BROADBAND INTERNET SURVEY REPORT

Issued by the

Turks and Caicos Island Telecommunications Commission

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REPORT

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Introduction

The internet is a major component to everyday life of Turks and Caicos ("TCI") residences. In fact, according to the *2019 We Are Social- Digital Trends Report*, the Turks and Caicos boasts an 83% penetration rate of internet connectivity (We Are Social, 2019). Meaning, 83% of the population uses and/or has access to the internet. Due to the COVID 19 pandemic, most of the population have resolved to work from home; which surely, has created a greater dependence on internet service.

But has the increased use of the internet at home affected the quality received by users? A user's internet speed is affected by the bandwidth provided by their internet service provider (Sheehan,2019). Each customer service plan is given a selected bandwidth. When that bandwidth has reached its max, the QoE (Quality of Experience) is negatively affected, leading to network delays and inconsistencies in service (Hickey, 2017). This begs to question whether the "best internet" practices determined by providers are adequate for consumers.

Background

Outside the Box Advertising ("OTBA") has been contracted by the TCI Telecommunications Commission to conduct a study of consumer QoE when using broadband internet in the Turks and Caicos. To do so, OTBA organized a quantitative study using the survey method. The aim was to collect a minimum sample size between 380-430. However, the group collected a total of 999 responses, of which 806 were completed; giving the study a completion rate of 81%. The surveys were delivered to consumers via mobile and online, using direct and indirect methods of contact.

The study concluded nationally 56% of internet users are happy with their service to some degree. However, internet experience varies between good and frustrating for users depending on their area of residence.

Objectives

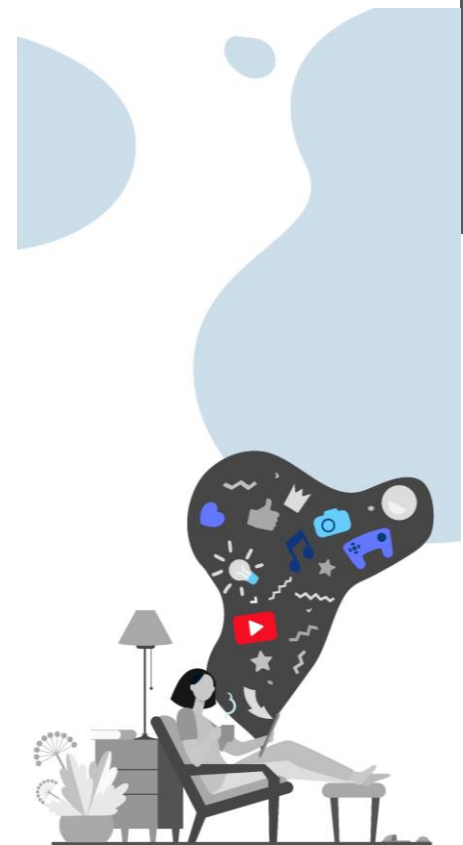At the onset of the study two objectives were determined:

01 Design and implement a survey questionnaire to distribute to residence of the Turks and Caicos in 3 key languages.

02 Analyze resulting data to assess the quality and performance of broadband internet quality to TCI residences.

The ensuring report details how the above objectives were met.

Research Study Method

Upon request, the survey questionnaire was replicated in three languages- English, Spanish, and Haitian Creole.
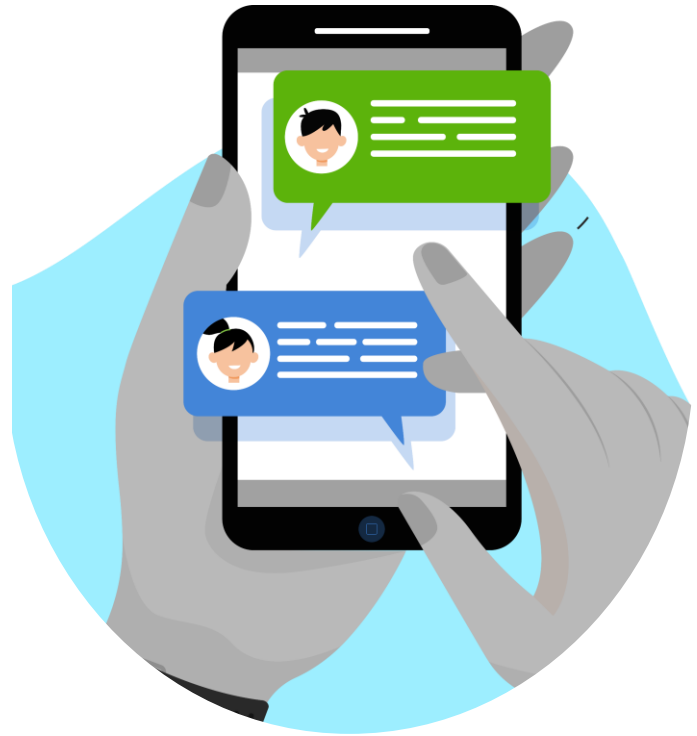
Due to the coronavirus pandemic, during the period of data collection, the Turks and Caicos Islands were under stringent health restrictions, limiting personal contact between households. The decision was taken to minimize direct contact with individuals as much as possible, using the internet as the main route to collect data. However, to ensure samples were collected from all communities in the TCI, interviewers were utilized. These persons were tasked with contacting targeted communities across the country.

Online

Questionnaires were distributed online via social media. Links to each language was published on the TCI Telecommunications Commission Facebook page and republished in popular Facebook groups. In total 34% of the collected data derived from this method.

Interviewers

The use of interviewers helped to establish a base and ensure the researchers adequately achieved their target quota for each community. Interviewers were selected from each island as well as language group. They were tasked with delivering the questionnaire to persons within

their community, known or unknown. In order to complete the task and abide by health protocols, interviewers were given a unique URL of the survey dedicated to their individual use. The link was shared with their targets via mobile devices through What's App groups and direct messaging. Data collected via interviewers accounted for 34% of total achieved.

Mobile

As a third method, local mobile service providers, FLOW and Digicel, were used. A text message was sent to the mobile operator's customer base using each of the 3 languages. The mobile operator text messaging method accounted for 32% of collected data.

Study Findings Quick Facts

Service Areas
The island of Grand Turk and highly populated areas of Providenciales reported having the worse service experience.

Spend on Service
The average spend on broadband internet service is $94-$140 a month.

Service Providers
52% of respondents were FLOW customers, and 48% were Digicel customers.

Customer Satisfaction
47% of respondents find their service to be 'Good', a close 34% find their service to be 'Frustrating'.

Time Periods
Early mornings and nights had the best service experience. Daytimes and evenings had the worse.

Most Used Activities
Broadband internet is used most for video streaming services and general browsing.

Summary of Findings

Average Participant Demographics

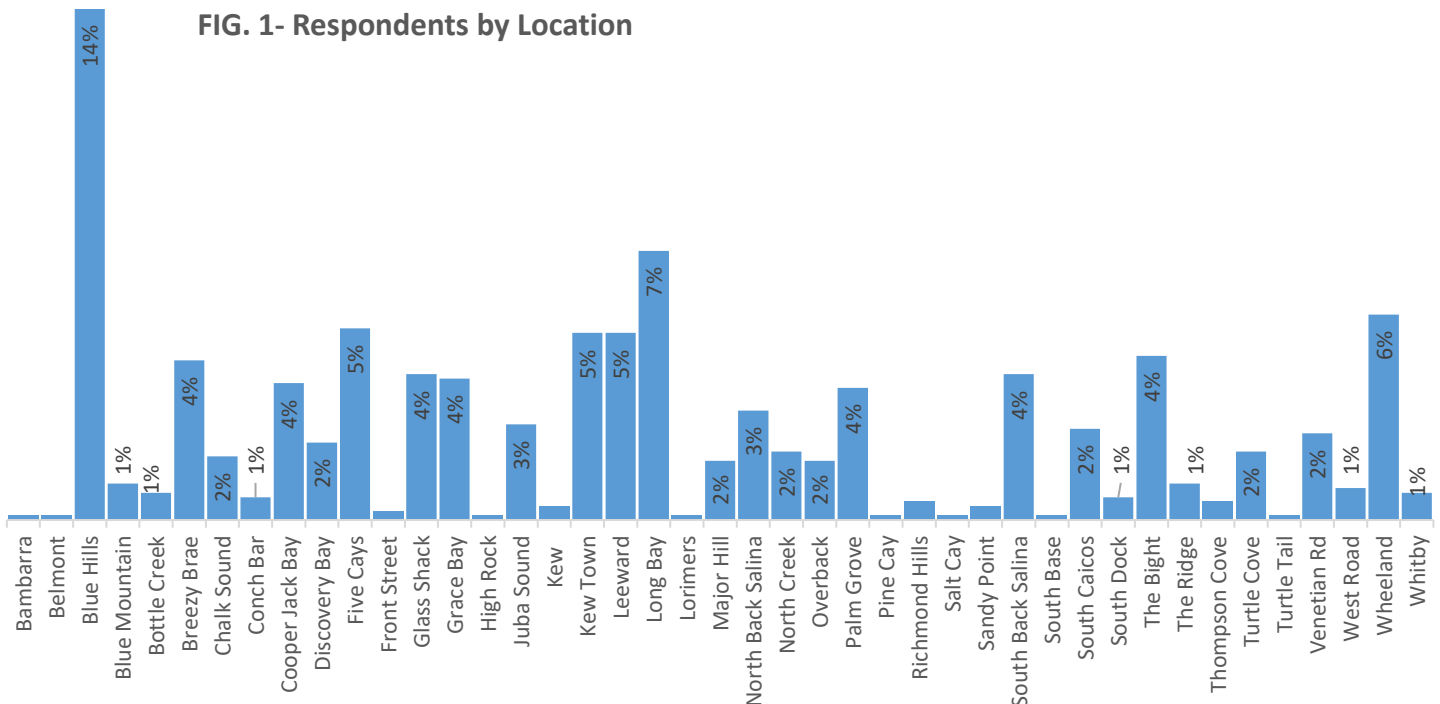| 72%	34%	59%	78%
LOCATION	AGE	GENDER	EMPLOYMENT
577 of the survey participants live on the island of Providenciales.	274 of survey participants fall into the range of 35-44	477 survey participants were female	596 survey participants gainfully employed in some capacity

Data Analysis

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Equal opportunity was given to public stakeholders to interact with the study. Paid advertising was utilized on social media to boost the frequency of the survey post, allowing it to appear at a high frequency in TCI residents' Facebook newsfeed. Interviewers used both random sampling and convenient sampling to complete their targeted amount of questionnaires; using social texting programs such as What's App groups and private messaging. Selected interviewers were designated to contact members of both the Spanish-speaking and Creole-speaking communities for equal participation in the study.

