

# CAN SMALL SCALE WOMEN FISHER TAKE TO ONLINE RETAIL?

## EVIDENCE FROM A SOCIAL EXPERIMENT WITH MUMBAI WOMEN FISHER



SIDDHIKA MEHER, ANANTHAN, P.S, AMJAD BALANGE  
AND ARPITA SHARMA

ICAR-CENTRAL INSTITUTE OF FISHERIES EDUCATION  
MUMBAI-INDIA



# ***Fisheries overview***

- **Fastest growing food production sector** in the world & India @CAGR of 4.5% during last 3 decades
- India: overall 3<sup>rd</sup> largest producer of fish **(11.3 million tons in 2017-18)** and 2<sup>nd</sup> largest producer of inland fish in the world.
- Still it's a sunrise sector with vast untapped resources and production potential
- Marine fisheries has a potential of 3.9 million tons from EEZ of 2.025 million sq.km. (3.7 million tons - present production)
- Employs over **14 million people** engaged fully, partially or in subsidiary activities, with an equal number in ancillary activities.

# *Retailing and E-commerce in India-future prospective*

- India is still a growth story - ***a big growth story.***
- India's nominal year-over-year expenditure growth of 12% is more than double the anticipated global rate of 5% - ***making third-largest consumer market by 2025.***
- A report by The Boston Consulting Group's Center for Customer Insight (CCI) examines the **factors shaping India's complex and growing market:**
  - ***Increasing & substantial impact of digital technologies has evolved Consumers' spending patterns.***
- Tremendous growth in the E-commerce segment- With an **internet user base of over 300 million**, India has third largest internet population after US & China

## ***Why we did this study?***

- Owing to the above context, there found to be a need to investigate the willingness and perception of women fisher to sell fish online if provided with a mobile app platform .
- Also to examine factor which motivates and hamper the willingness to involve in digital marketing.

## ***What we did?***

- Personal interview using a structured and pre-tested interview schedule was conducted in 4 fishing village of Mumbai among the 105 women fishers during the month of December 2017 to March 2018.
- Followed by a orientation and discussion session with the women participants.
- Actual handling of online order by the women fishers.

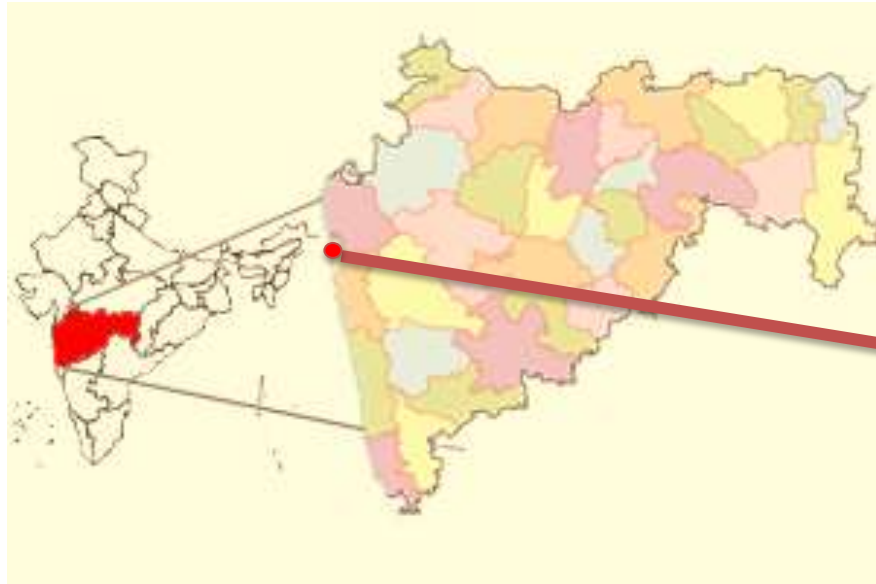
## General Profile of study area

Population (million)	12.4
Coastline of Mumbai (sq.km)	71
No of fish landing centers villages (nos)	18
No of fishing villages (nos)	30
Fisher folk population	40,953
No of fishers family (nos)	9,304
No of fisherwomen involved in marketing (nos)	8,083
Sex ratio	955:1000

Marine Census, CMFRI, 2010



# Locale of Study



**MAHIM**

**CUFF PARADE**

**VERSOVA**

**KHAR  
DANDA**

# Sampling

Mumbai

Women fisher (105)

Versova fishing village  
(30)

Khadanda fishing  
village(15)

Mahim fishing village (30)

Cuff parade fish market  
(30)

Fish Consumers (105)

Versova fish market  
(30)

Khar danda fish market  
(15)

Mahim fish market  
(30)

Cuff parade fishing  
village(30)

n=210



**Interview with the women fishers at fish market and landing center**



# Socio-Economic profile of Women Fisher

n=105

- **30** Responses each were collected from **Versova, Mahim, Cuffparade** and **15** Responses from **Khardanda**.

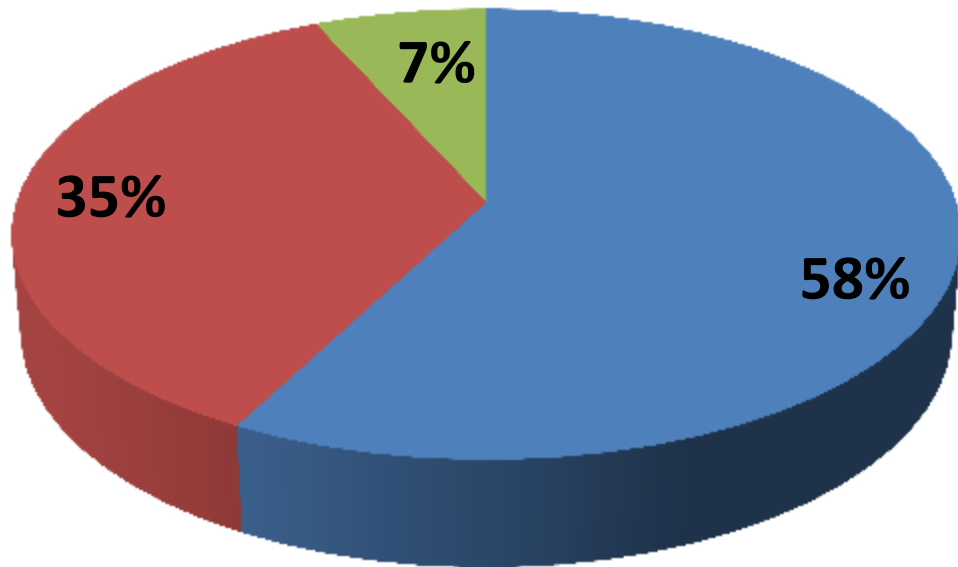
Particulars		Percentage
Marital status	Married	91
	Unmarried	3
	Widow	5
	Divorcee	1
Family status	Nuclear	46.7
	Joint	53.3
Education	No schooling	21.0
	Schooling	69.5
	Under graduation	10.5



