

The door-to-door surveys were conducted with 66 residents of Fitch Street and 8 business owners/managers/employees working in the commercial properties on Fitch Street; resulting in a total of 74 door-to-door surveys. In total, 123 online surveys were attempted. Many online respondents, as well as some door-to-door respondents, failed to complete all of the survey questions and this finding is tracked in the ‘skipped question’ row of each data chart.

Report Data

1. *What type of street lighting do you prefer: the previous (High Pressure Sodium), the new (Light Emitting Diode), or no preference?*

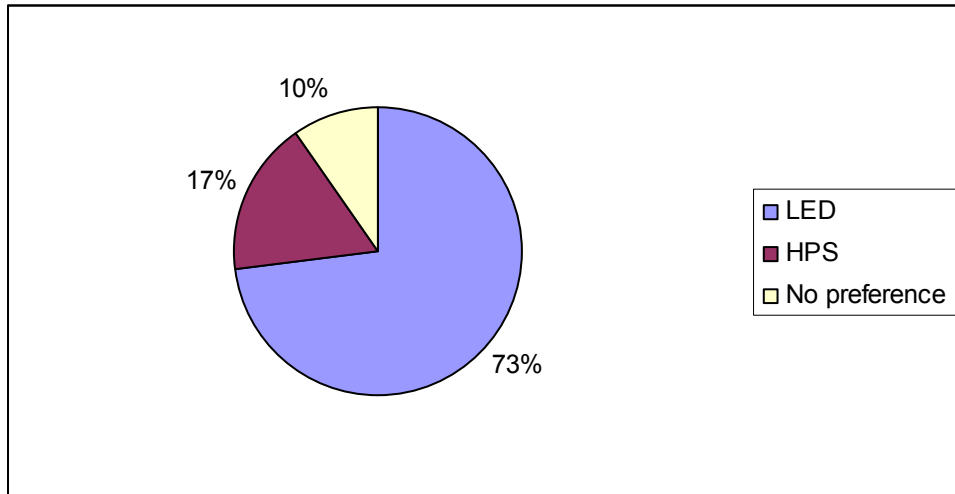
Online Results

	Response Percent	Response Count
LED	83.7	103
HPS	9.8	12
No Preference	6.5	8
Answered Question		123
Skipped Question		0

Door-to-door Results

	Response Percent	Response Count
LED	55.4	41
HPS	29.7	22
No Preference	14.9	11
Answered Question		74
Skipped Question		0

Combined Results



2. Why do you prefer the new LED street lighting?

Comment Category	Response Count		
	Online	Door-to-door	Total
Environmentally friendly / Energy efficient	44	7	51
Saves money / Cost effective	14	5	19
Brighter	8	8	16
Prefer white/blue colour over yellow colour	12	3	15
Less glare / Not blinding	9	3	12
Looks different / Looks better / Nicer quality of lighting	5	4	9
Not as bright / Not as intrusive	2	5	7
Increased visibility	4	2	6
Longer life	5	-	5
Modern / Innovative technology	2	3	5
Crisper / Cleaner light	3	1	4
More even illumination	3	1	4
Beams spread out more / Light up a larger area	-	3	3
Enhances city street	1	1	2
Less light pollution upwards	2	-	2
Soothing	-	1	1
Better directed light	1	-	1
Softer light	1	-	1
New optimal solution for street lighting	1	-	1
No noise	1	-	1
Less maintenance	1	-	1
Total Comments ¹	119	47	166

3. *Why do you prefer the previous HPS lighting or have no preference between the two types?*

Comment Category	Response Count		
	Online	Door-to-door	Total
LED not bright enough	5	5	10
Hard to see when driving at night	-	7	7
Patchy distribution of light / Shadows created with LED	4	2	6
Cannot see people in the yards / street /sidewalks <small>(Note: One respondent is legally blind and explained that the LED lights made it extremely dark on the street at night.)</small>	1	4	5
Safety / Security hazard	5	-	5
Concerned LED is not bright enough for elderly relatives and neighbours	1	1	2
LED may contribute to increased crime on Fitch Street	1	1	2
Prefer the softer light / colour of HPS	2	-	2
LED beam is too narrow	1	1	2
Found HPS more brilliant	-	2	2
Now has to use night lights in home because LED does not light up her property	-	1	1
LED is too dull	-	1	1
LED might be okay in an area without mature trees	-	1	1
No preference / didn't notice the switch	-	1	1
Total Comments ¹	20	27	47

