

# Social Media Analysis Project Summary

## 1. Summary for Task 1

- a) No Duplicate Post entries Found
- b) Standardization of all the columns and data completed
- c) Formatting of the columns completed
- d) Hashtags were split (Many of them were new for the new columns created)

## 2. Summary for Task 2

- a) Calculated the average engagement rate for each post
- b) The top 10 posts (Post ID in descending order) with highest engagement are as follows
  - i. P220 - 1.812925170
  - ii. P058
  - iii. P232
  - iv. P178
  - v. P175
  - vi. P062
  - vii. P264
  - viii. P143
  - ix. P210
  - x. P070 - 0.382747069
- c) Created a Pivot Table for the following
  - i. Total Likes, Shares, and Comments by Content Type and Platform.

Row Labels	Sum of Likes	Sum of Shares	Sum of Comments
<b>Carousel</b>	<b>161999</b>	<b>26471</b>	<b>14508</b>
Facebook	44476	7400	4589
Instagram	43948	6975	3890
Twitter	48649	5791	3607
YouTube	24926	6305	2422
<b>Image</b>	<b>173468</b>	<b>29610</b>	<b>16352</b>
Facebook	71602	12904	6495
Instagram	34202	5286	2655
Twitter	43761	7110	5125
YouTube	23903	4310	2077
<b>Reel</b>	<b>127945</b>	<b>23201</b>	<b>11320</b>
Facebook	36368	5964	3353
Instagram	32148	8110	3386
Twitter	27029	4550	1913
YouTube	32400	4577	2668
<b>Story</b>	<b>124488</b>	<b>23955</b>	<b>12107</b>
Facebook	29405	4950	3223
Instagram	42649	10049	3846
Twitter	20466	5090	3026
YouTube	31968	3866	2012
<b>Text</b>	<b>116496</b>	<b>18693</b>	<b>10285</b>
Facebook	31963	4792	3377
Instagram	25567	5112	1946
Twitter	31899	4861	3910
YouTube	27067	3928	1052

Video	115595	20995	10279
Facebook	28947	3171	2263
Instagram	25770	5912	2128
Twitter	29593	6326	3299
YouTube	31285	5586	2589
<b>Grand Total</b>	<b>819991</b>	<b>142925</b>	<b>74851</b>

ii. Average Clicks per post by Hashtag.

Row Labels	Average of Clicks
#LiveForNow	143.3052632
#LiveForNow,#AnytimelsPepsiTime	32
#LiveForNow,#AnytimelsPepsiTime,#ThirstyForMore	194
#LiveForNow,#PepsiCoRefresh,#AnytimelsPepsiTime	239
#LiveForNow,#SmoothLikeNitroPepsi	39
#LiveForNow,#ThirstyForMore,#BetterWithPepsi	208
#PepsiCoRefresh	156.8988764
#PepsiCoRefresh,#AnytimelsPepsiTime	182
#PepsiCoRefresh,#BetterWithPepsi	117
#PepsiCoRefresh,#SmoothLikeNitroPepsi	170
#PepsiCoRefresh,#ThirstyForMore,#BetterWithPepsi	100.5
#ThirstyForMore	156.625
#ThirstyForMore,#AnytimelsPepsiTime	200
#ThirstyForMore,#BetterWithPepsi	126.5
#ThirstyForMore,#PepsiCoRefresh	224
#ThirstyForMore,#PepsiCoRefresh,#AnytimelsPepsiTime	111
#ThirstyForMore,#SmoothLikeNitroPepsi	10
#ThirstyForMore,#ThirstyForMore,#BetterWithPepsi	25
<b>Grand Total</b>	<b>151.22</b>

d) Highlighted top-performing hashtags using a formula-based ranking.