n=105

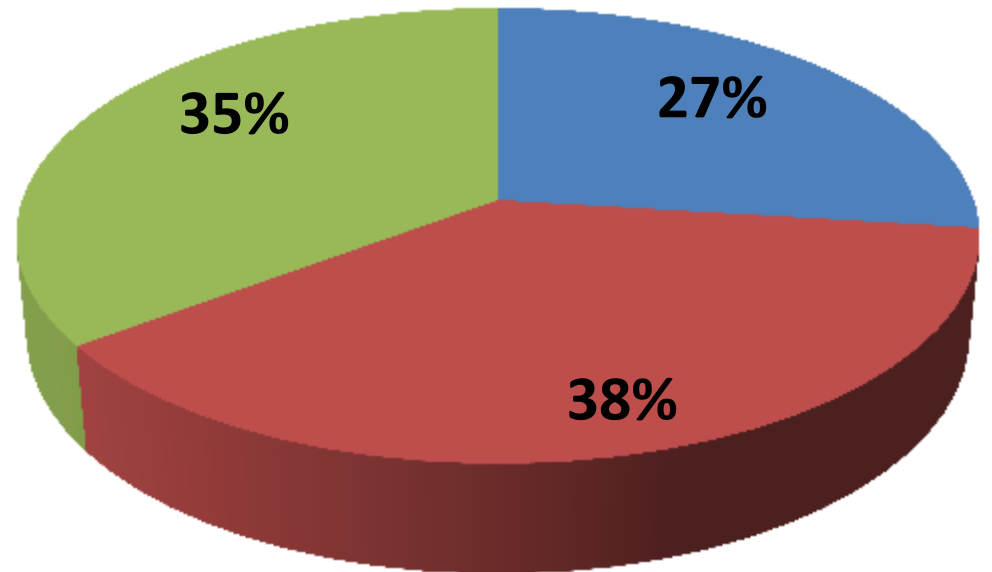
### Monthly Household Income

■ upto 50,000   ■ 50,000 to 1 lakh   ■ >1 lakh



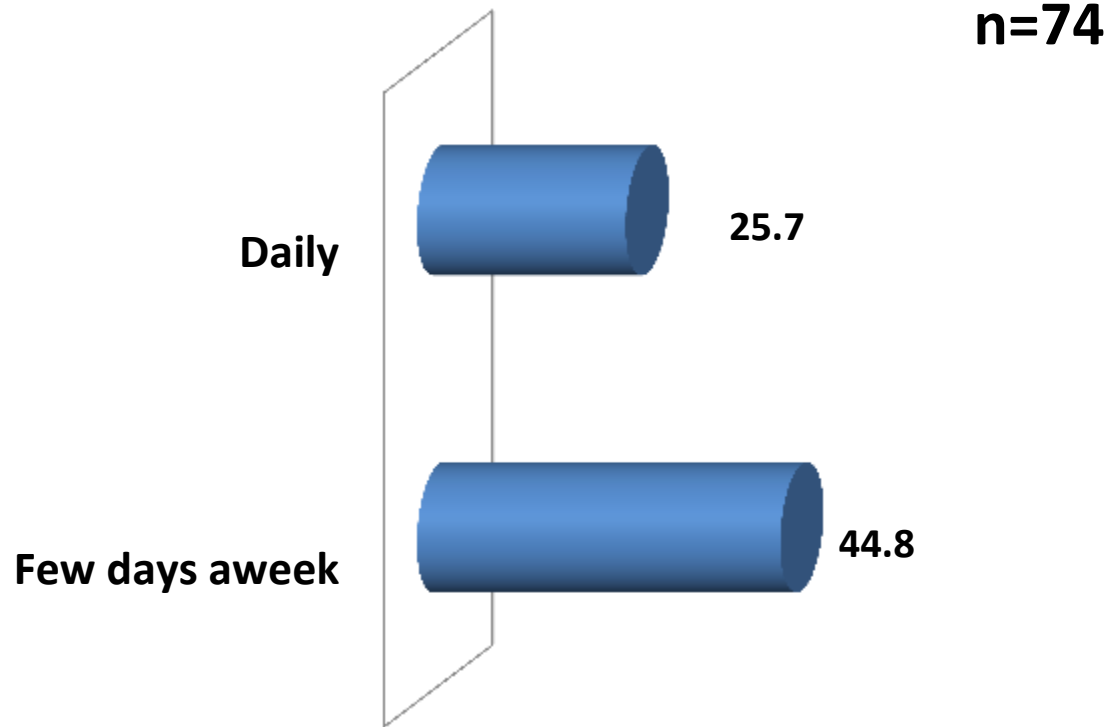
### Monthly Expenditure on Fish Procurement

