Project Ravin

Final Presentation

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Group 6

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Who is Singapore Children's Society

- ★ Established in 1952
- ★ Protects and nurtures children and youth of all races and religions
- ★ Operates more than 10 service centres islandwide
- ★ Offer services for:
  - ○ Childrens
  - ○ Youth Services
  - ○ Family Services Research and Advocacy.

Business Problem

Lack of engagement and social media presence with audience

Platforms scraped

Instagram

Reddit

LinkedIn

Twitter

Tools used

#1:
In search of Followers & Potential Platforms
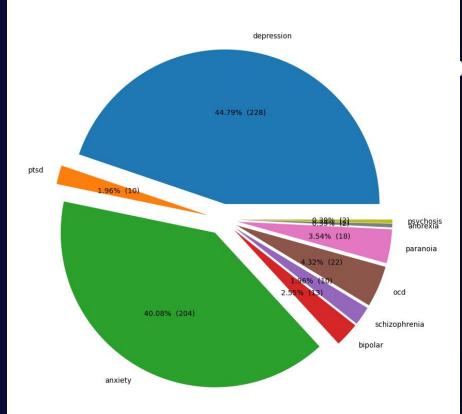
Reddit

Insights

- Depression & Anxiety
- Most discussed
- Least discussed
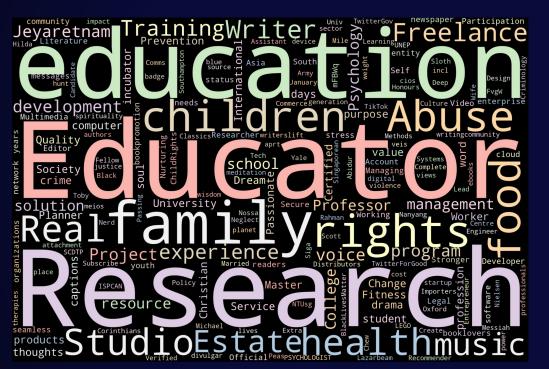
Twitter Follower's Bios

Took only the nouns in Twitter followers' bios using *nltk*

Hope to get a cleaner data and understand what they do

Many of SCS' followers work in education or are higher education students.

SCS can consider extending their outreach to universities, in particularly on Twitter.

Twitter Follower Diagram

Total: 9638 Nodes and 9719 Edges

Features nodes SCS' followers and their followers, which we cluster by in-degrees

Use networkx to clean the data, then Gephi to better find the clusters

Most of the nodes cluster around TikTokForGood.

TikTok for Good

TikTokForGood has 126.9K followers on Twitter and 331.5K followers on TikTok.

Has upwards of 100 comments, 300 likes and 50k views per video

There is no content creator currently on TikTik that specialises in mental health in Singapore, particularly about children.

Casual short-form videos may take a shorter time for SCS to create, compared to the current graphics.

#2

Competitive
Analysis with
Ministry of Social and
Family Development (MSF)

Comparison

SCS
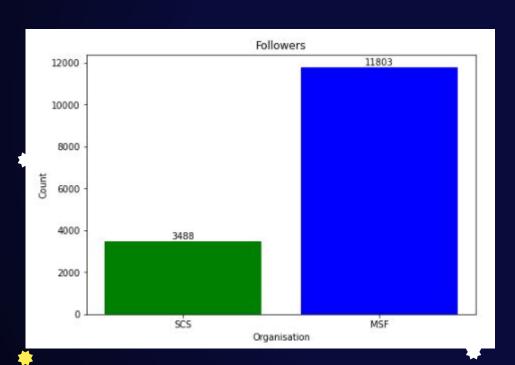(Singapore
Children's Society)

MSF
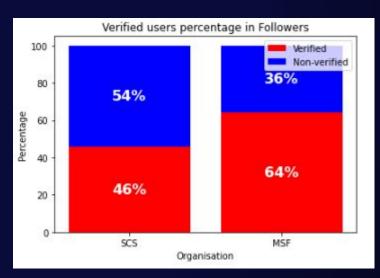(Ministry of Social and
Family Development)

