

ENGAGEMENT RATE ANALYSIS ON BATIK MSMEs INSTAGRAM ACCOUNT IN LASEM, REMBANG

Ibnu Zulkarnain¹, Amelia Kurniawati², Salsabila Safitri³, Farrel Asyrofil Irsyad⁴, Rayinda Pramuditya Soesanto⁵

^{1,2,3,4,5} Department of Industrial Engineering, Telkom University Bandung
E-mail: ibnuzulkarnain20@gmail.com

ABSTRACT

The use of social media in the batik industry enables MSMEs to effectively share their works and messages with a broader audience. However, many MSMEs face challenges due to limited resources and less effective marketing strategies, especially in the highly competitive social media landscape. This study aims to evaluate the engagement rates of Instagram accounts belonging to batik MSMEs in Rembang Regency, with the goal of identifying best practices for improving social media performance. The research involves three key processes: data collection, measurement of engagement scores, and ranking analysis of engagement rates. The data was collected over two periods: from 1 January 2022 to 31 August 2022, with 3,573 posts, and from 1 September 2023 to 31 October 2023, with 812 posts. The research analyzed the Instagram activity of eight Batik Lasem MSMEs in Rembang Regency, providing insights into engagement levels. Batik MSMEs with high engagement rates can serve as references for others to enhance their social media strategies.

Keywords: *MSMEs, Engagement Rate, Engagement Score, Social Media, Instagram.*

INTRODUCTION

The use of social media has driven the digital transformation of MSMEs in interacting with customers to promote products. The use of social media in creative industries such as batik allows MSME players to be more effective in spreading messages and presenting artworks to a wider audience (Chaffey, D., & Smith, P. R., 2022). Batik is one of Indonesia's cultural heritages and has been recognised by The United Nations Educational, Scientific and Cultural Organization (UNESCO) as an Intangible World Heritage of Humanity (UNESCO, 2009). Batik is mostly produced by MSMEs, which number 47,000 businesses and absorb 200,000 workers. In 2020, batik has an export value of US\$ 532.7 million and during the first quarter of 2021 it was able to reach US\$ 157.8 million (Ministry of Industry of the Republic of Indonesia, 2021).

Utilising the Instagram social media platform has become one of the basic needs for many individuals in the modern era. Various social media platforms are available, Instagram dominates in active use by individuals who have become accustomed to using various social media (Oeldorf-Hirsch, A, 2015). One important metric in measuring the effectiveness of social media marketing is the engagement rate. Engagement rate can help Batik MSMEs understand customer preferences. By analysing the type of content that gets high engagement, businesses can understand what attracts customers.

At the beginning of 2023, specifically in February, the number of active Instagram users reached 99.15 million, registering significant growth from the previous year's 85 million users in 2022. This reflects the extent to which Instagram has cemented its position as one of the most popular and important platforms in the world of social media. Instagram is one of the social media platforms used to promote or introduce products through content and posts. The development of social media can be utilised to develop business. There are seven potential functions in business, namely; identifying customers, establishing mutual communication, sharing information to find out the objects that customers like, customer presence, relationships between customers, brand reputation in the eyes of customers and forming groups between customers. Distribution supported by technology can increase the quantity of products that reach consumers (E. R. Isnanda, et al 2018). In the Indonesian economy, MSMEs are the largest group of businesses (L. MHamza, et al 2019). Many MSMEs have limited resources to utilise social media and less effective marketing strategies. Competition in the MSME market is fierce, especially on social media platforms.

MSMEs need to compete with many other competitors to gain customer attention (A. Wahana, (2018)) (N. D. Retnowati, et al 2019). Many MSMEs do not have sufficient marketing expertise to design effective marketing strategies. Effective problem-solving involves improving marketing skills, understanding social media, and

adapting to economic changes that may occur. In addition, collaboration and creative approaches can help MSMEs in facing the challenges of economic change in the modern era.

