

SOCIAL MEDIA ENGAGEMENT OF OFFICIAL STATISTICS TOWARDS BUILDING STATISTICAL CULTURE

Nur Syazwin Mansor¹ and Shafizaermawaty Shafei²

ABSTRAK

Media sosial banyak digunakan untuk menyebarkan maklumat dan telah menjadi satu medium yang cekap dalam proses komunikasi antara institusi awam dan rakyat. Kajian ini dijalankan untuk melakukan penilaian bagi menggambarkan keterlibatan rakyat dalam maklumat dan statistik rasmi yang dikongsi melalui laman Facebook Jabatan Perangkaan Malaysia (DOSM). Analisis deskriptif digunakan untuk mengenal pasti sama ada maklumat tersebut telah berjaya sampai kepada rakyat. Hasil kajian mendapati bahawa maklumat tersebut telah berjaya sampai kepada rakyat dan dapat dilihat dari segi komunikasi dua hala yang wujud di media sosial. Seterusnya, analisis sentimen dilakukan untuk mengenal pasti tahap pemahaman rakyat mengenai statistik yang dihasilkan dan hasil kajian menunjukkan rakyat Malaysia berkemampuan untuk mentafsir statistik dengan tepat melalui media sosial.

Kata kunci: Media sosial, Budaya statistik, Statistik rasmi

ABSTRACT

Social media tools are widely used to spread information and are gaining approval in the communication process between public institutions and citizens. This study conducts an assessment to describe the engagement on information and official statistics shared via DOSM Facebook page. Descriptive analysis is used to identify whether the information has reached the citizens. It was found that the information has reached the citizen and that two-way communications on social media platforms. Next, sentiment analysis was performed to gather the citizen's understanding of the statistics produced. It is revealed that Malaysian citizens are capable of interpreting statistics efficiently posted via social media.

Keywords: Social media, Statistical culture, Official statistics

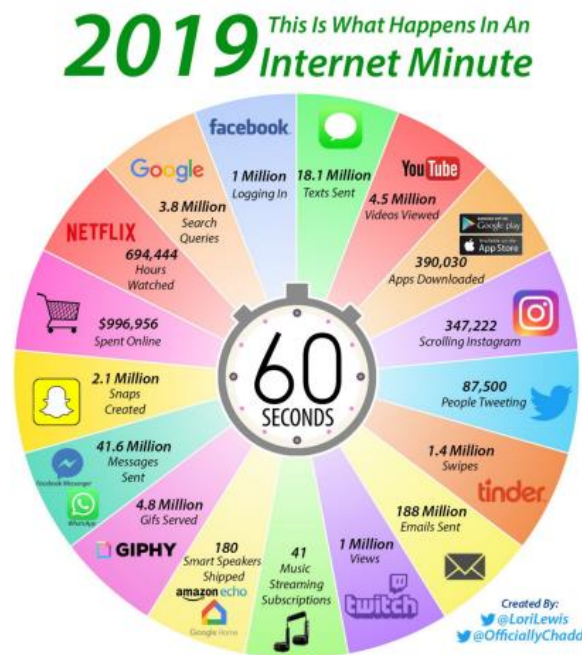
¹ Nur Syazwin Mansor is currently Assistant Director of Core Team Big Data Analytics (CTADR) and
² Shafizaermawaty Shafei is currently Director of Balance of Payments Statistics Division, Department of Statistics Malaysia.

1. INTRODUCTION

Challenging statements and research reports are now regularly appearing in media reports. In this data-driven society, it is important for citizen the understand and apply statistical literacy across varying backgrounds (Pierce, 2014) since the basis for decision-making should be statistics rather than feelings and beliefs (Ingram, 2015). For instance, citizens need to understand that any statement from various sources was derived from reliable sources and are able to evaluate whether the information is true. One of the domains of statistics is the citizen's literacy to ability in interpreting statistical results (Yusof et al., 2019). Indeed, citizens without statistical literacy may not be able to discriminate between credible and incredible information and will have difficulty interpreting such information's (Galesic & Garcia-Retamero, 2010).