■ upto 10,000   ■ 11,000 to 25,000   ■ >25,000

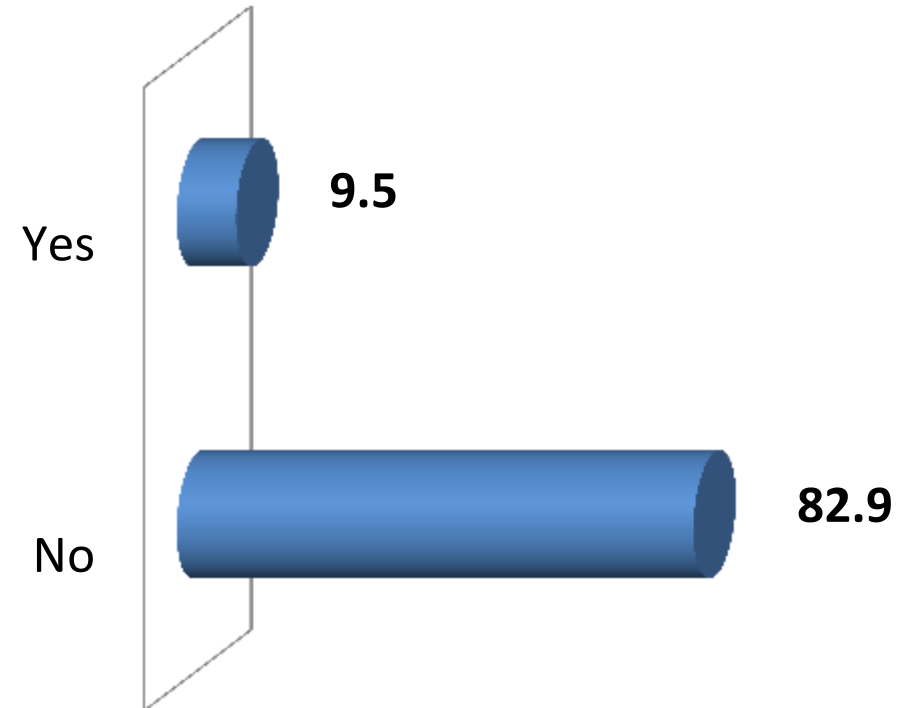


**Women fishers spend half of the monthly income for the procurement of fishes**

## Days of Marketing



## Part time business



**44.8 %** fisher women prefer to go in peak days (Sunday, Wednesday and Friday ) due to high sale  
Among 105 sample- **74** are ***fish retailer*** and **31** are ***Non fish retailer***.