i. Following highlighted are the top 10 Hashtags

Hashtag used	Average Engagement Rate	Rank
#ThirstyForMore,#AnytimelsPepsiTime	0.21637	1
#ThirstyForMore,#SmoothLikeNitroPepsi	0.15572	2
#ThirstyForMore	0.15459	3
#PepsiCoRefresh	0.14515	4
#LiveForNow	0.14123	5
#ThirstyForMore,#BetterWithPepsi	0.13420	6
#LiveForNow,#AnytimelsPepsiTime,#ThirstyForMore	0.12944	7
#LiveForNow,#PepsiCoRefresh,#AnytimelsPepsiTime	0.12922	8
#LiveForNow,#ThirstyForMore,#BetterWithPepsi	0.11880	9
#ThirstyForMore,#PepsiCoRefresh,#AnytimelsPepsiTime	0.11155	10
#PepsiCoRefresh,#AnytimelsPepsiTime	0.11146	11
#LiveForNow,#SmoothLikeNitroPepsi	0.11143	12
#PepsiCoRefresh,#SmoothLikeNitroPepsi	0.10231	13
#LiveForNow,#AnytimelsPepsiTime	0.10098	14
#ThirstyForMore,#PepsiCoRefresh	0.10007	15
#PepsiCoRefresh,#ThirstyForMore,#BetterWithPepsi	0.08565	16
#ThirstyForMore,#ThirstyForMore,#BetterWithPepsi	0.07992	17

### Conclusion for task 2:

1. According to analysis we can say that the post with Post Id **P220** was the **best performing** post, with an **engagement rate** of **1.812925170**
2. Also it can be said that, the **most engaging** content in on the social media plat forms are **Images** followed by Carousel and then the others. Also **#PepsiCoRefresh** got most number of avg\_click.
3. Similarly the **top performing** hashtag was **#ThirstyForMore,#AnytimelsPepsiTime**

### 3. Summary for Task 3

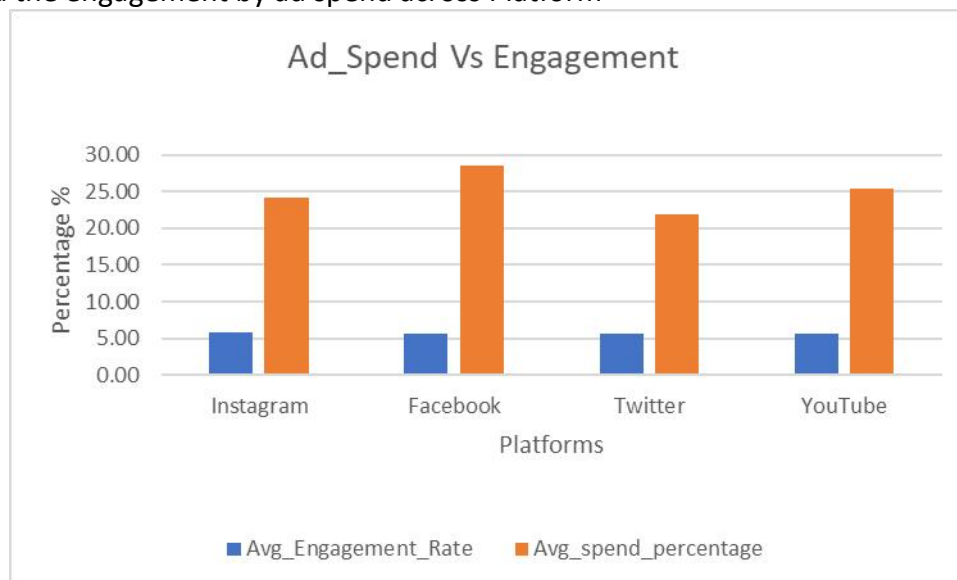
- a) Identified the Platform with the highest engagement.

Platform	Avg Engagement Rate
Instagram	5.72
Twitter	5.66
Facebook	5.65
YouTube	5.56

- b) Compared Growth rates of followers across different platform.

Platform	Avg Engagement Rate	Avg_Growth Rate
Instagram	5.72	0.58
Twitter	5.66	0.93
Facebook	5.65	0.55
YouTube	5.56	0.90

- c) Visualized the engagement by ad spend across Platform



### d) Conclusion

- Instagram** is the platform with **highest** engagement rate with an average engagement rate of **5.72%**
- Despite the **most amount** spent on **Facebook Ads**, the **growth rate** for **Facebook (0.55)** is the **least**. On the other hand **Twitter** with the **least spent** amount has the **highest growth rate**.
- Based on the analysis we can see that the **amount spent** for the **Facebook Ads** is the **most** but the **growth rate** is the **least** as well the **engagement** rate is **moderate**. On the other hand the **amount** spent for **Twitter & YouTube** is comparatively **low** and their **performance** is much **better** than Facebook while for **Instagram** the amount spent & growth is moderate but it still holds a great **significance** in the **engagement**.

