






VisionSpring

Impact Evaluation:
A Case Control Study in Andhra Pradesh, India










Research Objectives

- To evaluate the impact of wearing reading glasses in increasing work-related productivity among the population living with Presbyopia
  - Productivity-Related Questions adapted from Margaret Reilly (1993) Work Productivity and Activity Impairment Questionnaire (WPAI)

- To evaluate the impact of wearing reading glasses in increasing monthly income among the population living with Presbyopia
  - Income-related questions are the self reported questions asked on the income value from all sources of income and estimated total income in in the preceding month.
  - Probing question to reduce the respondent bias as seen the difference between the calculated and the estimated total income values

Research Design

- Customer and comparison group matched for age, income, livelihood, and village type
- **Customers:** defined as those who attended a VisionSpring eye camp, had Presbyopia and chose to buy reading glasses
- **Controls:** defined as those who attended a VisionSpring eye camp, had Presbyopia, and chose *not* to buy reading glasses
- **Sampling plan:**
  - Total sample distributed across four districts of varying socioeconomic status in AP
  - Exit interview of respondents (case and control) as per availability and comfort of respondent recruited at the eye camp site
  - Oral informed consent
  - Interview using structured questionnaire
- **Matched sample Size**
  - 261 customers (variable group)
  - 205 comparison group members (control group)

Summary of Research Findings

Those wearing reading glasses reported significantly higher monthly income growth (20%) as compared to those not wearing reading glasses

Those wearing reading glasses reported significantly higher productivity (34%) as compared to those not wearing reading glasses

Population Characteristics (Baseline)

Indicators	Control	Customer
Age		
Less than 37 years	27%	15%
38 to 43 years	24%	30%
44 to 49 years	18%	25%
more than 49 years	31%	30%
Median age	*43*	*45*
Sex		
Male	44%	59%
Female	56%	41%
Education		
Illiterate	43%	28%
Completed primary school	34%	39%
Completed higher secondary school	17%	28%
Upto university degree	6%	5%
Marital Status		
Single/divorced/widow(er)	12%	9%
Married/partnered	88%	91%

Population Characteristics (Baseline)

Indicators	Control	Customer
People living in the household		
Upto 2 people	28%	28%
Three people	26%	25%
More than 3 people	46%	47%
People earning income in the household		
One member	26%	41%
Two members	46%	40%
More than 2 members	28%	19%
Religion		
Muslim/Sikh/Christian	26%	23%
Hindu	74%	77%
Member of Self Help Group	48%	41%
Received Micro Credit Loan in the past year	37%	33%
Mean Income in Rs. (Baseline)	696	739
Mean Income in Rs. (Endline)	767	964

Note: Income variable analyzed for those who reported monthly income levels less than Rs. 5001 (Customer 99%, Control-98%)

Baseline Analysis of Population Characteristics

- Men are more likely to become customers
- Illiterate individuals are less likely to buy reading glasses
- Customers reported higher levels of income
- Single earning member in the household is more likely to become customer

Analysis of Outcome

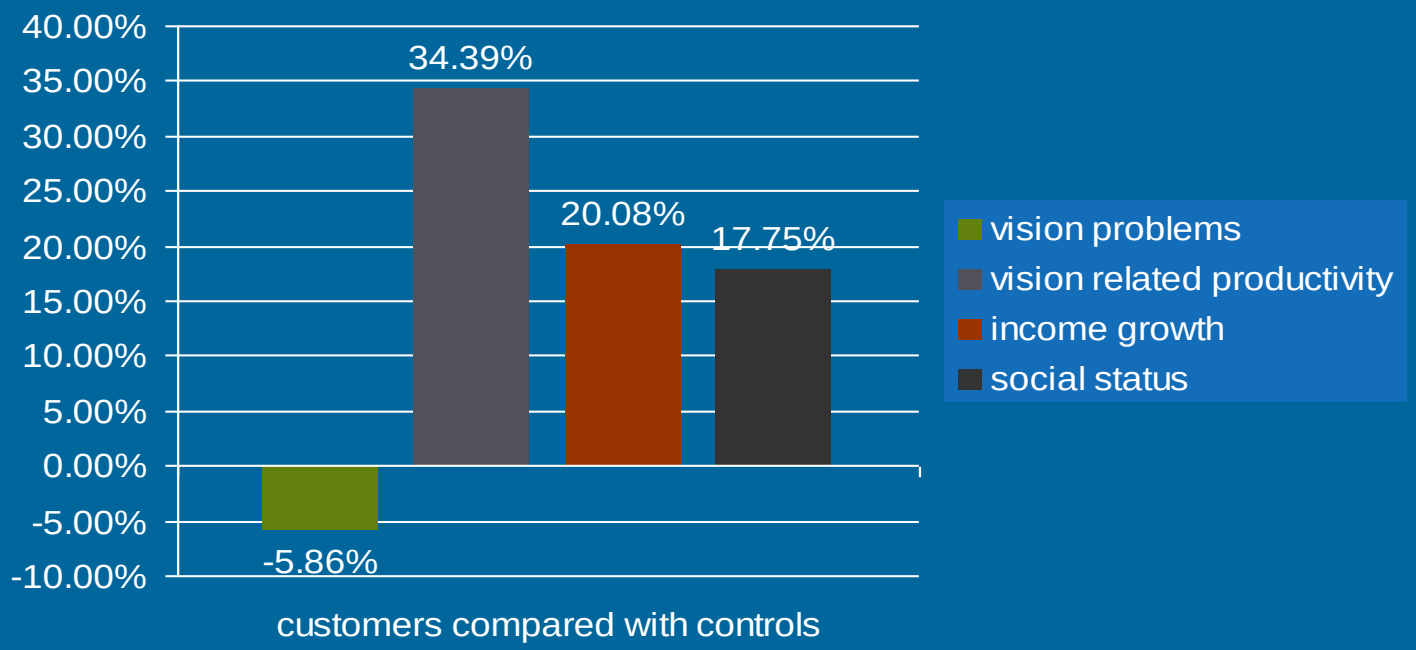
- Estimate a regression model that controls for pre-existing differences.