Consequently, one of the biggest challenges in a developing country such as Malaysia is the citizen's low awareness of data. As the official National Statistics Organization (NSO), the Department of Statistics Malaysia (DOSM) has developed various dissemination strategies which aim to increase the use and better understanding of official statistics. Hence, to accomplish these objectives, DOSM has undertaken initiatives to reach the citizen through social media.

It is well known that Internet has become one of the basic needs of humans besides basic amenities such as food, clothing, and accommodation. For instance, 88.0% of Instagram users are 39 years of age or younger, highlighting the popularity of this network among youth. Internet Users Survey (IUS) 2020 determined that WhatsApp has experienced slower growth in the communication applications, increasing from 98.1% in 2018 to 98.7% in 2020. Facebook Messenger, however, saw a decline from 55.6% in 2018 to 53.9% in 2020. One striking development is the double-digit increase in Telegram users from 25.0% in 2018 to 40.1% in 2020 (MCMC, 2020). The Internet covers every aspect of society, including the communication perspective. As shown in Figure 1.1 by Internet Minute Infographic 2019 (Jeff, 2019), we can visualize the massive usage of the internet all around the world in 2019. For example, there are 18.1 million texts sent using WhatsApp in 60 seconds. There are also 3.8 million search queries in 60 seconds and 118 million emails sent. Thus, a new communication space that has evolved is the social media - a new media that can break down time and space.



Source: Visual Capitalist

Figure 1.1: Internet Minute Infographic 2019

Therefore, as the Internet and social media growth are developing fast, one approach to meet the objective of building a statistical culture among Malaysian is by disseminating publications through social media. Social media users keep on increasing from year to year, especially among the Millennials and Gen Z. Later maybe there is going to be a time everybody has social media. According to DOSM (2022), the most popular internet usage activity in 2021 was participating in social networks, with 99.0 per cent, followed by downloading pictures, movies, videos or music; playing or downloading games (91.8%), finding information about goods or services (89.4%), making phone calls via Internet/ VoIP (89.2%) and downloading software or applications (86.3%). Thereby, DOSM uses this as a tool to communicate data routinely to society and create a statistical culture in Malaysia. This strategy is expected to increase the statistical culture among all types of users and promote the use of statistics in an evidence-based decision-making process culture.

Thus, this study was conducted to assess and describe the engagement on DOSM Facebook page and to identify whether the information has reached the users. It is hoped that the findings of this study will be of assistance to DOSM in improving the social media content in future.

2. LITERATURE REVIEW

In the new internet era, information technology has the potential to make complex concepts and ideas of statistics more accessible (Rubin, 2007). Statistical culture is crucial in dealing with the occurrence of statistical data in the media and other sources of information that influence our daily life (Kassim, 2010). For instance, even though students can calculate basic statistics, the understanding of what was being calculated, constructed or how it is interrelated is lacking (Garfield, 2004).

Currently, other National Statistics Offices (NSOs) have developed a good relationship with the media but many of them still do not use the media enough to promote statistical culture to different segments of the population (Ferligoj, 2015). Both the adult and young populations need to be supplied with more statistical news using social media. This is because young people claim to get more news through social media than was their primary intent (Hermida, 2012). Thus, every convenience offered by social media can be used by each NSO in communicating data as well as statistical activity (Maulana Faris, 2018).

Furthermore, Warren et al. (2014) stated that social media helps increase trust in government institutions. Social media is successfully utilised by government institutions and by other private agencies to share information that might be useful for the citizen (Freberg, 2012). In addition, social media also has become an essential tool for journalists and politicians to share opinion, fact, and economic updates which are not only just for young adults (Kelling et al., 2013).

3. METHODOLOGY

3.1 Data Description

This study utilised data generated from DOSM Facebook Page from September 2018 until September 2019.

3.2 Data Analysis

In describing the usage of DOSM Facebook Page and the engagement, several descriptive analyses were used. Next, the DOSM Media Intelligence tool was used to compile the sentiment of the public toward Facebook postings. The tool can classify comments left by visitors into positive/ neutral/ negative sentiments. It is the best measurement of the point of discussion. The more negative tone is exposed, the hotter the issue from the public perspective.

