



## CBA2 Statistical Investigation: Social Media by Gender

### CBA 2- Statistical Investigation

#### Question:

Does gender affect the time spent on social media in teenagers per day? Do females tend to spend longer?

#### Data collection plan:

I will take a series of 6 steps for my data collection plan during this investigation to make sure it is thorough and well planned, as follows:

1. Specify hypothesis
2. Create a survey on Microsoft forms for both girls and boys asking them how much time they spend on the following social media platforms:
  - Snapchat
  - Instagram
  - Tik tok

(I am using these social medias as they are currently the most used by the teenage population)

**Note:** the answers will differ depending on 2 things:

- Firstly, the gender (possible assumption: Girls use snapchat more than boys)
- Secondly, the day the survey is being answered (e.g. weekdays= busier, weekends= more relaxed, therefore social media usage will depend on the time the person spends on their phone)

As my survey is only being handed out to a sample of teenagers in my local area, it will not be 100% reliable and will not speak for the whole teenage population.

3. Share the survey to a sample of people of each gender and try to gather an audience of over 30 people in total (15 of each gender or more if possible as that is the minimum number of people needed to collect fair data)
4. After receiving the data, I will process it and represent on a histograms and tables.
5. Interpret the results using my primary & secondary research.

Poses a question that anticipates variability and plans to collect data appropriate for the question posed



## CBA2 Statistical Investigation: Social Media by Gender

6. Make a conclusion referring to the question that is being asked.

### **Variables and measuring strategy:**

These are the following **variables** in the investigation:

**Independent variable-** Gender

**Dependent variable-** Time spent on each social media by the two genders  
(variable that is being measured)

**Constant variable-** Number of people asked (30 girls and 30 boys). It is important for these numbers to stay the same to make sure the data is reliable and fair.

### **Measuring strategy:**

This is the **strategy** I used when I surveyed people. I asked them:

- How much time they spent on the social media platforms of Instagram, snapchat and TikTok

and

- Their gender

For them to be able to give me accurate data, I suggested them to check their screen time for that app through their settings.

To make sure that my data was reliable I ensured that all respondents had filled out the survey on a weekday because if some people completed it on a weekend, I assume they spent more time on the social medias compared to the ones who filled it out on a weekday. As a weekend is typically more relaxed, it could possibly cause a decrease in productivity and an increase un usage of social media.

### **Data displays + Measures of spread:**

After receiving responses to the created survey, I thought it would be suitable to represent my finding on a histogram:

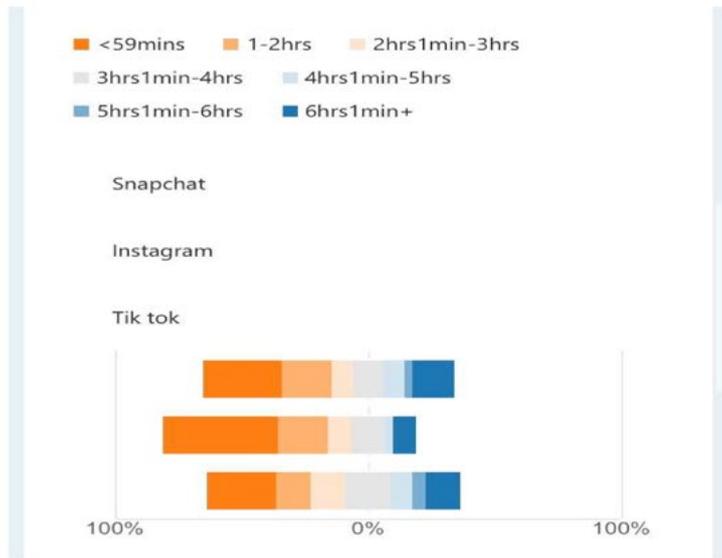
These were the results for the females:

Identifies variables and develops a measuring strategy for dependent and independent variables