Followers

- MSF has higher Followers count and higher percentage of verified followers.
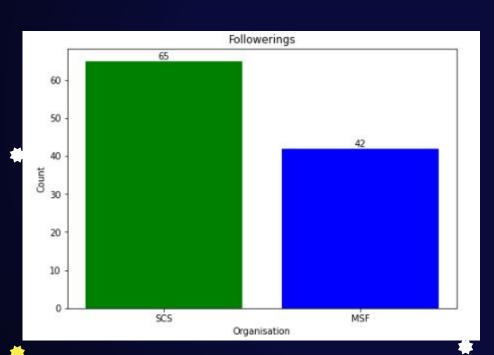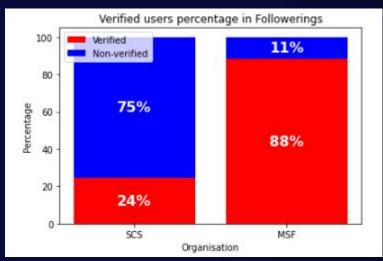
Followerings

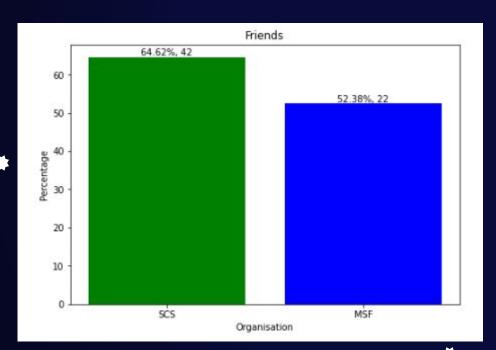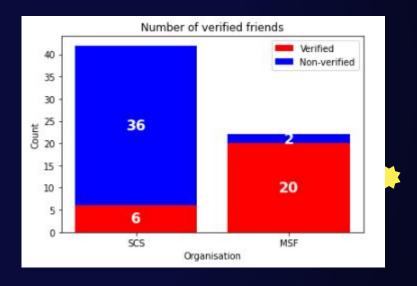- SCS can try to potentially network with more verified users

Friends -1

- Unlike SCS, MSF friend base is made up of mostly verified users

Friends -2

SCS Mutual Friend List

1. 'sgcancersociety',
2. 'theasianparent',
3. 'betterinternetsg',
4. 'youthcorpssg',
5. 'ncss.sg',
6. 'nycsg'

MSF Mutual Friend List

1. 'ericchuasl.sg',
2. 'sun.xueling', '
3. masagosz',
4. 'presidentschallengesg',
5. 'foodfromtheheartsg',
6. 'gov.sg',
7. 'ncpg.singapore',
8. 'beanstalksingapore',
9. 'mndsingapore',
10. 'psdsingapore',
11. 'motsingapore',
12. 'mof_sg',
13. 'desmond.lee',
14. 'singaporemci',
15. 'muhammadfaishalibrahim',
16. 'comchestsg',
17. 'ncss.sg',
18. 'familiesforlife',
19. 'chuanjin1',
20. 'mccysg'

Post
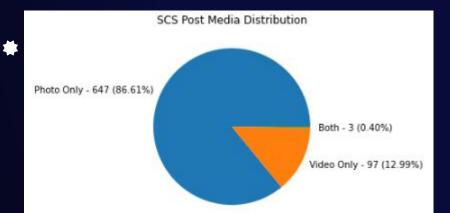
SCS Post Analysis:

Total posts: 747
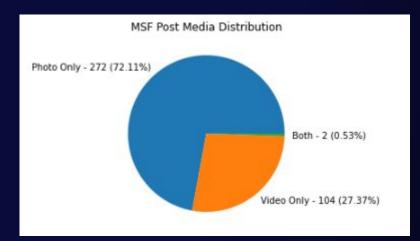Average media per post: 1.9732
Images count: 1371, 93.01%
Videos count: 103, 6.99%

MSF Post Analysis:

Total posts: 380
Average media per post: 1.9947
Images count: 629, 82.98%
Videos count: 129, 17.02%

SCS Post Media Distribution

Photo Only - 647 (86.61%)
Both - 3 (0.40%)
Video Only - 97 (12.99%)

MSF Post Media Distribution

Photo Only - 272 (72.11%)
Both - 2 (0.53%)
Video Only - 104 (27.37%)

Comment

Comments are a <u>better indicator</u> of whether a user is actively involved in the organization engagement efforts.