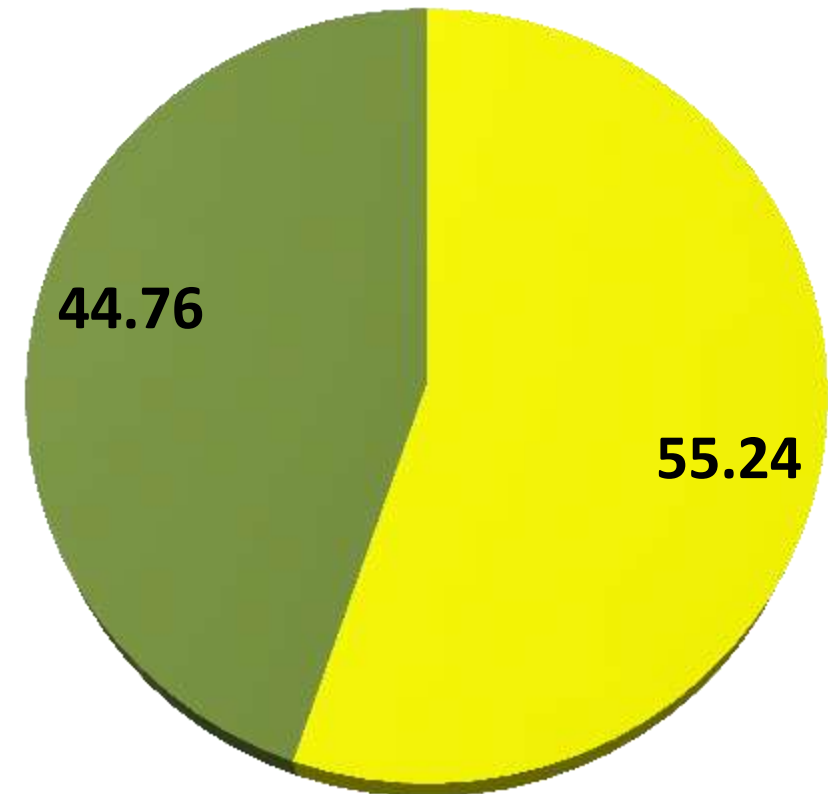
## Use of Mobile Phone

n=105

Yes	78.1 %
No	21.0 %

## Kind of Mobile Phone

Smart Phone Basic Phone n=82

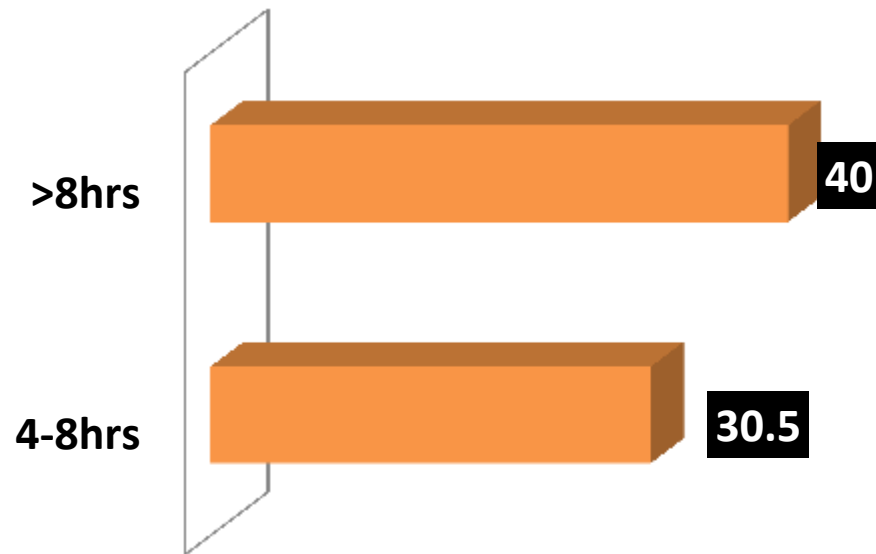


# Market Profile of Women Fishers

n=74

Average quantity sold by the fisherwomen= 31 kg/ day

## Time spent in fish marketing



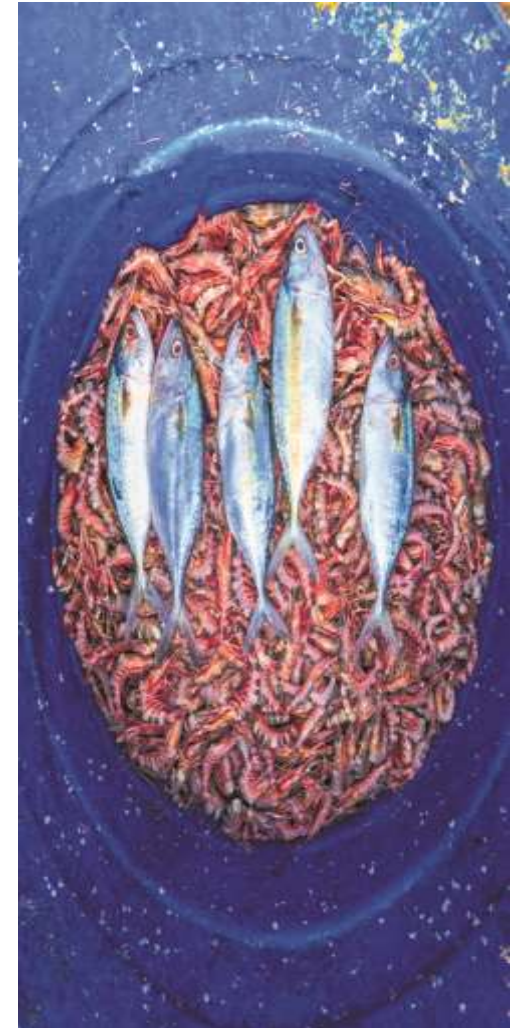
Own/Others boat

27.6

Wholesaler

42.9

## Source of fish purchase



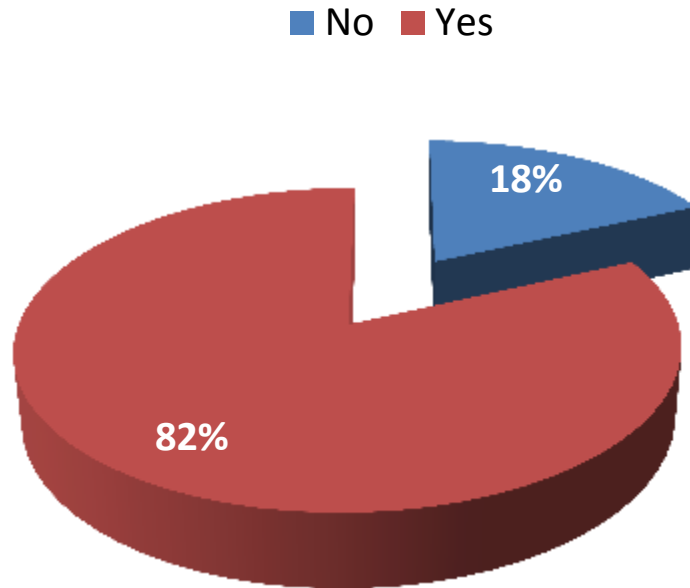
- 42.9% of the Women fisher purchase fishes from wholesaler.
- Mode of purchase of fish - through auctioning



# Women Fishers' Willingness To Sell Online (WTSO)

n=105

## Willingness for market online

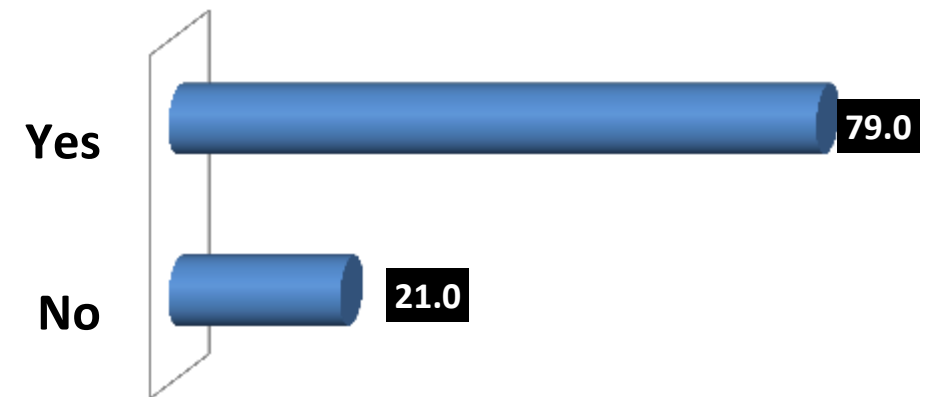


**82%** fisher women were willing for online marketing

## Awareness about online shopping

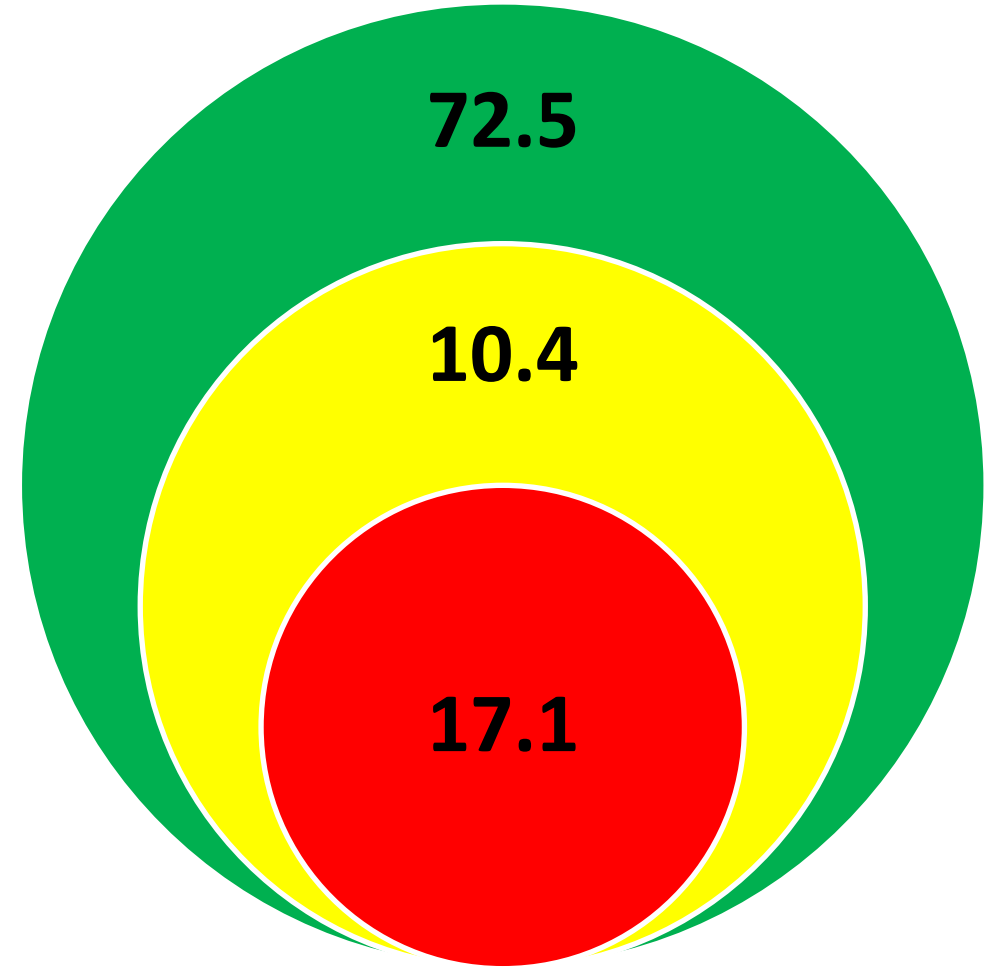
	Frequency	Percent
Yes	61	<b>58.1</b>
No	42	40.0
Total	103	98.1

