

# Effective Use of Instagram Algorithm for the Benefit of Small Online Businesses

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**Abstract:- Organizations are increasingly shifting their business on social media platforms like Instagram which enables users to interact with one another. Businesses are using this feature to showcase their products and build brand awareness in a cost-efficient manner.**

**Due to lack of research on the optimum use of the Instagram algorithm for small business owners this paper aims to enable readers to understand the different components of the algorithm.**

**This research was undertaken through the help of case studies which focused on exposure, sales, customer base and brand building of business which also includes the reaction of customers to trending, marketing strategies, number of followers, posting time, and influencer advertising. It also explores the buying behaviours of consumers. The data is obtained through customer surveys, interviews and observations. Furthermore, the Buzilla tool and binomial regression were used to analyse posts and extract quantitative engagement data.**

**Keywords:- Instagram, Marketing, Small Business, Advertising, Social Media, Instagram Algorithm.**

## I. INTRODUCTION

Instagram has more than 200 million operational business accounts (Omnicores, 2021) and this number is growing every day. Especially after the pandemic broke out, an increasing number of businesses are conducting their affairs online. It's becoming crucial for businesses to maximise revenue out of these social media platforms and beat competition. Thus, a knowledge of how these platforms prioritise marketing content is important.

Therefore, the research takes into consideration algorithms in the field of Operations Research. Furthermore, it compiles various published data on which further study can be conducted by applying several OR tools.

Data Analysis and Data Science are two terms that are evolving and have gained a lot of attention in the past few years. Descriptive analysis used in this paper serves as a medium to describe and summarize the data of other research papers into something constructive, which provides insights and information on statistical data and its analysis. Descriptive analysis of data is crucial for researchers and

data scientists to understand, comprehend and get an idea of the final analysis of data, its methodology and conclusion in a comprehensive manner, without having to go through hundreds of data points.

Instagram, a social media application acquired by Facebook, is a platform for users to share pictures and videos. This application is used approximately by one billion active users every month. The purpose of usage of this application differs from account to account, depending on what the user wants to show to the world. The types of accounts range from meme pages, animal pages, personal accounts and those of business and influencers. In this paper, we try to find out how Instagram serves as an amazing platform for small business owners and how they have grown and can grow using marketing strategies on Instagram.

## II. LITERATURE REVIEW

Instagram is a free app that allows you to share photos and videos online. It is one of the most popular social media apps, with increasing number of users every day. Because Instagram is such a visual platform, it is best suited for businesses that are focused on evoking feelings in customers and providing them with visual ideas. Which is why, out of all the available platforms, Instagram is a good choice for a business (Lim & Yazdanifard, 2014).

Moreover, Instagram crossed 100 million users in 2012, which made marketers realize the potential of marketing on this website (Miles, 2014). Today, customers expect companies to have a presence on Instagram (Bergström & Bäckman, 2013). Already two-thirds of businesses are on this platform, and they are exploiting its various features to their advantage (Ha, 2015). As a cherry on the cake, the application allows users to create and exchange personalized content, free of cost. It allows the business to enjoy all the advantages of marketing done via traditional sources; for instance, it enables the business to engage with its target audience and build brand awareness. For this reason, Instagram and TikTok are the top performing social media marketing applications that are being used by marketers (Mou, 2020).

In the era of digital marketing and digitalization, platforms such as Instagram are gaining traction and attention from small business owners and from equally interested customers. It is not very different from e-