SCS Comment Analysis:

Total comments: 237
Average comments/post: 0.3173

Number of commenter who is also a follower: 71 **(2.04%)**

Number of commenter who is also a verified user: 7

MSF Comment Analysis:

Total comments: 116
Average comments/post: 0.3053

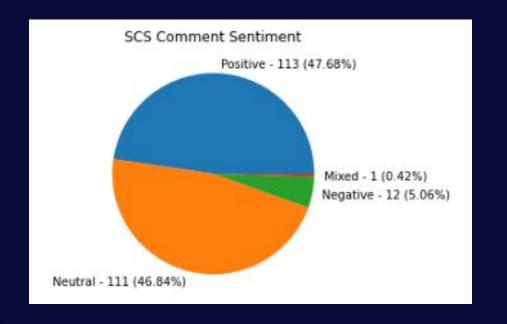Number of commenter who is also a follower: 46 **(0.39%)**

Number of commenter who is also a verified user: 0

Comment - Sentiment Analysis

Comment - Positive, Neutral

	comment
2	Congratulations on 70 years! 💪✨
3	Thank you for the memories. It was an honour to have worked as a teacher there. @nsd_be
4	Hi @sgchildrensoc pls check dm thank you
6	Hope you guys enjoyed the game! #RiseandRoar #ONESTRONG
7	only took part in a few activities conducted by scs, but they were really fun :)

Positive Comments
- Events related
- Talks more about the participants' experiences

Neutral Comments
- Emojis (some)
- Tags
- Neutral statements

	comment
0	👏👏
1	@cherylongkx @cool_zillavince
5	Promote it on @Mentalhealth_community
8	One of the children in CC1. There since 3yrs old to 12 yrs old.
9	Can send the recording link to rewatch this event again

Comment - Negative (12)

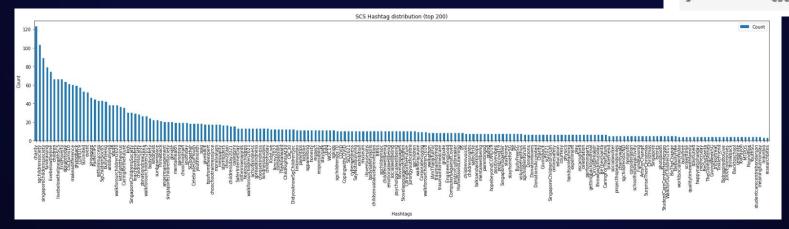|	comment
14	can live stream this talk on your facebook. then i will not rsvp
18	I feel very sad today because I wanted to wear a ear ring for my first time but my parents don't allow me what can I do to make my parents allow 😢😢
24	Hit your head on the wall. Don't hit your children
79	This looks like an session.
104	I hope for a healthier Singapore with lower cases of COVID-19.
107	My children got kidnaped for abductions for sex trafficking or sex exploration , that's why I am ver pathetic as the terrorists from terrorism challenges me with bestiality !
126	Awww 😢😢😢😢 So Sad
137	Link is not clickable
162	Thats meh
182	Hi Children Society! Was an hr late for Minister Chan's Lecture. Missed out the important part. Will you be sharing the video coverage or post the writeup coverage?
213	Terrific!
226	hope the haze gets worse and school closes

Hashtags

	Hashtag	Count
0	charity	123
1	sgchildrensociety	103
2	singaporechildrenssociety	89
3	fundraising	79
4	livebelowtheline	74
5	children	66
6	livebelowthelinewithSCS	66
7	EndPoverty	66
8	donatetoday	63
9	CSCturns10	61