Demographics

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At the onset of the analysis, researchers compared the statistics of the respondent population to the population of the country. According to the Turks and Caicos Island's Government Department of Statistics, 75% of the population were recorded as residence of the island of Providenciales in 2012 (Population, 2019) making Provo the most populated island in the archipelago. Nationally, 21% of residents in the country are reportedly between the age of 35-44 (est. 2017) followed by 17% between the ages of 25-34. Females make up 48% of the estimated TCI population. The ensuing breakdown in the demographics of the survey participants mirror in most cases the Turks and Caicos population, validating its representation of the public.

Location

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FIG. 1- Respondents by Location

Figure 1 showcases the number of survey respondents by settlement. Data collected based on location of respondents also follows government statistical trends of population by settlements. Blue Hills, notably the largest settlement in the country, has twice as many respondents as other locations. Residence of Blue Hills are tightly knit, living in closer proximity. The second highest rate of responses derived from the settlement of Long Bay, a burgeoning community with residents spread out over a large land mass. The quantity of broadband homes will affect the quality of service in these areas. In total, the island of Providenciales represents 72% of the survey population, while Grand Turk represents 21% of respondents, North Caicos 4%, and South Caicos 2%.
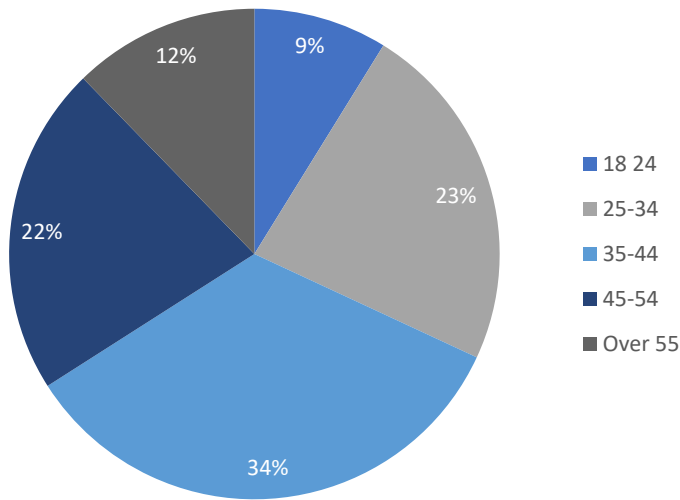
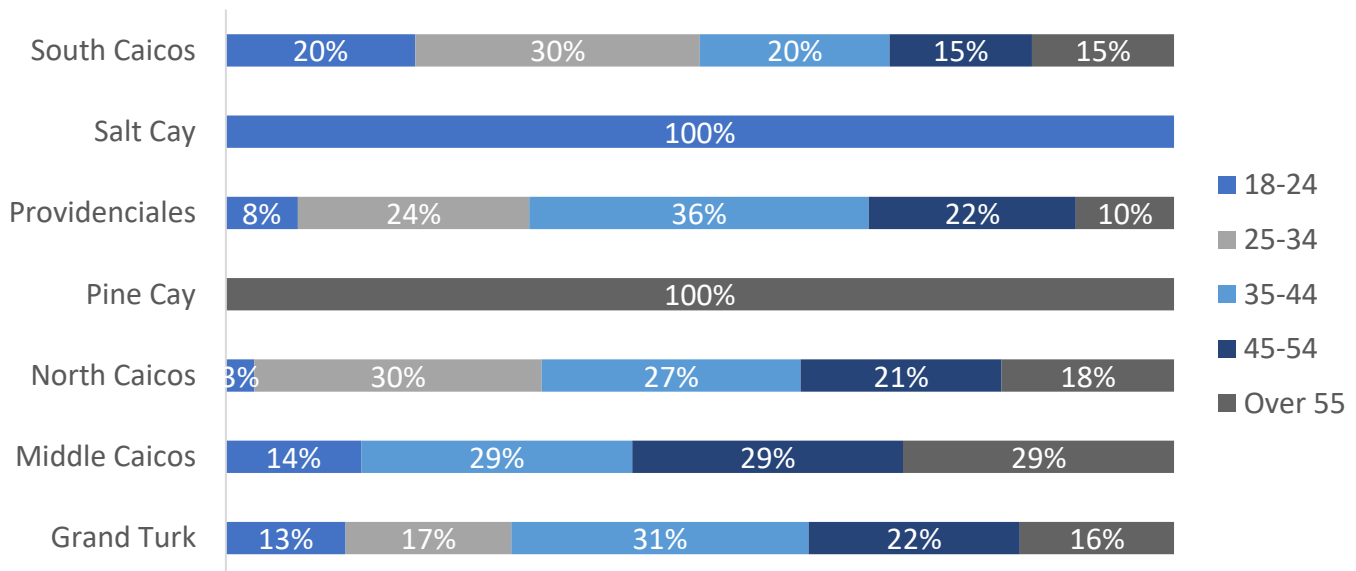Data Analysis

Age

FIG. 2- Respondents by Age

Figure 2 represents the age of respondents. Responses were gathered from stakeholders age 18 and up. The largest recorded age group, 35-44, represent 34% of the survey population. The second largest group, the 90's babies, range between 25-34. This group accounts for 23% of the respondent population followed closely by the 45-54 age group at 22%. Adult students typically fall within the 18-24 age range and are represented the least in the respondent population with 9% of the total.

Figure 3 below compares the age of respondents by their respective island. Each island has a unique make up of the dissection of age ranges. Most responses on the island of South Caicos were given by those in the 25-34 age range (30%). Following, the 18-24 age range and the 35-44 age range (20% each) were the next most populated groups for the island. This indicates the younger population of South Caicos responded at a higher rate than the older. During interviews of residents of South Caicos, it was revealed broadband internet service on the island predominantly is delivered through MiFi devices from both mobile operators. Home internet service plans for the island differ from islands such as Providenciales and Grand Turk.

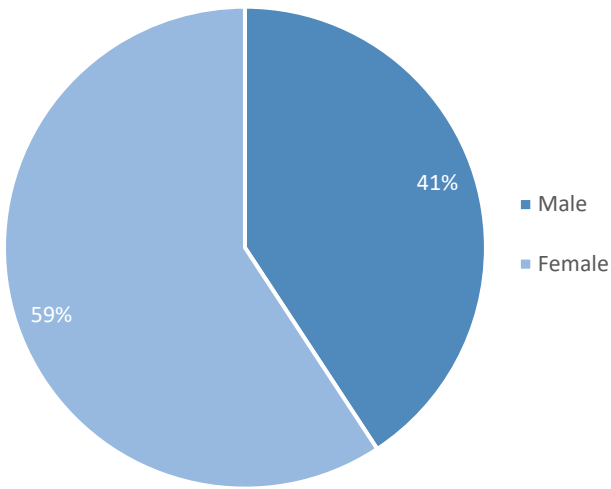Islands such as Providenciales and Grand Turk follow similar patterns of age range with the 35-44 group dominating by 30% or more followed by the 45-54 group. In North and Middle Caicos, the 25-34 age range dominate the response population followed by the 35-44 age group. A conjecture can be made comparing the age of users of home internet in the twin islands with the primary users.

FIG. 3- Respondents by Age x Location

FIG. 4- Respondents by Gender

Gender

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Figure 4 represents the gender of the respondent population. Of the 806 respondents to the study, 59% were female. In fact, females dominated responses of all island locations. However, when broken down by individual settlements there are a few variations to the gender data. Areas such as The Bight and South Back Salina have very small disparities between male and female respondents, under 5 points in both settlements. Locations such as Richmond Hills and Leeward were dominated by male respondents, but not a significant enough respondent population existed in those locations to affect the discrepancy between male and female respondents. Cooper Jack Bay is the single settlement with an equal amount of female and male respondents.

