



Driving customer engagement through Instagram advertising insight

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Abstract

Instagram has transformed the digital marketing landscape, offering businesses unprecedented access to target audiences through visually engaging content and dynamic features. This study investigates how advertising strategies, customer engagement metrics, and promotional activities on Instagram impact user behaviour and purchasing decisions. A dataset of 165 participants was analysed, focusing on variables such as demographics, Instagram interaction frequency, and purchasing behaviour influenced by advertisements and influencers.

The methodology employed includes descriptive statistics, exploratory data analysis (EDA), and Chi-Square tests to determine correlations between demographic variables and user interactions. Findings reveal that younger audiences (18-22 age group) are the most active, engaging frequently with Instagram ads. Influencers play a significant role in purchase decisions, particularly among students. Gender, occupation, and education level showed minimal statistical significance in influencing Instagram usage or interaction frequency.

Results highlight the effectiveness of visually driven content, influencer recommendations, and interactive features in engaging users and driving purchases. However, challenges such as user fatigue and evolving preferences require continuous monitoring and adaption of strategies. These insights offer valuable implications for brands seeking to optimize their presence and customer engagement on Instagram.

Keywords: Instagram advertising, customer engagement, social media marketing, influencer marketing, digital marketing strategies, chi-square analysis

Introduction

Social media sites, which business organizations for the very first time have experienced unprecedented contact with their target markets, had revolutionized the marketing environment of today's digital world. Among them is Instagram that has captured attention through its active features and visually engaging content material and attracted millions of users worldwide. With more and more companies making use of the Instagram platform for even more promotional activities, it becomes an issue of utmost urgency to research in-depth dynamics that impact on advertising tactics, customer interaction, and promotional activities on Instagram.

Changing expectations from customers along with a peculiar mix of Instagram's flashy images and intuitive user interface has posed new challenges to the companies in order to rethink the advertising tactics. With a deeper knowledge of Instagram's promotion-related ecosystem now being pivotal towards a comprehension of what affects the marketing of businesses' products alongside their business communication with clients, a pursuit of this exploration toward how to begin an understanding in the depth of the mystery of marketing on Instagram can be undertaken. This study aims to derive useful insights in the optimization of digital marketing efforts on this platform by analyzing the effectiveness of different promotional approaches, decomposing advertising strategies, and closely looking at customer engagement indicators.

By using Instagram marketing, businesses and individuals can eventually make their products, services, or personal brands more effective by having a share of one of the social media platforms. The most attractive place where you can reach out to more than one billion monthly active users and

tell your stories is Instagram. For staying visible on Instagram, you'll have to post often. To maintain an active stream every day, you will have to plan and manage your posts by using the content calendar. Use a variety of information, such as stories, carousels, videos, and photos in your posts.

Literature Review

Pavlova, Anna (November 2018) studied views Instagram as a marketing tool that is used in the process of micro, small and medium-sized enterprises (SMEs) activities of the Republic of Karelia. The leading objective was to investigate SME's business purposes on using Instagram in marketing processes, what aims are accomplished with the use of the social network, how SME's approach and evaluate Instagram marketing. The study basically took up the descriptive and explorative approaches since it was a sample of the qualitative data. The secondary sources came as developments from academic literature and internet publications; primary data was conducted by ten semi-structured interviews of Karelia's SMEs with those representatives who advertised their enterprise on Instagram. The study demonstrated the size of SMEs, and its SMEs targeted differently; found that size-dependent SMEs to be a business strategy for Instagram marketing to be very professional; such results led to more effective human social performance. Ladislava Mikova and Lenka Sukova, January 22, 2022.

Social Media Marketing through Instagram Influencer Marketing

Instagram influencer marketing is increasingly becoming one of the widely applied marketing tactics in today's marketplace for businesses of all sorts. More so today, most

companies use social networking sites to sell their wares as well as expand their connection to potential buyers. Business sales seem to benefit from influencer marketing, primarily through product placement. There is now more concern however that because the public might be bombarded with advertisement messages, too much exposure for brands within social networks-which have been made possible through influencers may cause consumer fatigue, but rather discomfort. Therefore, this chapter tries to evaluate how this new strategy of marketing communication puts up its products on Instagram and in what way this may trigger discomfort and negative views among its customers. Belanche, Danie (15 April 2020).