4. *Would your opinion of the LED street lighting change if you were told that LED streetlights use 50% less energy, reduce harm on the environment and will reduce the city of Welland's electricity costs?*

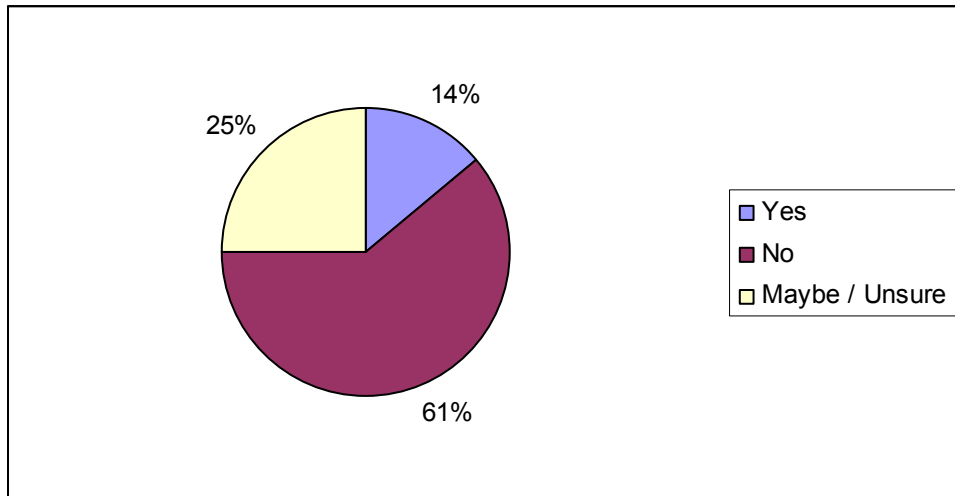
Online Results

	Response Percent	Response Count
Yes	15.4	2
No	61.5	8
Maybe / Unsure	23.1	3
Answered Questions		13
Skipped Question		110

Door-to-door Results

	Response Percent	Response Count
Yes	13.0	3
No	60.9	14
Maybe / Unsure	26.1	6
Answered Questions		23
Skipped Question		51

Combined Results



5. *Please provide a reason for your response to the previous question. (Would your opinion of LED streetlights change if you were told about the energy / cost savings?)*

Comment Category	Response Count		
	Online	Door-to-door	Total
Yes			
Energy savings / Environmental benefits	1	2	3
Cost savings	1	1	2
No			
Decreased visibility is not worth it / LEDs pose a hazard to safety	4	3	7
LED is too dark	-	1	1
Light distribution is not even, dark areas	1	-	1
Still not convinced that the technology is good enough for this application	-	1	1
Maybe / Unsure			
If LED improves and give more light	2	1	3
Like the look of LED lights	-	1	1
As long as safety isn't compromised	1	-	1
Total Comments ¹	10	10	20

6. *Has the new LED street lighting improved the amount of light on Fitch Street in comparison to the previous HPS street lighting?*

