

BME 180/EngrMSE 189: Winter 2020 Quarter Senior Design

Homework #2
Customer Interviews
Team AER

I. Market Research Plan

A. Goals and Objectives

- Understanding the market demand for our product.
- Obtaining data so that we may accurately target the audience with our product.
- Noticing the buyers' attitudes and purchasing behaviors towards pollution mitigating technologies.
- Being aware of the buyers' desired function and conception of the product.
- Recognizing the buyers' needs.
- Realizing the market's competition and risk for the company.

B. Recruitment Criteria

- People who live in cities with environmental pollution.
- People who have irregular breathing due to air conditions around them.
- People who are between the ages of 20 and 30.

C. Supporting Content

We have decided to do an online survey for our 25 recruitees.

D. Open-Ended Questions

“ Breathing Pattern Disorders Caused by Environmental Factors”

1. In the past 5 years, have you experienced irregular breathing (short, rapid breaths, or lack of breaths)?
2. How often have you experienced these symptoms?
3. Have you been diagnosed with any of the following breathing problems?
4. Have you been exposed to air pollution in the past 5 years?
5. Has your condition been affected when exposed to air pollution?
6. How would you describe the air quality in your city to be?
7. What kind of remedies have you tried to solve your problem of irregular breathing? What was your experience with them?
8. Would you be willing to use a handheld device that would purify the air you breathe and decrease your symptoms?
9. How much are you willing to pay for such a device?
10. Which country are you from?
11. Who else do you know that I should speak to? Would you be willing to make an introduction?

The link to the survey is: <https://www.surveymonkey.com/r/X79VDNV>.

II. Conducting the Interview Process

We have recruited our interviewees through Facebook, LinkedIn, and our connections at IVC. Below are the results of our survey:

1. In the past 5 years, have you experienced irregular breathing (short, rapid breaths, or lack of breaths)?



Answered: 29

Skipped: 0

Yes	51.72%	15
Maybe	24.14%	7
No	24.14%	7

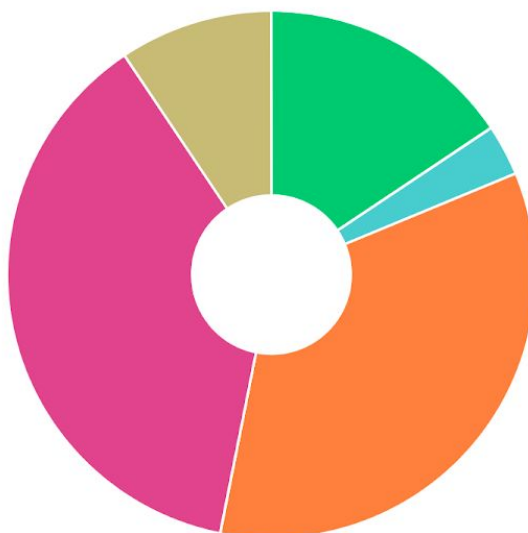
2. How often have you experienced irregular breathing?



Answered: 29 Skipped: 0

	On a daily basis	13.79%	4
	Few times a week	20.69%	6
	On a monthly basis	24.14%	7
	Almost never	41.38%	12

3. Have you been diagnosed with any of the following :



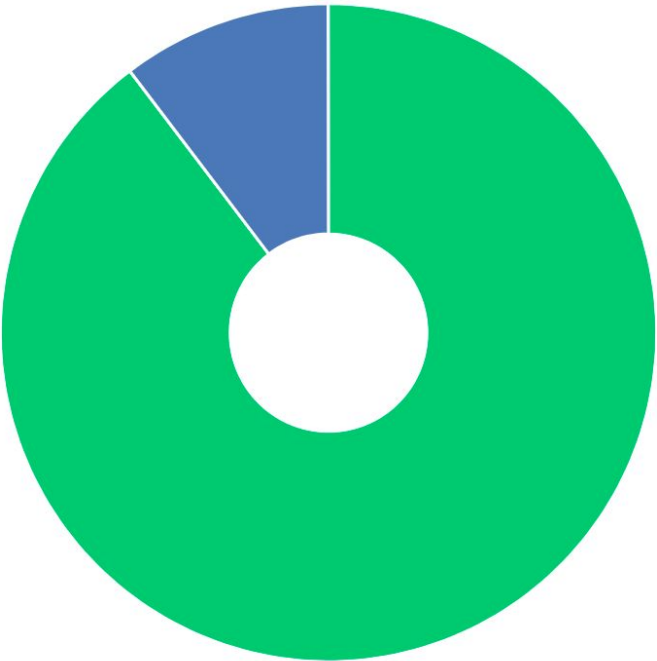
Answered: 29

Skipped: 0

Asthma	17.24%	5
COPD	0%	0
Emphysema	0%	0
Chronic Bronchitis	3.45%	1
Anxiety	37.93%	11
Heart Problems	0%	0
None of the above	41.38%	12
Other (please specify)	10.34%	3