This study's context is a fashion marketing campaign; hence, its purpose is to explore which factors are responsible for the positive attitude towards influencers related to the interaction with customers, and towards promoted products which relate to the search for information on products. The primary concern of this study involves congruence between an influencer and the product. This is also based on the assumption that both the product involvement level and the account follower count can actually serve as possible moderators of these relationships. The current research focuses on whether both contributions will actually occur. Ibrahim Ali, May 6, 2020.

To measure the degree to which the characteristics of Instagram would be beneficial for its utilisation as a sales promotional tool in developing customer loyalty, an appraisal was performed. Based on the use of DEM, the performance and efficiency of the features of Instagram as marketing tools were accessed, and further recommendations in terms of judgments of researchers. A sample of forty-three respondents was used for measuring each variable. Performance Variable achieved 79.37% that falls in the category of "effective" whereas, the effectiveness variable achieved 76.10% and falls in the category "effective". There were three evaluation indicators for every variable on which the analyses rested. In general, the results point to the fact that features on Instagram are useful in advertisement and marketing as far as performance and increasing customer loyalty is concerned. Pijar Suciati (8 August 2018)

Social media has been the most effective marketing instrument for many types of organizations in Indonesia, from small business persons, small businesses, entrepreneurs, or SMEs, all categorized as "Usaha Kecil dan Menengah". With its roots deeply in the traditions of Indonesia, small business firms offer fashion-related commodities and services in a trend which have experienced rising demand. From garments made out of local material to fast-moving instant food and logo creation companies amongst many more, these tend to include anything. Due to most people posting the images on Instagram, the majority exploited the media as a form of promotion. That cannot be said for Facebook and Twitter; Instagram is much more attractive, to the compulsive consumer, because of its greater interest in visual material. It is with this rich depository of interesting images that the customers in Indonesia perceive the aid from Instagram not only at work in navigating around but also in purchasing from it. Some of the managers in an online shop have placed more defined marketing strategies on the website of Instagram, such as showing their customers wearing their products and featuring celebrities

endorsing their company's products, and a competition where customers can add pictures to win prizes from the online shop. This research study will collect and summarize the marketing strategies utilized by Indonesian e-store managers in their advertisement, expansion, and selling efforts.

Research Methodology

This study uses the strategy of convenient sampling which aims to select participants where these can be easily obtained. The data collection tool used would involve a quantitative questionnaire, specifically constructed for the purpose of deriving primary data directly from those concerned. To explore the deeper perceptions within the study, a mixed research method has been considered utilizing an exploratory design.

Objectives of the study

- To measure the Correlation between demographics and usage of Instagram.
- To know about customer interest towards Instagram
- To Analyse the advertising strategy by influencers.

Data Collection Method

The major method used is data collection. This has been acquired through a structured questionnaire issued to all the batch mates, different colleges, family, and friends.

Hypotheses

H1: Gender's Effect on Engagement of Users to Instagram Ads

H0: There is no significant relationship between gender and engagement with Instagram ads (likes, shares, comments).

H1: There is a significant relationship between gender and engagement with Instagram ads (likes, shares, comments).

H2: Gender and Instagram Usage Frequency

H0: There is no significant association between gender and Instagram usage frequency.

H1: There is a significant association between gender and Instagram usage frequency.

H3: Purchasing Behaviour Based on Job Type

H0: There is no significant association between job type and purchasing decisions influenced by Instagram recommendations.

H1: There is a significant association between job type and purchasing decisions influenced by Instagram recommendations.

H4: Social Media Consultation Behaviour by Education

H0: There is no significant association between age groups and frequency of consulting social media.

H1: There is a significant association between age groups and frequency of consulting social media.

H5: Social Media Consultation Behaviour by Education

H0: There is no significant association between educational qualification and frequency of consulting social media.

H1: There is a significant association between educational qualification and frequency of consulting social media.

Data Analysis Methods

The data analysis for the research study employs a series of Chi-square tests to explore the relationships between various

demographic factors and their interactions with Instagram advertising and influencer behaviour. Each hypothesis aimed to determine whether there were statistically significant associations between the variables in question.

Data Collection & Preparation:

- I collected survey data regarding age, Instagram usage, purchasing behaviour influenced by social media, job type, and education level.
- Data was organized into a format suitable for analysis, likely using a DataFrame structure.

Statistical Testing:

- Performed Chi-Square Tests of Independence to explore relationships between categorical variables (e.g., age and Instagram interaction frequency, job type and purchasing behaviour).
- Analysed the Chi-Square statistic and the p-values to determine if observed differences were statistically significant.