Figure 5 below breaks down gender of respondents by age. As mentioned, the female gender leads in each age group by 15 points or more. The female gender completely dominates the 3rd largest age group of the study (45-54) accounting for 2/3 of the respondents.
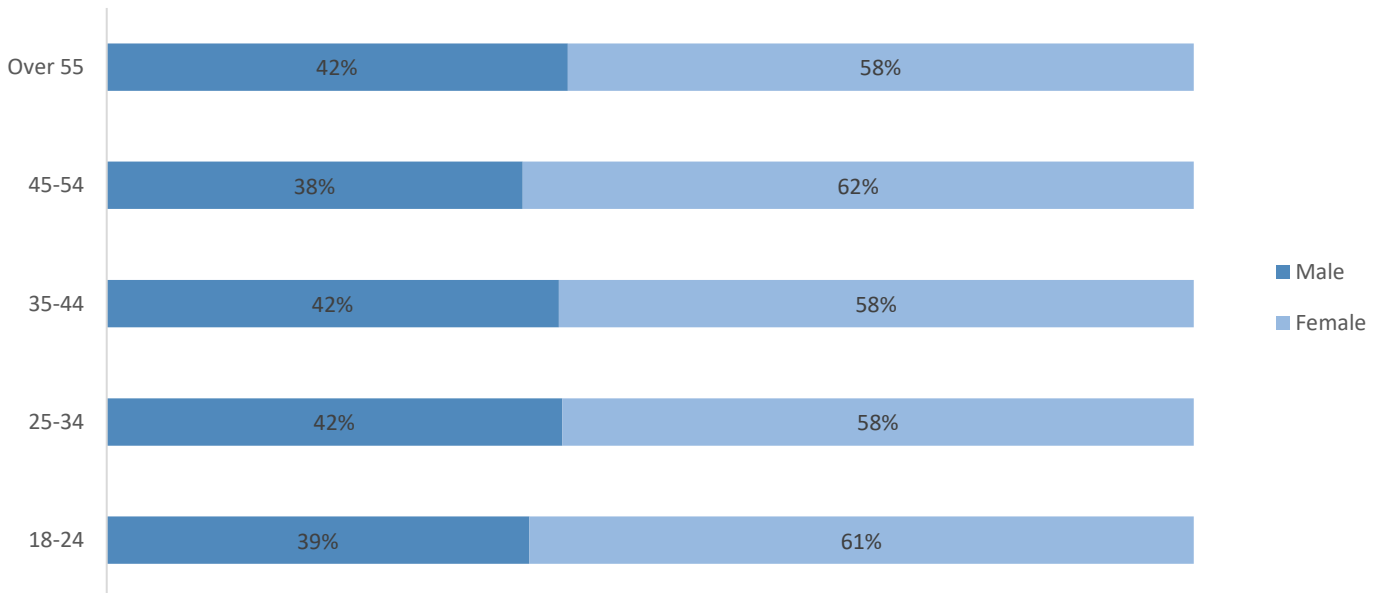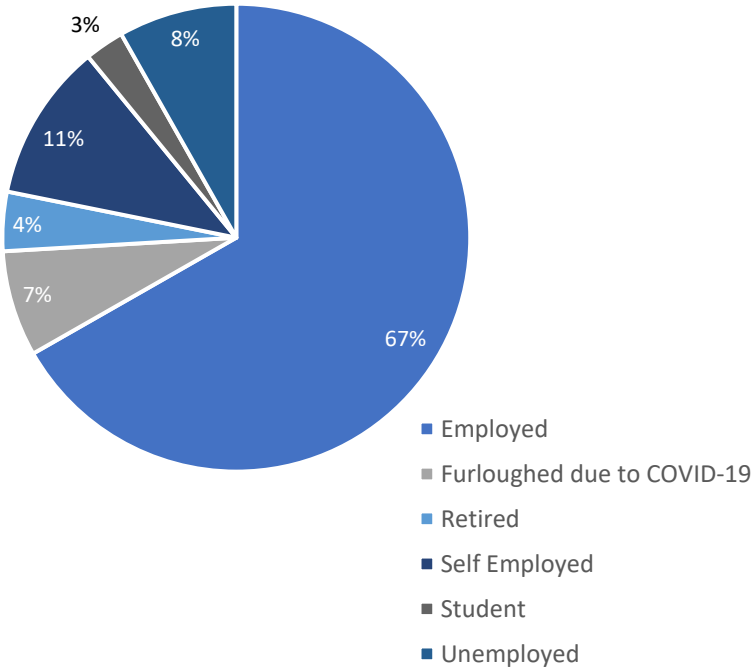
FIG. 5- Respondents by Gender x Age
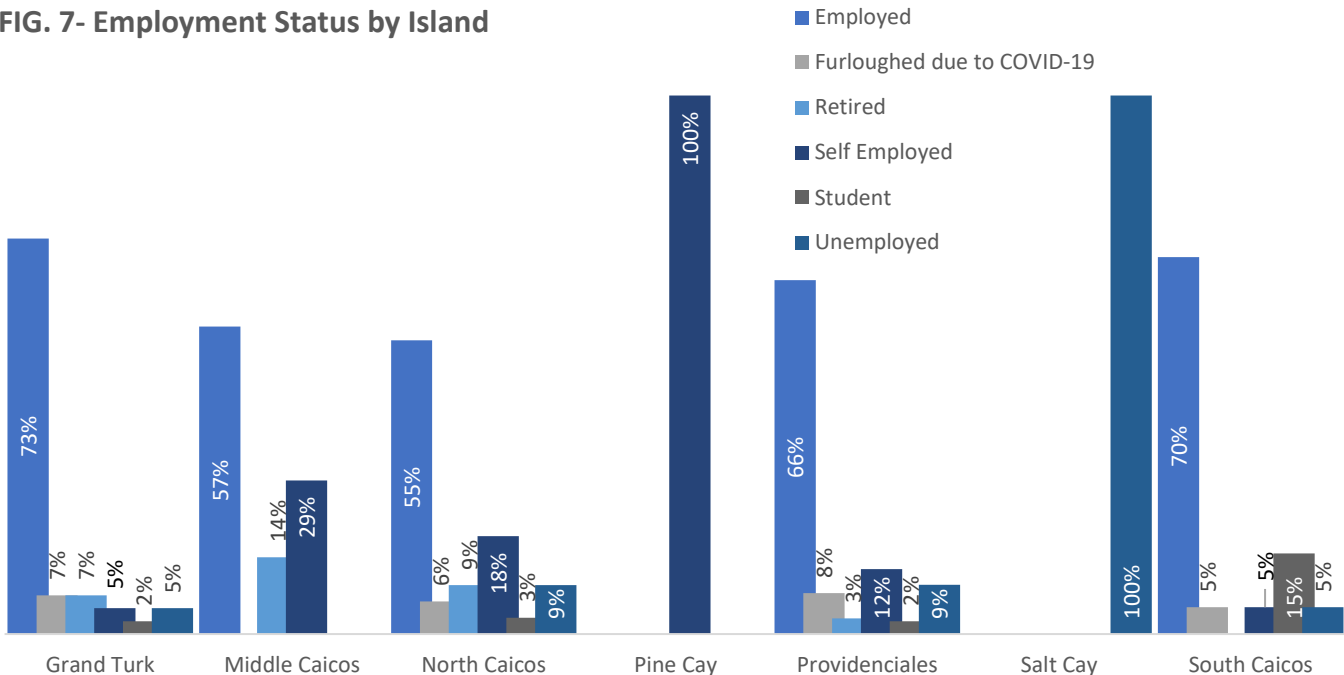
FIG. 6- Respondents by Employment Status

Legend:
- Employed
- Furloughed due to COVID-19
- Retired
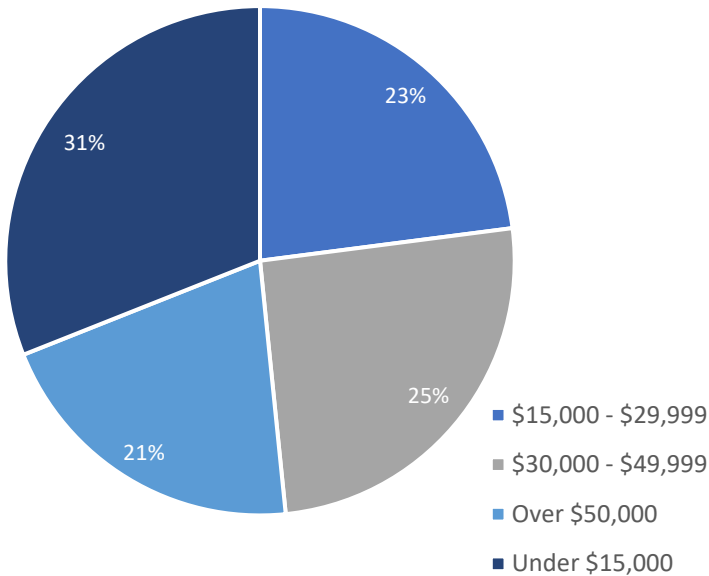- Self Employed
- Student
- Unemployed

Employment
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Figure 6 represents the employment status of the general respondent population. A total of 67% labelled themselves as employed. In addition to the employed category, 11% identified themselves as self-employed, making a total of 78% of all participants surveyed employed in some capacity. The data also shows that 8% of participants labelled themselves as unemployed and 7% were furloughed due to the COVID 19 pandemic. A small percentage of the population included in the survey are coded as students (3%) and retired (4%). Conjectures can be made correlating the methods of data collection having causality with the number of retired persons within the survey group; most notably for islands such as North, Middle, and Salt Cay where the average age group is more matured.

Figure 7 below further analyzes the relationship between survey participants employment status by island. While noting islands such as Pine Cay and Salt Cay only received one respondent each, it is not uncharacteristic for the data to show 100% employment status within their category (Salt Cay- unemployed, Pine Cay- self employed). It should be noted that all islands boast a significant employed status, with more than half of respondents employed in some factor. The islands with the most furloughed status are Providenciales and Grand Turk respectively.

FIG. 7- Employment Status by Island

Legend:
- Employed
- Furloughed due to COVID-19
- Retired
- Self Employed
- Student
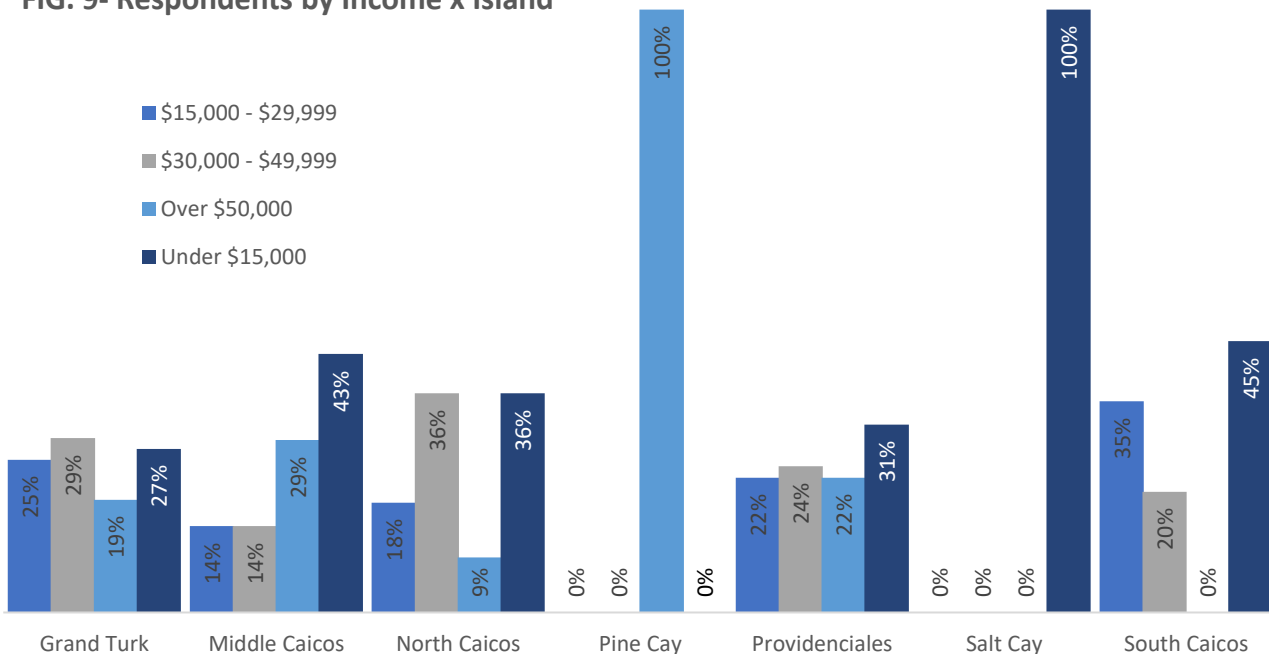- Unemployed

FIG. 8- Respondents by Income

Income

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Figure 8 represents reported income of survey participants. The under $15,000 category leads by a margin of 6 points to the $30,000 to $49,000 income group. According to the 2020 Turks and Caicos gross domestic product forecast, the GDP per capita has declined from $27,877 to $20,758 in the current year (TCIG Statistics Dept, 2020). The take home income after NHIP and NIB taxes will equate to less than the estimated $20,758 annual income. Therefore the relationship between the decrease in average income correlates with the high rate of reported income under $15,000. Nearly a quarter of participants in the survey income reportedly falls in the over $50,000 category. Later we will compare income to cost of service to highlight trends.