4. RESULT

4.1 Descriptive Analysis on DOSM Facebook Fan Page

DOSM's Facebook Fan Page has been created since 2013. On September 2019, DOSM Facebook Fan Page followers reached 21,458 followers.

Figure 4.1 shows rapid growth in the number of followers from 5K to 20K in 2 years. The significant increase was during August 2018 and the end of July 2019. It can be caused by regular promotional activity at any events held by DOSM or statistics publications posted online. In this case, as of July 2019, the Demographic Statistics for the Third Quarter of 2019 were published. Statistics on population is a subject that is understandable by the public.



Figure 4.1: DOSM Facebook Fan Page Follower Statistical Growth

Figure 4.2 shows the activity of DOSM Facebook Page where the monitoring of the page view, post reach and page followers can be done.

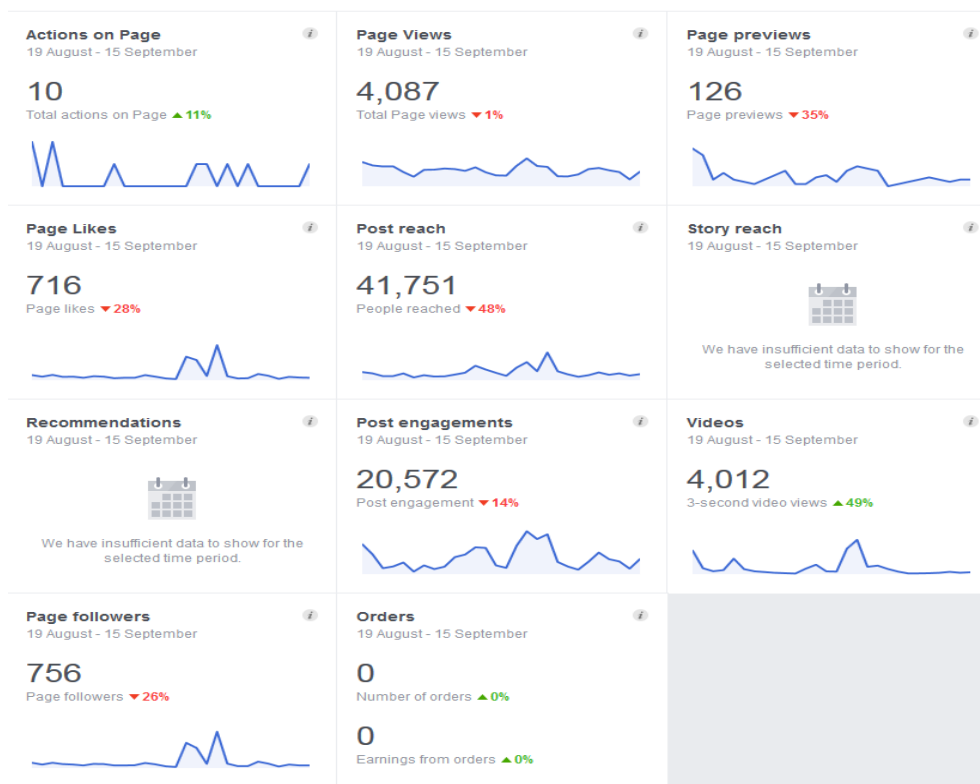


Figure 4.2: Facebook Fan Page Activity in September 2017–September 2019

We can also monitor DOSM page followers based on country area, city, and language used. We can monitor how many accounts are reached every day and every time a posting is uploaded on DOSM's social media.