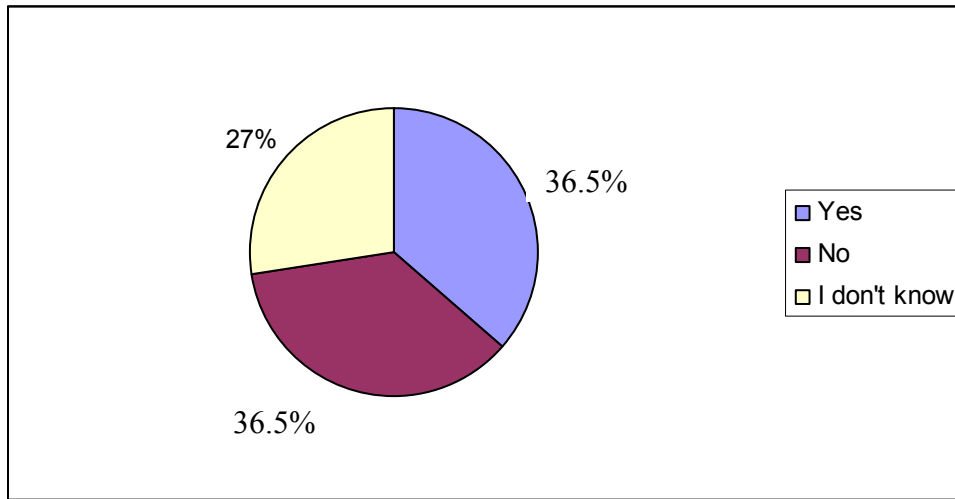
Online Results

	Response Percent	Response Count
Yes	45.9	39
No	28.2	24
I don't know	25.9	22
Answered Questions		85
Skipped Question		38

Door-to-door Results

	Response Percent	Response Count
Yes	25.0	18
No	45.8	33
I don't know	29.2	21
Answered Questions		72
Skipped Question		2

Combined Results



7. *Has the new LED street lighting improved the quality of light on Fitch Street in comparison to the previous HPS street lighting?*

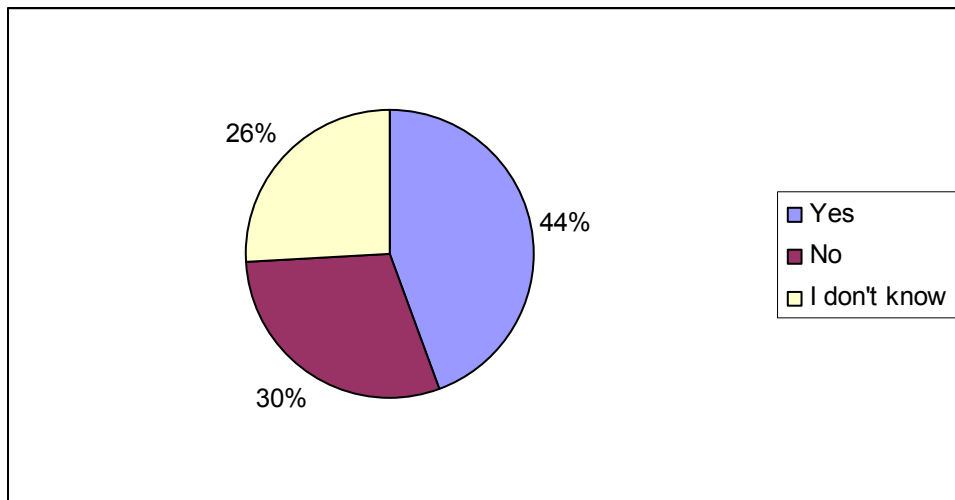
Online Results

	Response Percent	Response Count
Yes	45.1	37
No	26.8	22
I don't know	28.0	23
Answered Questions		82
Skipped Question		41

Door-to-door Results

	Response Percent	Response Count
Yes	43.8	32
No	32.9	24
I don't know	23.3	17
Answered Questions		73
Skipped Question		1

Combined Results



8. Please provide a reason for your response to the previous questions. (Has the quality of light improved?)

Comment Category	Response Count		
	Online	Door-to-door	Total
Yes			
Less glare / Not as harsh on eyes	9	6	15
Better colour / Not as yellow	5	6	11
More clarity with LED / Increased visibility	5	1	6
Brighter light	5	-	5
Crisper light / Cleaner light	2	2	4
Colour brightens up the road	2	1	3
LED has a better spread / less focused / more uniform distribution	1	1	2
Less intrusive onto people's homes/properties	2	-	2
Better light	-	1	1
LED provides a more calming light that may reduce vehicle speeds in the area	1	-	1
No			
LED not as bright as HPS	12	2	14
Concentrated on just the area below the light / patchy distribution	5	-	5
LED is pretty, but doesn't do what HPS does	-	1	1
HPS gives off a more natural light	-	1	1
LED is too harsh	1	-	1
I don't know			
Did not notice previous lighting	4	-	4
I haven't been to Fitch Street in a while / Don't travel their often	3	-	3
Have yet to view them	2	-	2
I don't possess a suitable meter	1	-	1
Total Comments ¹	60	22	82