Figure 9 analyzes respondents reported income by island. The largest subgroup- Providenciales has minimal deviation between incomes ranging from over $15,000 to over $50,000. North Caicos respondents have an equal amount of persons with an income under $15,000 and an income between $30,000 to $49,000. Of the 31% of participants who make up the under $15,000 category, 45% of them reside on the island of South Caicos and 43% reside in Middle Caicos.
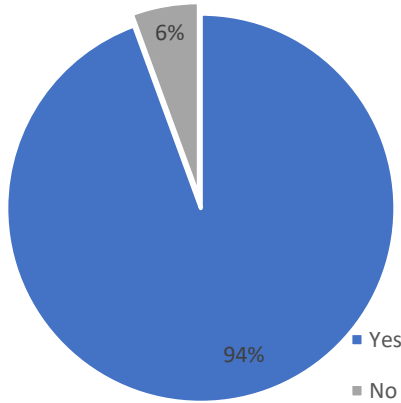
FIG. 9- Respondents by Income x Island

Broadband Internet Connectivity

In this section, home-based internet connectivity is analyzed by usage and providers. Comparisons will be made with the respondent demographics to create a clear understanding of the study population.
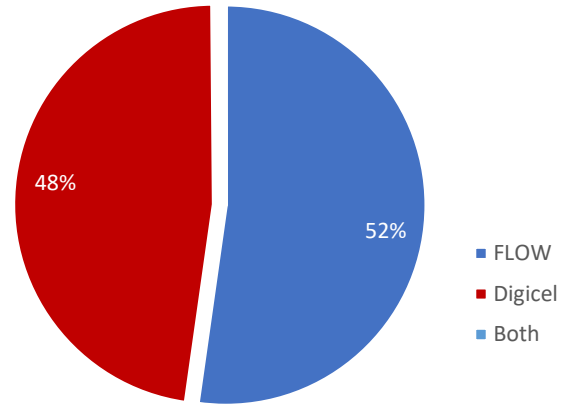
Q1- Home-based Internet
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FIG. 10- Respondents with home-based internet service plan

Figure 10 above represents the percentage of participants with a home-based internet service plan. A clear 94% of respondents reported having a home-based internet. Only 6% reported not using a form of home-based internet service. Majority of respondents without home internet (70%) reside on the island of Provo, predominately in the Blue Hills area. Of the 6% who reported not having a home-based internet service plan, 71% of that figure use their mobile device as an alternative (Q2).

Q3- Service Provider
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Figure 11, at top right, represents the service providers of the respondent population. FLOW Turks and Caicos leads held a slight edge over competitor Digicel by 4 points in the overall population of participants. A minimal margin of respondents (a total of 2) reported using both carriers. An occurrence not reflected on the chart, is usage of a third provider- AFF TCI by one respondent.

FIG. 11- Service Providers

Service Provider by Island
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Figure 12 below breaks down respondent's internet service provider by island. Respondents on the islands of South Caicos used Digicel service 25% more than FLOW, while both providers show a small variation on the more populated island of Providenciales. Of the respondents to the survey, FLOW is dominant on the islands of Grand Turk and North Caicos with a third more subscribers in the study than its competitor.

FIG. 12- Service Provider by Island

Service Provider by Settlement

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FIG. 13- Service Provider by Settlement

Figure 13 above represents service provider broken down by settlement. The 'Y' axis represents the count of persons using the service provider within each given settlement. From the graph it is noted FLOW has a bigger margin in settlements of the island of Grand Turk than its competitor. As well, FLOW leads in service providers in the largest settlements of Blue Hills, Long Bay, The Bight, and Wheeland. The settlements in which respondents used both services are Belmont and Blue Hills.

Q# 4 Internet Users per Household

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To the right, **Figure 14** showcases the number of internet users per household. Interconnectivity is shared the most within households of 3-4 people at a rate of 46%. Close behind by a margin of 9 points is 1-2 people per household. When the data was analyzed further, islands with larger survey populations such as Grand Turk and Provo mimic similar supported data. Larger settlements such as Blue Hills, Wheeland, Kew Town, Long Bay, and Five Cays also show a strong prevalence of 3-4 people per household.

FIG. 14- Number of Users per Household

Broadband Internet Service Plans

In this section, the broadband internet plans of the two main service providers will be examined. It will be compared with respondents' feedback regarding internet connection, spend, and speed.

FIG. 15- FLOW TCI Broadband Plans

	Superfast 60	Superfast 120	Superfast 240	Superfast 480	Superfast 720	Superfast 960
	$69	$94.99	$134.99	$194.99	$249	$294.99
Speed	6Mbps I 2Mbps	12Mbps I 4Mbps	24Mbps I 8Mbps	48Mbps I 20Mbps	72Mbps I 30Mbps	96Mbps I 50Mbps
Connection	ADSL	ADSL/Fiber	ADSL/Fiber	Fiber	Fiber	Fiber

Figure 15 shows FLOW broadband internet packages for all islands (excluding South Caicos). The plans cost exclude government tax and additional fees. The above plans are available to the public using ADSL connection. ADSL uses phone lines to transmit data to the nearest telephone poll, using copper wiring. The further the poll, the slower the speed (Wray 2016). In fact, increase user traffic on the network between poll exchange areas affects the quality of service and perceived speed. ADSL speeds range from 1Mbps- 40Mbps, speeds adequate for rudimentary internet usage and most activities.

FLOW's internet packages can be bundled with their three cable TV packages as add-on features. The service provider uses an ADSL or fiber connection for its television service. In cases where the combined bandwidth for internet and TV services exceeds the DSL connection capacity, the provider would be required to change the connection to fibre to deliver both services.

	Fibre 10 (GT)*	Fibre 10	Fibre 20	Fibre 30	Fibre 60	Fibre 100
	$69.99	$76.99	$93.99	$139.99	$214.99	$224.99
Speed	10Mbps I 5Mbps	10Mbps I 5Mbps	20Mbps I 10Mbps	30Mbps I 10Mbps	60Mbps I 30Mbps	100Mbps I 50Mbps
Connection	Fiber	Fiber	Fiber	Fiber	Fiber	Fiber

*exclusive to Grand Turk customers

FIG. 16- Digicel TCI Broadband

Figure 16 showcases Digicel broadband internet packages. The above plans exclude additional fees and government tax. Digicel bundles all levels of their broadband internet packages with television using fiber connectivity. Fiber has the capacity to handle higher volumes of traffic in comparison to ADSL connections (2016). Fiber connections are arguably better suited for TV streaming services, gaming, and smart devices.

When compared to price and speed of FLOW's service plans, Digicel's options are lucrative to consumers. Essentially, customers are given more speed at a lower price on the Digicel's network. The inclusion of cable television service with the package makes Digicel's plans extremely beneficial.

Q#5 Connection Type

FIG. 17- Connection Type by Service Provider

Figure showing connection type by service provider (Flow, Digicel, Other):
- ADSL: Flow 84%, Digicel 16%, Other 0%
- Cable Modem: Flow 56%, Digicel 44%, Other 0%
- Fiber to Home: Flow 30%, Digicel 70%, Other 0%
- Mi-Fi: Flow 35%, Digicel 63%, Other 2%
- Satellite: Flow 43%, Digicel 57%, Other 0%

Figure 17 above represents respondents named connection type by given service provider. In a general analysis of the entire population answer to question 5, t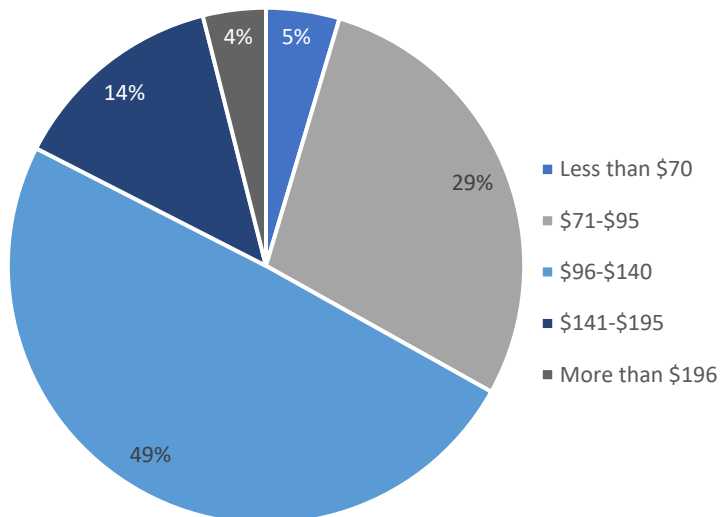heir answers sites Fiber to Home as the #1 connectivity by 40%. It was followed by ADSL with 29%, Cable Modem 24%, MiFi 6%, and Satellite 1%. In a deeper analysis, the above figure shows Fiber to Home was the most chosen option amongst Digicel customers, while ADSL was chosen most amongst FLOW customers. For MiFi, Digicel leads the category with 63%, however 2% is given to 3rd provider. Little is publicly known about 3rd mention provider- AFF TCI. A check of their website gives details on IPTV service, offering a single internet package and TV service package that can be bundled together or separately (AFF,2020).

Q#6 Broadband Service Plan Spend

FIG. 18- Service Plan Spend

Pie chart "Service Plan Spend":
- Less than $70: 5%
- $71-$95: 29%
- $96-$140: 49%
- $141-$195: 14%
- More than $196: 4%

Figure 18 left represents the amount of money respondents spend on their home-based internet service plan per month. Based on the figure, 49% of respondents believe they spend between $96-$140 a month on broadband. Given the range, it can be conferred these respondents fall under FLOW's Superfast 120 plan or Superfast 240. Respondents on the Digicel network would fall under the Fibre 10 or Fibre 20 packages. The price range $71-$95 price range equates to 29% of respondents. This price range entails service plans such as FLOW's Superfast 60 or Digicel's Fibre 10 package. The resulting theory is the lower plans are more popular for both networks.