Country	Your followers	City	Your followers	Language	Your followers
Malaysia	19,859	Kuala Lumpur, Malaysia	4,440	English (US)	9,112
Singapore	149	Johor Bahru, Johor, Ma...	977	English (UK)	6,688
Pakistan	143	Putrajaya, Malaysia	939	Malay	4,718
Bangladesh	140	Kuala Terengganu, Ter...	722	Simplified Chinese (C...	420
India	122	Penang Island, Penan...	662	Traditional Chinese (T...	106
Egypt	65	Shah Alam, Selangor, ...	661	Indonesian	72
Nigeria	64	Kota Bharu, Kelantan, ...	651	Arabic	59
Indonesia	61	Seremban, Negeri Se...	581	Thai	28
Saudi Arabia	51	Petaling Jaya, Selango...	560	Vietnamese	22
United Kingdom	47	Kajang, Selangor, Mal...	558	French (France)	17

Figure 4.3: Followers of DOSM Facebook Fan Page by Region and Language

The demographic distribution by age and gender can also be viewed on DOSM Page. Approximately 57.0% of DOSM followers are male and female is 42.0%. A majority of DOSM followers are around 25–34 years old, who are the millennials and most active in using social media. This information is useful for DOSM in making content relevant to the specific age group of the audience.

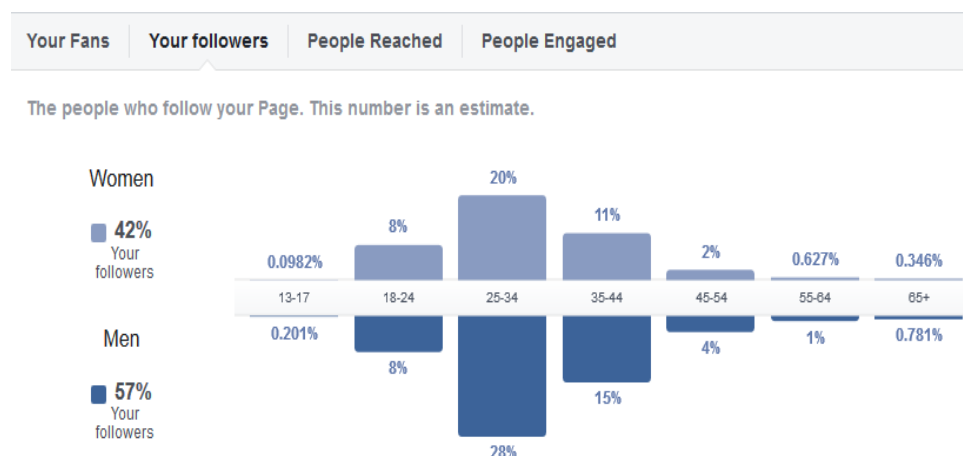


Figure 4.4: DOSM Facebook Fan Page Followers by Gender and Age

4.2 Engagement on DOSM Facebook Fan Page

In monitoring the social media engagement of official statistics produced by DOSM, it is important to observe the feedback from the public on every posting on DOSM's Facebook Page.

It is observed that there are two-way communications on the DOSM Facebook page by looking at the composition of postings and comments. Figure 4.5 shows that 36.4%

or about 1.5K comment have been made on DOSM Facebook page. This indicates that every posting made by DOSM has reached audiences.

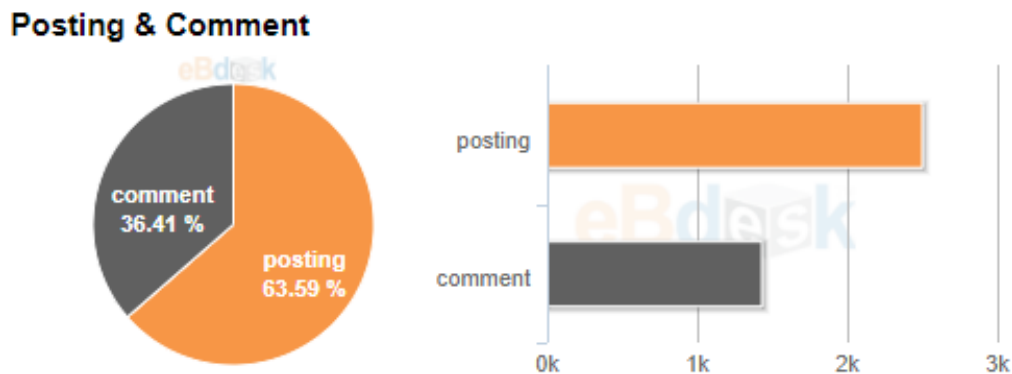


Figure 4.5: Composition of Posting and Comment on DOSM Facebook Page

DOSM can also identify the most demanded types of postings by society. We may conclude that social information-type of postings have a better response from society as compared to other types of information. For example, people are most likely to identify with population, local indicators, and demographic statistics which consisted of 219.4K, 14.8K and 12.4K engagements respectively.