The discussion in terms of Batik MSMEs in Lasem Rembang is on product marketing for sales via Instagram. The utilisation of engagement rate analysis to increase the benefits obtained by MSMEs in social media activities has been discussed in previous studies such as in MSMEs in Australia (Nguyen et al., 2021), Europe (Floris and Dettori, 2020), and Africa (Shehu, 2018). The utilisation of engagement rate analysis to increase sales has also been applied to MSMEs in Indonesia with various products such as food (Maharani et al, 2019), beverages (Lokito et al, 2018), fashion (Pramessti et al, 2021), and laundry services (Suryani et al, 2022). Engagement rate analysis on MSME Batik Instagram accounts can provide an accurate picture of the extent to which digital presence has a positive impact on the promotion and sale of local batik products. This research is expected to contribute to the empowerment of Batik MSMEs in Lasem. Through a deeper understanding of the level of community

engagement with the UMKM Batik Instagram account, the potential for increased marketing can be identified. This research encourages Batik MSMEs to develop innovative business models, utilising the potential of social media as an effective means of promotion. The research results can be the basis for designing smarter marketing strategies that are responsive to market needs and preferences. Batik MSMEs that have a high engagement rate can be a best practice reference for other batik MSMEs. In addition, the engagement rate value can be an initial basis in developing marketing strategies and customer relationship management through social media.

LITERATURE REVIEW

The process of measuring the engagement score of Instagram accounts of several Batik Lasem MSMEs in Rembang. This research consists of three sub-processes, namely the data collection process, measuring the Engagement Score, and analysing the Engagement Rate ranking. The steps of measuring the engagement score are shown in Figure 1.

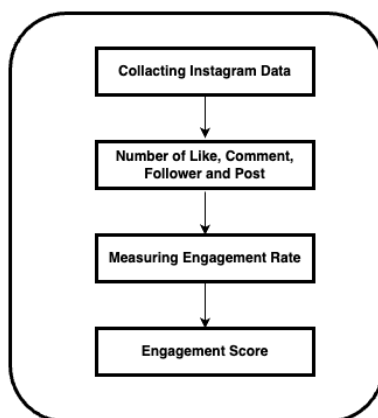


Figure 1: Engagement Rate Measurement Steps

1. Collecting Instagram Data using Web Scraping.

Web scraping is a technique for obtaining information from websites automatically without having to repeat manually (Yani et al. 2019). The purpose of a web scraper is to find certain information and then collect it in a new web (Yani et al. 2019). Web scraping is made to target a particular website or site with the aim of collecting specific information on that site (Maulana et al. 2019). The benefit of web scraping is to retrieve information so that the information retrieved is more focused, making it easier to search for something (Sahira et al. 2020). In this study, the method collects some data from the Instagram account of UMKM batik lasem. Instagram data

collection using Web scraping has a number of steps including: Create Scraping Template: At this stage, the user analyses the website's Instagram HTML structure. The creation of a format or template that will be used by software or scripts to identify, retrieve, and organise the desired data from a particular website. This template serves as a guide to ensure that the required data can be retrieved correctly and efficiently according to the desired format (Gallagher & Beveridge, 2021) (Khan et al., 2020). Extracted Data and Package History: The result of this stage is the collection of data (number of followers, posts, likes, and comments) obtained from the Instagram accounts of several lasem batik MSMEs in Rembang during

January to August 2022, and September to October 2023. Then the data set will be stored in the database (Tayefi et al. 2021).

2. Measuring Engagement Rate.

Engagement Rate is a metric used to measure the level of engagement generated from the content created (Priadana et al. 2020). Evaluation of the engagement rate can include assessment and

comparison of the level of engagement between various subjects or within a category (Deng et al., 2019). Indicators in the calculation of engagement rates can involve many activities. Starting from the number of people who like, comment, share, the duration of time in reading content (Priadana et al. 2020).

$$ER\ Post = \frac{Total\ engagements\ on\ a\ post\ (Likes + Comments)}{Total\ followers} \times 100\%$$

Figure 2: Engagement rate calculation formula

3. Engagement Rate Ranking Analysis.

Engagement rate ranking is done after knowing the number of engagement rate posts from each UMKM Batik Lasem Instagram account. This ranking analysis is carried out to find out which Instagram account has the highest post engagement rate (Vassey, J, 2022). After knowing the highest posting engagement rate, it can be analysed what makes the account have a high enough post engagement rate both in terms of content, followers, likes and comments (O’Kane et al. 2022).

posts, likes, and comments) was carried out in the time span from January to August 2022.