Other answers included: Claustrophobia, dust/mold allergies

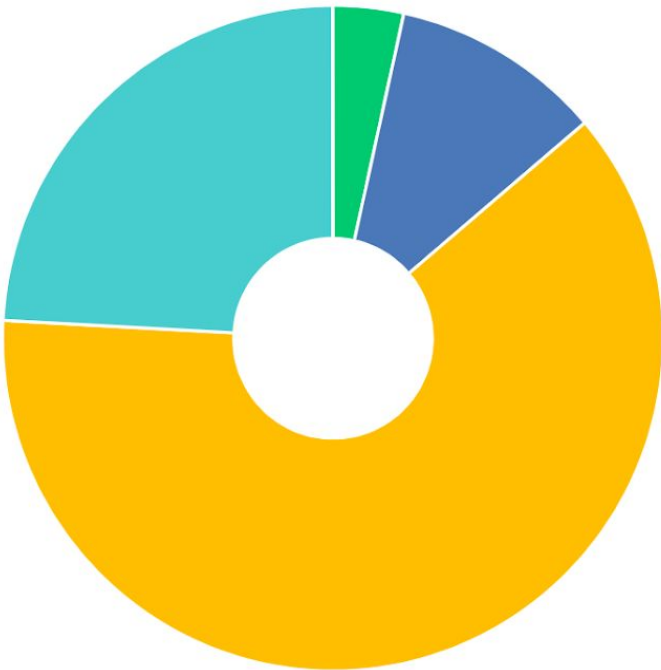
4. Have you been exposed to air pollution in the past 5 years?



Answered: 29 Skipped: 0

Yes	89.66%	26
No	10.34%	3

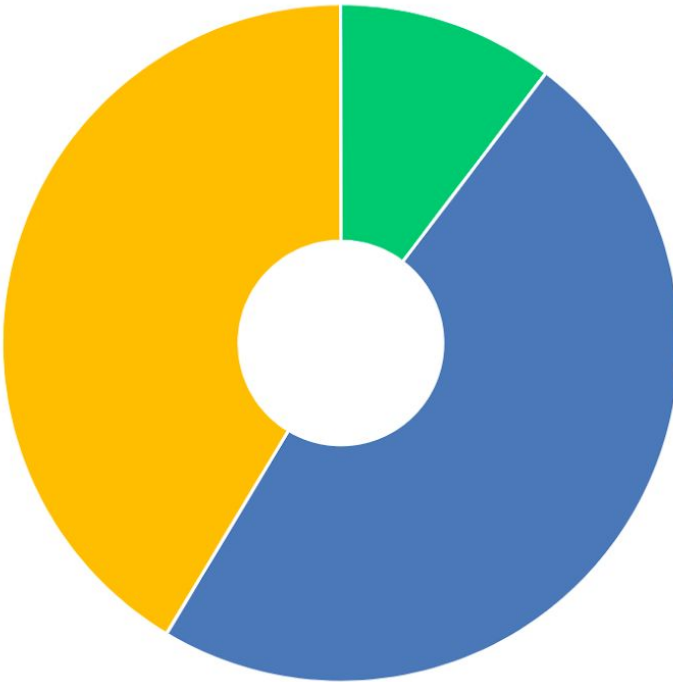
5. How would you describe the air quality in your city to be?