Spend by Provider

FIG. 19- Spend on Service and Provider

Figure 19 left represents spend on broadband service by provider. A total of 58% of Digicel customers revealed a spend between $96-$140 a month for internet service, which their Fibre 20 package falls under. This is a steep increase compared to the 19% who spend between $71-$95 a mo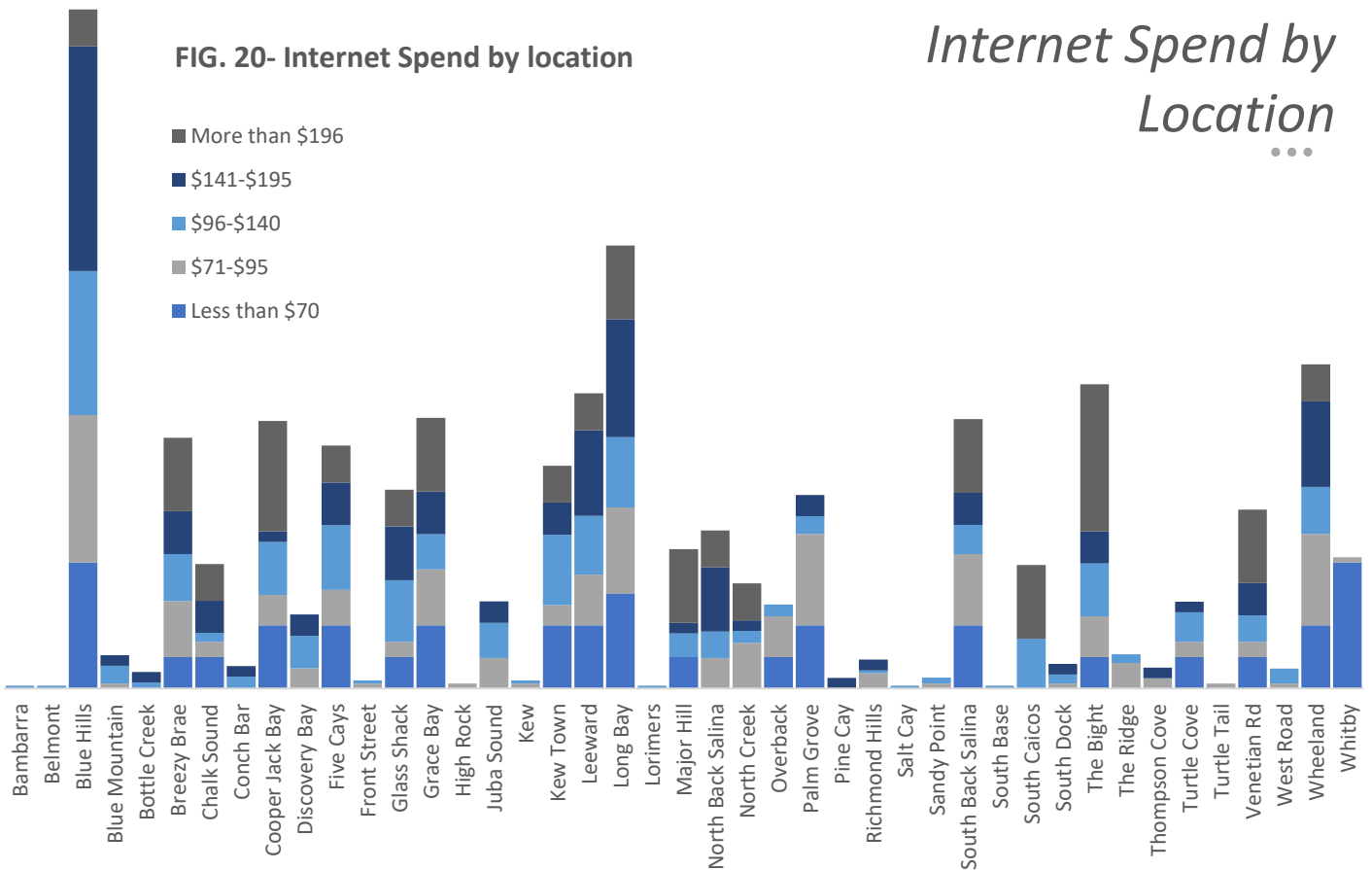nth on their entry level plan. Customers who spend between $141-$195 a month can mostly be found on the Digicel Network. Similarly, a 42% majority of FLOW respondents spend between $96-$140 a month on broadband service. A close 37% utilize a lower plan, spending $71-$95 a month. The graph also shows a majority of persons who believe to spend less than $70 a month on internet service are FLOW customers.

Internet Spend by Location

FIG. 20- Internet Spend by location

Figure 20 above represents respondents spend on broadband internet by settlement. A high concentration of persons spending less than $70 a month reside in the settlements of Blue Hills, Long Bay, and Whitby. As the largest settlement of respondents, Blue Hills also has the highest concentration of persons spending $96-$140 and $141-$195. The settlement of Kew Town also has
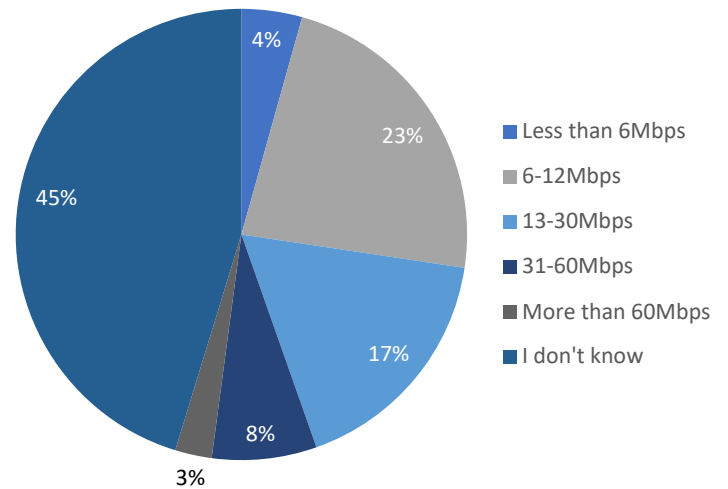
a high concentration of expenditure between $96-$140. All other settlements have an even representation in this spend category. The settlements of Wheeland, Long Bay, and Leeward have the highest rates of spend between $141-$195. Those spending more than $196 reside in The Bight, Cooper Jack Bay, and Long Bay.
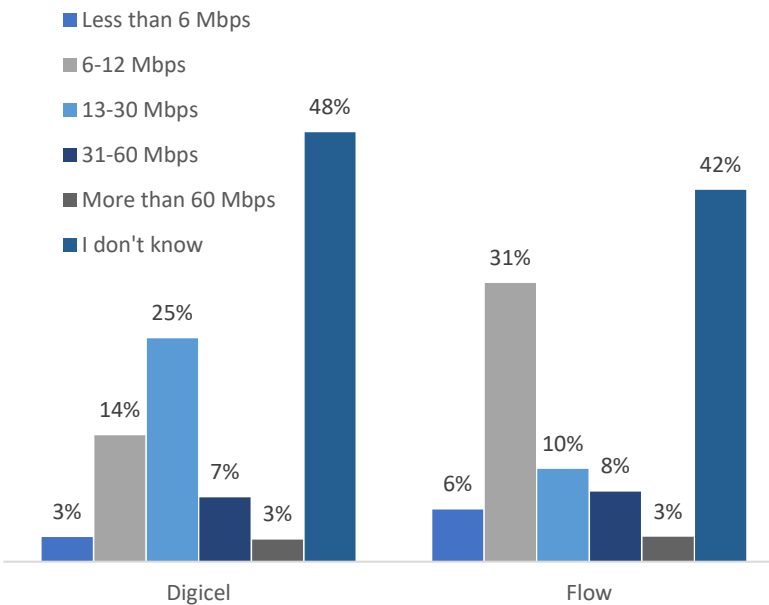
Q#7 Broadband Internet Speed

Figure 21 to the right represents respondents perceived internet speeds. A total of 45% of respondents admitted to not knowing the actual speed of their internet service plan. However, 23% believe their internet service speed to be between 6-12Mbps. This matches the lowest service plan of both providers. 17% of respondents believe their internet speed to be between 13-30Mbps. This matches the speeds of FLOW's Superfast 120 and Superfast 240; and Digicel's Fibre 20 and Fibre 30 packages. Only 3% believe their broadband service is more than 60Mbps.

FIG. 21- Internet Speed

- Less than 6Mbps
- 6-12Mbps
- 13-30Mbps
- 31-60Mbps
- More than 60Mbps
- I don't know

FIG. 22- Internet Speed by Provider

- Less than 6 Mbps
- 6-12 Mbps
- 13-30 Mbps
- 31-60 Mbps
- More than 60 Mbps
- I don't know

Internet Speed by Provider

Figure 22 to the left shows respondents estimated internet speed by service provider. The graph shows a significant amount of persons are not aware of their internet speed under both providers. 48% of Digicel's and 42% of FLOW's customers do not know the speed of their service. Of Digicel's customers, 25% of them believed their speed to be between 13-30Mbps. At the next level, 14% believed their speed to be between 6-12Mbps. 31% of FLOW's customers believed their speed to be 6-12Mbps, while 10% believed their speed to be 13-30Mbps. A comparison of FIG. 22 and FIG. 19 shows a knowledge gap in service plan by the respondents. 42% of respondents using FLOW's service pay between $96-$140 for their internet service.

This equates to the FLOW Superfast 120 plan with a max of 12Mbps or the Superfast 240 plan with a max of 24Mbps. However, 31% of FLOW subscribers believe their speed to between 6-12Mbps. There are correlations between higher cost plans and spend with perceived speed. 10% of FLOW's respondents pay between $141-$195. Which equates to higher cost plans Superfast 240 and Superfast 480 (48Mbps). Subsequently 10% believe their speed to be between 13-30Mbps and 8% believe their speed to be 31-60Mbps.

Q#8 Broadband Internet Activity

FIG. 23- Internet Activity

Figure 23 above shows the frequency of internet activities respondents engage with on their broadband network. Wi-Fi access for mobile use is second highest to video streaming services. In the questionnaire, video streaming services was noted to include streaming movie apps, streaming devices, online gaming, and YouTube. These activities are clearly utilized more by respondents. It should be observed most video streaming activities require smart devices, which require more bandwidth and speed. In personal interviews, quite a number of respondents admitted to having smart devices such as Amazon Firesticks and Roku's as a source for their television entertainment.

The category of online shopping, banking, and government services has the second *least* amount of responses. Given the complexities of online shopping's delivery service to the country, as well as the prolific mobile apps for mobile banking; it is easy to understand why this category usage was not greater. The graph shows a higher frequency in activities for entertainment purposes rather than general online activities such as shopping, banking, etc. or communicative use.

Broadband Internet Ratings

In this section, broadband internet connectivity is analyzed by usage and providers. Comparisons will be made with the respondent demographics to create a clear understanding of the study's population.

Q9- Quality of Service

Figure 24 to the right represents respondents rating of service. Overall, 47% of participants marked their broadband service as 'Good'. However, 34% marked their broadband service as frustrating. 10% of survey participants also labelled their internet service as 'Terrible', while a mere 9% of participants rate their internet service as 'Excellent'.

An evaluation of responses by island and location was necessary to extract further data on areas most responsive to positive and negative service experiences.

FIG. 24- Quality of Service Rating

Figure 25 below represents the perceived quality of service by respondents based on the island in which they reside. When comparing the data of islands with larger respondent populations (Grand Turk and Provo), the most obvious dissimilarity is Grand Turk respondents are more frustrated with their quality of service than Provo residents. It has been previously noted that FLOW is the leading service provider among respondents on the island of Grand Turk. As well, FLOW is the leading service provider for respondents on the island of North Caicos who gave a rating of 41% 'Good' and 30% 'Terrible'- the highest 'Terrible' amongst all islands.

The island of South Caicos also has a high rate of 'Frustrated' customers. The island is dominated by Digicel subscribers none of which gave any marks for 'Excellent' service but 32% for 'Good'.