SCS Hashtags Analysis

Total Hashtag (non-unique):	3718
Average Hashtag per post:	4.98
Total Hashtag (unique):	570
Reusability rate:	6.52

MSF Hashtags Analysis

Total Hashtag (non-unique):	1283
Average Hashtag per post:	3.38
Total Hashtag (unique):	287
Reusability rate:	4.47

SCS Hashtag distribution (top 200)

Overall - Photo Likes

Overall - Video Views
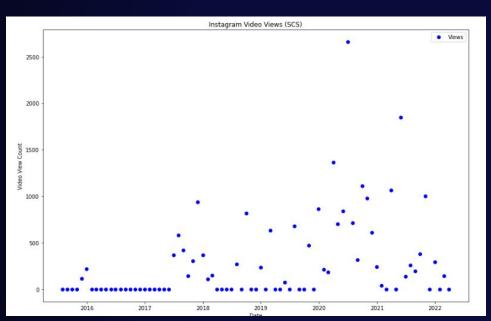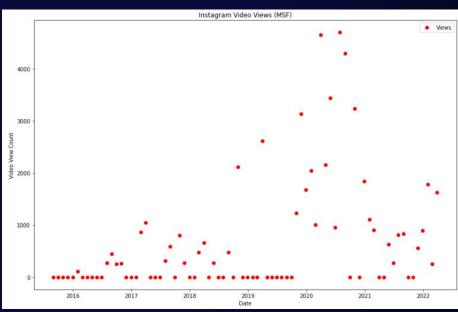
Tagged Post

	username	likeCount	commentCount		postUrl
91	malaquemahdaly	5096	6	My dearest girl here means the world to me. She lights up my life with her laughter and easy-going nature. She really taught me to be a lil more forgiving and that happiness... sparked my journey to be healthier and more energetic as I grow older every day, so that I can spend more precious quality time with her and her brother.\n\nSpeaking of pur... both of our feet. Thoughtfully made with materials that are kinder on our planet, these are shoes that will not only make a fashion statement, but also express an eco-conscious sta... chemical-free cotton and certified recycled thermoplastic rubber. \n\nIf you're passionate about giving back, whether it's to the earth or to society, we can also help to give back... up for a @PayPal Singapore account, and when you shop on CHARLES & KEITH's website (children's shoes included), @paypal will donate 3% of your transaction to @sgchildren... faces. :)\n\nShop at many other merchants, including @bedandbasics to give back! Visit paypal.com/sg/givebackMM to find out n...	
98	poojakawatra	3436	69	Have you ever felt that you are struggling with your feelings?? Keeping a smile on your face but a lot going inside??\n\nMental health is something we all speak about once som... but we need someone who can sit, talk to us, assure us and not judge us for what we are going through at the moment.\n\nChildhood trauma, depression, Sexual abuse is on the... event during the first 18 years of their lives. \n\nMost of the time people are so confused to talk about it. \n\nSeven local agencies focusing on community-based menta... Caregivers Alliance Limited, Limitless, Singapore Association for Mental Health, and Singapore Children's Society - have come together to launch Safe Circle. \n\n@safecircle.s... anyone who would like to find out more about trauma-informed care, Safe Circle offers complimentary programs and workshops as well! \n\nFor anyone out there reading this, w... any form of trauma, @SafeCircle.SG is here for you. \n\nJust to...	/p/CRgrKbnlgDh/
121	ruchyii_soul	2008	48	I was honoured to be invited to share my personal experience and journey as a Professional Esports Player with VOX @ Children's Society.\n\nA youth drop-in centre focusing on p... in which fun and social work intersect. VOX reaches out to youth aged between 13 to 18, underpinned by the Positive Youth Development framework to build on 5Cs - Confide... were having an in-house tournament for Mobile Legends and youths were enthusiastic to ask me questions in hopes to seek advice to improve their gaming strategies. \n\nApa... knowledge, I wanted to highlight the positive aspects of gaming alongside the transferable skills that you are able to cultivate through gaming.\n\nOne lucky youth received the u... some mask souvenirs from the M2 tournament through a mini quiz session as well.\n\nIn spite of the challenges faced by COVID-19, I hope the drop-in centre...	/p/CNUZWPMrgyB/
83	malaquemahdaly	1573	1	The visit to Singapore Children's Society (SCS) was an eye-opening one for me. Not all of us are blessed to grow and be nurtured in a safe home environment. The society is fo... these children, regardless of race and religion, lending them all the support that they'll need to be able to thrive in their growing-up years.\n\nRecently, I had the opportunity to pa... CHARLES & KEITH, we put a smile on some these children's faces through these goodie bags lovingly packed by @CharlesKeithOfficial. \n\nAdditionally, @CharlesKeithOfficial has... Enterprises for Children-in-Need (1000E) . All funds to the programme will be used to support Singapore Children's Society and the programmes and services across SCS'... whenever we can—for example, if you create a @paypal Singapore account, and shop online at @CharlesKeithOfficial, @bedandbasics, and many other merchants, PayPal will d... can do good when we shop! Visit http://...	/p/CS0omBgJH6r/
39	gladyshf80	1520	6	Previous Post Deleted due to rights for video 🙏😔\n\nOn Behalf of my kiddos I want to thank everyone who supported us through our bidding sessions & all those who donated... weeks time and details will be out soon on Acube³ FB page. Thank you @8worldnews for the feature and... video\nhttps://www.facebook.com/140711089280549/posts/4976710889013854/\n_____\n#family #makeadifference #charity #childrensociety #children...	/p/CWDSDMlv0ur/