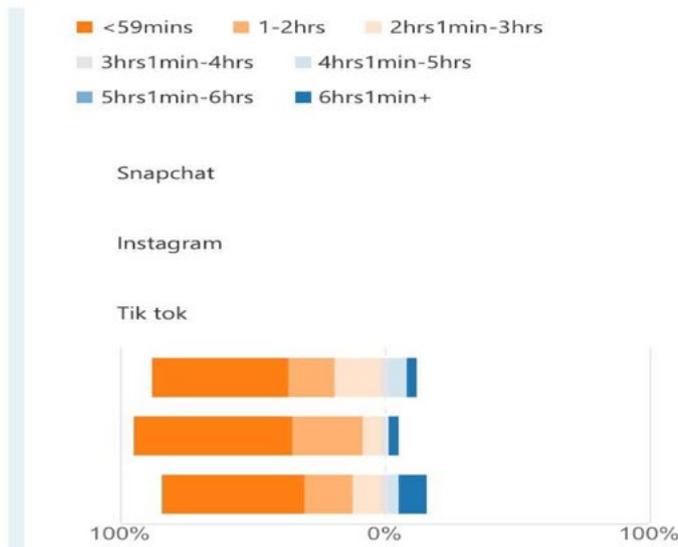
Shows awareness of how variability affects the validity and reliability of the findings.



## CBA2 Statistical Investigation: Social Media by Gender



And the males:



Here are the results in percentages:

Gathers and displays data



## CBA2 Statistical Investigation: Social Media by Gender

Females	<59 mins	1-2hrs	2hrs1 min-3hrs	3hrs 1min-4hrs	4hrs 1 min-5hrs	5hrs 1 min- 6 hrs	6hrs 1 min+
Snapchat	31.4%	20%	8.6%	11.4%	8.6%	2.9%	17.1%
Instagram	45.7%	20%	8.6%	14.3%	2.9%	0%	8.6%
TikTok	27%	13.5%	13.5%	18.9%	8.1%	5.4%	13.5%

Displays data in a way that allows patterns to be identified

I felt that the most appropriate measure of spread to calculate would be the mean as it is the most reliable for this investigation and would give me the most accuracy. Although I did find out the range and the mode too.

This is the mean amount of time females spent on:

Snapchat = 166 mins = 2hrs 46min

Instagram = 118mins = 1hr 58mins

TikTok = 178mins = 2hrs 58mins

I created frequency tables to get my answer as you can see below.

Here are my calculations:

Time (hours)	Frequency, f	Midpoint, x	f x
< 59	9	30 mins	270
1 - 2	6	90 mins	540
2hrs 1min - 3hrs	3	150 mins	450
3hrs 1min - 4hrs	3	210 mins	630
4hrs 1min - 5hrs	3	270 mins	810
5hrs 1min - 6hrs	1	330 mins	330
6hrs 1min +	5	390 mins	1950
$4980 \div 30 = 166 \text{ mins}$ $= 2.76 \text{ hrs}$			



## CBA2 Statistical Investigation: Social Media by Gender

Instagram - Females

Time (hours)	Frequency, f	Midpoint, x	fx
<59 mins	12	30 mins	360
1-2 hrs	7	90 mins	630
2hrs 1min - 3hrs	3	150 mins	450
3hrs 1min - 4hrs	5	210 mins	1050
4hrs 1min - 5hrs	1	270 mins	270
5hrs 1min - 6hrs	0	330 mins	0
6hrs 1min+	2	390 mins	780

$3540 \div 30 = 118 \text{ mins}$   
 $= 1 \text{ hr } 58 \text{ mins}$

Tik Tok - Females

Time (hours)	Frequency, f	Midpoint, x	fx
<59 mins	8	30 mins	240
1-2 hrs	3	90 mins	270
2hrs 1min - 3hrs	5	150 mins	750
3hrs 1min - 4hrs	5	210 mins	1050
4hrs 1min - 5hrs	3	270 mins	810
5hrs 1min - 6hrs	2	330 mins	660
6hrs 1min+	4	390 mins	1560

$5340 \div 30 = 178 \text{ mins}$   
 $= 2 \text{ hr } 58 \text{ mins}$

Males	<59 mins	1-2hrs	2hrs 1 min- 3hrs	3hrs 1min- 4hrs	4hrs 1 min- 5hrs	5hrs 1 min- 6 hrs	6hrs 1 min+
Snapchat	51.7%	17.2%	17.2%	3.4%	6.9%	0%	3.4%
Instagram	60%	26.7%	6.7%	3.3%	0%	0%	3.3%
TikTok	53.6%	17.9%	10.7%	3.6%	3.6%	0%	10.7%