FIG. 25- Quality of Service by Provider

Quality of Service by Provider and Island

FIG. 26-29: Service Rating Type by Provider

EXCELLENT

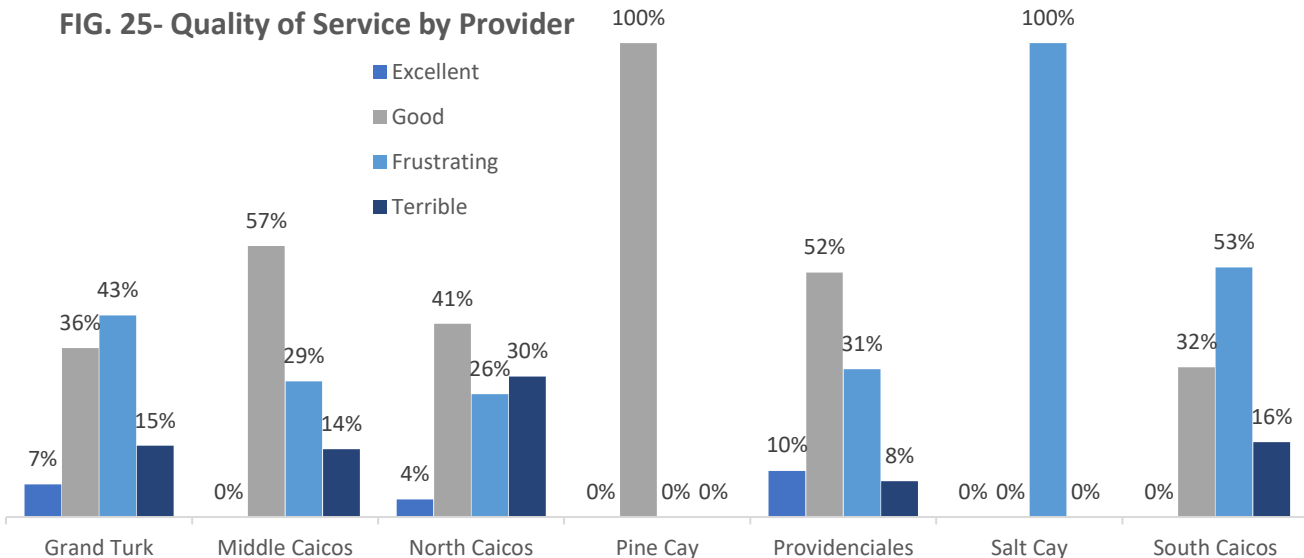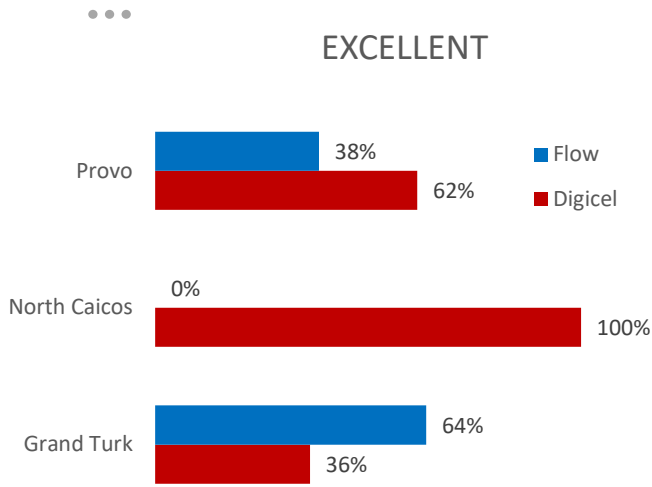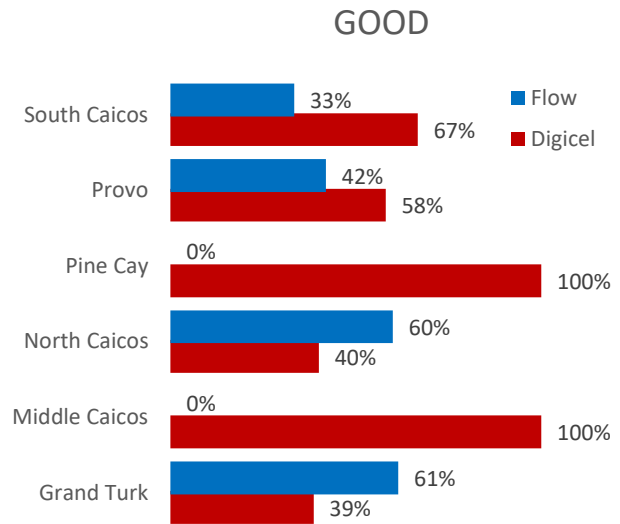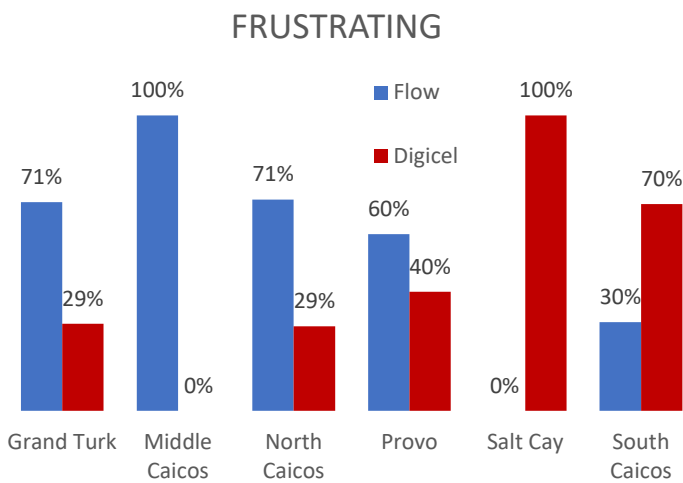| Island	Flow	Digicel
Provo	38%	62%
North Caicos	0%	100%
Grand Turk	64%	36%

FIG. 26- Excellent Service Rating

With each rating categorically deciphered by service provider and island, the chart above shows all islands whose respondents found their internet service to be 'Excellent'. Digicel appears to have a higher occurrence of 'Excellent' ratings within the islands than FLOW.

GOOD

Island	Flow	Digicel
South Caicos	33%	67%
Provo	42%	58%
Pine Cay	0%	100%
North Caicos	60%	40%
Middle Caicos	0%	100%
Grand Turk	61%	39%

FIG. 27- Good Service Rating

Digicel leads with higher ratings of 'Good'. However, FLOW has higher scoring in North Caicos and Grand Turk, where they are the predominate service provider among the study's respondent population.

FRUSTRATING

Island	Flow	Digicel
Grand Turk	71%	29%
Middle Caicos	100%	0%
North Caicos	71%	29%
Provo	60%	40%
Salt Cay	0%	100%
South Caicos	30%	70%

FIG. 28- Frustrating Service Rating

FLOW leads in four of the seven islands in the category of 'Frustrating'.

TERRIBLE

Island	Flow	Digicel
Grand Turk	83%	17%
Middle Caicos	0%	100%
North Caicos	88%	13%
Provo	51%	49%
South Caicos	0%	100%

FIG. 29- Terrible Service Rating

While only 10% of respondents rated their internet service as 'Terrible', a high proportion of them are customers of Digicel.

Q#10 Time Period of Usage

• • •

FIG. 30- Time of the Day Internet Most Used

Legend:
- Early (6am – 9am)
- Day (9am – 6pm)
- Evening (6pm – 11 pm)
- Night (11pm – 6am)
- I use the internet at different times
- Other (please specify)

Pie values: 1%, 3%, 14%, 27%, 53%, 2%

Figure 30 to the left breaks down the time periods respondents use internet the most. 53% of participants say they use their internet servi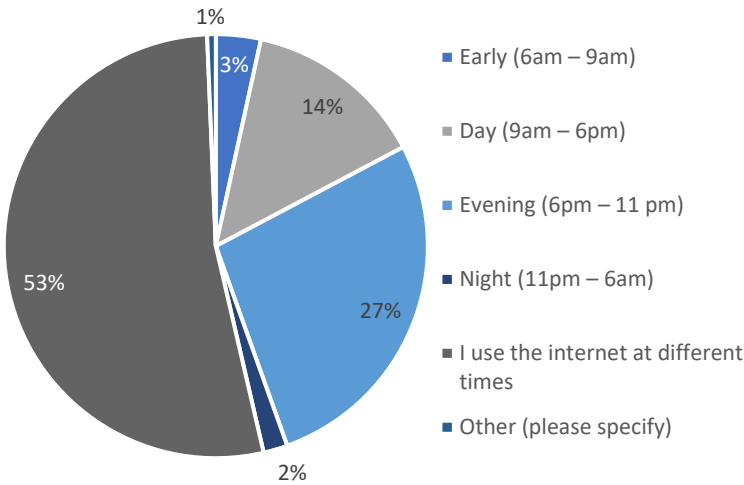ce at different times of the day. Similarly, 1% selected 'Other' as their option, however, upon further analysis of the 'Other' category, 57% said they used the internet all throughout the day.

The graph also shows that 27% of respondents said they use the internet most during the evening periods of 6pm-11pm. This specific time period has the most responses outside of the 'Different times of day' option.

The second most chosen time period is the period of 9am-6pm and represents 14% of those surveyed.

Q#11 Quality over Time Period of Usage

• • •

FIG. 31- Does the Quality of Experience Vary Depending on Time of Day

Legend:
- No
- Yes

Pie values: 41%, 59%
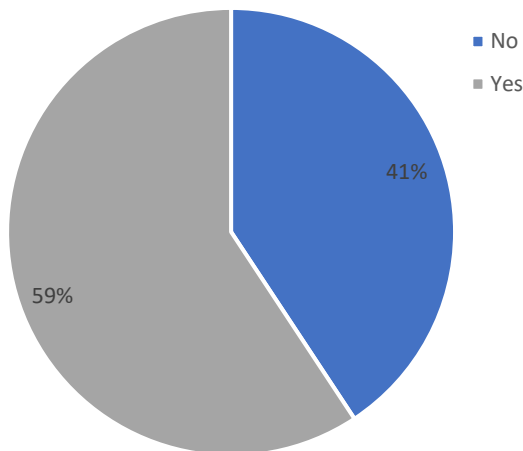
Figure 31 to the left represents the percentage of participants who believe the quality of their internet experience varies depending on the time of day. A majority of 59% of respondents said their quality of service depended on the time of day. The next few questions will break down the time of day with the best and worst experience as well as the attributing network of the respondent.

Q#12 Best Time Period of Service

FIG. 32- Best Time Period to Use the Internet

Count of Early (6am - 9am)

Count of Day (9am – 6pm)

Count of Evening (6pm – 11pm)

Count of Night (11pm – 6am)
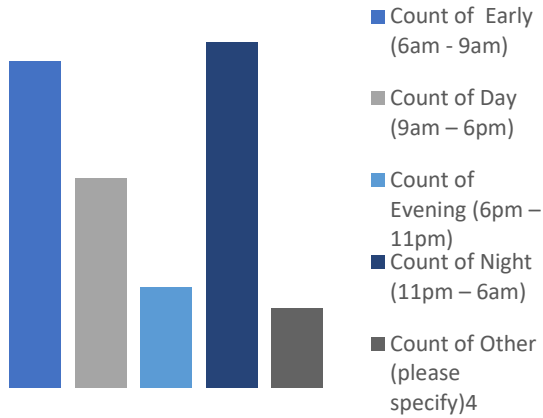
Count of Other (please specify)4

Figure 32 to the left shows a count of respondents review of the best time of day to use the internet. The graph shows a slightly higher count of respondents who believe the internet to be better in the nighttime period between the hours of 11pm-6am. It leads by a narrow margin over the early time period of 6am-9am. Of those who selected 'Other' in the original questionnaire, 16% offered an alternative of a shorter period, typically after 1am.