A. Data from followers, likes, comments and posts

The first step in this study is to collect data from Instagram accounts using Web Scraping techniques. Data was taken in the period from January to August 2022, with a total of 3573 data posts and September to October 2023 with a total of 812 data posts from eight Instagram accounts of Rembang batik lasem MSMEs. The results of collecting Instagram data using the Web Scraping technique are shown in Table 1 Based on the results of data collection in Table 1, it can be seen that @oemahbatiklasem Instagram account has the highest number of followers, likes, and comments compared to the other seven Instagram accounts.

RESULTS AND DISCUSSION

The experiment was conducted by determining eight Instagram accounts of umkm batik lasem Rembang. On eight Instagram accounts, data collection (number of followers,

Table 1. Results of Data Collection January-August 2022

Instagram account	January – August (2022)		Total number of followers	Number of Posts	ER Posting
	Like	commentary			
@oemahbatiklasem	2415	1327	41000	583	0,0912682
@batiktulislasem_by_javier	1752	756	1128	412	2,2234042
@sekarmulyobatiklasem	3368	293	11700	533	0,3129059
@batiksekarkencana	1832	227	5271	551	0,3906279
@pusakaberuang_batiklasem	1020	57	5303	284	0,2030925
@ningrat_batik_lasem	2777	82	4289	340	0,6665889
@batiktiganegerilasem	9979	2655	17200	493	0,7345348
@kendorokendiri	3174	118	2027	377	1,6240749

B. Reader Engagement Score

The next step is to calculate the Engagement Score from the Instagram account. The results of measuring the Instagram account's Engagement Score are shown in Table 2. Based on

Table 1. It can be known if Instagram data collection is in the time range, namely during January – August 2022 with a total number of posts from 8 Instagram accounts of 3573. With a total ER Post of 6.2464979. The Engagement

Score is based on the number of likes, comments, followers and posts. The data from the indicator is calculated according to the ER post formula described in figure 2. @batiktulislasem_by_javier Instagram account has the highest number of Post

ER at 2.2234042. @oemahbatiklasem Instagram account has the lowest number of Post ER at 0.0912682.

Table 2. Reader Engagement Score Data January-August 2022

Instagram account	ER Posting
@oemahbatiklasem	0,09126829268
@batiktulislasem_by_javier	2,223404355
@sekarmulyobatiklasem	0,3129059829
@batiksekarkencana	0,3906279643
@pusakaberuang_batiklasem	0,2030925891
@ningrat_batik_lasem	0,6665889485
@batiktiganegerilasem	0,7345348837
@kendorokendiri	1,624074988

Based on Table 2, there is a calculation of Reader Engagement with the lowest gain in @oemahbatiklasem account of 0.091, and the

highest in @batiktulislasem_by_javier account of 2.223.

Table 3. Ranking of Engagement Score Data January-August 2022

Instagram account	Posting	ER Posting	Pering
@batiktulislasem_by_javier	412	2,223404355	1
@kendorokendiri	377	1,624074988	2
@batiktiganegerilasem	493	0,7345348837	3
@ningrat_batik_lasem	340	0,6665889485	4
@batiksekarkencana	551	0,3906279643	5
@sekarmulyobatiklasem	533	0,3129059829	6
@pusakaberuang_batiklasem	284	0,2030925891	7
@oemahbatiklasem	583	0,0912682926	8

Based on Table 3, it is known that the ranking of Instagram accounts with rank 1 is @batiktulislasem_by_javier of 2.223404355, rank 2 is @kendorokendiri of 1.624074988, rank 3 is @batiktiganegerilasem of 0.7345348837, rank 4 is @ningrat_batik_lasem of 0.6665889485, rank 5 is

@batiksekarkencana of 0.3906279643, rank 6 is @sekarmulyobatiklasem of 0.3129059829, rank 7 is @pusakaberuang_batiklasem of 0.2030925891, and ranked 8th, namely @oemahbatiklasem of 0.0912682926. This ranking is based on the ER Posting value from several aspects. Instagram

accounts @batiktulislasem_by_javier have a high ER Post score because they have a fairly high number of likes, comments, followers in a single post. The followers who actively follow the

Instagram account's posts are quite high so that the value of the ER Post is higher than the other seven Instagram accounts analyzed in this study.

