q33	At what price you will definitely buy a water purifier for your family? **vki fdl nke ij mls t+:j [kjhnsaxs**	Rs. _____	
Q34	Where would you generally expect to find the water purifier? PROBE ON PERCEIVED PLACE AND DISTANCE FROM THE RESIDENCE **vkids vuqlkj ;g l;wfjQk;j fdl txg fey ldrk gS\ og txg vkids ?kj ls fdruh nwjh ij gS**	Place: **Txg**	
		Distance (km): **?kj ls fdruh nwjh ij gS**	
Q35	In which type of shops would you expect to find such water purifiers? PROMPT **vkids vuqlkj ;g l;wfjQk;j fdl Ádkj dh nqdku¨a ij fey ldrs gSa**	Electronic goods shops **fctyh ds leku cspus okyh nqdku**	1
		Shops selling plastic wares etc **lyklfVd ds leku cspus okyh nqdku**	2
		Utensil shop **crZu¨a dh nqdku**	3
		Other: **vU;%**	

Q36	What incentives should the water purifier give you so that you will surely buy it? PROMPT **vkid¨ l;wfjQk;j ds lkFk d©u&lh vrfjDr lqfo/kk,¡ feyuh pkfg, ftls fd vki l;wfjQk;j t+:j [kjhnsaxs **	Replacement guarantee **[kjkc g¨us ij cny fn;k tk,**	1
		Exchange offer **iqjkus ds cnys u, ij fj;k;r**	2
		Annual Maintenance Contract **j[k&j[kko dk lkykuk dkWUVªsDV**	3
		Other: **vU;%**	

Q37	If you come to know of a water purifier that is available on sharing/hiring basis in your community, what is the chance that you will buy it? **;fn vkids ;gk¡ HkkM+s is ;k lkewfgd l;wfjQk;j miyC/k g¨r¨ D;k lEHkkouk gS fd vki mls [kjhnsaxs**	Will definitely buy **fcydqy [kjhnsaxs**	3
		May or may not buy **'kk;n [kjhnsaxs**	2
		Will definitely not buy **fcydqy ugha [kjhnsaxs**	1
Q38	At what price you will definitely like to share the community water purifier for your family? **vki fdl nke ij ;g lkewfgd l;wfjQk;j t+:j bLreky djsaxs**	Rs. _____	

IV	**AWARENESS ABOUT WATER PURIFIERS**		
Q39	Are you aware of the different brands of water purifiers available in the market? **D;k vki ekdsZV esa feyus okys l;wfjQk;j ds fofHkUUk czsUM ds ckjs esa tkurs gSa** **Thank the respondent & Terminate if '2' coded.** **;fn *2* d¨M fd;k gS r¨ bUVjO;w lekIr djsa v©j mRrjnkrk d¨ /kU;okn nsaA**	Yes **gk¡**	1
		No **ugha**	2
Q40	Which are the brands of water purifier you are aware of? **Record top of mind, unaided & aided.** **vki l;wfjQk;j ds d©u&d©u ls czsUM ds ckjs esa tkurs gSa**		
Q41	Where did you come to know about the brands? **vkid¨ bu czsUM ds ckjs esa dgk¡ ls irk pyk**		

Brands	**Awareness (Q40)** **d©u&d©u ls czsUM ds ckjs esa tkurs gSa**			**Source of awareness (Q41)** **czsUM ds ckjs esa dgk¡ ls irk pyk**				
	TOM	**Unaided**	**Aided**	**Radio**	**TV**	**News paper**	**Wall writing**	**Word of mouth**
Aqua Guard **,Dok xkMZ**	1	2	3	1	2	3	4	5
Kent **dSUV**	1	2	3	1	2	3	4	5
Pure it (HLL) **l;¨j bV** (HLL)	1	2	3	1	2	3	4	5
Tata Swatch **VkVk LoSV~p**	1	2	3	1	2	3	4	5
Other: **vU;%**				1	2	3	4	5

THANK AND CLOSE

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MR03019	GRASP ANALYTIQUE	PROJECT JAL-RETAILER	MARCH 2011

Good _____. I am _____. I am from GRASP Analytique, a research agency based in Delhi. We conduct surveys from time to time on the different products and services. Currently we are conducting a survey on the water purifier market in your city