- Use this regression model to get an estimate of the effect of the intervention on the difference between customers and controls.

- Calculate a percentage difference:

$$\text{Effect} = \frac{\text{difference between customer and control}}{\text{outcome score for comparison}} \times 100$$

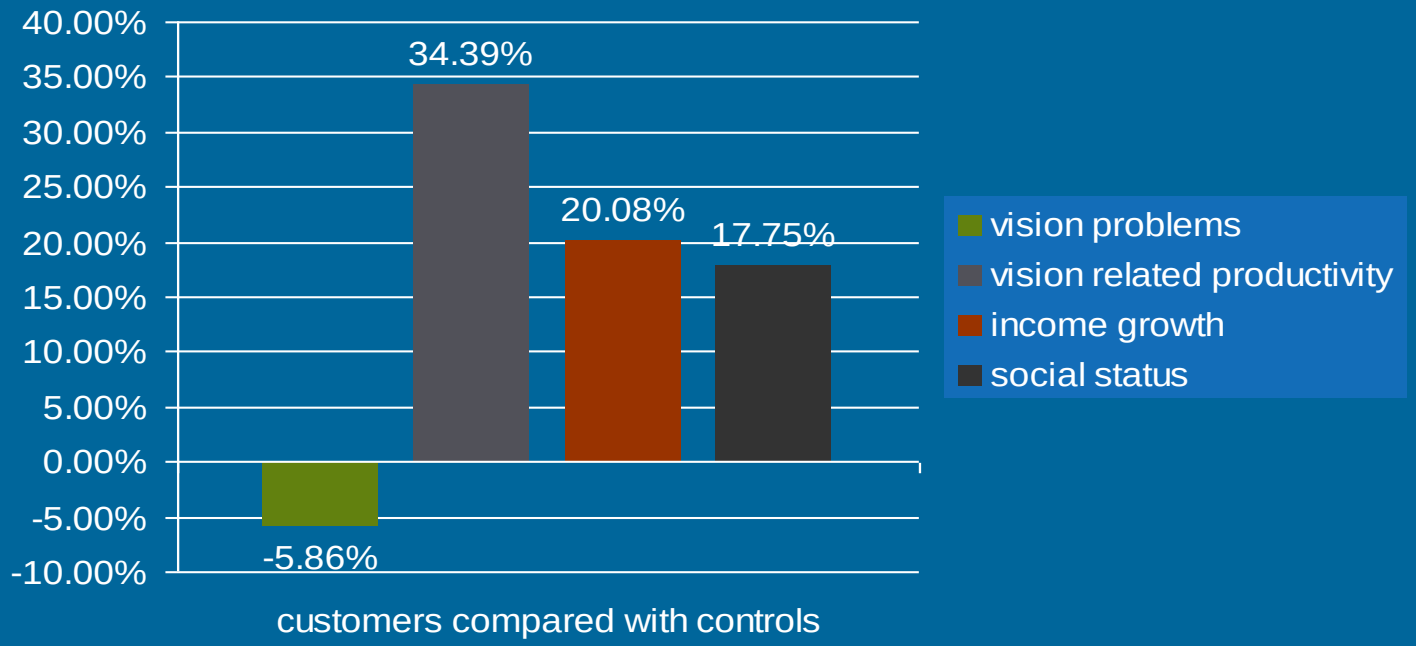
Outcomes: Customer Vs. Comparison Group



Measure: RAND's (2000) National Eye Institute Vision Functioning Questionnaire (VFQ) consists of 25 questions and is an item reduction from a larger 51-item questionnaire(RAND 1996)

Customers had fewer vision problems than comparison group.