	username	likeCount	commentCount
47	thejianhaotan	45452	122
190	joannepeh	18346	74
245	zoetay10	6430	103
225	bentanzx	6241	184
1	leebelinda	5183	133

#3
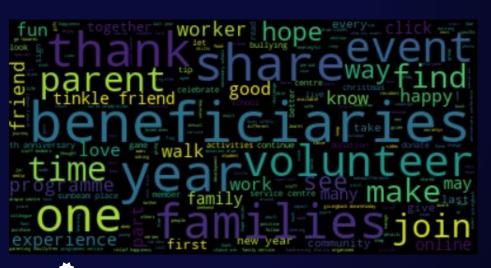
How to increase engagement level through content creation?

#1 General WordCloud

- Comparing across **captions** and **images** of each post
- General overview of the things that SCS talks about by looking at the most frequently appearing words
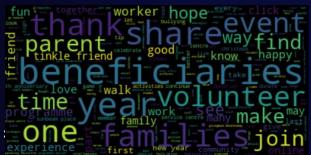
Captions

- Repetitions
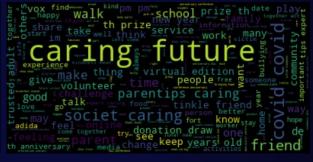- Names and the functions of SCS appear the most often

#1 General WordCloud

Captions

Image Labels

Labels detected by AWS

Image - Text

Text extracted from the posts

#2 Topic Modelling

Captions

```python
# number of topics
num_topics = 5
# Build LDA model
lda_model = gensim.models.LdaMulticore(corpus = corpus,
                                       id2word = id2word,
                                       num_topics = num_topics)
# Print the Keyword in the 5 topics
pprint(lda_model.print_topics())
doc_lda = lda_model[corpus]
```

```
[(0,
  '0.013*"youth" + 0.008*"link" + 0.007*"centre" + 0.007*"bio" + '
  '0.006*"support" + 0.006*"service" + 0.005*"year" + 0.005*"beneficiaries" + '
  '0.005*"today" + 0.004*"family"'),
 (1,
  '0.007*"youth" + 0.006*"help" + 0.005*"link" + 0.005*"day" + 0.005*"need" + '
  '0.005*"year" + 0.004*"families" + 0.004*"beneficiaries" + 0.004*"bio" + '
  '0.004*"bullying"'),
 (2,
  '0.013*"youth" + 0.009*"bio" + 0.009*"link" + 0.005*"event" + 0.005*"day" + '
  '0.005*"help" + 0.005*"need" + 0.004*"programmes" + 0.004*"year" + '
  '0.004*"walk"'),
 (3,
  '0.007*"help" + 0.006*"today" + 0.006*"year" + 0.005*"day" + 0.005*"support" '
  '+ 0.005*"bio" + 0.005*"need" + 0.005*"new" + 0.004*"link" + '
  '0.004*"families"'),
 (4,
  '0.008*"support" + 0.007*"day" + 0.006*"thank" + 0.005*"help" + '
  '0.005*"family" + 0.005*"today" + 0.005*"beneficiaries" + 0.004*"need" + '
  '0.004*"youth" + 0.004*"volunteers"')]
```