I	PROFILE		
Serial	**Question**	**Option**	**Code**
Q1	Name of the retail outlet: **nqdku dk uke%**		
Q2	Name of the retailer: **nqdkunkj dk uke%**		
Q3	Address: **irk%**	Phone/mobile no.	
Q4	Category of the outlet **fdl Ádkj dh nqdku gSA**	Consumer durable shop **Vhoh] fQzt] vkfn dh nqdku**	1
		Kitchenware shop (toaster, mixer, cooker, etc) **jl¨bZ ds leku dh nqdku ¼tSls V'LVj] feDlj] dqDdj] vkfn½**	2
		Utensil shop **crZu¨a dh nqdku**	3
		Home utility shop (plastic wares) **lyklfVd ds leku dh nqdku ¼ckyVh] vkfn½**	4
		Other: **vU;%**	
Q5	Do you sell water filters and/or water purifiers? **D;k vki okWVj fQyVj ;k okWVj l;wfjQk;j csprs gSa** **IF '2' CODED GO TO Q30 ELSE CONTINUE** **;fn *2* d¨M fd;k gS r¨ Åå 30 ij tk,¡A**	Yes **gk¡**	1
		No **ugha**	2

II	SHOPS SELLING WATER PURIFIERS		
Q6	Which are the types of water purifiers that sell the most in this town & for nearby villages? **vki ds 'kgj o ikl ds xk¡o esa d©u ls Ádkj dk okWVj l;wfjQk;j lcls T+;knk fcdrk gS**	Filter with silicon candles **flfydu dSUMy ;qDr fQYVj**	1
		Tap attachments **uyds ij yxk fQYVj**	2

		Non-electrical purifier **fcuk fctyh ds pyus okyk l;wfjQk;j**	3
		RO/UV purifier **vkj v© @ ;w oh l;wfjQk;j**	4
		Other: **vU;%**	
Q7	Which are the types of water purifiers that you sell from your shop? **vki viuh nqdku ij d©u&d©u ls okWVj l;wfjQk;j csprs gSa**	Filter with silicon candles **flfydu dSUMy ;qDr fQYVj**	1
		Tap attachments **uyds ij yxk fQYVj**	2
		Non-electrical purifier **fcuk fctyh ds pyus okyk l;wfjQk;j**	3
		RO/UV purifier **vkj v© @ ;w oh l;wfjQk;j**	4
		Other: **vU;%**	

NOW LET US TALK ABOUT THE TYPES OF WATER PURIFIERS PEOPLE BUY FROM YOUR SHOP. WHAT WOULD BE GENERALLY THE PROFILE OF PEOPLE BUYING THE DIFFERENT TYPES OF WATER PURIFIER? IF THERE ARE 100 CONSUMERS, PLEASE TELL ME WHAT WOULD BE PROPORTION OF THE DIFFERENT CUSTOMERS.

Q8	What proportion is from the town and what proportion are from the nearby villages? **vkidh nqdku ij t® y¨x l;wfjQk;j [kjhnus vkrs gSa muesa ls fdrus Áfr'kr vkids 'kgj lss vkrs gSa v©j fdrus Áfr'kr ikl ds xk¡o ls vkrs gSa\ gj ,d Ádkj ds l;wfjQk;j ds fy, crk,¡A**
Q9	What proportion from the town will be from lower/middle class families, upper middle class families and rich families? **t® y¨x 'kgj lss vkrs gSa muesa ls fdrus Áfr'kr y¨vj feM~My DYkkl ds g¨rs gSa] fdrus Áfr'kr vij feM~My DYkkl ds g¨rs gSa v©j fdrus Áfr'kr vehj g¨rs gSa**
Q10	What proportion from the villages will be landed farmers, people in jobs, others? **t® y¨x xk¡o lss vkrs gSa muesa ls fdrus Áfr'kr t+ehunkj g¨rs gSa] fdrus Áfr'kr u©djh&is'ksokys g¨rs gSa v©j ckdh vU; fdrus Áfr'kr g¨rs gSa**

Type of water purifier		**Proportion (%) (Q8)**		**Profile of Urban consumers (%) (Q9)**			**Profile of rural consumers (%) (Q10)**		
		Town	**Nearby village**	**Lower/ middle class**	**Upper middle class**	**Rich families**	**Landed farmers**	**People in jobs**	**Other**
Filter with silicon candles **flfydu dSUMy ;qDr fQYVj**	1								
Tap attachments **uyds ij yxk fQYVj**	2								
Non-electrical purifier **fcuk fctyh ds pyus okyk l;wfjQk;j**	3								
RO/UV purifier **vkj v© @ ;w oh l;wfjQk;j**	4								
Other: **vU;%**									

Q11	Which brands of water purifiers do you sell? RECORD IN THE GRID BELOW **vki okWVj l;wfjQk;j ds d©u&d©u ls czsUM csprs gSa\ ¼gj ,d l;wfjQk;j ds fy, crk,¡½**