Data Analysis Techniques Used

- **Descriptive Statistics:** Summarized data distributions with histograms and contingency tables.
- **Chi-Square Test of Independence:** Assessed whether there is a significant relationship between two categorical variables.

Tools Used

- **Pandas:** For data manipulation and creating contingency tables.
- **Matplotlib:** For data visualization, specifically histograms.
- **SciPy:** For performing statistical tests like the Chi-Square test.

Descriptive Statistics: Summarized data distributions with histograms and relevant visualizations.

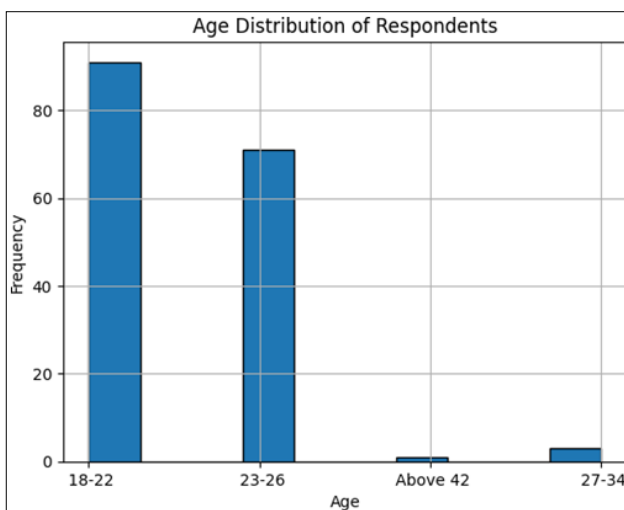


Fig 1

Most respondents are in the 18-22 age group, followed by the 23-26 group. Minimal representation is seen in the 27-34 and above 42 age brackets. This suggests that younger individuals predominantly participated in the survey.

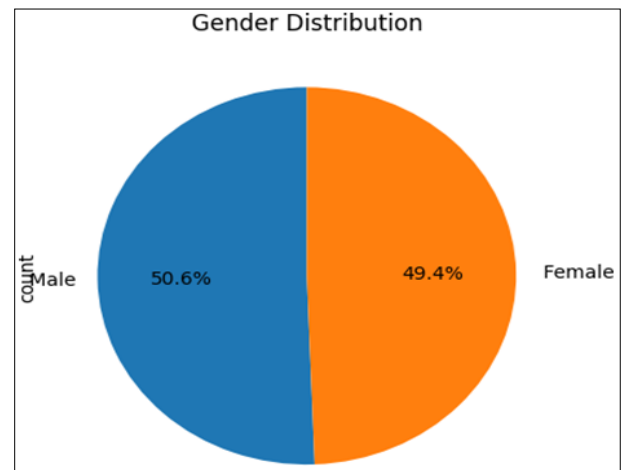


Fig 2

The pie chart displays a nearly even gender distribution among participants, with males comprising 50.6% and females accounting for 49.4%. This slight male majority indicates a balanced representation between genders, suggesting that the sample is relatively equitable in gender demographics.

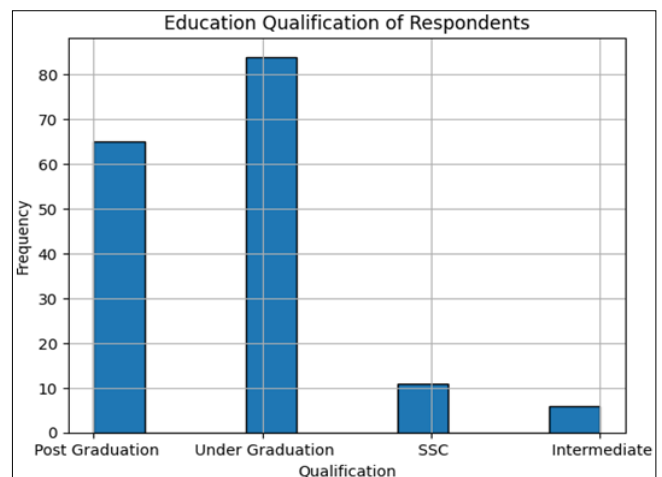


Fig 3

Most respondents have an undergraduate qualification, followed by a significant number with postgraduate qualifications. Few respondents have completed only SSC or intermediate levels, indicating a higher educational attainment among the surveyed group.