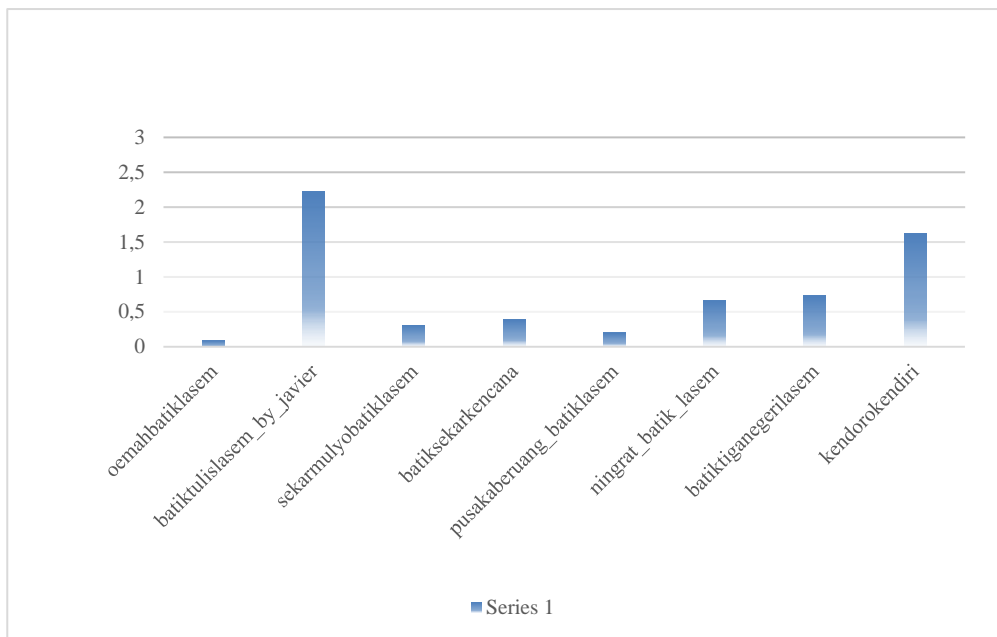


Figure 2. Reader Engagement Rate Data January-August 2022

Figure 2 shows that @batiktulislasem_by_javier achieved the highest ER post, with a score of 2.22. In fact, after conducting research, @batiktulislasem_by_javier has content that contains batik motifs that they want to market, and is neatly arranged for the placement of their Instagram feeds. It is not uncommon to share documentation together with customers. In addition, @batiktulislasem_by_javier always describes the quality of the batik materials

he produces through captions in each post, as well as adding hashtags to increase impressions, which can achieve a lot of impressions and engagement from outside customers who have not even followed his Instagram account. As a comparison of the previous data, the following are the results of the Engagement Score measurement from the Instagram account of Batik Lasem MSMEs in Rembang Regency from September – October 2023.

Table 4. Results of September-October 2023 Data Collection

Instagram account	January – August (2023)		Total number of followers	Number of Posts	ER Posting
	Like	commentary			
@oemahbatiklasem	11900	165	45200	58	0,2669247788
@batiktulislasem_by_javier	476	3	1846	75	0,2594799567
@sekarmulyobatiklasem	8557	190	33700	71	0,2595548961
@batiksekarkencana	0	0	5724	0	0
@pusakaberuang_batiklasem	871	9	6677	39	0,1317957166
@ningrat_batik_lasem	7890	120	6034	340	1,3274776268
@batiktiganegerilasem	11596	1035	30400	181	0,4154934211
@kendorokendiri	447	15	2280	48	0,2026315789

Based on Table 4. It can be known that Instagram data collection is in the time range, namely during September - October 2023 with a

total number of posts from 8 Instagram accounts of 812. With a total of 2.863357975 Post ER.

Table 5. Reader New Engagement Score Data September-October 2023

Instagram account	ER Posting
@oemahbatiklasem	0,2669247788
@batiktulislasem_by_javier	0,2594799567
@sekarmulyobatiklasem	0,2595548961
@batiksekarkencana	0
@pusakaberuang_batiklasem	0,1317957166
@ningrat_batik_lasem	1,3274776268
@batiktiganegerilasem	0,4154934211
@kendorokendiri	0,2026315789

Based on Table 5, there is a calculation of Reader Engagement with the highest gain in @ningrat_batik_lasem account of 1.3274, and the

lowest in @batiksekarkencana account of 0, and @pusakaberuang_batiklasem of 0.1317.