Q12	How many pieces do you sell in a month on an average? RECORD IN THE GRID BELOW **vki ,d efgus esa rdjhcu fdrus okWVj l;wfjQk;j csprs gSa\ ¼gj ,d l;wfjQk;j o czsUM ds fy, crk,¡½**
Q13	What % of the sales is from the villages? RECORD IN THE GRID BELOW **fdrus Áfr'kr xk¡o esa fcdrs gSa\ ¼gj ,d l;wfjQk;j o czsUM ds fy, crk,¡½**
Q14	What is the MRP of the product? RECORD IN THE GRID BELOW **mldk ,e vkj ih D;k gS**
Q15	What is the MOP of the product? RECORD IN THE GRID BELOW **vki mls fdrus esa csprs gSa**
Q16	How much margin (%) do you get on the products? RECORD IN THE GRID BELOW **vkid mlesa fdruk ekjftu feyrk gSa**
Q17	How many days credit does the company give you? RECORD IN THE GRID BELOW **vkid dEiuh mlesa fdrus fnu dk m/kkj nsrh gS**
Q18	Please give the name and nos. of the distributor/s. RECORD IN THE GRID BELOW **—l;k fMfV²O;wVj dk uke v©j Q¨u u% crk,¡**

NAME OF THE BRAND (Q11)	Sale/ mth (Q12)	% vill (Q13)	MRP (Q14)	MOP (Q15)	% Margin (Q16)	Credit (days) (Q17)	Details of distributors (Q18)
FILTERS WITH SILICON CANDLES flfydu dSUMy ;qDr fQYVj							

NAME OF THE BRAND (Q11)		Sale/ mth (Q12)	% vill (Q13)	MRP (Q14)	MOP (Q15)	% Margin (Q16)	Credit (days) (Q17)	Details of distributors (Q18)
TAP ATTACHMENTS uyds ij yxk fQYVj								
Zero B Suraksha	1							
Tap Guard	2							
Other:_____								
Other:_____								
NON ELECTRICAL fcuk fctyh ds pyus okyk l;wfjQk;j								
Pure It	1							
Aquasure	2							
Other:_____								
Other:_____								
WITH NANO TECHNOLOGY usu¨ Vsdu¨yWkxh l;wfjQk;j								
Swatch	1							
Swatch Magic	2							
Other:_____								
Other:_____								
RO/UV FILTERS (AQUAGUARD, KENT etc) vkj v© @ ;woh l;wfjQk;j								
Aquaguard	1							
Kent	2							
Other:_____								
Other:_____								

Q19	Have you ever noticed community-based purchase of water filters and/or water purifiers? By community-purchase I mean a group of people of a locality or village buying for sharing in a community? **D;k vkius dHkh lkewfgd :i ls l;wfjQk;j [kjhnus ds ckjs esa lwuk gS\ tSls dwwN y¨x feydj lkewfgd :i ls l;wfjQk;j [kjhndj bLreky djsa A**	Yes **gk¡**	1
		No **ugha**	2
Q20	Have you ever noticed community-based purchase of water filters and/or water purifiers initiated by any government project? **vkius dHkh lkewfgd :i ls ¼jdkj dh rjQ ls½ l;wfjQk;j [kjhnus ds ckjs esa lwuk gS**	Yes **gk¡**	1
		No **ugha**	2
Q21	**If '1' coded in Q19 or Q20 ask.** Please give details about it. **Elaborate.** **;fn Q19 ;k Q20 es *1* d¨M fd;k gS r¨ iwNs A Ñl;k foLrkj ls crk, A**		
Q22	What are the different attributes that the consumers ask for in a water purifier? **xzkgd T;knkrj l;wfjQk;j esa D;k&D;k ek¡xrs gSa** **Multiple responses possible.**	Non-electric **fcuk fctyh ds pyus okyk**	1
		Has storage facilities **ftlesa ikuh LV¡j fd;k tk lds**	2
		Has low maintenance **ftldh j[k&j[kko dk [kPkkZ de g¨**	3
		Available on rent/share **t¨ HkkM+s ij ;k lkewfgd r©j ij miyC/k g¨**	4
		Other: **vU;%**	

Q23	If a company launches a water purifier based on nanotechnology that is available at a very reasonable price, who do you think will be more attracted to buy such water purifier? **Prompt.** **vxj ,d dEiuh usu¨ Vsdu¨yWkTkh ds lkFk lLrs nke esa ,d l;wfjQk;j ckt+kj esa yk, r¨ vkids vuqlkj d©u mls [kjhn sxk\+**	Lower middle class families in the town **'kgj ds y¨vj feM~My DYkkl ifjokj**	1
		Middle class families in the town **'kgj ds feM~My DYkkl ifjokj**	2
		People from the nearby villages **ikl ds xk¡o ds y¨Xk**	3
		Other: **vU;%**	
Q24	At what price do you think they will definitely buy the water purifier? **fdl nke esa og t+:j £fjnsxsa\+**	Rs. _____	
Q25	How much will you be interested in selling such water purifier? You will say . **vki ,Slk&,d l;wfjQk;j cspus esa fdrus mRlqd g¨xsa**	Very interested **cgwr mRlqd**	1
		Somewhat interested **Fk¨M+k mRlqd**	2
		Not at all interested **fcydwy mRlqd ugha**	3
Q26	Why do you say so? **Probe on triggers & barriers.** **vki ,slk D;¨a dgrs gSa**		
Q27	What supports do you want from the company so that people can easily buy it? **vkid¨ ,Slk&,d l;wfjQk;j cspus ds fy,**	Place the product on credit **m/kkjh ij j£ok¡**	1
		Provide consumer loans **xzkgd d¨y¨u ij nsa**	2