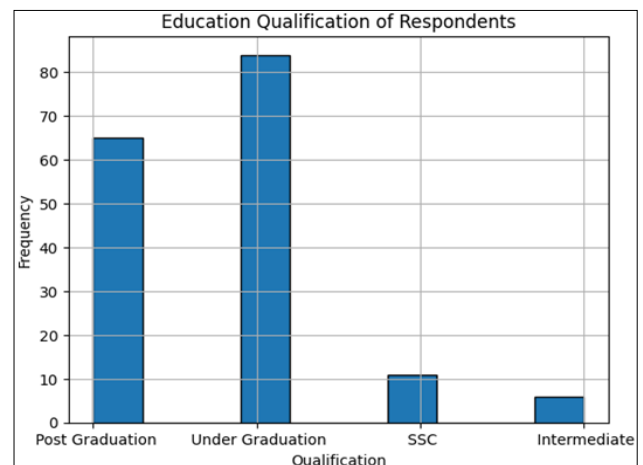


Fig 4

Most respondents use Instagram multiple times a day. A smaller proportion accesses it once a day or several times a week, while very few rarely or never use the platform. This highlights Instagram's frequent engagement among users.

response toward the factor influencing the purchase decision.

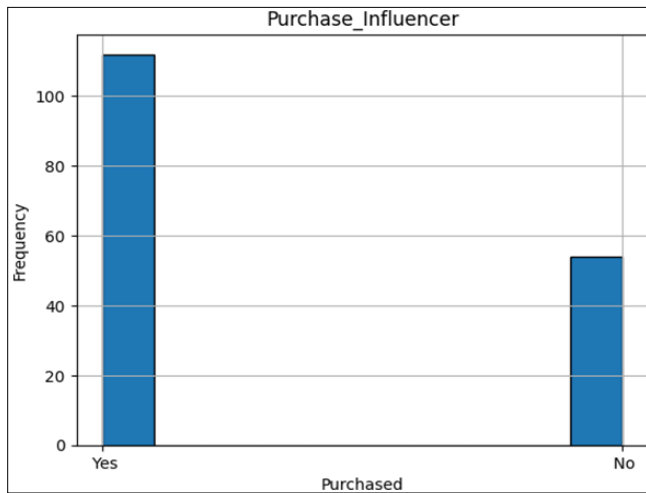


Fig 5

The bar chart displays the frequency distribution of a variable labelled "Purchase Influencer," indicating whether individuals made a purchase. It shows that "Yes" (purchased) has a significantly higher frequency compared to "No" (did not purchase), suggesting a strong positive

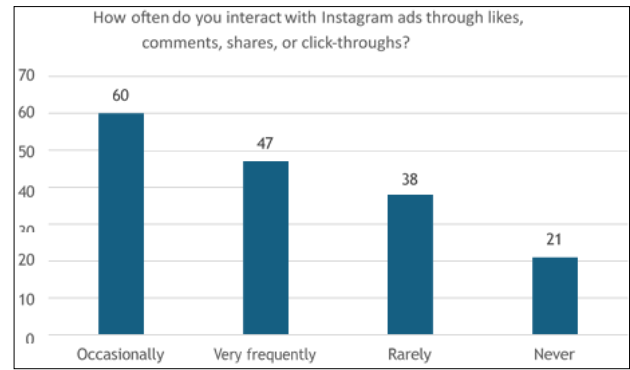


Fig 6

The bar chart illustrates user interactions with Instagram ads, revealing that the largest group, 60%, engages occasionally. A substantial portion, 47%, interact very frequently, while 38% do so rarely. Only 21% of users report never engaging with these ads. Overall, the data suggests a general tendency for users to interact with ads at least some of the time, with notable engagement levels among many participants.

Chi-Square Test of Independence: To do statistical test such as the Chi-Square test, I utilized the library SciPy.