The mean for the males was:

Snapchat = 96mins = 1hr 36mins

Instagram = 72mins = 1hr 12mins

TikTok = 107mins = 1hr 47mins

And again, here are my calculations:

Attempts to describes data in terms of measures of centre and spread



## CBA2 Statistical Investigation: Social Media by Gender

Time (hours)	Snapchat - Males Frequency, f	Midpoint, x	fx
< 59 mins	15	30 mins	450
1 - 2hrs	5	90 mins	450
2hrs 1min - 3hrs	5	150 mins	750
3hrs 1min - 4hrs	1	210 mins	210
4hrs 1min - 5hrs	2	270 mins	540
5 hrs 1min - 6hrs	0	330 mins	0
6hrs 1min +	1	390 mins	390

$2790 \div 29 = 96 \text{ mins}$   
 $= 1.60 \text{ hrs}$

Time (hours)	Instagram - Males Frequency, f	Midpoint, x	fx
< 59 mins	18	30 mins	540
1 - 2hrs	8	90 mins	720
2hrs 1min - 3hrs	2	150 mins	300
3hrs 1min - 4hrs	1	210 mins	210
4hrs 1min - 5hrs	0	270 mins	0
5hrs 1min - 6hrs	0	330 mins	0
6hrs 1min +	1	390 mins	390

$2160 \div 30 = 72 \text{ mins}$   
 $= 1.2 \text{ hrs}$

Time (hours)	TikTok - Males Frequency, f	Midpoint, x	fx
< 59 mins	15	30 mins	450
1 - 2hrs	5	90 mins	450
2hrs 1min - 3hrs	3	150 mins	450
3hrs 1min - 4hrs	1	210 mins	210
4hrs 1min - 5hrs	1	270 mins	270
5hrs 1min - 6hrs	0	330 mins	0
6hrs 1min +	3	390 mins	1170

$3000 \div 28 = 107 \text{ mins}$   
 $= 1.78 \text{ hrs}$

The data **rang**ed between 6 hours. (midpoint of 6hrs+, which was 390 mins – midpoint of <59 mins, which was 30 mins)  $390-30=360$  which is 6 hours. It doesn't quite give me an accurate average which is why I chose to select mean as my main measure of spread instead of the range.

The **mode** (most common answer) for both genders was < 59 mins spent on the social media platforms of Snapchat, Instagram and TikTok per day. Although, a

Attempts to describe data in terms of measures of centre and spread



## CBA2 Statistical Investigation: Social Media by Gender

higher percentage of females than males spent longer than 1 hour, as seen in the histograms.

### Conclusion:

The percentage of girls who responded saying that they spent 1 hour, or more was higher than the percentage of boys who said that they spent the same time as them. This leads me to my conclusion that gender does affect the amount of time spent on social media and teenage girls do tend to spend more time on Snapchat, Instagram and TikTok compared to teenage boys.

I also researched online to see if there were any more official statistics to back this conclusion, and I found out that:

- Girls are somewhat more likely than boys to say they spend too much time on social media (47% vs. 35%). By contrast, boys are roughly four times as likely to say they spend too much time playing video games (41% of boys and 11% of girls say this).

Source: <https://smra-global.org/news/7957194#:~:text=Girls%20are%20somewhat%20more%20likely,%25%20of%20girls%20say%20this>.

- A study, titled “Social Media, Social Life: Teens Reveal Their Experiences” done in September of 2018, revealed that women tend to use social media more than men. The report found that 81 percent of female teenagers use social media daily, compared to 66 percent of teenage males.

Source: <https://azbigmedia.com/business/business-and-social-media/how-age-and-gender-can-impact-social-media-usage/>

By carrying out this investigation I have gained a lot of insight on the teenage social media usage and how it differs between genders and ages. My primary research helped me understand the usage of social media of people around me and the secondary research helped me back up this CBA.

Reports the findings and conclusion refers to the original question

**Overall judgement:**  In line with expectations