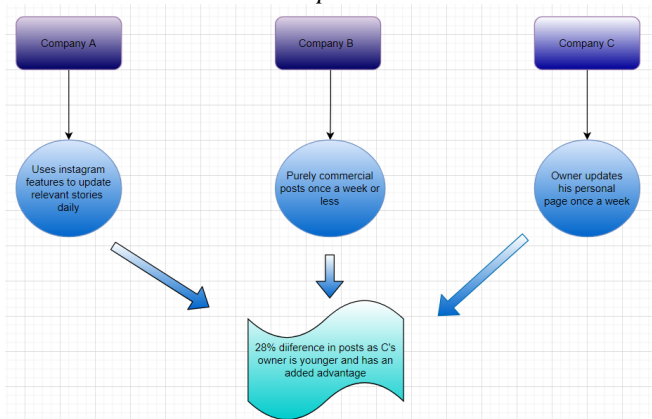
commerce since it offers a diverse range of opportunities to generate a considerable consumer base. With an expanded functional scope that includes product design, marketing, and customer relationship management, Instagram for small business owners is really emerging as a stable platform to sell products ranging from customized phone cases and jewellery to customized clothing and thrift clothing. These small business owners on Instagram are very similar to the sellers on e-commerce platforms, so a link can be drawn between the two (Talwar, Kaur, Fosso Wamba, & Dhir, 2021).

Furthermore, as the world adapts to new changes, so are small businesses adapting changes in terms of marketing. In order to achieve their goals, they will have to put their old school thoughts to a halt and modify their ideas to use technology and new media i.e., Instagram (Storozhenko, 2019).

Instagram gives an opportunity for small businesses to grow and promote their products or services to a larger audience. It makes people aware of different products and services that are available which they were not aware of. It also gives recognition to small businesses all over the world for their services. By perfecting its marketing game, it helps small businesses reach out to their target audience faster and results in profitability ( Harun & Tajudeen, 2020).

It's part of being an entrepreneur to have work and not have work, but in the past, a company's success or failure usually meant one or two companies going bankrupt. However, this time, every business and company were affected. The pandemic could not be avoided. The ability of an entrepreneur to adapt to the current situation determines whether or not a business would survive (Kutilla, 2020). Figure 1 shows three companies that use Instagram in three different ways for their business.

Figure 1: Case study of Instagram advertising by 3 different companies



Source: The author

Thus, the work of the Instagram algorithm is to show the user the content that they are most interested in by ascertaining the frequency with which they interact with that type of content. However, human behaviour threw a wrench in the plan. The user-friendly interface of Instagram makes it

easy for users to forget to engage with accounts that they already follow. Thus, users interact less frequently with posts. Therefore, instantly altering your “relevant content”. Designed to be a visual platform, users often spend less than two seconds viewing a post as they scroll to the next. This inherently alters the Instagram algorithm again by shortening the time spent viewing a post (Facebook , 2019).

In today’s world Instagram is the most favourite app used by millennials. But like all other good things Instagram also has its limitations because of its algorithm which dictates on user-based models. The first limitation of Instagram is the number of likes you do in an hour which is capped on 350 likes per hour. However, this limit cannot be unless you’re an active user but if you’re then there is threat for you getting locked by the system.

Second is hashtags, you cannot use more than 30 hashtags per post which is not justifiable because Instagram shows users posts according to their activity on the app. So, more the no. of hashtags you use increases your reach to more people. Third is posting times according to research it is proved that different types of accounts have different posting times at which the posts can get maximum engagement. For example, for food brands or food blogging pages it is suggested that people should post at breakfast (6 am to 10 am), lunch (11 am to 3 pm) and at dinner (6 pm to 9 pm) (Wahid & Wadud, 2020).

Therefore, our motivation behind taking up this topic was the relevance of the Instagram algorithm in our personal life. Upon further research on this topic, we could not find papers that linked how the effective use of the algorithm could help small business conduct their affairs in an optimal manner. This research paper strives to address this gap.

This research could help a lot of small businesses grow their page and engage with their followers. Moreover, it could be used by other academicians who want to apply tools of Operations Research to the working of the Instagram algorithm. This knowledge would help students who wish to open a small business or just learn about the algorithm in general in order to grow their following. Other than that, consumers might benefit by learning about how they are approached by businesses online in order to be self-aware.

III. METHODOLOGY

Storozhenko’s research (2019) aimed to find any connection between the number of followers and advertising within popular influencers on Instagram. The research also tried to ascertain whether there is any correlation between the comment section and how many conversations include two or three keywords at the same time. They took an example of Farsali, a small unknown brand that paid Huda Beauty, a very popular brand with good social presence on Instagram, to advertise their products.