## Willingness to participate in training program



# Index of Willingness To Sell Online (I-WTSO)

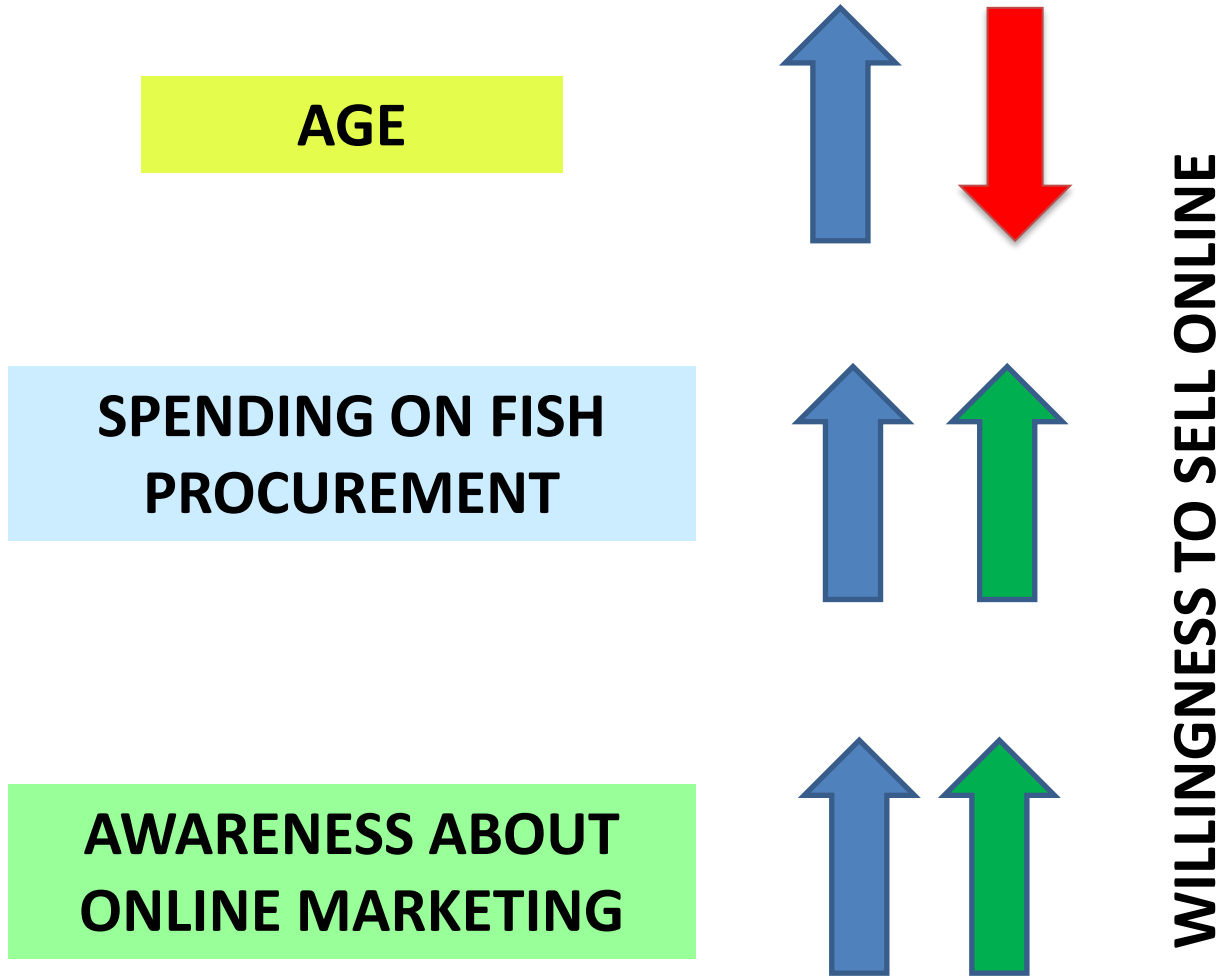
	Frequency	Percentage
Low (<0.33)	18	17.1
Medium (0.34-0.66)	11	10.4
High (>0.66)	76	<b>72.5</b>



## Correlation among Willingness to Sell fish Online and socio-economic variables

Variable	Willingness To Sell Online
<b>Age</b>	<b>-.453**</b>
<b>Education</b>	<b>.412**</b>
<b>Expense on fish purchase</b>	<b>.306**</b>
Household Income	NS
Part time business	NS
Other source of income during lean season	NS
<b>Use of mobile phone</b>	<b>.385**</b>
Kind of mobile phone	NS
Basic phone with internet	NS
Smartphone with internet	NS
Duration of internet	NS
Time spend in market	NS
<b>Awareness about online fish marketing</b>	<b>.323**</b>

\*. Correlation is significant at the 0.05 level (2-tailed).  
 \*\*Correlation is significant at the 0.01 level (2-tailed).



- With *increase in age for each year*, the probability of WTSO *decreases* by 0.92 units