Answered: 29 Skipped: 0

Excellent	3.45%	1
Above average	10.34%	3
Average	62.07%	18
Below average	24.14%	7
Poor	0%	0

6. Has your condition been affected when exposed to air pollution?



Answered: 29 Skipped: 0

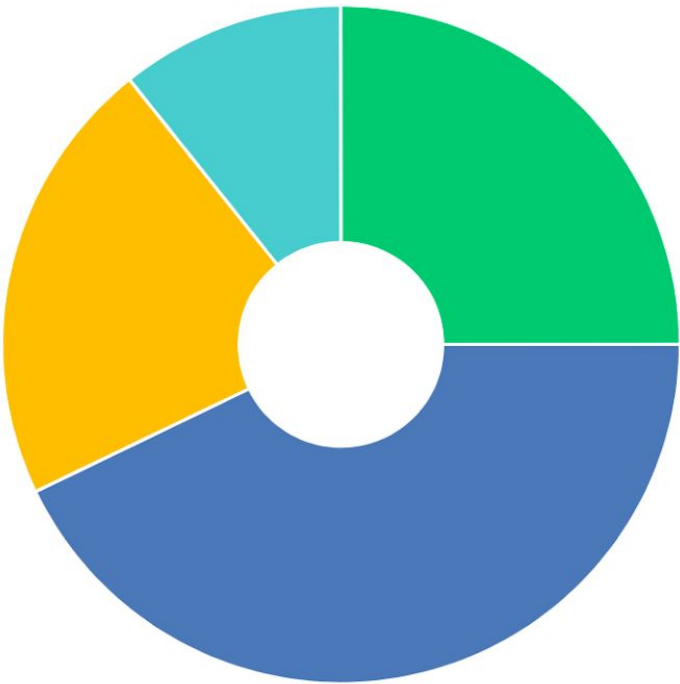
	My condition has worsened due to air pollution	10.34%	3
	My condition has been somewhat affected due to air pollution	48.28%	14
	My condition was not affected at all	41.38%	12

7. What kind of remedies have you tried to solve your problem of irregular breathing? What was your experience with them?

<input type="checkbox"/>	I have a hard time breathing due to smokers around us specially those smoking (drugs). I just cover my nose and after a few minutes I tried to inhale and exhale slowly	1/27/2020 12:36 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Try not to go places w ppl smoking and try not to catch a cold	1/26/2020 10:50 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Staying indoor and avoid strenuous work. It helps somewhat.	1/26/2020 4:03 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Air purifier & it's wonderful!	1/26/2020 11:12 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	HEPA air filters in apartment (very effective for dust-induced symptoms), automated vaccum (effective), breathing excercises (effective for anxiety-induced symptoms)	1/26/2020 10:47 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	I tried stress-relieving pills, green tea. It sort of worked.	1/26/2020 10:24 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Fluticasone Furoate Nasal Spray- still taking it	1/26/2020 2:52 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	I have not had irregular breathing.	1/25/2020 1:47 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Medication, staying indoors, air purifier	1/25/2020 10:57 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	usually drink water, or go indoors or something	1/25/2020 10:02 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Take the time until my breathing returns to normal	1/25/2020 9:44 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	N/A	1/25/2020 9:27 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	I don't			

<input type="checkbox"/>	Medicine	1/25/2020 7:58 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Deep breaths	1/24/2020 7:40 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Inhalers	1/24/2020 1:58 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	CB Therapy and 5 years of therapy, has not worked at all	1/24/2020 1:51 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Pure oxygen treatments. They helped but were temporary relief	1/24/2020 12:47 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	None	1/24/2020 12:19 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Relax	1/24/2020 12:04 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	No problems but lots of dust at home. Considered getting an air purifier but read some online reviews of amazon products and people claimed there was radiation from the air purifier. I believe the brand was Leviot.	1/24/2020 12:01 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Breathing exercises or contacting physician when uncontrollable	1/24/2020 11:56 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Asthma inhaler. They work great. Also avoiding people that smoke. It's disgusting and triggers my asthma badly	1/24/2020 7:22 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	non	1/24/2020 5:22 AM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	inhaler	1/23/2020 11:17 PM	View respondent's answers	Add tags ▼
<input type="checkbox"/>	Nothing was needed			