9. *Do you feel safer because of the new LED street lighting on Fitch Street?*

Online Results

	Response Percent	Response Count
Yes	33.3	26
No	66.7	52
Answered Questions		78
Skipped Question		45

Door-to-door Results

	Response Percent	Response Count
Yes	16.4	12
No	43.8	32
N/A	39.7	29
Answered Questions		73
Skipped Question		1

10. Please provide a reason for your response to the previous question. (Do you feel safer because of the LED lights?)

Comment Category	Response Count		
	Online	Door-to-door	Total
Yes			
LED gives more light / Brighter	6	1	7
Increased visibility	5	-	5
Less glare for drivers	3	-	3
Better for the kids	-	1	1
Likes LED, but said that Wilson Road would benefit more from having the LED street lights	-	1	1
Decrease of dark areas	1	-	1
Old lights would go off occasionally	1	-	1
Better quality of light	1	-	1
No			
Darker, decreased visibility and increased shadows with LED	7	2	9
LED is only concentrated below the polls / patchy distribution	4	-	4
Crime on the street and doesn't think LED are appropriate on main roads such as Fitch	-	1	1
Safety is reduced with LED	-	1	1
Have to keep their outside light on now in order to feel safe	-	1	1
N / A			
Doesn't feel safety is affected by street lighting	6	1	7
Fitch street is safe anyway / Never felt in danger	4	-	4
I have yet to view the lights	2	-	2
I only drive on the street	1	-	1
Safety would not change due to colour	1	-	1
Total Comments ¹	42	9	51

11. Are there any positive changes / effects seen on Fitch Street due to the new LED street lighting? If yes, please elaborate.

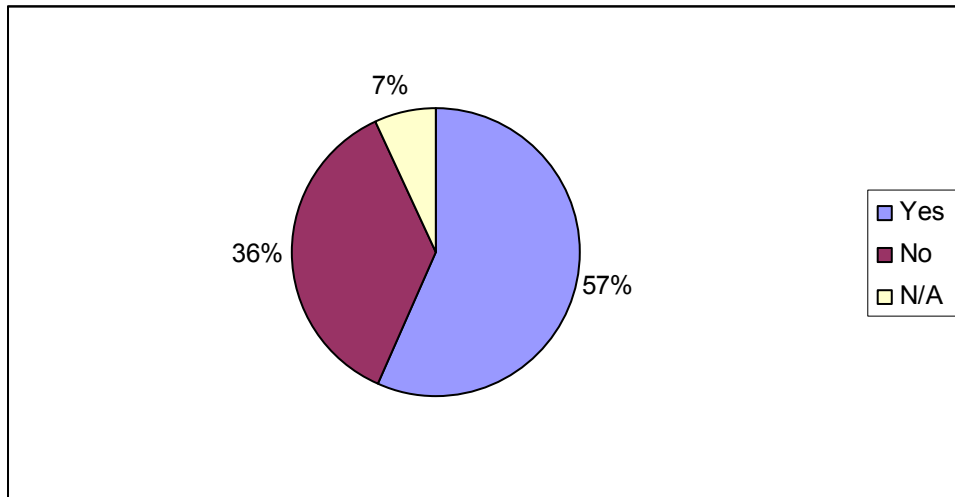
Online Results

	Response Percent	Response Count
Yes	77.5	31
No	17.5	7
N/A	5.0	2
Answered Questions		40
Skipped Question		83

Door-to-door Results

	Response Percent	Response Count
Yes	45.2	33
No	46.6	34
N/A	8.2	6
Answered Questions		73
Skipped Question		1