Supporting beneficiaries (youth)

Helping bullied youths

Event/ Programmes

Supporting beneficiaries (families)

Calling new volunteers

#2 Topic Modelling

Image Labels

```
1   pprint(lda_train.print_topics())
```

```
[(0,
  '0.111*"indoors" + 0.105*"room" + 0.092*"crowd" + 0.061*"school" + '
  '0.056*"screen" + 0.051*"electronics" + 0.051*"furniture" + 0.045*"audience" '
  '+ 0.044*"classroom" + 0.042*"table"'),
 (1,
  '0.093*"clothing" + 0.091*"apparel" + 0.053*"outdoors" + 0.049*"shoe" + '
  '0.044*"footwear" + 0.034*"accessories_accessory" + 0.033*"phone" + '
  '0.030*"building" + 0.030*"nature" + 0.029*"animal"'),
 (2,
  '0.179*"advertisement" + 0.177*"poster" + 0.162*"paper" + 0.148*"flyer" + '
  '0.147*"brochure" + 0.085*"text" + 0.014*"document" + 0.013*"collage" + '
  '0.009*"graphics_art" + 0.009*"bag"'),
 (3,
  '0.194*"clothing" + 0.192*"apparel" + 0.119*"people" + 0.072*"face" + '
  '0.068*"female" + 0.051*"shoe_footwear" + 0.041*"shorts" + 0.032*"pants" + '
  '0.027*"sport" + 0.021*"girl"'),
 (4,
  '0.217*"text" + 0.101*"food" + 0.047*"plant" + 0.044*"sleeve" + 0.040*"meal" '
  '+ 0.037*"restaurant" + 0.033*"glasses_accessories" + 0.033*"symbol" + '
  '0.033*"accessory" + 0.030*"label"')]
```

Indoors or Classroom settings

Nature or Outdoor settings

Advertising, posters and brochures

Awareness on Sexual Harassment

Activities

#2 Topic Modelling

Images' Text

```
▶|    1  pprint(lda_train.print_topics())

[(0,
  '0.097*"future" + 0.074*"societ_caring" + 0.043*"caring_future" + '
  '0.029*"bullying" + 0.026*"thank" + 0.024*"vox" + 0.023*"love" + '
  '0.023*"caring" + 0.022*"donation_draw" + 0.022*"dinner"'),
 (1,
  '0.099*"caring_future" + 0.050*"happy" + 0.031*"th" + 0.027*"year" + '
  '0.021*"hope" + 0.020*"good" + 0.020*"tinkle_friend" + 0.019*"one" + '
  '0.018*"since" + 0.016*"experiences"'),
 (2,
  '0.056*"caring_future" + 0.055*"time" + 0.039*"family" + 0.028*"may" + '
  '0.027*"friends" + 0.025*"school" + 0.022*"home" + 0.021*"pm" + 0.020*"play" '
  '+ 0.018*"pm_pm"'),
 (3,
  '0.069*"caring_future" + 0.025*"dont" + 0.022*"parents" + 0.022*"future" + '
  '0.018*"food" + 0.017*"tell" + 0.017*"im" + 0.017*"keep" + 0.017*"online" + '
  '0.016*"give"'),
 (4,
  '0.067*"walk" + 0.029*"covid" + 0.026*"de" + 0.025*"free" + 0.023*"mr" + '
  '0.022*"pm" + 0.022*"event" + 0.020*"caring_future" + 0.020*"join" + '
  '0.020*"september"')]
```