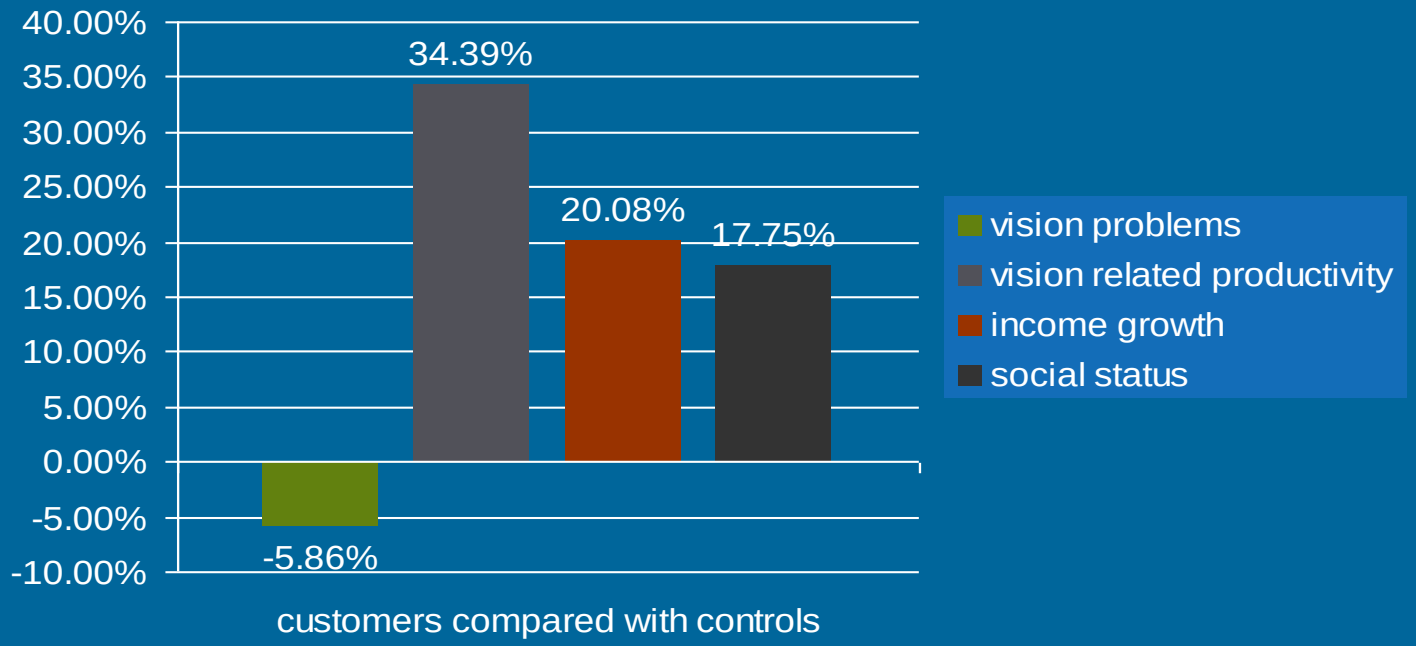
Outcomes: Customer Vs. Comparison Group



Measure: Margaret Reilly (1993) Work Productivity and Activity Impairment Questionnaire (WPAI). We leveraged 2 of 6 questions in this questionnaire with response scales ranging from 0 "Vision problems had no effect on my [activities]" to 10 "Vision problems completely prevented me from my [activities]" to assess the effect of vision problems on work productivity and ability to do regular daily activities other than work at a job.

Customers had higher productivity related to vision than comparison group.