	dEiuh dh rjQ ls D;k&D;k lgk;rk pkfg, g¨xk rkfd y¨x mls vkl kuh ls [kjhn ik,¡\ PROBE SPONTANEOUS RESPONSES ONLY	Give attractive schemes for dealers fMyj d¨ vkd'kZd fLdeh nsa	3
		Give attractive schemes for consumers xzkgd¨a d¨ vkd'kZd Ldhe nsa	4
		Give good margin fMyj d¨ vkd'kZd Ekjftu nsa	5
		Give ads ,M nsa	6
		Provide POP supports POP nsa	7
		Other: vU;%	
Q28	What are the different schemes currently being launched by different companies? vHkh dEifu;k¡ d©u&d©u lh Ldhe pyk jgh gS\		
Q29	OBSERVE AND RECORD FOR ANY POP OF WATER PURIFIER IN THE OUTLET. l;wfjQk;j ds i¨LVj vkfn gSa r¨u¨V djsa A		

Posters		Banners		Danglers		Glow sign	
Yes	No	Yes	No	Yes	No	Yes	No
1	2	1	2	1	2	1	2

III	SHOPS NOT SELLING WATER PURIFIERS		
Q30	What is the average daily footfall of customers at your shop? vkidh nqdku eas ,d fnu es fdrus y¨x vkrs gS\	No. of customer per day _____	
Q31	If you get 100 customers a day, what is the proportion of lower middle class, middle class families & people from the nearby villages visiting your shop? ;fn vkidh nqdku eas 100 y¨x vkrs gS r¨ mueas ls 'kgj ds y¨vj feM~My DYkkl, feM~My DYkkl v©j ikl ds xk¡o ls fdrus Áfr'kr y¨x vkrs gS\	Category	%
		Lower middle class families in the town 'kgj ds y¨vj feM~My DYkkl ifjokj	
		Middle class families in the town 'kgj ds feM~My DYkkl ifjokj	
		People from the nearby villages ikl ds xk¡o ds y¨Xk	
		Other: vU;%	
Q32	If a company launches a water purifier based on nanotechnology that is available at a very reasonable price, how much will you be interested in selling such water purifier? You will say … ;fn ,d dEiuh usu¨ Vsdu¨yWkxh ds lkFk lLrs nke esa ,d l;wfjQk;j ckt+kj eas yk, r¨ vki mls cspus esa fdrus mRlqd g¨xsa\	Very interested cgwr mRlqd	3
		Somewhat interested Fk¨M+k mRlqd	2
		Not at all interested fcydwy mRlqd ugha	1
Q33	Why do you say so? **Probe on triggers & barriers.** vki ,slk D;¨a dgrs gSa\		
Q34	Who do you think will be more attracted to buy such water purifier?	Lower middle class families in the town 'kgj ds y¨vj feM~My DYkkl ifjokj	1

	Prompt. **vkids fglc ls d©u bl l;wfjQk;j d¨ £fjnsxsa\+**	Middle class families in the town **'kgj ds feM~My DYkkl ifjokj**	2
		People from the nearby villages **ikl ds xk¡o ds y¨Xk**	3
		Other: **vU;%**	
Q35	At what price do you think they will definitely buy the water purifier? **og bl l;wfjQk;j d¨ fdl nke ij t+:j [kjhnsaxs**	Rs. _____	
Q36	What supports do you want from the company so that people can easily buy it? PROBE SPONTANEOUS RESPONSES ONLY **vkid¨ ,Slk ,d l;wfjQk;j cspus ds fy, deauh ds rjQ ls D;k D;k lgk;rk pkfg, g¨xk rkfd y¨x bls vklkfu ls £+fjn ik,sa**	Place the product on credit **m/kkjh ij j£ok,¡**	1
		Provide consumer loans **xzkgd d¨ y¨u ij nsa**	2
		Give attractive schemes for dealers **fMyj d¨ vkd'kZd fLde nsa**	3
		Give attractive schemes for consumers **xzkgd¨a d¨ vkd'kZd Ldhe nsa**	4
		Give good margin **fMyj d¨ vkd'kZd Ekjftu nsa**	5
		Give ads **,Mnsa**	6
		Provide POP supports POP **nsa**	7
		Other : **vU;%**	