They performed a quantitative analysis using web content analysis and social media network analysis. Using the Buzilla tool they analysed keywords in the comment section of Instagram posts that manifested the name of the brand and name of the Instagrammer. The keywords that they took under consideration are farsalicare, hudabeauty, and farahdhukai. From the analysis they inferred that all three keywords were used at the same time in one comment right before the product was released or stocked on the website and on the page of @farsalicare on Instagram. Apart from keywords what they also realized was that video content engages more audience than photos, especially the video content in form of live stories as stories become archived 24 hours from when it's uploaded (Storozhenko, 2019).

Next, Wadid & Wadud (2020) researched about what is the most effective posting time on Instagram which can enhance the content engagements (i.e., likes and comments). They used negative binomial regression to analyse 2958 Indonesian food brand posts and use that to predict the number of likes and comments. They chose 40 food brands who have more than 20000 followers on Instagram. The study conducted included the recording of information regarding posting times of the post. It also selected 4 random posts with different dates and checked their posting times to ensure validity of the method. The study then divided the period of the posts into 4 categories i.e., during breakfast (6 am to 10 am), lunch (11 am to 3 pm), dinner (6 pm to 9 pm) and the rest of the hours during the day. The results of this research showed that brands should post their Instagram content on weekdays (i.e., Monday, Tuesday, Wednesday, Thursday and Friday) to receive more engagement (i.e., likes and comments) (Wahid & Wadud, 2020).

Furthermore, another research paper used content analysis where 200 Instagram posts were examined to ascertain its content and the level of interaction with the post. This was followed by a survey. The survey aimed to find out the motive behind consumers using the platform and also the motive behind them following a business on Instagram. The result of this was that different posts were met with different levels of enthusiasm. When company made posts about their products or other information, it received little engagement. On the other hand, posts that used co-creative features on Instagram and urged users to use company specific hashtags received five times more interaction. Thus, this interaction affects the company's self-representation, self-disclosure and its relationship with its customers. Therefore, this interaction makes or breaks the trust of consumers in the business (Bergström & Bäckman, 2013).

Similarly, to ascertain the view of consumers on the marketing strategies of beauty bloggers, another author conducted 1.5 hours of in-depth interview and 0.5 hours of follow-up interview with each interviewee. The same results were obtained; highly interactive posts were met with enthusiasm and received high engagement. It managed to entice a wide range of audience (Mou, 2020).

#### IV. ANALYSIS

4.1 Case study I: Skip Coffee's use of Instagram to develop a trending market strategy.

The aim of this study was to show that Instagram plays an important role to improve business performance and marketing promotion on developing the business. This study explained the marketing communication strategies that were used by Skip Coffee as a small business to grow their brand on Instagram. (@skipcreative.id on Instagram)

This research method uses a descriptive qualitative research method which is intended to explore data and information both process and mechanism. Data was collected through observation as well as interviews. Primary data was collected through interviewing people from the digital marketing team of the brand and Secondary data was collected from people closely related to the brand, like students on campus who consumed the products.

This study led researchers to discover how the number of followers cannot be the standard to measure the success of a small business. Their #BackToSchool campaign on Instagram also gained traction amongst students returning to the campus after their break. Owing to this campaign, their reach increased by 800 visitors in a week. Researchers also found that long term engagement between the seller and customers is a crucial parameter to sustain the performance of a small business.

Hence, to create a strategy that captures the attention of an audience, the business' Instagram page must produce engaging visual material to gain traction and create customer engagement. Based on the findings, it can be stated that Skip Coffee's marketing communication methods employ a promotion mix that includes advertising, sales promotion and personal selling to help them develop and grow their small business (Sholikhah, 2019).

4.2 Case study II: Study of consumer preferences and advertising effectiveness towards Instagram Stories.

Compared to the previous period, the number of visitors to Studio Hikari's online store decreased by 2.86%. The ineffective content for the audience on Instagram was the reason behind their unproductive marketing. Therefore, they decided to advertise through Instagram Stories. Studio Hikari had a hard time determining the type of content they should use in Instagram Stories' ads. Therefore, the purpose of this research is to help Studio Hikari develop and determine the appropriate ad types for Instagram Stories.