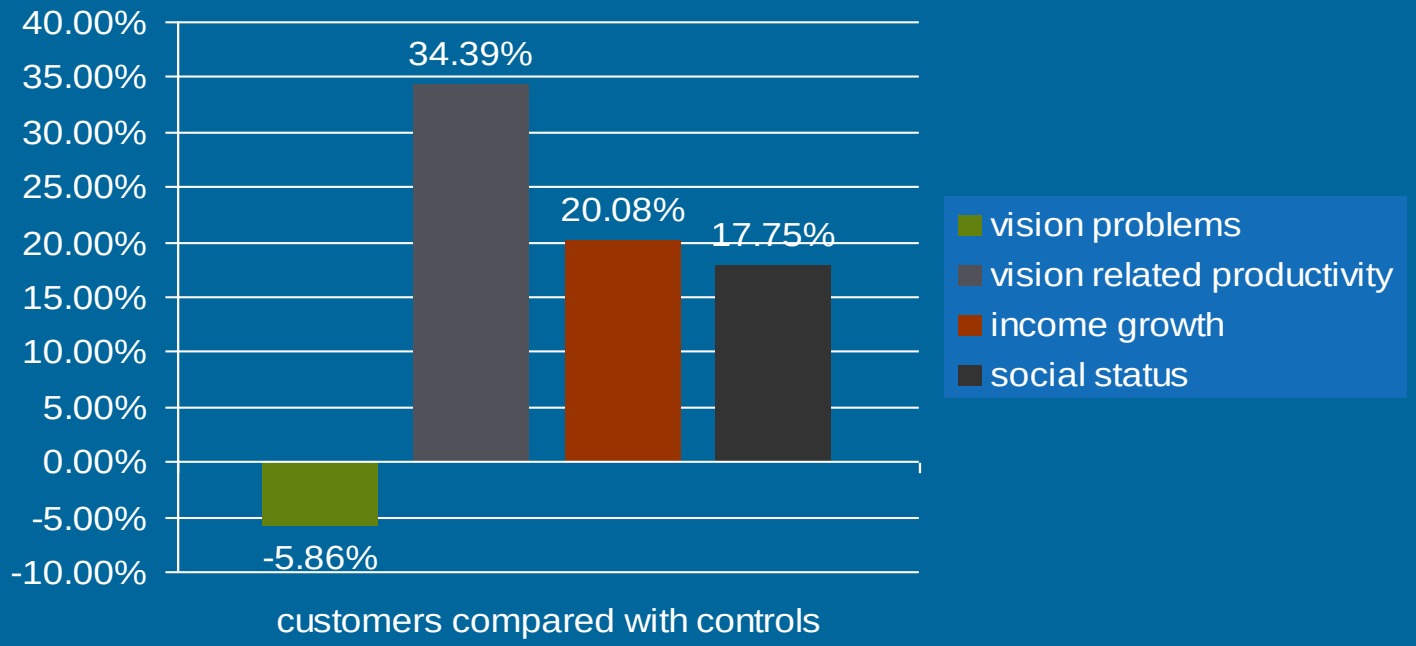
Outcomes: Customer Vs. Comparison Group



Measure: Income-related questions are the self reported questions asked on the income value from all sources of income and estimated total income in in the preceding month. Probing question to reduce the respondent bias as seen the difference between the calculated and the estimated total income values

Customers had higher income growth than comparison group.