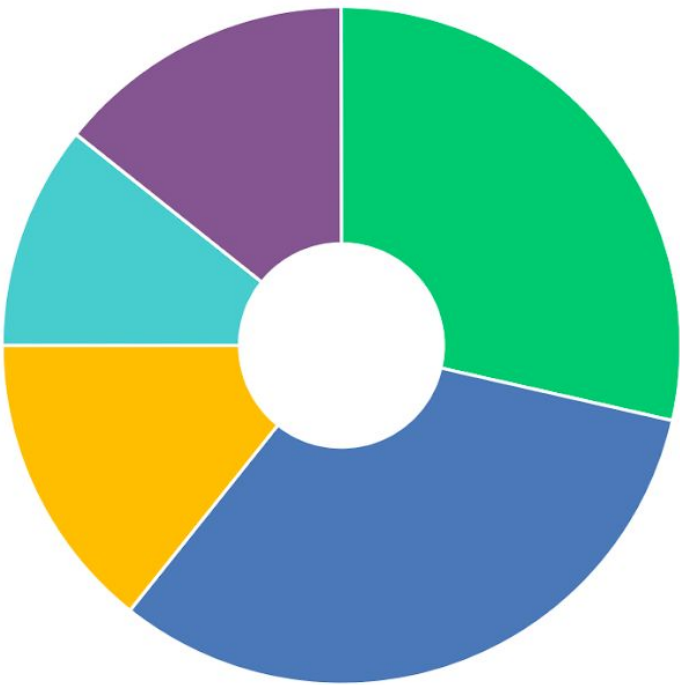
8. Would you be willing to use a handheld device that would purify the air you breathe and decrease your symptoms?



Answered: 28 Skipped: 1

Definitely would	25%	7
Probably would	42.86%	12
Probably would not	21.43%	6
Definitely would not	10.71%	3

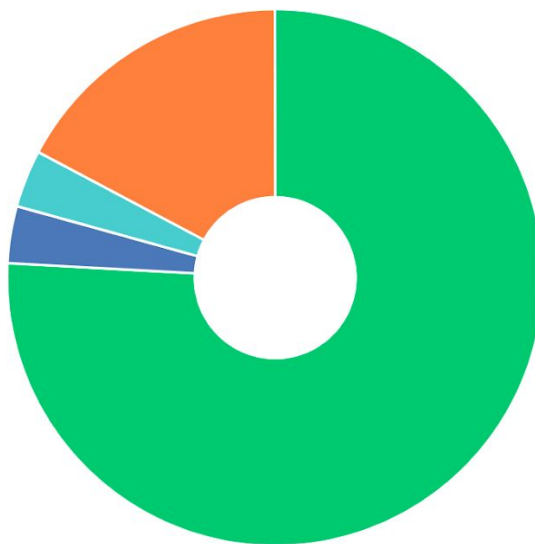
9. How much are you willing to pay for such a device?



Answered: 28 Skipped: 1

\$30+	28.57%	8
\$20-\$30	32.14%	9
\$10-\$20	14.29%	4
\$5-\$10	10.71%	3
less than \$5	0%	0
Would not pay for it	14.29%	4

10. Which country are you from?



Answered: 29

Skipped: 0

USA	75.86%	22
China	3.45%	1
India	0%	0
U.K	3.45%	1
Other (please specify)	17.24%	5

Other: Vietnam, South Africa, Chile, Israel, Philippines

We decided to omit question 11 from the survey because we did not want our interviewees to disclose personal information.

III. Reporting Findings

During the past week, we attempted to collect data by developing a survey at [Survey Monkey](#). The survey was distributed through Facebook and LinkedIn, as well as advertised among Irvine Valley College students. Twenty-nine people have participated as of today and we hope that the number will increase by the end of the week.

Participants overwhelmingly reported that they either have breathing trouble or may have breathing problems (75.86%), and 89.66% of them were exposed to air pollution. More than half reported (58.62%) that their breathing condition has been affected by air pollution, while 62.07% reported an average air quality in their area of living.

Most questions had consistent answers, but there were some answers that we found to be surprising. According to our preconceived notions, we hypothesized that people living in the United States would not be as aware of air pollution as indicated by the survey results. To our surprise, 77.2% of the respondents are U.S. residents who have experienced air pollution in the past five years. Reportedly, more than half of them (64.7%) have indicated that their condition had been affected by being exposed to air pollution.

Furthermore, the majority of our participants (67.86%) reported that they would buy a handheld air filtration product that will help them with their breathing pattern, and would be willing to pay \$20 or more for such a device (60.71%). As such, we can conclude that the market for a handheld device that filters air and regularizes breathing patterns is not just limited to heavily polluted countries like China and India, but will also be readily accepted in the United States.

Also, in acknowledgment of some limitations and a low number of participants, we will use a paid electronic survey in the future which would allow us to choose our target group. This will guarantee more efficiency in data entry, analysis, and feedback for AER.