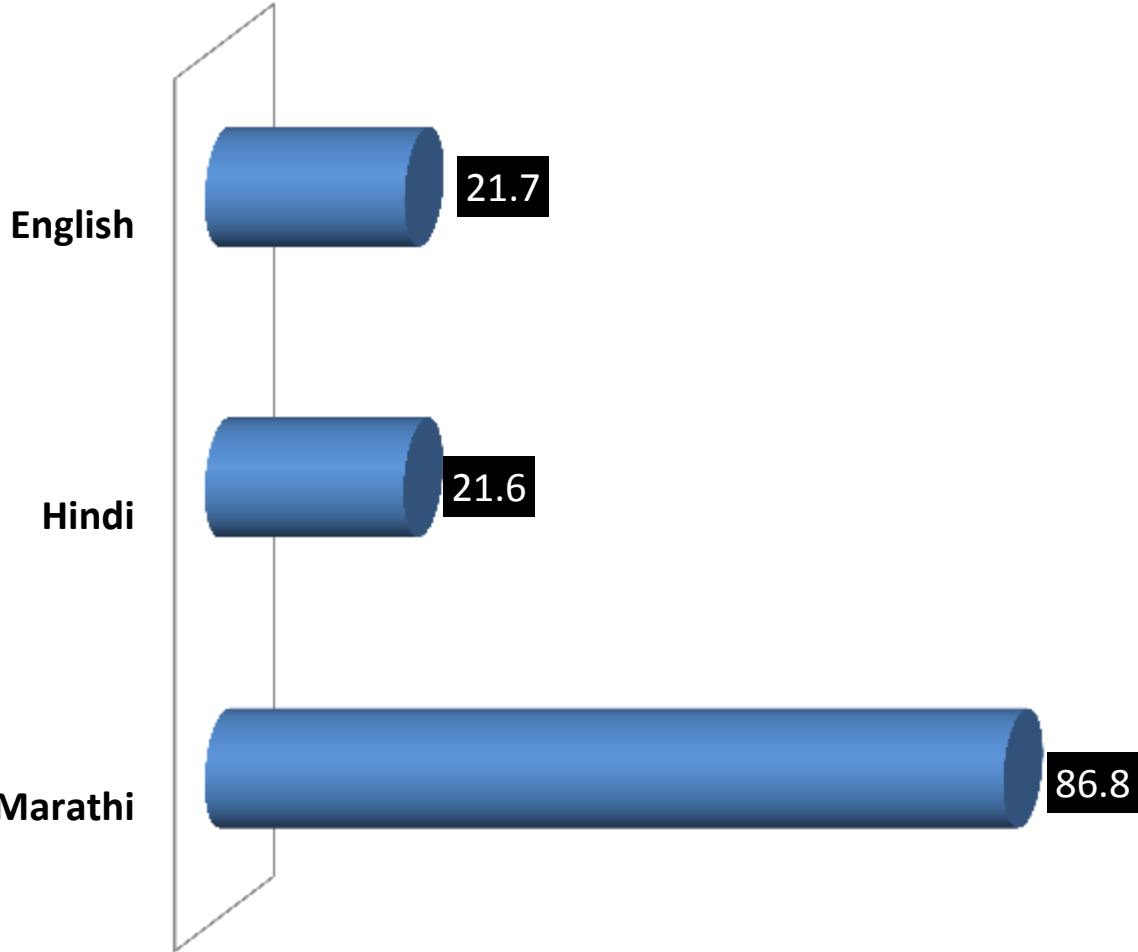
- With *increase in spending on fish procurement* (>25,000/month), the probability to go for online marketing increases by 2.4 units i.e log odds in favour of selling online increases by 24%

- With *increase in awareness about online marketing*, the probability to go for online marketing increases by 3.7 unit i.e log odds in favour of selling online increases by 37%

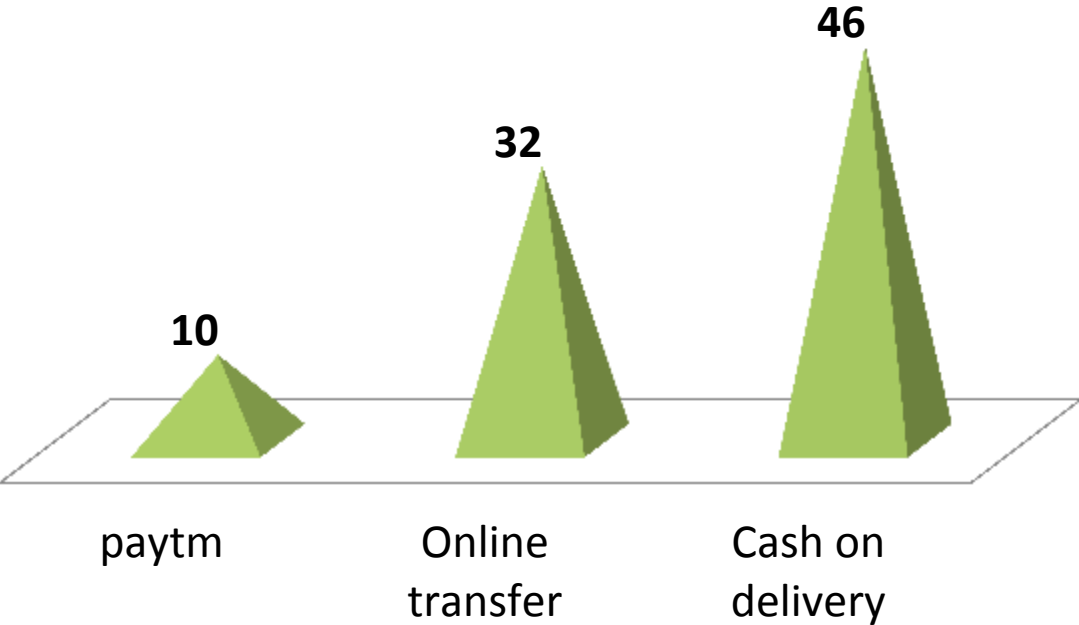
	$\beta$	S.E.	Sig.	Exp( $\beta$ )
Age	-.080	.038	.036	.923
Expense on fish purchase	.902	.604	.040	2.464
Awareness about online fish sale/marketing	1.331	.973	.050	3.783
Constant	-1.995	2.957	.500	.136