THANK AND CLOSE

ANNEXURE 2

DATA TABLES

ANNEXURE A- CONSUMERS: STATE-WISE

Table 1: Total Monthly family income

	UP	Punjab	Haryana	All
Below Rs.5000/-	41.9	33.3	56.7	43.2
Rs.5000-10000/-	37.8	30.8	29.2	34.5
Rs.10001-20000/-	17.2	31.7	10.8	18.9
Rs.20001-30000/-	2.5	3.3	0.8	2.3
Rs.30001-50000/-	0.6	0.8	0.0	0.5
Above Rs.50000/-	0.0	0.0	2.5	0.5
Base	320	120	120	560

Table 2: Source of drinking water

	UP	Punjab	Haryana	All
Own well	1.6	0.0	0.0	0.9
Community well	0.9	0.0	15.8	3.9
Hand pump in own house	33.4	10.8	10.0	23.6
Community hand pump	32.8	17.5	7.5	24.1
Tap water in own house	26.6	56.7	55.8	39.3

Community tap water	4.7	15.0	6.7	7.3
Own tubewell	0.0	0.0	0.8	0.2
Community tubewell	0.0	0.0	3.3	0.7
Base	320	120	120	560

Table 3: Supply of water

	UP	Punjab	Haryana	All
Completely adequate	85.0	66.7	94.2	83.0
Somewhat adequate	14.4	29.2	5.8	15.7
Not at all adequate	0.6	4.2	0.0	1.3
Base	320	120	120	560

Table 4: Parameters to check the purity of water

	UP	Punjab	Haryana	All
When the color of water looks clean and not muddy	57.5	87.5	68.3	66.3
When the water is free from germs	36.3	42.5	3.3	30.5
When there is no foul smell in the water	43.4	36.7	6.7	34.1
When the taste of water is unusual	13.4	13.3	31.7	17.3
Base	320	120	120	560

Table 5: Level of concern with the purity of water

	UP	Punjab	Haryana	All
Extremely concerned	37.2	26.7	32.5	33.9
Somewhat concerned	29.7	28.3	34.2	30.4
Neither concerned nor otherwise	17.2	13.3	10.8	15.0
Somewhat unconcerned	6.9	10.0	3.3	6.8
Not at all concerned	9.1	21.7	19.2	13.9
Base	320	120	120	560

Table 6: Cohorts for whom purity of water is most relevant

	UP	Punjab	Haryana	All
For infants (upto 1 year)	5.0	1.7	1.7	3.6
For children less than 10 years old	16.6	0.8	0.8	9.8
For old people	5.6	0.0	0.0	3.2
For women	1.9	0.0	0.0	1.1
For one and all in the family	70.9	97.5	97.5	82.3
Base	320	120	120	560

Table 7: Awareness on the health problems caused by impure drinking water

	UP	Punjab	Haryana	All
Cholera	59.7	69.2	50.8	59.8
Jaundice	41.6	39.2	44.2	41.6
Typhoid	28.8	55.8	21.7	33.0
Diarrhea	54.4	71.7	45.0	56.1
Digestive problems	41.9	68.3	36.7	46.4
Does not cause health problems	3.8	2.5	0.8	2.9
Base	320	120	120	560

Table 8: Households who suffered water borne disease

	UP	Punjab	Haryana	All
Suffered water borne disease	28.8	7.5	12.5	20.7
Did not suffer any disease	71.3	92.5	87.5	79.3
Base	320	120	120	560

Table 9: Level of satisfaction with the drinking water

	UP	Punjab	Haryana	All
Very satisfied	40.9	42.5	60.8	45.5
Somewhat satisfied	45.3	38.3	28.3	40.2
Not at all satisfied	13.8	19.2	10.8	14.3
Base	320	120	120	560

Table 10: Awareness of water purifying methods

	UP	Punjab	Haryana	All
Boil the water	98.4	100.0	100.0	99.1
Chemicals like Phitkari	73.1	72.5	60.0	70.2
Traditional method	49.1	75.8	33.3	51.4
Chlorine tablets	79.1	91.7	79.2	81.8
Tie a cloth at the mouth of the tap	75.0	72.5	84.2	76.4
Filter with silicon canble	27.2	32.5	20.8	27.0
Tap attachment	30.3	49.2	28.3	33.9
UV Purifier	28.4	45.8	26.7	31.8
RO purifier	29.1	42.5	48.3	36.1
Non-electric purifier	39.7	40.8	38.3	39.6
Base	320	120	120	560