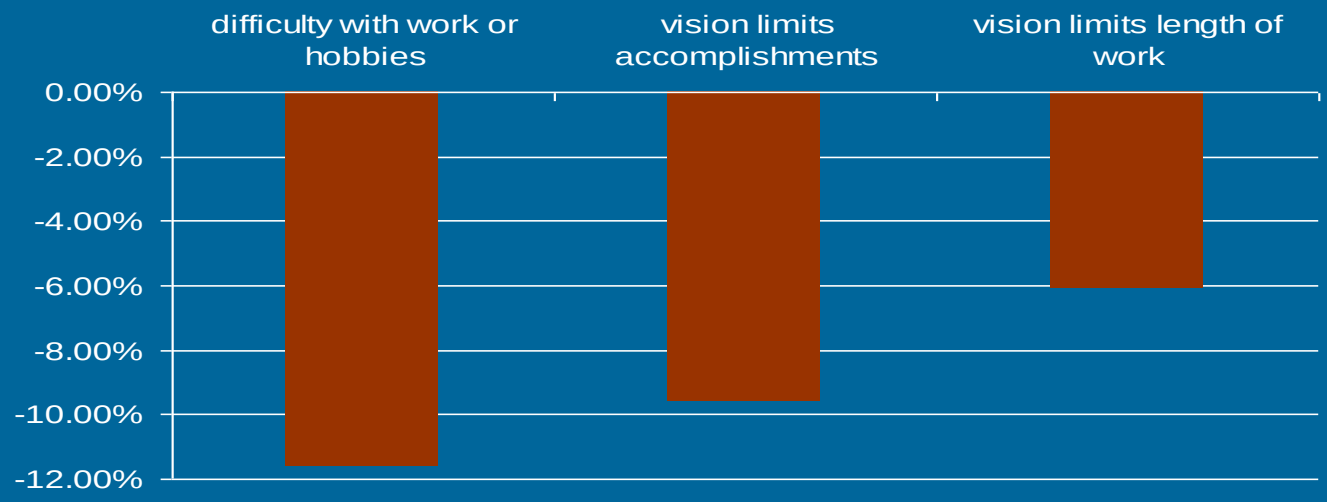
Outcomes: Customer Vs. Comparison Group



Measure: The MacArthur Scale of Subjective Social Status asks respondents to compare themselves to others socioeconomically using 10 rungs of a ladder, with 10 at the top of the ladder as "those who are the best off-who have the most money, the highest amount of education, and the most attractive jobs" and 1 at the bottom of the ladder as "those who are the worst off-they have the lest money, little or no education, and the least attractive jobs"

Customers reported a higher social status than the comparison group.

Outcomes: Customer Vs. Comparison Group



Questions: Individual questions from RAND's (2000) National Eye Institute VFQ.

- How much difficulty do you have doing work or hobbies that require you to see well up close, such as cooking, sewing, fixing things around the house, or using hand tools? Would you say: No difficulty, a little difficulty, moderate difficulty, extreme difficulty, stropped doing this because of your eyesight, stopped doing this for other reasons or not interested in doing this
- Do you accomplish less than you would like because of your vision? All of the time, most of the time, some of the time, a little of the time, none of the time
- Are you limited in how long you can work or do other activities because of your vision? All of the time, most of the time, some of the time, a little of the time, none of the time

Customers had fewer vision problems than comparison group with regard to many specific items on the vision questionnaire (as shown above).

Program Recommendations

- Create price points to make reading glasses affordable (or ways to cross-subsidize glasses) to the lower income population since those with higher income are more likely to buy reading glasses
- Alternatively, increase willingness to pay to attract more customers
- Develop product and service marketing mix to create outcome expectations of increased productivity and increased income rather than improved vision alone
- Create product appeal among non-income earning individuals and develop strategies to position product as offering improved social status
- Develop marketing strategies to expand the usefulness of reading glasses beyond “reading” to illiterate individuals
- Design and implement behavioral research to better understand behavior beyond income and socio demographic factors
- Develop measurements to research and observe “affordability” and “willingness to pay” to inform pricing strategy of eyeglasses

Appendix

Analysis of Income…cont.

Where do we see impact?

	Control		Customer	
	Baseline	Endline	Baseline	Endline
No income	45%	41%	45%	40%
Upto Rs. 1000	31%	32%	27%	24%
Rs. 1001 - 2000	15%	17%	20%	26%
More than Rs. 2000	10%	10%	8%	11%

- **45% of respondents reported no income at baseline.**
- **Income of Rs. more than 1000, at the endline, contributes 37% vs. 28% at the baseline among the customer group**

Analysis of Income…cont.

Male vs. Female Groups

Males

	Control		Customer	
	Baseline	Endline	Baseline	Endline
No income	39%	36%	42%	35%
Upto Rs. 1000	22%	27%	23%	18%
Rs. 1001 - 2000	26%	20%	23%	29%
More than Rs. 2000	14%	16%	12%	18%

Females

	Control		Customer	
	Baseline	Endline	Baseline	Endline
No income	50%	46%	49%	46%
Upto Rs. 1000	35%	35%	33%	32%
Rs. 1001 - 2000	11%	14%	14%	20%
More than Rs. 2000	4%	5%	4%	2%

- **Among male customers, higher percentage of respondents reported earning income at the endline vs. baseline.**
- **Among the female customers, increase in the income between Rs 1001 and Rs. 2000 at the endline as compared to the baseline.**

Analysis of Income…cont.

Illiterate vs. Literate Groups

Illiterate

	Control		Customer	
	Baseline	Endline	Baseline	Endline
No income	51%	44%	44%	40%
Upto Rs. 1000	32%	36%	29%	31%
Rs. 1001 - 2000	11%	16%	19%	24%
More than Rs. 2000	6%	5%	7%	6%

Literate

	Control		Customer	
	Baseline	Endline	Baseline	Endline
No income	41%	40%	46%	39%
Upto Rs. 1000	30%	29%	26%	21%
Rs. 1001 - 2000	18%	17%	20%	26%
More than Rs. 2000	10%	14%	9%	14%

- **Among literate customers, higher increase in the category of Rs. more than 1000 at the endline as compared to literate control group.**
- **Among the illiterate group of customers and controls, similar pattern of change in the incomes observed at the endline.**