Combined Results



Positive changes / effects due to LED Streetlights

Comment Category / Positives of LED streetlights	Response Count		
	Online	Door-to-door	Total
Cost savings	4	17	21
Energy savings / Environmentally friendly	5	11	16
Aesthetically pleasing	4	2	6
Reduced glare / easier on the eyes	4	1	5
Less light pollution due to more directed light	5	-	5
Brighter	3	1	4
Beams spread further / more dispersed light / even illumination	1	2	3
Less intrusive, does not shine onto houses / properties	2	1	3
Cleaner light	3	-	3
Improved visibility	2	-	2
Modern	2	-	2
Provides more even lighting	1	1	2
Likes the colour / white light	1	1	2
Improved safety for children	-	1	1
Very pleased	-	1	1
Classier	-	1	1
Better technology	1	-	1
Decreases crime	1	-	1
Decreased maintenance	1	-	1
LED is better in foggy conditions	1	-	1
Long life	1	-	1
Calmer light	1	-	1
Total Comments ¹	43	40	83

12. Are there any negative changes / effects on Fitch Street due to the new LED street lighting? If yes, please elaborate.

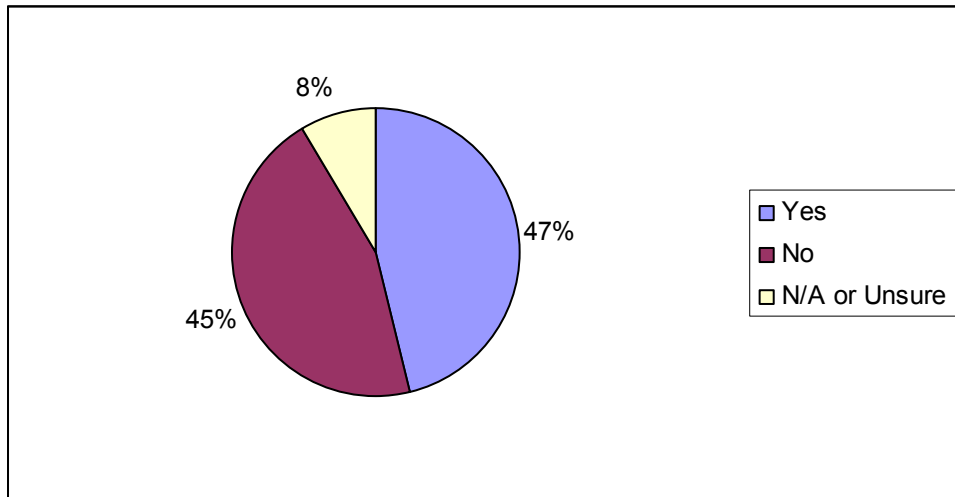
Online Results

	Response Percent	Response Count
Yes	58.8	20
No	26.5	9
N/A or Unsure	14.7	5
Answered Questions		34
Skipped Question		89

Door-to-door Results

	Response Percent	Response Count
Yes	40.3	29
No	54.2	39
N/A or Unsure	5.6	4
Answered Questions		72
Skipped Question		2

Combined Results



Negative changes / effects due to LED Streetlights

Comment Category	Response Count		
	Online	Door-to-door	Total
LEDs are not bright enough	5	14	19
Dark areas / Patchy distribution	4	-	4
Does not light up sidewalks / Can't see people	-	3	3
Wants increased distribution / lights to spread more	1	2	3
Not good in foggy weather	-	1	1
Can't tell when it rains / snow by looking at the lights	-	1	1
Accustomed to the yellow light of HPS	-	1	1
Installation of new system was disruptive	-	1	1
LEDs will promote crime because they do not provide sufficient light	-	1	1
Do not like the lights in general	-	1	1
Would like the old lights back	-	1	1
Street has lost the warm neighbourhood feeling	1	-	1
Intrusive into homes	1	-	1
Upwards light pollution	1	-	1
Blue light has negative effect on circadian rhythm	1	-	1
Shape of fixture is bulky / old looking	1	-	1
Street looks much darker, especially when wet	1	-	1
Total Comments ¹	16	26	42