Table 11: Usage of water purifying methods

	UP	Punjab	Haryana	All
Boil the water	16.6	8.3	25.0	16.6
Chemicals like Phitkari	1.6	0.0	0.0	0.9

Traditional method	0.3	0.0	0.8	0.4
Chlorine tablets	1.3	0.8	0.8	1.1
Tie a cloth at the mouth of the tap	2.8	0.8	0.0	1.8
Filter with silicon canble	0.9	0.8	0.0	0.7
UV Purifier	0.6	5.0	3.3	2.1
RO purifier	0.0	0.0	3.3	0.7
Non-electric purifier	3.8	3.3	0.0	2.9
Do not use anything	72.2	80.8	66.7	72.9
Base	320	120	120	560

Table 12: Need for a water purifier

	UP	Punjab	Haryana	All
Very strongly	35.3	19.3	29.5	30.7
Somewhat strongly	45.9	39.4	48.2	45.0
Not at all strongly	18.8	41.3	22.3	24.2
Base	303	109	112	524

Table 13: Reason for not using any water purifier

	UP	Punjab	Haryana	All
Don't know about it	18.5	17.4	20.5	18.7
Don't know where they are available	7.9	3.7	1.8	5.7
Think it is expensive	61.1	55.0	62.5	60.1
Don't think that need one	23.4	33.0	20.5	24.8
Believe its government's responibility to provide safe drinking water	13.9	3.7	3.6	9.5
Base	303	109	112	524

Table 14: Preferred water purifier

	UP	Punjab	Haryana	All
Non-electric	51.8	67.9	46.4	54.0
Don't know where they are available	23.1	14.7	6.3	17.7
Think it is expensive	21.1	20.2	50.0	27.1
Believe its government's responibility to provide safe drinking water	4.6	1.8	2.7	3.6
Base	303	109	112	524

Table 15: Intention to purchase

	UP	Punjab	Haryana	All
Will definitely buy	27.1	20.2	34.8	27.3
May or may not buy	64.0	38.5	53.6	56.5
Will definitely not buy	8.9	41.3	11.6	16.2
Base	303	109	112	524

Table 16: Intention to purchase on sharing basis in the community

	UP	Punjab	Haryana	All
Will definitely buy	15.2	15.6	35.7	19.7
May or may not buy	53.5	24.8	37.5	44.1
Will definitely not buy	31.4	59.6	26.8	36.3
Base	303	109	112	524

Table 17: Preferred shops for purchasing a water purifier

	UP	Punjab	Haryana	All
Electronic goods shop	50.8	60.6	71.4	57.3
Shops selling plastic wares	35.0	9.2	10.7	24.4
Utensil shop	14.2	30.3	17.9	18.3
Base	303	109	112	524

Table 18: Perceived incentives to attract the consumers

	UP	Punjab	Haryana	All
Replacement guarantee	77.6	72.5	67.9	74.4
Exchange offer	14.5	11.9	20.5	15.3
Annual Maintenance Contract	7.9	15.6	11.6	10.3
Base	303	109	112	524

Table 19: Awareness about water purifiers

	UP	Punjab	Haryana	All
Aquaguard	31.9	59.2	41.7	39.8
Kent	26.6	26.7	29.2	27.1
Pure it	29.4	55.0	26.7	34.3
Tata Swachh	25.0	5.8	8.3	17.3
Not aware of any brand	63.8	37.5	50.8	55.4
Base	320	120	120	560

ANNEXURE II-CONSUMER: PLACE OF RESIDENCE

Table 1: Total Monthly family income

	General	Slum	Rural	All
Below Rs.5000/-	20.0	65.0	43.9	43.2
Rs.5000-10000/-	35.0	28.6	37.1	34.5
Rs.10001-20000/-	36.4	5.0	17.1	18.9
Rs.20001-30000/-	6.4	0.0	1.4	2.3
Rs.30001-50000/-	1.4	0.7	0.0	0.5

Above Rs.50000/-	0.7	0.7	0.4	0.5
Base	140	140	280	560

Table 2: Source of drinking water

	General	Slum	Rural	All
Own well	0.0	0.0	1.8	0.9
Community well	0.7	1.4	6.8	3.9
Hand pump in own house	18.6	18.6	28.6	23.6
Community hand pump	7.1	32.1	28.6	24.1
Tap water in own house	64.3	37.9	27.5	39.3
Community tap water	9.3	6.4	6.8	7.3
Own tubewell	0.0	0.7	0.0	0.2
Community tubewell	0.0	2.9	0.0	0.7
Base	140	140	280	560

Table 3: Supply of water

	General	Slum	Rural	All
Completely adequate	75.0	82.1	87.5	83.0
Somewhat adequate	22.1	17.1	11.8	15.7
Not at all adequate	2.9	0.7	0.7	1.3
Base	140	140	280	560