- iv. Hence based on all the analysis I would **suggest** that, the **funds** for the **Facebook Ads** should be **reallocated** to the other **3 platforms** like **Twitter, Instagram & YouTube** as Facebook the lowest ROI on the Ad spent . As the **growth rate** for both **Twitter & YouTube** is **high** and the engagement rate for Instagram is high, it would be much more **beneficial** if they keep growing on **multiple platforms**. With Instagram's high engagement rate and Twitter & YouTube's high growth rate it will be much more **significant** to use **multi-platform** strategy as all the 3 platforms will **contribute** towards the **overall growth**.

#### 4. Summary for Task 4

- a) Identified the most frequently used hashtags - #PepsiCoRefresh - 107 times

Hashtags Used	Count
#LiveForNow	103
#PepsiCoRefresh	107
#ThirstyForMore	102
#AnytimelsPepsiTime	15
#SmoothLikeNitroPepsi	5
#BetterWithPepsi	7

- b) Average performance (likes, comments) of posts containing each hashtag.-  
Top performing - #LiveForNow (298414.00)

Hashtags Used	Average Performance	Performance	AVG likes	Avg_Comments
#LiveForNow	2897.223301	298414.00	271376.00	27038
#PepsiCoRefresh	1479.64486	158322.00	144723.00	13599
#ThirstyForMore	1023.251634	104371.67	96519.33	7852.333333
#AnytimelsPepsiTime	1238.5	18577.50	16647.00	1930.5
#SmoothLikeNitroPepsi	3411.2	17056.00	15639.00	1417
#BetterWithPepsi	1801.357143	12609.50	12081.00	528.5

- c) Compared the performance of videos vs. images vs. carousels across platforms.

Average of Performance	Content Type			
Platform	Carousel	Image	Video	Grand Total
Facebook	0.13	0.17	0.15	0.15
Instagram	0.15	0.14	0.12	0.14
Twitter	1.12	0.19	0.25	0.63
YouTube	0.22	0.10	0.15	0.16
<b>Grand Total</b>	<b>0.52</b>	<b>0.16</b>	<b>0.16</b>	<b>0.29</b>

#### d) Conclusion & Recommendation

##### i. Conclusion

1. The **Most Frequently** used hashtag is **#PepsiCoRefresh** With a count of **107** followed by **#LiveForNow** with a count of **103**.
2. Even tho **#LiveForNow** not being the most frequently used hashtag, it was the best performing hashtag amongst the other hashtag used.
3. Comparing the content (Image, Carousel & Video), **Carousel** stood out to be the **best performing** content type **overall**, while it was the **least performing** content on **Facebook**, carousel performed very well across other platforms with the highest performance on Twitter (1.12), while the **overall** performance for **Images** and **Video** was almost **similar** across the platforms (Image- 0.16 & Video - 0.16).

## ii. Recommendation

1. According to the analysis, I would recommend the following
  - a) Facebook - Prioritize Image & Video
  - b) Instagram - Prioritize Carousel & Images
  - c) Twitter - Prioritize Carousel & Video
  - d) YouTube - Carousel & Video
2. Overall, if they **focus** on **carousel** it will help significantly in the **growth** towards social media platform

## 5. Summary for Task 5

- a) Calculated:
  - i. Total and average impressions, likes, and clicks per campaign.

Campaign Name	Average Likes	Average Impression	Average Clicks
SummerSplash	2891.52	38464.00	134.042
FestiveRadiance	2754.88	34247.52	170.207
NewYearRefresh	2736.51	33821.69	149.731
DailyWellness	2646.61	34716.39	150.549

Campaign Name	Sum Likes	Sum Impression	Sum Clicks
SummerSplash	138793.00	1846272.00	6434.000
FestiveRadiance	159783.00	1986356.00	9872.000
NewYearRefresh	183346.00	2266053.00	10032.000
DailyWellness	187909.00	2464864.00	10689.000

- ii. Engagement uplift during vs. before the campaign period.