15/07/2019 12:24		Jumlah penduduk Malaysia pada 2019 adalah dianggarkan 32.6 juta			219.4K		3.1K 1.1K	
16/05/2019 05:47		32.66 juta penduduk di Malaysia, lelaki melebihi perempuan			29.7K		3.6K 766	
08/08/2019 15:46		My Local Stats 2018 merupakan penerbitan kedua yang dikeluarkan			14.8K		1.3K 345	
15/08/2019 12:00		Perangkaan Demografi bagi suku tahun kedua 2019 Penduduk			12.4K		1.2K 395	
06/09/2019 12:00		Pada suku tahun kedua 2019, jumlah jawatan sektor swasta meningkat			12.1K		1K 442	
04/09/2019 12:00		Eksport mencatatkan kenaikan 1.7%, manakala import menurun 5.9%.			7.7K		724 399	
04/09/2019 16:34		Jom saksikan wawancara Program "Bicara Politikonim" di TV1			4.8K		136 180	

Figure 4.6: The Average of Most Liked Threads

All information that is posted on DOSM Facebook page can be evaluated as shown in Figure 4.7. It is indicated that the posting has reached 219,350 people and a total of 1,070 reactions, comments and shares have been received.



Figure 4.7: Number of the Performance of Statistical Social Activity in DOSM Facebook Fan Page

On the other hand, two-way communication can be observed in social media. In conjunction with Malaysia Independence Day 2019, for example, a user posted a comment on DOSM's infographic on Population statistics for senior citizens aged 62 years old and above. One of the Facebook users commented that the percentage of Chinese has increased so fast. He also uploaded another infographic as proof.



Figure 4.8: Independence Day Infographic Comments on 31st August 2019

A section of the infographic that the Facebook user uploaded in his comment (Figure 4.9) refers to population estimates in 2019 that showed 22.8% of the total Malaysian population is Chinese, posted on DOSM Facebook on 15th July 2019.

Meanwhile, a posting on 31st August 2019, shows that the percentage of Chinese 62 years and above is 30.6% (Figure 4.10) While both statistics are correct, the Facebook user cannot compare both statistics as it belongs to a different group of demographics. Through the chat box, DOSM has alerted the Facebook user that the posting on 31st August 2019 shows the composition of senior citizen aged 62 years old and above only. Based on his comment and the previous infographic he uploaded in his comment, it shows that this Facebook user has been following statistics published on DOSM Facebook page regularly and he noticed the differences between the two infographics.



Figure 4.9: Posting on 15 July 2019

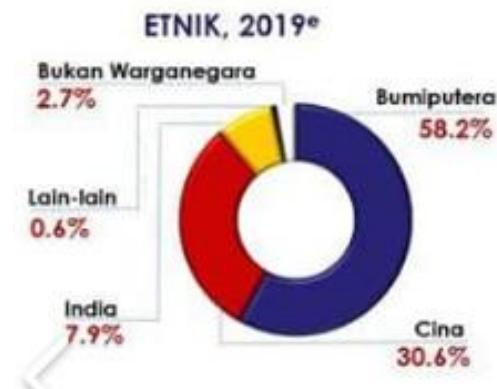


Figure 4.10: Posting on 31 August 2019

4.3 Media Intelligence on DOSM Facebook Fan Page

From the media intelligence analysis, DOSM can extract who is the most influential person in making media statement about DOSM's product. This influencer can play an important role in promoting the official statistics and DOSM products to society. The influencer can also play the role of DOSM spoke person to promote the official statistics that are going to be published. Figure 4.11, shows that the Chief Statistician of Malaysia has the given the highest number in making media statements on DOSM's product and most of the statements were issued by Bernama.