Table 1: Chi-Square Results and Hypothesis Acceptance and Rejection

Hypothesis	Contingency Table Summary	p-value	Conclusion
H1: Gender's Effect on Engagement of Users to Instagram Ads	Females marked "never" 10 times; males 11. Females interacted "occasionally" 32 times; males 28. Both genders interacted "rarely" 19 times. Males reported 26 "very frequent" interactions; females 21.	0.84	Accept H0: Gender does not significantly affect engagement with Instagram ads.
H2: Gender and Instagram Usage Frequency	Females (57) and males (60) use Instagram multiple times daily. Few users (2 females, 3 males) reported never using it. Males exhibit more varied usage patterns than females.	0.86	Accept H0: Gender does not significantly influence Instagram usage frequency.
H3: Purchasing Behaviour Based on Job Type	Students showed the highest engagement, with 94 purchases based on influencer recommendations. Employees had 5 purchases, and business people had 1.	0.42	Accept H0: Job type does not significantly affect purchases influenced by Instagram recommendations.
H4: Social Media Consultation Behaviour by Age Group	Ages 18–22 consult social media the most (27 always, 21 often). Minimal engagement seen above age 42 and none in 27–34 age group. Drop-off observed with increasing age.	0.31	Accept H0: Age does not significantly influence frequency of consulting social media.
H5: Social Media Consultation Behaviour by Education	Post-graduates (17 always, 15 frequently) and undergraduates (28 frequently) are more active. Lower involvement observed among those with SSC/intermediate qualifications.	0.24	Accept H0: Educational qualification does not significantly influence social media consultation behaviour.

Findings and Conclusions

- Most respondents are within the 18-22 age group, which shows a younger demographic is more frequent in the survey.
- Most respondents use Instagram multiple times a day, indicating that it is a highly engaged platform with the participants.
- Around 100 respondents reported that they bought some products because of the influencer's recommendation, signifying the impact of social media influencers.
- There is a marked trend that respondents, women in particular, engage with Instagram ads, and the statistics prove so by frequent engagement.
- Job types did not have a significant influence on the number of times people researched the product on

Instagram before purchasing, as evidenced by the p-value of 0.50.

- Educational qualifications had no significant influence on the number of times people check social media for decisions, as evidenced by the p-value of 0.24.
- Across all analyses, the p-values for the most part were >0.05, hence demographic variables such as occupation and education status do not significantly influence the user's behavior in relation to social media consulting.
- Gender does not play a significant role for users interacting with Instagram advertisements.
- For users purchasing products/services in response to influencer referrals, occupation is a significantly influencing variable.
- Age does not present a significant influence on what time of purchase decision; users make on Instagram.

- Age has a negative correlation with the usage of Instagram.
- Videos or Reels are the most popular types of content on Instagram.
- Influencers are very influential in making purchases of products/services on Instagram.
- Users are actively engaging with the content on Instagram and making purchase decisions based on their needs and interests.

References

1. Brodie RJ, Hollebeek LD, Juric B, Ilic A. Customer engagement: conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research*,2011;14(3):252-271. doi: 10.1177/1094670511411703
2. Fionda AM, Moore CM. The anatomy of the luxury fashion brand. *Journal of Brand Management*,2009;16(5-6):347–363. doi:10.1057/bm.2008.45
3. Locowise. Instagram follower growth is now lagging behind Facebook page likes growth, 2017. [online] Available at: <https://locowise.com/blog/instagram-follower-growth-is-now-lagging-behind-facebookpage-likes-growth> [Accessed 11 September 2019].
4. Mangold WG, Faulds DJ. Social media: The new hybrid element of the promotion mix. *Business Horizons*,2009;52:357–365.
5. Pradhan D, Duraipandian I, Sethi D. Celebrity endorsement: How celebrity– brand–user personality congruence affects brand attitude and purchase intention. *Journal of Marketing Communications*,2014;22(5):456–473.
6. Schiffman LG, Hansen H, Kanuk L. Consumer behaviour. London: Prentice Hall. Statista.com, 2019. Leading luxury brands with the most followers on Instagram as of May 2019, 2012.
7. Van Doorn J, Lemon KN, Mittal V, Nass S, Pick D, Pirner P, *et al.* Customer engagement behaviour: Theoretical foundations and research directions. *Journal of service research*,2010;13(3):253-266.
8. De Oliveira Santini F, Ladeira WJ, Pinto DC, Herter MM, Sampaio CH, Babin BJ. Customer engagement in social media: a framework and meta- analysis. *Journal of the Academy of Marketing Science*,2020;48:1211-1228.
9. Sashi CM. Customer engagement, buyer-seller relationships, and social media. *Management decision*,2012;50(2):253-272.
10. Agam DNLA. The impact of viral marketing through Instagram. *Australasian Journal of Business, Social Science and Information Technology*,2017;4(1):40-45.