13. Would you be in favour of the City of Welland changing all the street lighting to LED?

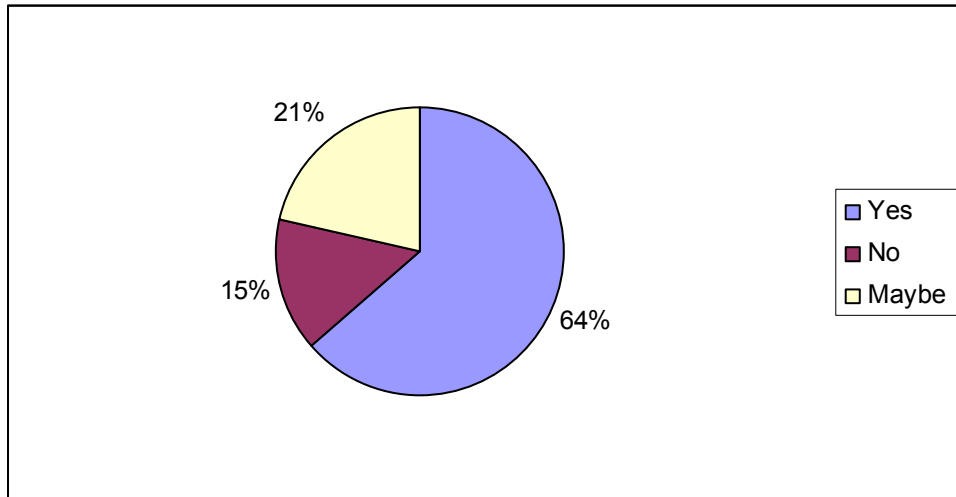
Online Results

	Response Percent	Response Count
Yes	64.2	43
No	11.9	8
Maybe	23.9	16
Answered Questions		67
Skipped Question		56

Door-to-door Results

	Response Percent	Response Count
Yes	63.0	46
No	17.8	13
Maybe	19.2	14
Answered Questions		73
Skipped Question		1

Combined Results



14. Please provide a reason for your previous answer. (Would you be in favour of the City changing all streetlights to LED?)

Comment Category	Response Count		
	Online	Door-to-door	Total
Yes			
Conserves energy / Good for the environment	26	12	38
Cost savings – some mentioned how money could be put towards other municipal infrastructure	22	13	35
Longer life / Reduced maintenance / More reliable	7	-	7
Improves the look of the city	2	1	3
LED light is better quality and good for driving	2	1	3
Reduce light pollution / Sky glow	2	-	2
Produces less glare; however, spacing needs to be evaluated in order to eliminate dark areas	2	-	2
Improves safety	2	-	2
More modern	1	1	2
LED lights are brighter	1	-	1
LED lights are not gloomy like the old lights	-	1	1
More natural colour	1	-	1
Especially would like to see LED in parking lots	-	1	1
Would be proud to be the first city with LED streetlights	-	1	1
Fixtures are more environmentally friendly upon disposal	1	-	1
Promotes new technology	1	-	1
No			
Safety needs to be the priority	2	-	2
Does not like the change	-	1	1
Wants Welland to be more inviting and feels that LED lights are too dismal	-	1	1
Waste of time and money	1	-	1
If light pollution / trespass was reduced	1	-	1
Do not provide enough light	1	-	1
Unproven technology	1	-	1
Maybe			
If there were more lights installed or if they were brighter	6	8	14
As long as costs / taxes don't increase	-	6	6
If the harness of the colour could be softened	2	-	2
If they had a wider beam distribution	1	-	1
Perhaps on side streets only	-	1	1
Maybe in parking lots, gas stations, and other businesses	1	-	1
Total Comments	86	48	134

Survey Responder Information

15. *Are you a resident of the City of Welland?*²

Online Results

	Response Percent	Response Count
Yes	85.1	57
No	14.9	10
Answered Questions		67
Skipped Question		56

16. *Do you live on Fitch Street?*²

Online Results

	Response Percent	Response Count
Yes	22.8	13
No	77.2	44
Answered Questions		57
Skipped Question		66