Campaign_Name	Engagement During Campaign Period	Engagement Before Campaign Period	Engagement Uplift
SummerSplash	6.13	6.12	0.21%
FestiveRadiance	5.72	5.62	1.65%
NewYearRefresh	4.55	5.87	-22.54%
DailyWellness	5.97	5.80	2.96%

- b) Provided insights into:
  - i. Campaign having the highest ROI in terms of engagement vs. budget. - **SummerSplash**

Campaign_Name	Campaign_Budget	Avg_Engagement	ROI
SummerSplash	\$150,000.00	6.13	0.41%
FestiveRadiance	\$200,000.00	5.72	0.29%
NewYearRefresh	\$250,000.00	4.55	0.18%
DailyWellness	\$180,000.00	5.97	0.33%

- ii. Campaign having the strongest follower growth impact.

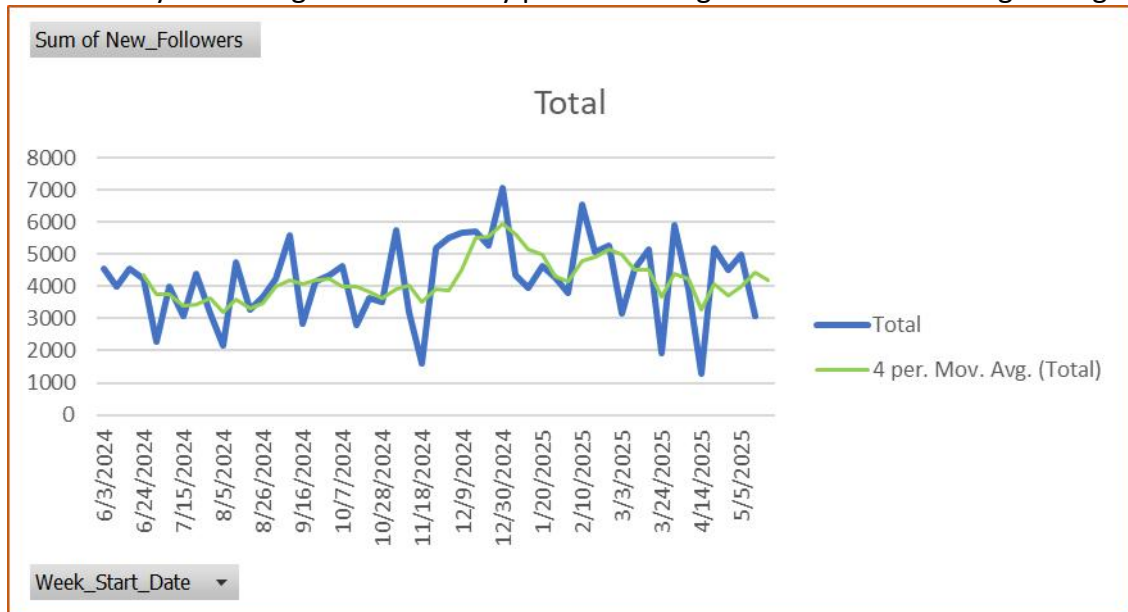
Campaign_Name	Total Followers Before campaign start	Total New Followers	Total Unfollows	Growth_Rate
SummerSplash	752450	10459	2378	1.07%
FestiveRadiance	8998409	9053	1493	0.08%
NewYearRefresh	16253254	6215	1102	0.03%
DailyWellness	21395555	10121	1734	0.04%