Figure 4.11: Media Intelligence on DOSM Facebook Page

The sentiment analysis can facilitate DOSM to monitor the posts whether positive or negative. The negative statement may cause misunderstanding of the official statistic produced by DOSM. Figure 4.12 shows a sentiment timeline on DOSM Facebook page. It is observed that negative sentiments are higher than positive sentiments on 24th July 2019. The posting on that date is highlighting the Consumer Price Index (CPI) increased by 1.5% as compared to June 2019. Based on the fact that the increase in CPI commutes negative implication rather than positive. Society understood the statistics and has correctly interpreted the statistics.

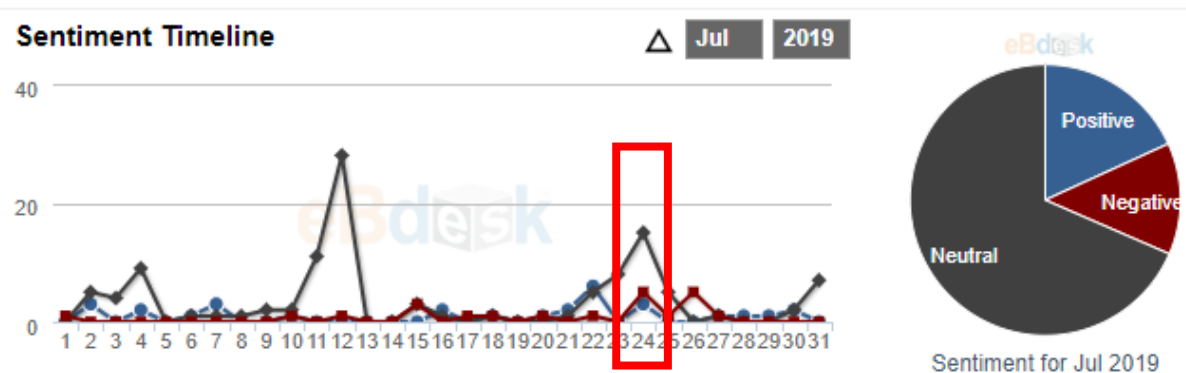


Figure 4.12: Sentiment Analysis on DOSM Facebook Page

5. CONCLUSION AND RECOMMENDATION

Social media is proven to be an effective communication tool to promote official statistics. The use of social media in disseminating information to a better target audience can be enhanced by knowing the profile of the followers. In addition, two-way communication can be made with each posting. Thus, a better monitoring process can be done in identifying the acceptance and engagement of the citizens towards the statistics posted. Social media is a convenient way for NSOs to share data and statistical activity with the public.

In the long term, NSO will be able to utilise social media to build a statistical culture in society. Communication built routinely in social media will improve social awareness of data and will make data part of the society's daily life. Thus, the embedded practice later will create new normal, that is data culture. However, DOSM needs to monitor the feedback on official statistics produced to ensure the right information is delivered. Hence, by using social media as a medium for communicating statistics, the content and presentation will contribute to improve statistical culture in society. Furthermore, it can promote the use of official statistics in decision-making.

Media Intelligence tools are proven to be able to monitor how data from multiple sources such as news and media social are being used by the public. The input from structured and unstructured data will enable DOSM to describe and analyse the number of shares and influencers, the intensity of exposure and the tone of sentiments of the topics in a conversation over the media. In addition, the influencer of DOSM's products can play an important role to encourage the official statistics to the citizen. Thus, results from the influencer analysis enable DOSM to create the spoke person to promote its statistics.

Further research on the assessment of various social media approaches by DOSM can be made to identify the most effective medium for sharing information. Taking into consideration the assessment, NSOs can improve their posting strategies which will lead to better engagement and the building of a statistical culture.

LIMITATION

This article only utilised data sourced from the DOSM's Facebook page and Media Intelligence report. Therefore, it is recommended that further study should be undertaken by considering other sources of data and other variables to be able to draw a more comprehensive conclusion and recommendation on the engagement of public towards the publication of official statistics produced by DOSM.

DECLARATION OF CONFLICTING INTEREST

The authors declared no potential conflicts of interest with respect to the article, authorship, and/or publication of this article. This article is based on author(s) opinion and do not necessarily represent the opinion of DOSM.

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