Table 6. Ranking of New Engagement Score Data September-October 2023

Instagram account	Posting	ER Posting	Rank
@ningrat_batik_lasem	340	1,3274776268	1
@batiktiganegerilasem	181	0,4154934211	2
@oemahbatiklasem	58	0,2669247788	3
@sekarmulyobatiklasem	71	0,2595548961	4
@batiktulislasem_by_javier	75	0,2594799567	5
@kendorokendiri	48	0,2026315789	6
@pusakaberuang_batiklasem	39	0,1317957166	7
@batiksekarkencana	0	0	8

Based on Table 6, it is known that the ranking of Instagram accounts with rank 1 is @ningrat_batik_lasem of 1.3274776268, rank 2 is @batiktiganegerilasem of 0.4154934211, rank 3 is @oemahbatiklasem of 0.2669247788, rank 4 is @sekarmulyobatiklasem of 0.2595548961, rank 5 is @batiktulislasem_by_javier of 0.2594799567, rank 6 is @kendorokendiri of 0.2026315789, rank 7 is @pusakaberuang_batiklasem of 0.1317957166, and ranked 8, namely

@batiksekarkencana of 0. This ranking is based on the ER Posting value from several aspects. Instagram accounts @ningrat_batik_lasem have a high ER Post score because they have a fairly high number of likes, comments, followers in a single post. The followers who actively follow the Instagram account's posts are quite high so that the value of the ER Post is higher than the other seven Instagram accounts analyzed in this study.

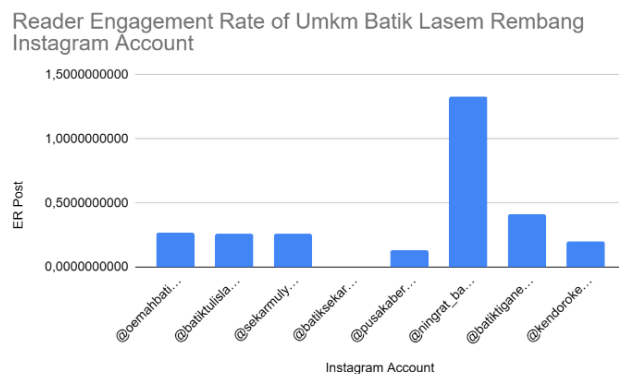


Figure 3. Reader Engagement Rate Data September-October 2023

Based on Figure 3. It was shown that @ningrat_batik_lasem achieved the highest ER post, which was 1.33. In fact, @batiktiganegerilasem has interesting content related to information about lasem batik and the types of batik offered, as well as having a unique Instagram feed. In the post, there are a lot of testimonials given by buyers regarding the quality of batik on @batiktiganegerilasem account. There are captions and hashtags related to batik products that will be sold as information to potential

customers. @batiktiganegerilasem Instagram account also provides a variety of interesting content in making batik through creator content packaged in videos on Instagram. Batik @ningrat_batik_lasem won the ER post superiority because it was seen from the interest of customers through the number of likes and comments on one post. The number of active followers who follow the post is a supporting factor why @ningrat_batik_lasem Instagram account has a high value.

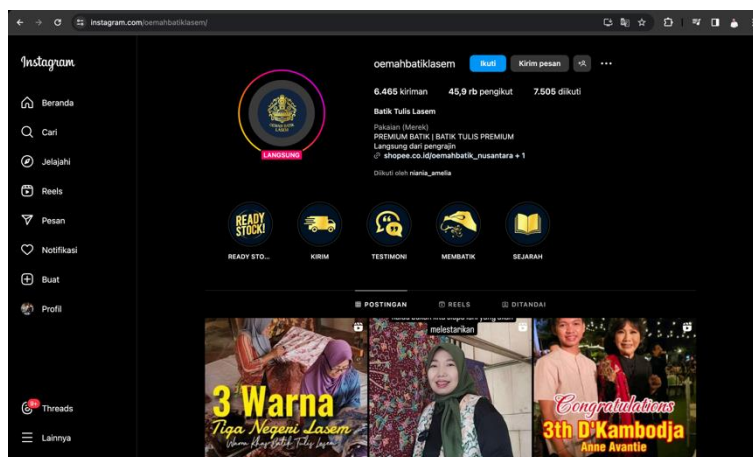


Figure 4. Highest Instagram Engagement Rate January-August 2022 data

Comparing engagement rates across different social media platforms other than Instagram, such as Facebook or TikTok, can provide a broader understanding of user behavior and the effectiveness of marketing strategies across those platforms. In figure 4, one of the MSMEs that uses an Instagram account has the highest