c) **Conclusion:**

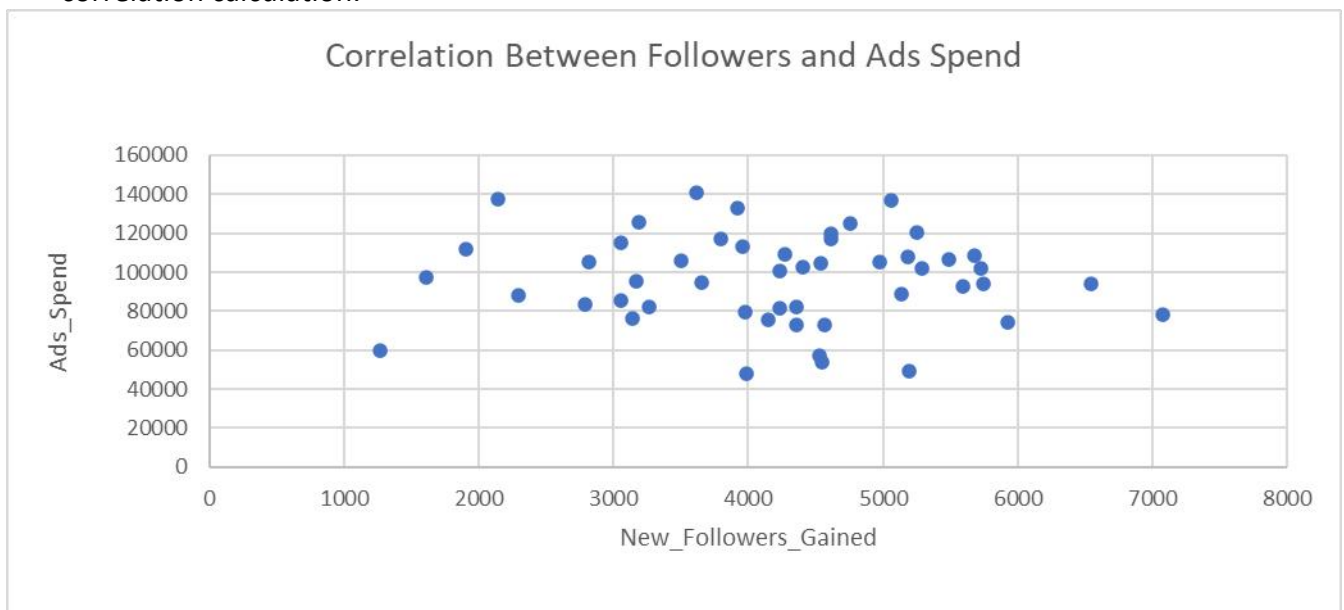
- Based on the calculation for Engagement before and after the campaign, **DailyWellness** had the **most** Engagement Upliftment of **2.96%**, while NewYearRefresh performed poorly with the upliftment of **-22.54%**.
- Carefully studying the insights of the Campaigns Budget and engagement, **SummerSplash** had the **highest ROI**, while the **investmet** for **NewYearRefresh** was the **highest** it's **returns** tured out to be the **lowest**.
- Overall we can conclude that the **ROI** as well as the **Growth** Impact for the campaign **SummerSplash** was the **highest** despite **low investemnt**.

6. Summary for Task 6

- a) Visualize weekly follower growth trends by platform using line charts and moving average.



- b) Identify the week with the highest net follower gain.
- c) Determine the correlation between ad spend and follower growth using scatter plots and basic correlation calculation.



d) **Conclusion:**

- Based on the visualization of the **line chart** we can say that the week starting on **12/30/2024** **gained** the **most** number of new **followers**, while the week starting **4/14/2025** gained the **least** number of **followers**.

- ii. While based on the formula **Net Gain followers = (New followers - Unfollow)**, we can say that the week starting from **5/5/2025** had the **highest net gained followers**
- iii. While observing the **scatter plot** and performing some basics calculations using correlation formula **correl(Ad\_spend\_rang, new\_followers range)** the value came out to be - **00.051737298** we can conclude that there is **no direct relation** between the **ad\_spend** and **followers gained**. Hence we can't say that if the amount spend for ads is higher the growth of followers will be more. The **growth depends** on the **platform** and the type of **content** and **quality** of content posted.

### **Project Summary:**

Overall we can say that with the help of some examples like

1. The amount invested in campaigns and the results
2. The amount spent on ads in week and the amount of followers gained

We can surely say that even if the amount invested for certain project, campaign or Ad is high it won't produce the highest returns.

But on the other hand if we focus on the type of content and the platform on which they perform, it will contribute much more significantly in the overall growth for example.

1. The Avg Ad spend on Twitter was less (21207.14) but it achieved the highest growth rate (0.93) with the right amount of content.

### **Conclusion:**

Strategic content planning along with the suitable platform selection can provide better results rather than simply increasing the budget.