Societal care on bullying

Caring with Tinkle Friend

Caring with Family, Friends and School

Caring from Mainly Parents

Event/ Programmes

#3 Engagement

Engagement level per post on # Likes & # Comments

1. Create a metric for engagement by using a weighted sum of # likes and # comments.
   - To create an engagement score, use 0.4# likes (normalized) + 0.6# comments (normalized).

2. Define High (1) and Low (0) engagement based on the median value
   - If engagement score > median value = (1) High
   - If engagement score < median value = (0) Low

Bringing it all together

Correlation of engagement level to topics

Final results: **Image Labelling**

	Top Quartile	Bottom Quartile	% difference	Inferred Topics	Topic Ranking
topic2	0.359546	0.319467	11.147	Advertising, posters and brochures	1
topic3	0.185336	0.205304	10.774	Awareness on Sexual Harassment	2
topic0	0.131472	0.160533	22.104	Indoors or Classroom settings	3
topic4	0.186381	0.167634	10.059	Activities	4
topic1	0.137264	0.147062	7.138	Nature or Outdoor settings	5

- The most frequently posted topic – Advertising, is the most well received
- Topic on Indoors/ Classroom Settings have the most drastic difference between the engagement levels between top and bottom quartiles
- Topic on Sexual Harassment has one of the lowest engagement levels
- Infrequently posted topic on Activities are more well-liked

Bringing it all together

Final results : **Image Text**

	Top Quartile	Bottom Quartile	% difference	Inferred Topics	Ranking Topics
topic0	0.189323	0.186323	1.585	Societal care on bullying	4
topic1	0.173284	0.232318	34.068	Caring with Tinkle Friend	3
topic2	0.187560	0.198072	5.604	Caring with Family, Friends and School	2
topic3	0.289824	0.202718	30.055	Caring from Mainly Parents	1
topic4	0.160010	0.180569	12.849	Event/ Programmes	5

- The most frequently posted topic - Caring from Mainly Parents, is the most well received
- Topic on Event/ Programmes are generally less popular when posted
- Topic on Caring with Tinkle Friend has one of the lowest engagement levels

Bringing it all together

During analysis of **Image Text...**

```
'and smiles',
'Caring for the Future',
'terms of their private body',
'Since 1952',
'parts. No nicknames please!',
'My private body',
'parts are covered',
'by my underwear.',
'breasts',
'groin',
'groin',
'penis',
'backside',
'vulva',
'testicles',
'This will help them develop a healthy',
'respect for their own bodies.',
'Teach',
'your',
```

- Provocative languages = Less liked by followers?
- Pulled up posts with more provocative languages to double check

- We thought wrong !

Bringing it all together

Correlation of engagement level to topics

Posts with HIGH engagement (Top quartile)

0.42000

0.066038

0.026415

Avg engagement: 0.02981

Bringing it all together

Correlation of engagement level to topics

Posts with LOW engagement (Bottom quartile)

0.01321

0.00943

Avg engagement: 0.02981

Recommedations

What should SCS do to generate more engagement?

1. SCS should continue posting more on advertising and brochures, as well as topics like 'Caring from Mainly Parents'
   - Originally the most posted topics and most well-received
2. SCS can post less of Indoors/ Classroom settings and posts more pictures with people doing daily activities
   - Indoors/ Classroom settings received low engagement
   - Posts on activities are more well-liked, yet not posted much
3. SCS should mix topics with low engagement levels like Event/ Programmes and 'Caring with Tinkle Friend' with high engagement topics
4. For topics on Sexual Harassment, SCS should focus more on posting 'comic-like' posts instead of pictures or posts where information is hidden in long-winded captions

Thanks!