FIG. 33- Best Time Period by Provider

Count of Early (6am - 9am)

Count of Day (9am – 6pm)

Count of Evening (6pm – 11pm)

Count of Night (11pm – 6am)

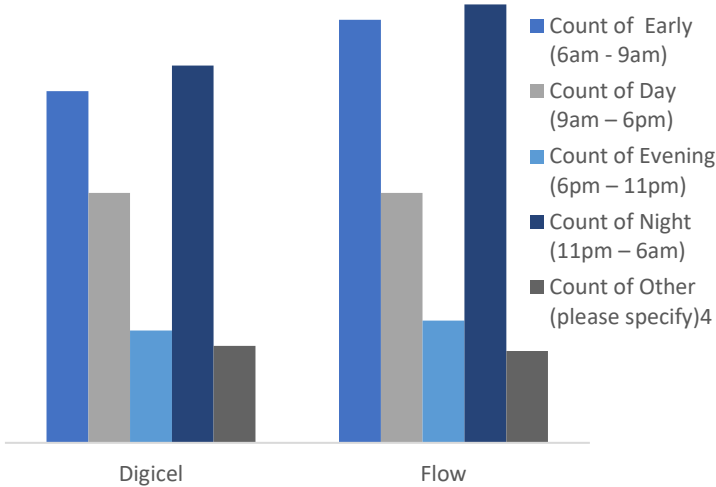Count of Other (please specify)4

Digicel   Flow

Figure 33 to the left represents the count of best time of day for internet service by service provider. Respondents with FLOW's broadband service show a slightly higher prevalence for the early morning and nighttime period. Both providers have nearly identical counts for the day and evening period, however, the 'Other' category is higher under Digicel. As previously mentioned, responses in the 'Other' category detail early morning periods.

FIG. 34- Best Time Period by Settlement

Count of Early (6am - 9am)

Count of Day (9am – 6pm)

Count of Evening (6pm – 11pm)

Count of Night (11pm – 6am)
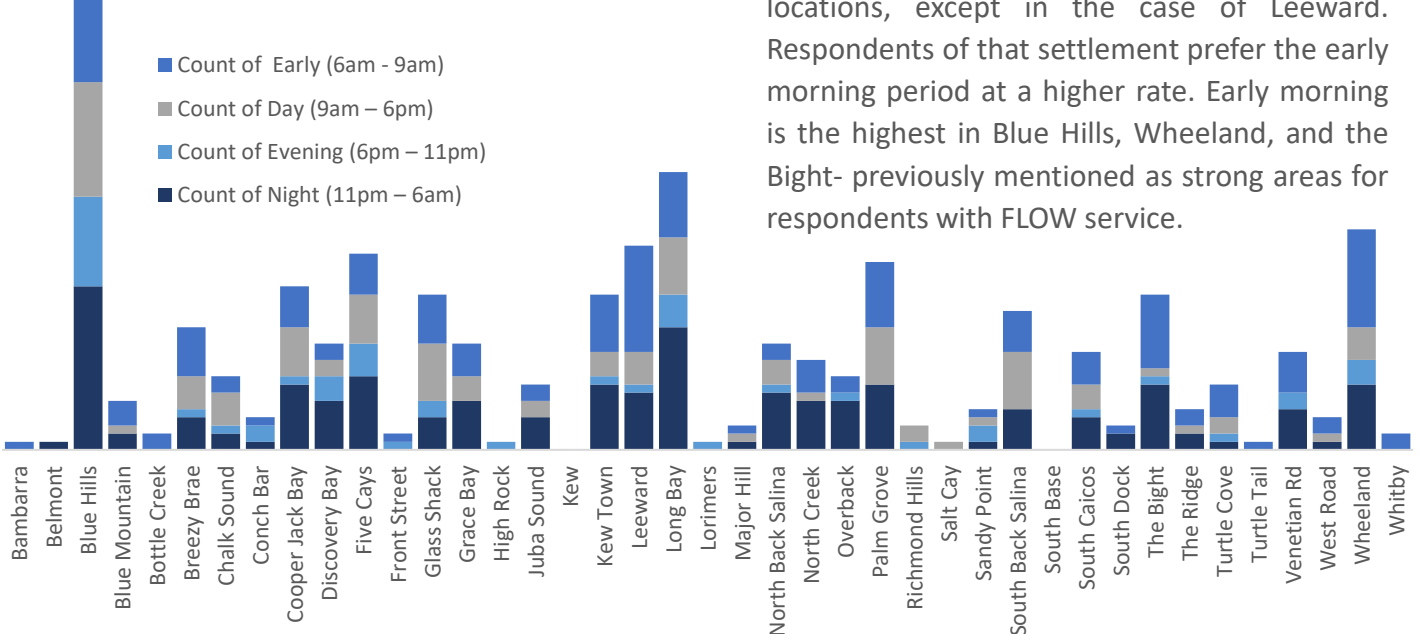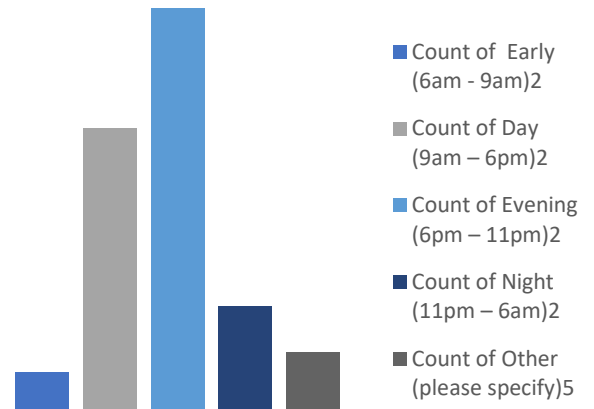
Figure 34 below breaks down the best time period for internet service by settlement. The nighttime period clearly dominates all locations, except in the case of Leeward. Respondents of that settlement prefer the early morning period at a higher rate. Early morning is the highest in Blue Hills, Wheeland, and the Bight- previously mentioned as strong areas for respondents with FLOW service.
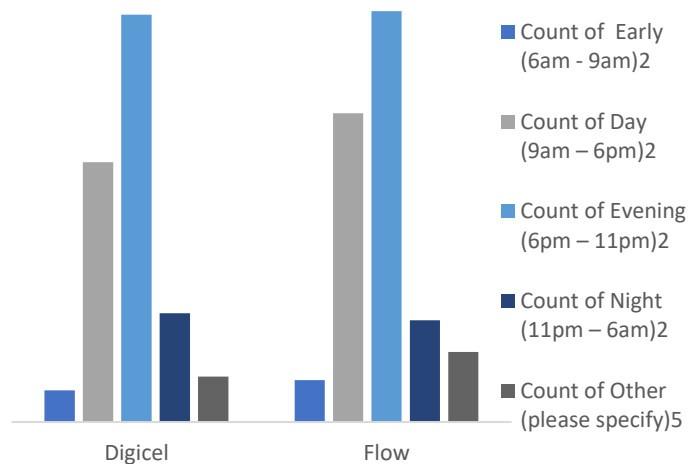
Q#13 Worse Time Period of Service

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To the right, **Figure 35** shows a visual count of respondents view on the worse time period to use the internet. The evening time period of 6pm-11pm was selected as the worse. In at 72 points less, the daytime period of 9am-6pm was selected as the second worse period of the day to use the internet. This does follow the trend of best time periods- as early morning and night are the least represented periods in the worse category.

FIG. 35- Worse Time Period to Use the Internet

- Count of Early (6am - 9am)2
- Count of Day (9am – 6pm)2
- Count of Evening (6pm – 11pm)2
- Count of Night (11pm – 6am)2
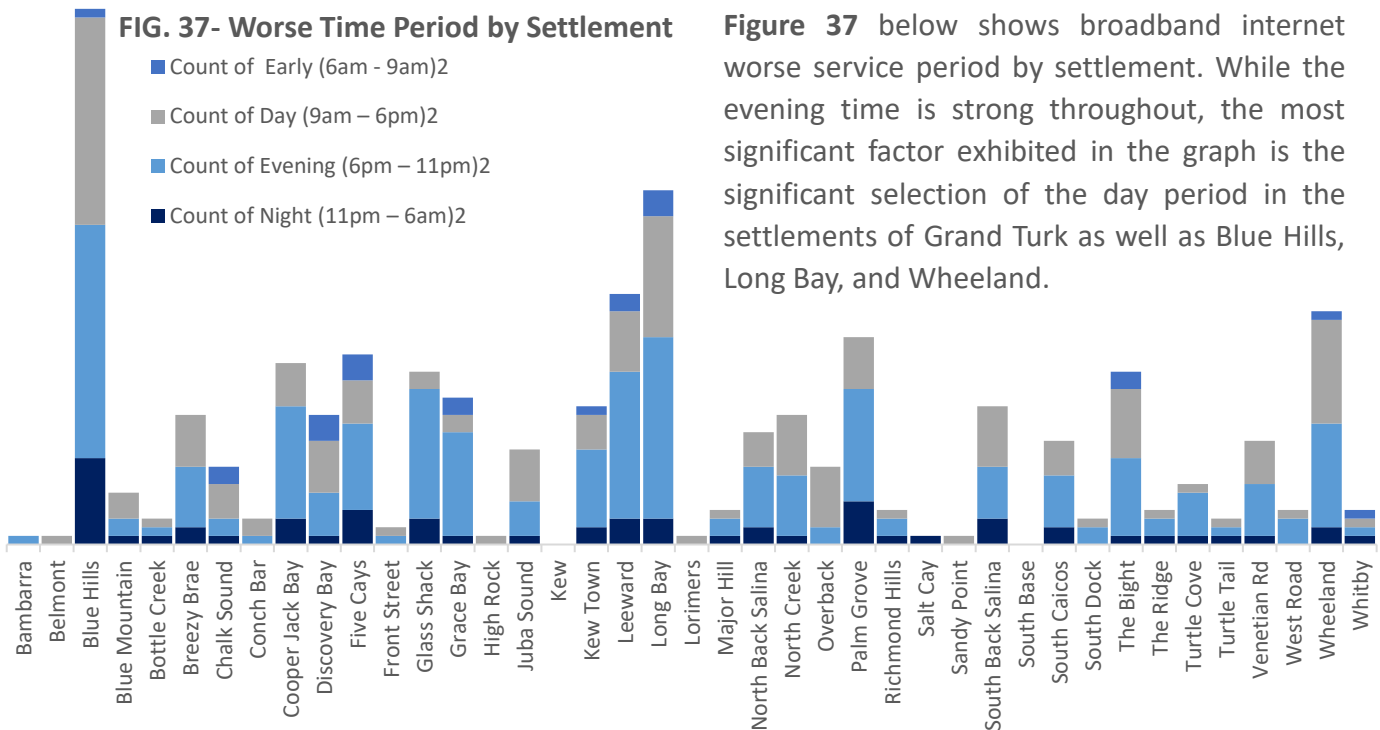- Count of Other (please specify)5

To the right, **Figure 36** represents the worse time periods of broadband internet service by provider. The graph shows an increase of respondents under the FLOW provider who believe their internet service to be worse during the day than respondents under the Digicel provider. The 'Other' category represents respondents who gave a self-created response. Some of the responses relayed worst service periods to bad weather and network outages.