# WOMEN FISHER EXPECTATION ABOUT MOBILE APP

## Language expectation



## Payment expectation

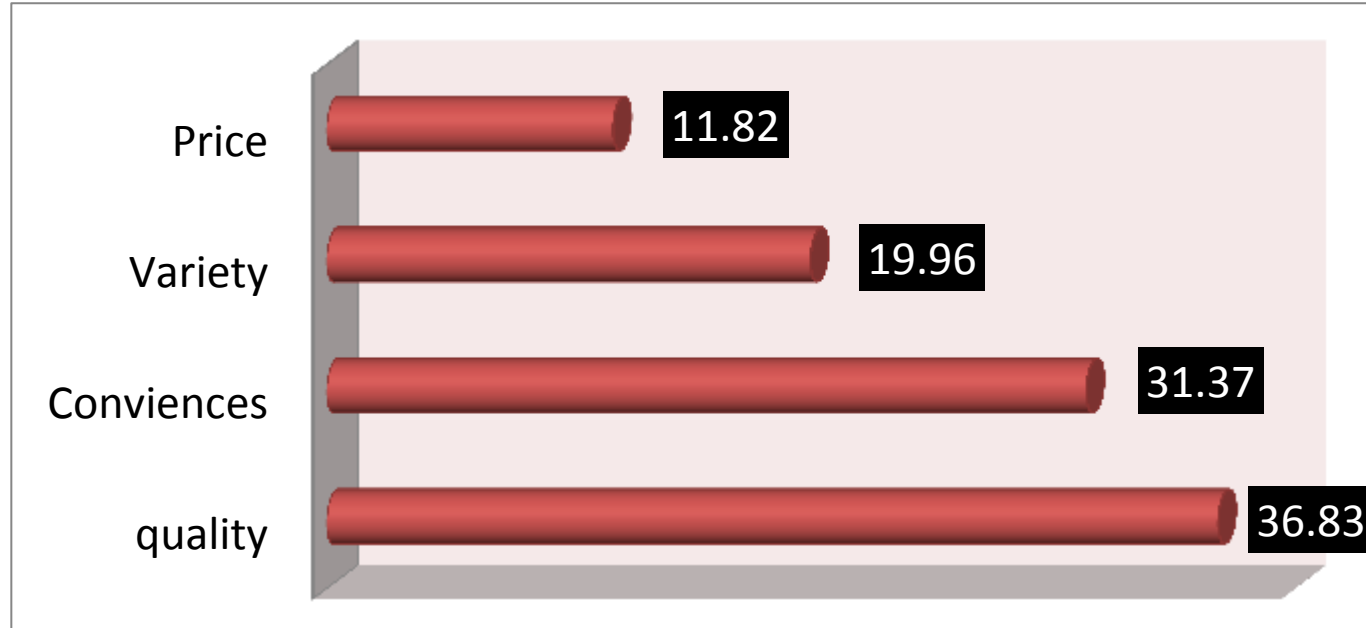


Average expected income of fisher women = **Rs. 2,200/day**



# Consumer expectation about online purchase

n=105



Quality	36.83%
Convenience	31.37%
Variety	19.96%
Price	11.82%

consistency index  
 $CI = \frac{4.04336238 - 4}{4 - 1}$   
 $= \frac{0.0436238}{3}$   
 $= 0.0145$

Consistency ratio  
 $CR = \frac{CI}{RI}$   
 $= \frac{0.01454}{0.9}$   
 $= 0.016$  i.e 1.61%

Largest Eigen value= 4.0433

Normalized principle eigen value =0.3683

0.3137

0.1996

0.1182

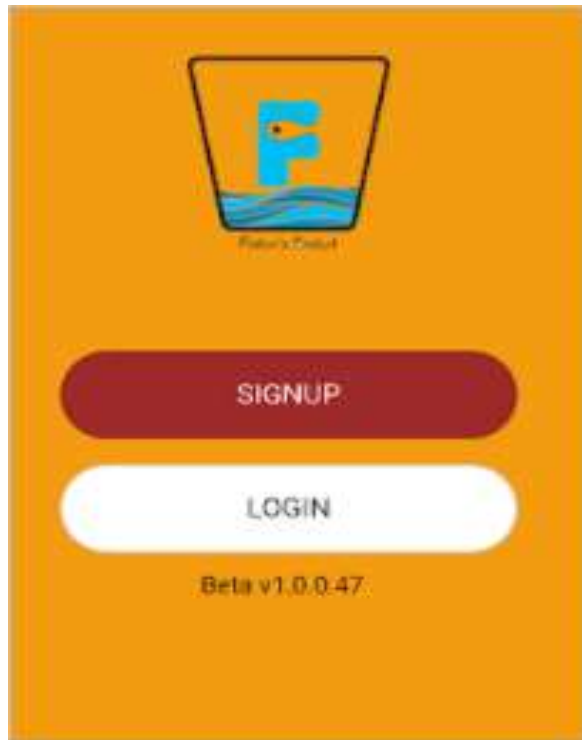
CR which is less than 10%, thus the evaluation about factor prefer by the consumer for online purchase is consistent

\* ANALYSIS COMPETED USING ANALYTICAL HIERARCIAL PROCESS



## Designing & testing of Mobile App prototype: *Fisher's Basket*

- Mobile app prototype was prepared **analysis of women fishers profile, perception and expectations**, as well as based on the **review of existing ecommerce Applications**, prototype
- With the help of a software engineer, a mobile App was developed on android API platform & tested among fish sellers & consumers
- Mobile App (***Fisher's Basket***) was made functional for a week. Printed packaging material, with customized logo and prints.
- The women fisher were given orientation



## ORIENTATION PROGRAMME FOR WOMEN FISHER

- A detailed demonstration was given about the working of mobile app prototype
- Interactive session was held on each of the selling –process
- The Do's and Don't to follow were explained to the women fisher

**Suggestions from fisherwomen are as follow:**

1. Species of fishes to be sold (pomfret ,shrimp, seer fish etc)
2. Sale type of fish and cuts
3. Categorization of fishes into Sizes (S/M/L)
4. Serving options for cooked or value added fish.
5. Uploading actual images
6. Explanation about diff options / drop downs





Distribution of packaging bags



Women fisher using mobile app  
(***FISHER'S BASKET***)



Packaging material



# ***MOBILE APPLICATION- FISHER'S BASKET***



Fisher's Basket

SIGNUP

LOGIN

Beta v1.0.0.48



Stock Management


Select Category Fin Fish


- All
- Fin Fish
- Shell Fish
- Dried Fish
- Value Added
- Kitchen Secret
- Cooked Fish


Up for Sale to accept order


Fin Fish (10)


ALL


- 

**Pomfret**  
Samiksha  
Product Code : 1  
₹ 20.0 ₹ 0.0
- 

**Pomfret**  
Bharthi Dogrikar  
Product Code : 22
- 

**Pomfret**  
Sonali Karde  
Product Code : 29
- 


**Bombil**  
Bharthi Dogrikar  
Product Code : 23
- 

**Bombil**  
Sonali Karde  
Product Code : 30
- 

**Bangda**  
Bharthi Dogrikar  
Product Code : 24

Filter Sort

Stock Management



**Stock List**

Small_Single_cost ₹10 Qty : 10	Available
Small_Pair_cost ₹150 Qty : 10	Available
Small_Bucket_cost ₹600 Qty : 1	Available
Medium_Single_cost ₹210 Qty : 0	Available
Medium_Pair_cost ₹220 Qty : 0	Available
Medium_Bucket_cost ₹230 Qty : 0	Available
Large_Single_cost ₹310 Qty : 0	Available
Large_Pair_cost ₹320 Qty : 0	Available
Large_Bucket_cost ₹1000 Qty : 10	Available