A quantitative approach was used for this research. The approach was used because of its ability to generate numerical data that could be used for the study. The sampling technique used here is judgemental sampling, where the elements in the sample are believed to be representative of the population of interest. The minimum sample size to be included in an advertising study should be 150. This research was conducted with 188 respondents.

Four variables were assessed in the survey: demographic, behavioural, advertising effectiveness, and consumer preferences towards the ad.

With the increased usage of digital advertisement by marketers, it has become very important to measure ad effectiveness in this relatively new format. In creating an Instagram story advertisement, the duration of the advertisement must be carefully considered. In this research, the researcher only used 3 factors in an advertisement, which are duration, the colour of the background, and level of informativeness. For future research, it is suggested to test other factors. More factors tested will result in better data for marketers using Instagram stories advertisements to develop the right advertisement.

In this research, it was also found that a long advertisement will have higher advertising intrusiveness, which is undesirable. Therefore, the ideal duration, in this case, according to the researcher, is 10 seconds. This was the conclusive analysis from the research (Fakhradyan, 2021).

#### 4.3 Case study III: Company X's social media marketing on Instagram.

An online survey was carried out by Company X, the objective of which was to know the behaviour of the followers in general and their opinions on certain topics.

As the research subject in this paper is a small entrepreneur, Leavy's description of qualitative research resonates very well with the work. Leavy describes how the qualitative method aids the researcher in their thoughts which are formatted based on their social interactions. Interviews with the subject of the article were conducted face-to-face. Social media, marketing, and photography are rapidly changing terms, topics, and themes. The interview consists of a set of questions for basic information, such as the background to the topic and the beginning of your career, and a set of more in-depth questions. These questions are general and not specific to a particular service or product. Moreover, the style of the interview is semi-structured.

The goal of a small business Company X's owner is to stand out through her work and to let as many people as possible understand her. She works hard for them and each photo has a story and information that she wants to share. Therefore, the expected results are loyal followers, exposure, expanded customer base, and sales (Heidari, 2020).

#### 4.4 Case study IV: Social capital on Instagram and its application for small apparel retailers.

The social capital theory is used to draw attention towards the effects and consequences of human sociability, connectedness and their relations to the individual and social structure. It refers to the resources accumulated through relationships among people.

McKneely, Kim, Leung and Pookulangara (2020) researched on consumer's perceived benefit and development of social capital in small business's Instagram pages that lead to purchase intentions for the retailer.

They used social capital theory and run multiple regression analysis on 200 sample data which they collected using the field survey method. The study examined the relationships among social bonding on Instagram which includes trust, brand identification and purchase intentions. The study also took ad hoc multiple regression analysis into account through which they found several other significant influences of the social capital dimensions and perceived benefit dimensions on brand identification, trust and purchase intentions.

The research concluded that norms of reciprocity have a significant effect on variables like social bonding, brand identification, trust and purchase intentions. The study also found that engaging with Millennials to build relationships on social networking sites requires authenticity, transparency and reciprocity. This study suggests to small businesses that if they want to stay ahead of large companies then they should use the results of the study to improve the areas in which they are lacking behind (McKneely, Kim, Leung, & Pookulangara, 2020).

#### 4.5 Case study V: Improving SMEs' competitiveness with the use of Instagram influencer advertising and eWOM.

As the demand for cosmetics continues to increase and is easily obtained through online channels, the cosmetics retail industry is expected to grow rapidly in the next few years. The main aim of this research was to understand the use of beauty influencers on social media in the advertisement sector as a tool to improve the output of SMEs.

An exploratory research design was used and in-depth interviews were conducted to better understand young Saudi adults' perceptions of Instagram influencers, electronic word-of-mouth (eWOM), and advertising trust.