FIG. 36- Worse Time Period by Provider

- Count of Early (6am - 9am)2
- Count of Day (9am – 6pm)2
- Count of Evening (6pm – 11pm)2
- Count of Night (11pm – 6am)2
- Count of Other (please specify)5

Digicel   Flow

FIG. 37- Worse Time Period by Settlement

- Count of Early (6am - 9am)2
- Count of Day (9am – 6pm)2
- Count of Evening (6pm – 11pm)2
- Count of Night (11pm – 6am)2

Figure 37 below shows broadband internet worse service period by settlement. While the evening time is strong throughout, the most significant factor exhibited in the graph is the significant selection of the day period in the settlements of Grand Turk as well as Blue Hills, Long Bay, and Wheeland.
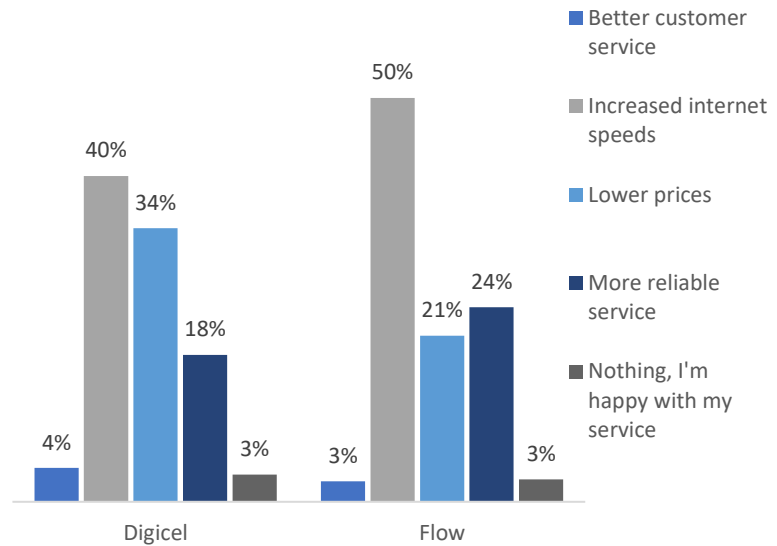
Q#14 Service Improvements

● ● ●

FIG. 38- Broadband Service Improvements Needed

Figure 38 above represents the most needed improvements to broadband service amongst the study's respondents. A clear majority of 45% believe that increased internet speeds is the most needed improvement. 27% of respondents would like lower prices, while 21% would like more reliable service. A meager 3% are happy with their service overall.

FIG. 39- Broadband Service Improvements by Provider

Figure 39 above breaks down service improvements by the two main competitors. Respondents on the FLOW network would like increased speeds at a higher rate. 24% of their respondents would like more reliable service. 34% of respondents on the Digicel network would like lower prices over a more reliable service.

Q#15 Number of Service Providers

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FIG. 40- Number of Service Providers

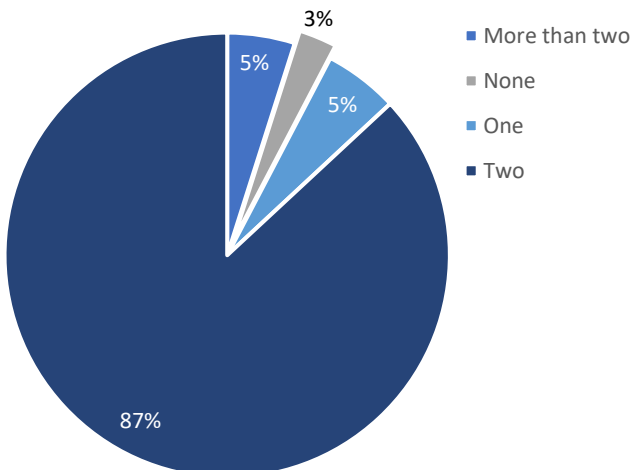**Figure 40** to the left represents the number of broadband service providers participants believe to be available in the country. 87% of participants believe there to be two service providers on island. Surprisingly, a fair amount of 5% believed there to be more than two or just one provider on island. Feedback from the respondents in this question helped identify the availability of a third provider in the Turks and Caicos.

Summary of
Survey Study

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The information represented in this report marks 8 weeks of data collection followed by two weeks of evaluating the data set and report findings. Outside information was sought to clarify points of interest in the discoveries. The conclusion was drawn on the following points:

Broadband customers are generally satisfied with their service. However, certain settlements of the country reported a higher instance of dissatisfaction. Most notably, larger communities where homes densities were higher, showed a higher instance of dissatisfaction. A few of the observed settlements are Blue Hills, Wheeland, Long Bay, and Major Hill. Dissatisfaction with service was also observed on the islands of South Caicos and Grand Turk. It was discovered a large portion of customers on the island of South Caicos use MiFi devices for internet connectivity on both networks.

FLOW TCI, the incumbent broadband service provider, has a strong subscriber base in the most populated islands of the country. However, according to respondents, their service is described as frustrating in comparison to its competitor. Respondents with FLOW broadband believe their service to be slow and unreliable at a higher rate, a common complaint worldwide for customers using ADSL services versus fiber. FLOW is rated slow and unreliable most by respondents in Grand Turk settlements as well as the more populated communities of Provo.

Digicel customers are marginally more satisfied with their broadband service but would like an increase in network speed as well as a decrease in prices.

Turks and Caicos residents are using the internet for entertainment purposes, most purportedly video streaming and streaming devices, more so than for general use and simple tasks. The increase dependence and usage of advanced smart devices will require a greater need for faster internet service in the future. A survey over a period would determine whether our habits and quality of service changes or improves over time.

Conclusion

TCI TELECOMMUNICATIONS COMMISSION BROADBAND SURVEY
Conducted by Outside the Box Advertising   All Island   Sept 2020

Good morning/evening, I am a representative of Outside the Box Advertising. We are conducting a survey on behalf of the TCI Telecommunications Commission on home-based internet service. Please note, this survey does not refer to accessing the internet from your mobile device via a voice and data or data-only mobile plan. The questions below refer to regular usage of internet service within your place of resident via a home-based service. The information gathered in this survey is for statistical purposes only and your personal data will be kept strictly confidential.

1. Do you currently have a home-based Internet service plan?
>   Yes
>   No

2. If not, do you access the Internet at your home from your mobile via a voice and data or data-only mobile plan? Skip ahead to question 16.
>   Yes
>   No

3. Who is your Internet Service provider for your home-based Internet service plan?
>   Flow
>   Digicel
>   Other

4. How many persons use your home-based Internet service plan in your household?
a. 1-2
b. 3-4
c. 5-6
d. >6

5. Which of the following internet connections do you have for your home-based Internet service plan?
>   ADSL (High Speed Internet from your telephone service provider)
>   Cable Modem (High Speed internet from your cable service provider)
>   Fiber-to-Home
>   MiFi
>   Satellite Service
>   Other (please specify: _____)

6. How much do you spend on a home-based Internet service plan each month? Select the closest answer.

      less than $50

      $51 – $75

      $76 – $100

      $101 – $150

      > $150

7. What is the advertised speed of your home-based Internet service plan?

      < 6 Mbps

      6 - 12 Mbps

      13 - 30 Mbps

      31 – 60 Mbps

      > 60 Mbps

8. What activities do you **primarily** use your home-based Internet service plan for? Select all that apply:

      General web browsing

      E-mail

      Online shopping, banking and/or access to government services

      Video streaming services (Netflix, YouTube, online gaming etc.)

      Voice services (Skype, Zoom, Viber etc.)

      Social Media (Facebook, Instagram, Twitter etc.)

      Wi-fi access for your mobile smartphone(s) while at home

9. How do you rate the quality of your home-based Internet service plan overall?

      Excellent – everything just works, and I can do what I want, when I want

      Good – things work well with occasional slowdowns/glitches

      Frustrating – usable, frequent slowdowns, freezes or problems

      Terrible - I can't rely on my service at all for the things I want to do

10. What time of day do you mostly use your home-based Internet service plan?

      Early (6am – 9am)

      Day (9am – 6pm)

      Evening (6pm – 11 pm)

      Night (11pm – 6am)

      I use the internet at different times

11. Does the quality of your Internet experience using your home-based Internet service plan vary depending on the time of the day?

      Yes (Quality changes throughout the day)
      No (Quality is the same at all times)

12. If yes to question 11, when is the Internet better?

      Early (6am – 9am)
      Day (9am – 6pm)
      Evening (6pm – 11pm)
      Night (11pm – 6am)

13. If yes to question 11, when is the Internet worse?

      Early (6am – 9am)
      Day (9am – 6pm)
      Evening (6pm – 11pm)
      Night (11pm – 6am)

14. What would you like to see most improved from your current home-based Internet service plan?

      Increased Internet Speeds
      Lower Prices
      More reliable service
      Better customer service
      Nothing

15. As far as you are aware, how many Internet service providers currently offer a home-based Internet service where you live?

      None
      One
      Two
      More than two

16. Select the area where your Home is located?

      Providenciales

            Chalk Sound I Five Cays I Kew Town I Blue Hills I Wheeland I The Bight
            Juba Sound I Cooper Jack I Venetian Road I Glass Shack I Discovery Bay
            Leeward I Long Bay I Turtle Cove I Turtle Tail I Richmond Hills I Grace Bay
            South Dock I Blue Mountain I Thompson Cove

      North Caicos

            Kew I Sandy Point I Whitby I Major Hill I Belmont I High Rock I Bottle Creek

Middle Caicos
    Conch Bar I Bambara I Lorimers

Grand Turk
    North Back Salina I South Back Salina I Palm Grove I Breezy Brae
    Over Back I West Road I North Creek I The Ridge I Front St I South Base
South Caicos
Salt Cay
Pine Cay

17. Please select your age range below:
    18-24
    25-34
    35-44
    45-54
    Over 55

18. Please select your sex below:
    Male
    Female

19. Please select your nationality:

    i.) Turks and Caicos Islander   ii.) British   iii.) Canadian   iv.) American
    v.) Haitian   vi.) Bahamian   vii.) Filipino   viii.) Dominican   ix.) Jamaican
    x.) Other

20. Employment Status
    Employed
    Unemployed
    Student
    Retired
    Furloughed due to COVID-19

21. Annual Income
    Under $15,000
    $15,000 - $29,999
    $30,000 - $49,999
    Over $50,000

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