Table 4: Parameters to check the purity of water

	General	Slum	Rural	All
When the color of water looks clean and not muddy	66.4	71.4	63.6	66.3
When the water is free from germs	27.9	26.4	33.9	30.5
When there is no foul smell in the water	34.3	30.0	36.1	34.1
When the taste of water is unusual	21.4	12.1	17.9	17.3
Base	140	140	280	560

Table 5: Level of concern with the purity of water

	General	Slum	Rural	All
Extremely concerned	36.4	25.7	36.8	33.9
Somewhat concerned	27.1	23.6	35.4	30.4
Neither concerned nor otherwise	18.6	17.9	11.8	15.0
Somewhat unconcerned	7.1	10.7	4.6	6.8
Not at all concerned	10.7	22.1	11.4	13.9
Base	140	140	280	560

Table 6: Cohorts for whom purity of water is most relevant

	General	Slum	Rural	All
For infants (upto 1 year)	1.4	5.0	3.9	3.6
For children less than 10 years old	8.6	5.7	12.5	9.8
For old people	2.1	2.9	3.9	3.2
For women	0.0	0.7	1.8	1.1
For one and all in the family	87.9	85.7	77.9	82.3
Base	140	140	280	560

Table 7: Awareness on the health problems caused by impure drinking water

	General	Slum	Rural	All
Cholera	57.1	54.3	63.9	59.8
Jaundice	50.0	35.0	40.7	41.6
Typhoid	32.9	27.9	35.7	33.0
Diarrhea	57.9	58.6	53.9	56.1
Digestive problems	45.0	47.1	46.8	46.4
Does not cause health problems	1.4	5.0	2.5	2.9
Base	140	140	280	560

Table 8: Households who suffered water borne disease

	General	Slum	Rural	All
Suffered water borne disease	16.4	18.6	23.9	20.7
Did not suffer any disease	83.6	81.4	76.1	79.3
Base	140	140	280	560

Table 9: Level of satisfaction with the drinking water

	General	Slum	Rural	All
Very satisfied	46.4	61.4	37.1	45.5
Somewhat satisfied	37.1	30.0	46.8	40.2
Not at all satisfied	16.4	8.6	16.1	14.3
Base	140	140	280	560

Table 10: Awareness of water purifying methods

	General	Slum	Rural	All
Boil the water	99.3	99.3	98.9	99.1
Chemicals like Phitkari	77.1	71.4	66.1	70.2
Traditional method	50.0	50.0	52.9	51.4
Chlorine tablets	85.0	85.0	78.6	81.8
Tie a cloth at the mouth of the tap	84.3	72.9	74.3	76.4
Filter with silicon canble	35.7	23.6	24.3	27.0
Tap attachment	47.9	24.3	31.8	33.9
UV Purifier	47.1	16.4	31.8	31.8
RO purifier	56.4	27.1	30.4	36.1

Non-electric purifier	60.7	32.9	32.5	39.6
Base	140	140	280	560

Table 11: Usage of water purifying methods

	General	Slum	Rural	All
Boil the water	20.7	14.3	15.7	16.6
Chemicals like Phitkari	0.0	0.0	1.8	0.9
Traditional method	0.0	0.7	0.4	0.4
Chlorine tablets	0.7	0.0	1.8	1.1
Tie a cloth at the mouth of the tap	1.4	2.9	1.4	1.8
Filter with silicon canble	1.4	0.7	0.4	0.7
UV Purifier	5.0	0.7	1.4	2.1
RO purifier	2.1	0.0	0.4	0.7
Non-electric purifier	7.1	0.7	1.8	2.9
Do not use anything	61.4	80.0	75.0	72.9
Base	140	140	280	560

Table 12: Need for a water purifier

	General	Slum	Rural	All
Very strongly	37.3	22.6	32.0	30.7
Somewhat strongly	42.4	40.1	48.7	45.0
Not at all strongly	20.3	37.2	19.3	24.2
Base	118	137	269	524

Table 13: Reason for not using any water purifier

	General	Slum	Rural	All
Don't know about it	14.4	25.5	17.1	18.7
Don't know where they are available	3.4	8.8	5.2	5.7
Think it is expensive	60.2	56.2	62.1	60.1
Don't think that need one	28.8	29.2	20.8	24.8
Believe its government's responibility to provide safe drinking water	7.6	5.8	12.3	9.5
Base	118	137	269	524

Table 14: Preferred water purifier

	General	Slum	Rural	All
Non-electric	58.5	57.7	50.2	54.0
Don't know where they are available	21.2	14.6	17.8	17.7
Think it is expensive	23.7	27.7	28.3	27.1
Believe its government's responibility to provide safe drinking water	0.0	2.9	5.6	3.6
Base	118	137	269	524