Up for Sale to accept order

# Order received by consumer



Order list [Statistics](#) [Profile](#)

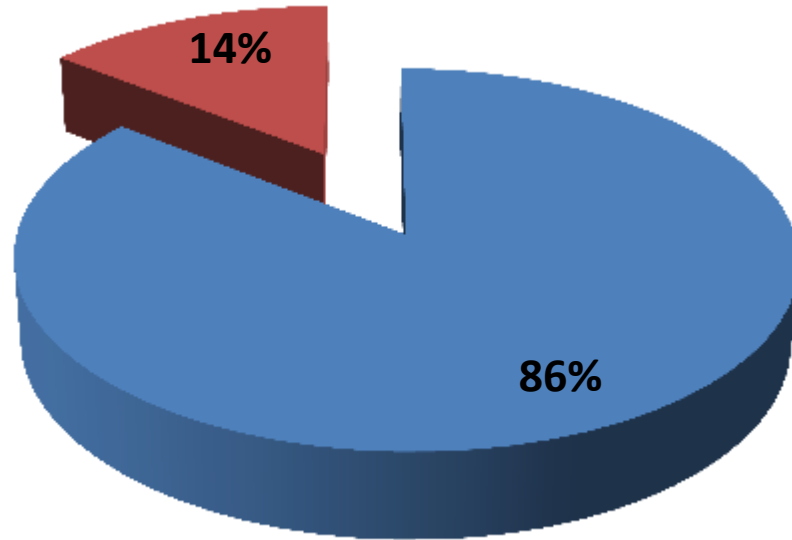
My orders Filter: [All orders](#) [Active](#) [Completed](#) [Drafts](#)

Order	Created ↓ ↑	Arrival time ↓ ↑	Status	Price, ₹	Delivery address	Service rate
<a href="#">22517</a>	14.08.18 at 12:15	14.08.18 at 13:30	Order completed 13:20 14.08.18	₹ 130 <a href="#">Details</a>	dongrikar house,dsouza wadi,shiv gully, Versova, Andheri West, Mumbai, Maharashtra 400047, India	★★★★★
<a href="#">22488</a>	14.08.18 at 10:30	14.08.18 at 12:00	Order completed 16:01 14.08.18	₹ 100 <a href="#">Details</a>	dongrikar house ,dsouza wadi,shiv gully versova,andheri west	Thanks for the feedback! It will help us improve the quality of services.
<a href="#">22404</a>	13.08.18 at 17:36	13.08.18 at 19:00	Canceled: Order was placed by mistake	₹ 108 <a href="#">Details</a>	Saudi Arabia	
<a href="#">22403</a>	13.08.18 at 17:36	13.08.18 at 19:00	Order completed 19:28 13.08.18	₹ 108 <a href="#">Details</a>	dongrikar house, dsouza wadi, shiv gully,versova,andheri west mumbai-400081	★★★★★ 4
<a href="#">22386</a>	13.08.18 at 18:53	13.08.18 at 19:00	Order completed 19:28 13.08.18	₹ 108 <a href="#">Details</a>	Versova, Andheri West, Mumbai, Maharashtra, India	★★★★★

## FEEDBACKS FROM WOMEN FISHERS AFTER USE

Do the App / online sale will increase your total fish sale and income

■ Yes, totally agree    ■ Yes partially agree

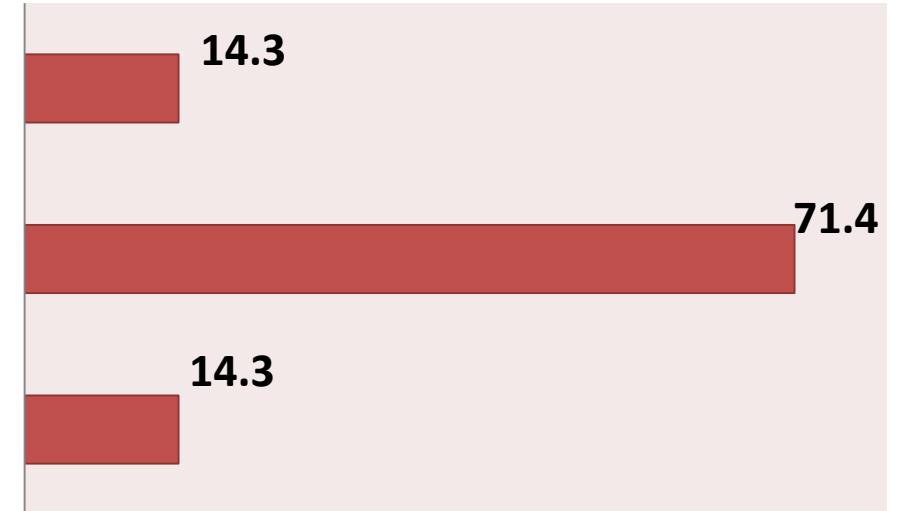


Do mobile App provides a convenient way to sell fish

Not sure at this stage

Partial agree

Totally agree



- **Cent percent** of Women fisher believes that their your **overall confidence** has increased by participating in online fish sale using a mobile App and there is **need of such Mobile App** in near future

# Inferences

- Use of Mobile App **has increased the confidence** of women fishers to sell online.
- study revealed that **awareness and use of mobile phone increases the likelihood** to sell fish online - appropriate handholding & capacity building will make them benefit from modern e-retailing
- Mobile App is found to be a **convenient** and **desirable** by women fishers as it reduces **work load, time** and **stress** which are common in traditional fish marketing.
- The App has also helped **expand the working/marketing area** of women fishers who were confined to restricted market space.
- This social experiment has opened a **window of opportunity to make an additional revenue** to women fishers



- Need to provide **proper training** about the using of mobile App and handling of fishes for **online marketing, quality, packaging and warehousing**.
- **May help reduce Gender Gap** and provide greater access to resources as significant earning members as compared to their male companions
- Need **gender friendly credit and investment support** to scale-up e-fish retailing by women



# ACKNOWLEDGEMENT

*My sincere acknowledgement and regards to the Women fishers of Mumbai*

*Express my deep sense of thankfulness to the Sponsors for giving me an opportunity to present my work @GAF7*







Each one of us can make  
a difference. Together  
we make change.



**THANK YOU**