17. *In which Municipality do you live (if not in Welland)?*

Dubai, Romania, Pelham (3), Nearby, Toronto, Waterloo, PC, Cambridge

18. Gender

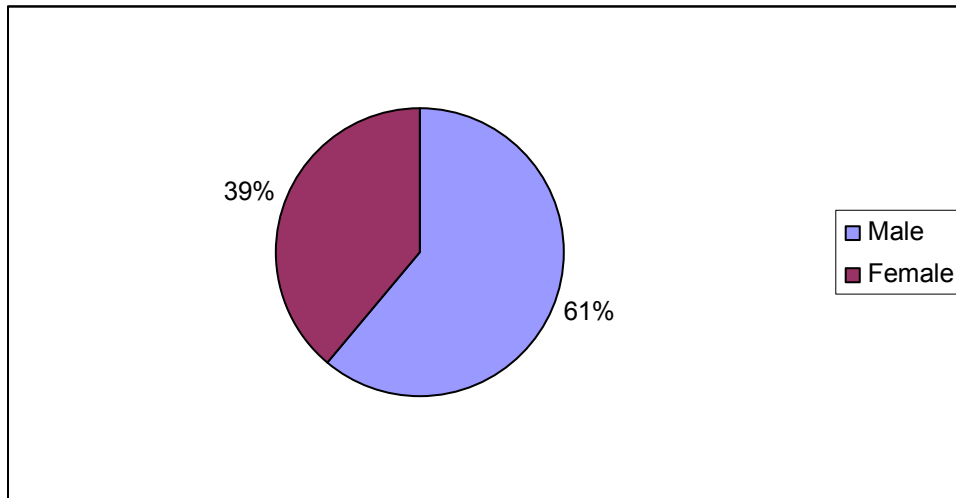
Online Results

	Response Percent	Response Count
Male	80.6	54
Female	19.4	13
Answered Questions		67
Skipped Question		56

Door-to-door Results

	Response Percent	Response Count
Male		32
Female		42
Answered Questions		74
Skipped Question		0

Combined Results



19. Age

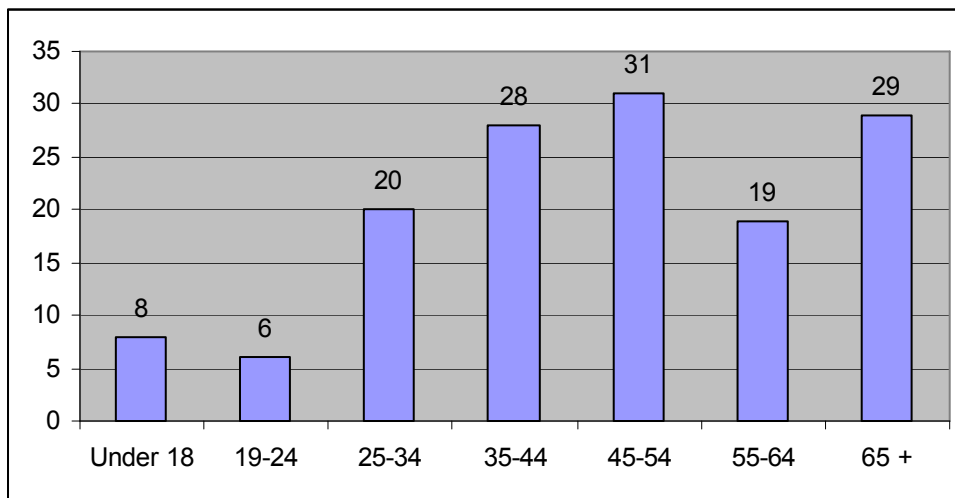
Online Results

	Response Percent	Response Count
Under 18	10.4	7
19-24	7.5	5
25-34	15.4	11
35-44	19.4	13
45-54	19.4	13
55-64	13.4	9
65 +	13.4	9
	Answered Questions	67
	Skipped Question	56

Door-to-door Results

	Response Percent	Response Count
Under 18	1.4	1
19-24	1.4	1
25-34	12.2	9
35-44	20.3	15
45-54	24.3	18
55-64	13.5	10
65 +	27.0	20
	Answered Questions	74
	Skipped Question	0

Combined Results



¹ Many survey participants may have contributed more than one comment; in contrast, some participants did not contribute any comments. Thus, the total number of comments does not necessarily correspond to the actual number of participants that responded to this question.

² The door-to-door surveys were conducted with 66 residents of Fitch Street and 8 business owners/managers/employees working in the commercial properties on Fitch Street.