SMEs can greatly benefit from eWOM when seeking competitiveness. Therefore, when beauty influencers on Instagram promote products to SMB fans, this will increase visibility and willingness to buy.

The survey results showed that participants were highly sceptical when receiving comments or promotions from beauty influencers on social media because they rarely believed they were real. Also, when participants had a positive experience with influencers before, they seemed to trust Instagram beauty influencers. Trust, honesty and authenticity are important factors that increase the impact of eWOM (Konstantopoulou, Rizomyliotis, Konstantoulaki, & Badahdah, 2019).



#### 4.6 Buying behaviour

Understanding the buying behaviour of consumers stemming from advertisements is really crucial as it can help a company grow. Similarly, KARADENİZ and KOCAMAZ (2019) aimed to analyse the effects of Facebook, YouTube and Instagram advertisements on consumers' buying behaviour.

He has used the SPSS program for frequency, factor, reliability and correlation analyses. In order to test the significance and reliability of that model LISREL structural equation modelling is used. According to the analysis, it is inferred that independent variables like informativeness, hedonic motivation, trustworthiness and economic benefit have a significant impact on buying behaviour. Every company should provide right and clear information about its company or its service while advertising. Hedonic ad attributes to the recreational characteristics of advertisements that affect the consumers online buying behaviour.

According to the results the data is perfectly eligible for factor analyses. Also, the results of reliability analysis carried out with the 4 factors proved to be highly reliable. The result inferred that the relationship between the dependent variable 'buying behaviour' and the independent variables 'trustworthiness', 'informativeness', 'hedonic motivation' and 'economic benefit' came out to be significant on the 0.1 reliability level which signifies that the model is significant, reliable and perfectly acceptable. As per the t values, the independent variable that affects the dependent variable 'buying behaviour' the most is 'informativeness', which is followed by the independent variables 'hedonic motivation', 'trustworthiness' and 'economic benefit', respectively. The most valuable dimension that the users value is informativeness so the influencers should focus on this which would enable them to attract more audience (KARADENİZ & KOCAMAZ, 2019).

### V. FINDINGS AND CONCLUSIONS

In today's time, the most efficient and cost friendly way to make your company recognisable is social media, especially Instagram. Instagram adds value to not only small businesses, but also to well established businesses. Upon research and thorough analysis, the conclusion can be drawn that there are many small businesses that have used Instagram as a tool to market and build their recognition. Businesses that want to spread awareness about their product or services should be aware of the working of Instagram algorithm. We all know that social media is the future, where Instagram would be playing a major role. Soon Instagram would not only be a platform known for entertainment, but also be known for imparting knowledge, values and information about all the fields that we can possibly think of. Hence, businesses should use this potential to their advantage.

### VI. LIMITATIONS AND FUTURE RESEARCH

Further studies can be taken up on how hashtags impact the audience engagement with a brand's stories and posts. Research can also be done on how other popular social media platforms like Facebook, TikTok and Snapchat can be used to grow small scale businesses.

There are certain limitations of using operational research tools in general. These are as follows:

- Expenditure of money and time: If the underlying data changes frequently, then incorporating it into the Operations Research model is an expensive proposal. In addition, in the present, fairly good solutions may be preferable to perfect operations research solutions that will be available sometime later.
- Execution: Executing decision-making is a delicate task. It must take into account the complexity of interpersonal relationships and behaviours which is not discussed in this paper. This research is purely based on facts and quantifiable variables.

Moreover, there are other limitations that arises pertaining to the case studies taken up in this research:

- In the above case study of advertising effects based on consumer preferences, an advertisement only considers 3 factors, namely, instant length, background colour, and information content. For future research, it is recommended to also test other factors in order to develop correct advertisements for effective marketing. The study also found that long ads are more intrusive, which is not desirable. Therefore, according to the researchers, the ideal duration in this case is 10 seconds (Fakhradyan, 2021).
- One of the studies discussed the best time to post on Instagram for maximum exposure. This did not take into consideration data from other countries, especially emerging markets such as India and Brazil (Wahid & Wadud, 2020).

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