Table 15: Intention to purchase

	General	Slum	Rural	All
Will definitely buy	30.5	22.6	28.3	27.3
May or may not buy	57.6	55.5	56.5	56.5
Will definitely not buy	11.9	21.9	15.2	16.2
Base	118	137	269	524

Table 16: Intention to purchase on sharing basis in the community

	General	Slum	Rural	All
Will definitely buy	20.3	14.6	21.9	19.7
May or may not buy	42.4	48.9	42.4	44.1
Will definitely not buy	37.3	36.5	35.7	36.3
Base	118	137	269	524

Table 17: Preferred shops for purchasing a water purifier

	General	Slum	Rural	All
Electronic goods shop	62.7	57.7	54.6	57.3
Shops selling plastic wares	23.7	20.4	26.8	24.4
Utensil shop	13.6	21.9	18.6	18.3
Base	118	137	269	524

Table 18: Perceived incentives to attract the consumers

	General	Slum	Rural	All
Replacement guarantee	75.4	76.6	72.9	74.4
Exchange offer	16.9	15.3	14.5	15.3
Annual Maintenance Contract	7.6	8.0	12.6	10.3
Base	118	137	269	524

Table 19: Awareness about water purifiers

	General	Slum	Rural	All
Aquaguard	65.7	24.3	34.6	39.8
Kent	47.9	19.3	20.7	27.1
Pure it	57.9	20.7	29.3	34.3
Tata Swachh	29.3	12.1	13.9	17.3
Not aware of any brand	29.3	68.6	61.8	55.4
Base	140	140	280	560

ANNEXURE III- RETAILERS

Table 1: Sale of water purifier

	UP	Punjab	Haryana	All	Avg sale/mth (pcs)	Margin (%)
Filter with silicon candle	20.0	13.3	6.7	15.7	7.1	14.5
Tap attachment	25.0	6.7	0.0	15.7	8.8	9.5
Non-electrical purifier	80.0	73.3	46.7	71.4	16.2	12.3
RO/UV purifier	22.5	60.0	80.0	42.9	8.8	14.3
Base	40	15	15	70		

Table 2: Proportionate footfall

	UP		Punjab		Haryana		All	
	Town	Village	Town	Village	Town	Village	Town	Village
Filter with silicon candle	51.9	48.1	35.0	65.0	50	50	48.6	51.4
Tap attachment	43.0	57.0	70.0	30.0	0	0	45.5	54.4
Non-electrical purifier	58.4	41.6	63.2	36.8	52.1	47.9	58.6	41.4
RO/UV purifier	65.0	35.0	69.4	30.6	47.1	52.9	59.2	40.8

Table 3: Important purchase attributes

	UP	Punjab	Haryana	All
Non-electric	80.0	66.7	40.0	68.6
Has storage facilities	60.0	73.3	33.3	57.1
Has low maintenance	55.0	53.3	80.0	60.0
Available on rent/share	12.5	6.7	0.0	8.6
Base	40	15	15	70

Table 4: Level of interest in selling the water purifier based on nano technology (seller)

	UP	Punjab	Haryana	All
Very Interested	72.5	66.7	26.7	61.4
Somewhat Interested	25.0	20.0	60.0	31.4
Not at all interested	2.5	13.3	13.3	7.1
Base	40	15	15	70

Table 5: Level of interest in selling the water purifier based on nano technology (non-seller)

	UP	Punjab	Haryana	All
Very Interested	60.0	40.0	53.3	54.3
Somewhat Interested	35.0	53.3	26.7	37.1
Not at all interested	5.0	6.7	20.0	8.6

Table 6: Perceived TG (acc. to seller)

	UP	Punjab	Haryana	All
Lower Middle class families in the town	15.0	26.7	0.0	14.3
Middle class families in the town	52.5	40.0	33.3	45.7
People from nearby villages	32.5	33.3	66.7	40.0

Base	40	15	15	70

Table 7: Perceived TG (acc. to non-seller)

	UP	Punjab	Haryana	All
Lower Middle class families in the town	17.5	60.0	0.0	22.9
Middle class families in the town	42.5	6.7	20.0	30.0
People from nearby villages	40.0	33.3	80.0	47.1
Base	40	15	15	70

Table 8: Support from the company

	UP	Punjab	Haryana	All
Place the product on credit	17.5	26.7	33.3	22.9
Provide consumer loans	12.5	26.7	3.3	13.6
Give attractive schemes to dealers	45	80	37	50.7
Give attractive schemes to consumers	67.5	56.7	76.7	67.1
Give good margin	78.8	63.3	40	67.1
Give ads	60	60	80	64.3
Provide POP support	3.8	3.3	20	7.1
Base	80	30	30	140