engagement rate in 2022. The content used is diverse and creative, the account is active and often conducts live broadcasts to promote batik to be sold. Interesting content makes it attractive to the followers of the Instagram account. So that it can increase the number of likes on the post and the number of comments on the product.

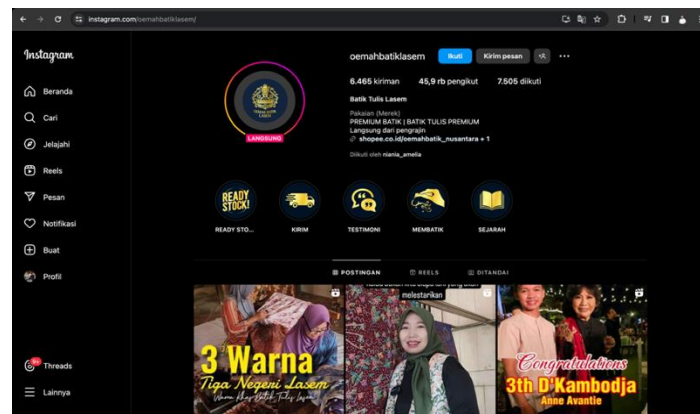


Figure 5. Highest Instagram Engagement Rate September-October 2023 data

Further research can expand the geographical scope by comparing the engagement rate on the Instagram account of Batik MSMEs in Lasem, Rembang, with other areas that have similar characteristics related to the use of social media. In figure 4, one of the MSMEs that uses Instagram accounts has the highest engagement rate in 2023 in the September-October period, namely @ningrat_batik_lasem Instagram accounts that have interesting content so that interest from followers is quite high.

CONCLUSION

Based on the results of the study, it can be analyzed that the level of involvement of several Instagram accounts of Batik Lasem MSMEs in Rembang Regency by measuring the Engagement Rate. The data was taken in 10 months, namely post data from January 1, 2022 to August 31, 2022, with a total of 3573 post data and from September 1 to October 31, 2023 from 8 Batik Lasem MSME Instagram accounts in Rembang Regency. Based on January-August 2022 data, the Instagram account of Batik Lasem MSMEs in Rembang Regency with the highest Engagement Rate of 2.22 was achieved by @batiktulislasem_by_javier while the lowest Engagement Rate was from @oemahbatiklasem with a value of 0.91. Meanwhile, in the data obtained in the September – October 2023 range, the highest Engagement Rate of 1.33 was achieved by @ningrat_batik_lasem, while the lowest Engagement Rate was 0 out of @batiksekarkencana.

In the span of two periods of time for data collection, the Engagement Rate value has changed. This change is caused by the unstable use of Instagram both in sharing posts, less creative in creating content and no longer active in using Instagram accounts as a promotional tool. @batiksekarkencana Instagram account in the September – October 2023 time period is no longer

actively using Instagram in promoting batik products so that the value of the Engagement Rate is equal to 0. The highest value of the Engagement Rate in the time period from January 1, 2022 to August 31, 2022 and September – October 2023 is also different. This difference is due to several aspects such as a decrease in active followers, which can be seen through the number of likes and comments on a post.

The results of this study have the potential to enrich the literature on the strategy of using social media for marketing, especially on the Instagram account of Batik MSMEs in Lasem, Rembang. The analysis obtained not only provides in-depth insights into the effectiveness of social media use, but also provides a solid foundation for further research in digital marketing. In addition, this research opens up opportunities for business strategy updates for Batik MSMEs, allowing them to responsively adjust and optimize their marketing efforts in accordance with changing trends and social media dynamics that continue to evolve in the digital era.

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